Weaknesses in Regulatory Capital Models and Their Implications

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2012 Enterprise Risk Management Symposium
April 18-20, 2012

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Abstract

Following the global financial crisis in 2008 and the collapse of large financial institutions, increased attention was paid to regulatory capital. Having an adequate level of capital based on regulatory requirements is one way to provide protection against bankruptcies. There are certain weaknesses in the regulatory capital model, such as its limitation in facilitating risk-based decisions. This article examines some weaknesses in the regulatory capital model and ways regulators and/or companies can handle the weaknesses. One way to address weaknesses in the regulatory capital model is for companies to adopt and use economic capital that can facilitate risk-based business decisions and encourage companies to implement risk management controls. Having effective risk management and risk-based capital determination are ways to prevent company failures and bankruptcies.

Keywords: regulatory capital, economic capital, Basel and risk management

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Introduction

The global financial crisis in 2008 highlighted the importance of having an adequate level of capital to prevent bankruptcy. Capital requirements can be in the form of regulatory capital, such as the amount of capital required by regulators. While the regulatory capital model has certain different weaknesses, there are ways for regulators and/or companies to address these limitations.

Capital Requirement

A capital requirement is the determination of how much capital is needed to sustain operating losses while meeting the demand of liabilities. To guide this determination, the Basel Committee on Banking Supervision issued Basel II, which includes recommendations on banking laws and regulations. Basel II set up capital management requirements to ensure that a bank has adequate capital for the risks it is exposed to through its lending and investment practices. In general, the higher the risk level, the greater the amount of capital required. This is the principle of risk-based capital management.

Three levels of sophistication evolved over the years for capital requirements. At the simplest level, all companies can be required to maintain a minimum amount of capital expressed as a fixed percentage of income. An example would be Basel II's operational risk calculation under the basic indicator approach. The next level of development involves company-specific minimum capital requirements with the use of fixed factors applied to various items of a company's reported balance sheet or financial statement. An example would be Basel II's operational risk calculation under the standardized approach. The third level in the development of capital requirements puts increased focus on the use of company-specific internal models to reflect a company's unique risk profile and corresponding capital requirements. An example would be Basel II's operational risk calculation under the advanced measurement approach.

Purpose and importance of capital requirement

Capital is important because it is one way a company can prevent being liquidated or bankrupted as it provides a buffer against insolvency. As capital is provided by shareholders, it is a source of funding and part of shareholders' equity that is not directly dependent on company performance, as is the company's profit. The capital provides a good defense against

bad days. Without adequate capital, a company can be at the brink of collapse or bankrupt, as demonstrated by large financial institutions like Lehman Brothers during the global financial crisis in 2008. Hence, having adequate capital is important to prevent bankruptcy.

Regulatory capital

Regulatory capital is the amount of capital required by regulation and/or regulators. For instance, for countries that adopted the Basel II accord, Basel II's Pillar 1 establishes the minimum capital requirement and Pillar 2's Internal Capital Adequacy Assessment Process (ICAAP) will either determine no additional capital is needed or additional capital is required above Pillar 1 levels. Basel II calculates a bank's overall minimum capital requirement as the sum of capital requirements for credit, operational and market risks.

Examples of solvency regimes include the European Union's solvency capital requirement (SCR) under Solvency II; the U.S. Insurance Financial Solvency Framework's risk-based capital (RBC) system, which provides a capital adequacy standard related to risk and a safety net for insurers; and minimum continuing capital and surplus requirements (MCCSR) by the Office of the Superintendent of Financial Institutions (OSFI) for Canada's life insurance companies.

Economic capital

Economic capital is calculated by determining the amount of capital the entity needs to ensure its realistic balance sheet (stated in market value) stays solvent over a certain time period with a pre-specified probability. It is often parameterized as the amount of capital a bank needs to absorb unexpected losses over a certain time horizon at a given confidence interval, calculated as value at risk (VaR), and it can cover market, credit and operational risks. Economic capital can be seen as a tool developed and implemented by an individual entity for internal risk management purposes. It allows companies to consistently assess risk and attribute capital to cover the economic effects of risk-taking activities. In particular, economic capital analysis typically involves an identification of the risks from certain activities or exposures, an attempt to measure and quantify those risks, the aggregation of those risks and an attribution or allocation of capital to those risks.

Actual available capital

Actual available capital is the actual amount of capital maintained by the company. Many banks' definitions of available capital are tangible equity, tier one capital or capital definitions used by rating agencies. Among the various items that can be included in the definition of available capital (some of them are included in the regulatory definition of capital) are common equity, preferred shares, adjusted common equity, perpetual non-cumulative preference shares, retained earning, intangible assets, surplus provisions, reserves, contributed surplus, current net profit, planned earning, unrealized profits and mortgage-servicing rights. In determining the actual capital amount to be maintained, management can consider regulatory capital requirements and economic capital (where it exists), the capital or solvency level perceived to be required to maintain a specific external rating assigned by credit rating agencies, levels set by peers and comparable competitors, shareholders' influence, etc.

Regulatory Capital Gains Prominence

Without regulatory capital requirements, companies may not have the incentives to retain a large amount of capital. They may wish to engage in risk-taking business initiatives with a view to create profits. Also, raising capital dilutes the return for shareholders and senior management with share options. This can create a disincentive for senior management to raise capital. In June 2007, U.S. Federal Deposit Insurance Corp. Chair Sheila Bair explained the purpose of capital adequacy requirements for banks:

> There are strong reasons for believing that banks left to their own devices would maintain less capital—not more—than would be prudent. The fact is, banks do benefit from implicit and explicit government safety nets. Investing in a bank is perceived as a safe bet. Without proper capital regulation, banks can operate in the marketplace with little or no capital. And governments and deposit insurers end up holding the bag, bearing much of the risk and cost of failure. History shows this problem is very real … as we saw with the U.S. banking and S & L crisis in the late 1980s and 1990s. The final bill for inadequate capital regulation can be very heavy. In short, regulators can't leave capital decisions totally to the banks. We wouldn't be doing our jobs or serving the public interest if we did.

The global financial crisis in 2008 and the collapse of big financial institutions such as Lehman Brothers illustrated the point that certain companies may not have sufficient capital if left to their own devices in determining the amount of capital required. As a result, regulators in different countries are re-examining regulatory capital requirements and capital adequacy. Basel 2.5, agreed upon in July 2009, enhanced the measurements of risks related to securitization and trading book exposures. Basel III, released in December 2010, set higher

levels of capital requirements and introduced a new global liquidity framework. The reforms raise both the quality and quantity of the regulatory capital base and enhance the risk coverage of the capital framework. Also, a methodology has been developed to identify global systemically important banks (G-SIBs) and there are SIB surcharge placed on certain banks. Basel 2.5 and Basel III are responses from regulators to the lessons learned from the global financial crisis in 2008.

Weaknesses in Regulatory Capital Models and Their Implications

While regulatory capital is very important in preventing company failures, there are certain weaknesses in regulatory capital models. The weaknesses and their implications are described below.

The first weakness is the regulatory capital amount can be significantly different from the actual desirable capital level determined by sophisticated risk-based capital methodology. If the actual capital is determined solely based on regulatory capital, significantly undercapitalized or overcapitalized companies can result. There are different implications to different stakeholders if a company is undercapitalized or overcapitalized.

Undercapitalization can lead to firm failures as companies may not have sufficient capital to meet their obligations. The collapse of large financial institutions that are "too big to fail" can lead to widespread consequences in the industry and/or economy and great impact on many stakeholders. Investors and creditors around the globe would suffer financial losses. Employees could lose their jobs. Government bailouts of the nearly failed companies would be a big financial drain on the government and its taxpayers. Credit rating agencies would suffer reputation and credibility losses as large financial institutions with high credit risk rating assigned by those agencies end up broke or on the brink of bankruptcy. Counterparties that trade and/or have services with the failed companies would suffer loss of trade, profits, assets, services and/or risk protection. For instance, individuals or companies that bought insurance or credit default swap (CDS) protection from failed financial institutions would have lost the protection they sought from the firms.

Overcapitalized companies, on the other hand, can result in decreased competitiveness. For instance, if potential competitors could provide the same products or services without having the same required level of capital, the products or services could be offered at a lower price. The firm would then face losing business to the competitors. Shareholders and investors may view companies in a certain industry, such as the financial industry, with decreased returns to be less attractive than companies in other industries, such as non-financial industries, that are less capitalized.

Although the large regulatory capital requirement of financial institutions may decrease their attractiveness to shareholders and investors, the new regulatory requirements on increased regulatory capital hopefully can lead to increased stability and can reduce the chance and impact of systemic risk in the financial industry. This stability may, to a certain extent, restore public and investor confidence in financial institutions.

Another weakness in the regulatory capital model is that regulatory capital is not as effective as economic capital in facilitating risk-based decision. Economic capital can be calculated based on the risk of the portfolio, exposure or project and can facilitate risk-based decisions (e.g., risk-adjusted performance assessment and risk-based capital allocation). Regulatory capital, on the other hand, is determined at an aggregate, or company, level and cannot be assigned to portfolio, exposure or project level to facilitate risk-based decisions.

In addition, there is a weakness in the regulatory capital model that relates to the timeliness of reporting and monitoring of regulatory capital. There can be untimely reporting and monitoring of regulatory capital that does not reflect an up-to-date risk profile. Regulatory capital is reported to and monitored by regulators periodically on a specified frequency. For example, capital ratios are reported quarterly to the U.S. regulator in Thrift Financial Reports. During times of crisis, such as global or national financial crisis or bankruptcy of large financial institutions, the periodic capital reporting to regulators may not be timely enough to detect and/or prevent company failures or bankruptcies. This can have a widespread impact as systemic risk is present in the financial industry.

Ways for Regulators and/or Companies to Handle Weaknesses in Regulatory Capital Models

During times of high risks, like a financial crisis or default of financial institutions, regulators can request more frequent updates and reporting of capital and other financial figures and indicators for monitoring purpose. Examples of financial figures or indicators to be reported include capital amount, debt amount, solvency or insolvency ratios, liquidity ratios, current ratios and leverage ratios. This can allow regulators/governments/industry bodies to monitor and detect risks such as liquidity and insolvency risks and perform follow-up actions accordingly. Even if there is no regulatory requirements, companies can also consider increased frequency of measurement, reporting and monitoring of capital and other financial figures and indicators to facilitate better and more timely monitoring and follow-up.

Ways for regulators to address weaknesses in regulatory capital models

Regulators can regularly revisit the method of determining regulatory capital. For instance, regulators can increase the regulatory capital if a past method of determining the amount resulted in undercapitalized companies as demonstrated by their failure. Also, regulators can perform reasonableness checks on capital determination methods against methods used by other countries. Furthermore, regulators can consider making good use of economic capital when determining the regulatory capital amount. As economic capital is risk capital determined by the economic risk of an entity, regulators can consider setting a regulatory capital amount or *minimum* regulatory capital amount as the economic capital amount (e.g., if regulators assessed that the economic capital is not understated and hence provides good protection to the entity). Using economic capital to assess the adequacy of regulatory capital is in accordance with Basel II's Pillar 2's ICAAP.

Regulators can also explore ways to introduce granularity to regulatory capital requirements to better implement risk-based capital. Instead of applying a high percentage in determining the regulatory capital amount as a response to the global financial crisis, regulators can consider identifying and applying additional measures based on risks. For instance, for financial institutions that are "too big to fail," additional capital can be required to serve as further protection against collapse. Basel III already requires certain categories of financial institutions to have higher loss absorbency capacity depending on the systemic importance of the institution. As financial institutions that are too big to fail can pose systemic risk to the whole industry, the extra capital requirement can reduce systemic risk. Other factors that can be used to determine a company's risk level include credit risk rating, risk level for the type of business and/or transactions the company is engaged in, and loss events. By exploring ways to increase granularity in determining the regulatory capital amount needed to better implement risk-based capital, the regulatory capital amount can better reflect the risk level of the company.

Ways for companies to handle weaknesses in regulatory capital models

While companies should keep the regulatory capital amount at a minimum, companies can determine the actual available capital amount for their companies by taking into account factors such as economic capital (if any), risk level, and capital or solvency level perceived to be required to maintain a specific external rating assigned by credit rating agencies. This can lower the company's chance of bankruptcy as the actual available capital amounts take into consideration other factors that reflect economic reality and the risks the company faces.

Companies should proactively implement and improve risk management controls and/or economic capital modeling as they can improve the financial stability and public confidence in the company and the industry, which are the objectives of having regulatory capital. Companies can use economic capital as a tool to improve business decisions as it facilitates risk-based

decisions such as risk-based pricing, risk-adjusted capital allocation and performance assessment. With risk-based performance assessment, everyone in the company is encouraged to manage risk and not take a level of risk that exceeds the company's risk appetite. Having good and effective risk management, such as effective liquidity risk management or asset liability management, is one way for companies to prevent bankruptcy. In addition, when companies implement better economic capital modeling, the benefit can be spread across the industry as various stakeholders (e.g., shareholders, government, industrial bodies, etc.) can benchmark companies in the same industry. Also, companies such as banks tend to look to peers in choosing external credit ratings and targeting their capital ratios. Hence, financial institutions with good economic capital modeling can encourage their peers to adopt the same. This can benefit the industry as a whole with increased financial stability and public confidence in the financial industry.

Conclusion

After the global financial crisis in 2008, regulatory capital is gaining importance as an adequate level of capital is crucial in providing protection against company bankruptcy and restoring public confidence in the financial industry. Mandatory capital requirements can be brought about by regulatory requirements as companies may not maintain a sufficient level of capital if left to their own devices. However, the regulatory capital model has weaknesses in that regulatory capital may not reflect the economic reality and risks an entity faces. In addition, regulatory capital is not as effective as economic capital in allocating capital within an entity, and encouraging risk management and risk-based business decisions (including risk-based capital allocation and risk-adjusted performance assessment). Moreover, regulatory capital reporting and/or monitoring may not be timely enough to detect and/or prevent company failures.

Although regulatory capital models may have weaknesses, there are certain ways for regulators and companies to handle these weaknesses. These include introducing granularity in the method of determining regulatory capital, regularly revisiting regulatory capital requirements, determining actual available capital based on factors in addition to regulatory capital, reporting and monitoring of financial figures (including capital amount) on a timely basis, and adopting and improving economic capital modeling and risk management. Having effective risk management and risk-based capital determination are ways to prevent company failures and bankruptcies.

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