

Capital requirement and financial regulations in banking: Are they effective?

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ABSTRACT This article describes the role of capital and capital requirement in the banking industry. Using an accounting definition, bank capital refers to common stocks, surplus and undistributed profits. This capital, among other things, acts as a cushion or buffer to absorb unexpected losses. When these losses exceed this buffer amount, bank failure occurs. Since a single bank failure may prove contagious as observed in the 1997 Asian financial crisis, bank capital position should not be allowed to erode. Because of this, regulators regulate the level of capital in the banking institutions. Hence, regulatory capital refers to the minimum amount of equity capital that banks must maintain to comply with regulatory requirements. Bank capital and default, however, are not always inversely related as proven in past studies. Accordingly, this article also explains why a stringent capital requirement does not necessarily reduce the probability of bank failure.

Like other forms of regulations, the announcement of new capital requirements can have both good and bad effects on the targeted financial institutions and markets. Capital requirements create pressure on the targeted financial institutions: in this case there is pressure to maintain higher capital ratios and to hold a higher percentage of equity capital per loan than per government security. As loans are riskier than securities, bank risk-taking presumably falls as banks shift their portfolios away from loans and into securities. Increasing capital requirements can result in increasing rather than reducing bank risk. Instead of switching to less risky assets, capital requirements can motivate banks to take greater risk by holding more risky assets. Evidently, there is no guarantee that capital requirements will lead to greater stability and wealth for banks.

LACK OF CAPITAL has often been cited as a major cause of bank failures. Subsequently, banking supervisors around the world impose capital regulations based on the recommendations by the Basle Committee. In 1988, the Basle Committee, represented by the G-10 countries, agreed on a common framework of capital adequacy measurement, i.e. an 8% minimum target risk-based capital standard (CAR) for banks operating internationally. In 1999, the Committee issued a proposal for a new Basel Capital Accord to replace the Basle I Accord. The format of the Basle II Accord has now been finalised but will not be fully adopted until 2007/2008. While the present 1988 Basle I Accord incorporates the use of models for measuring credit and market risks, the new risk-based capital plan will explicitly contain, for the first time, a measurement of operational risk. Other changes include requirements for supervisory review and market discipline. Malaysia will be adopting the Basle II Capital Accord.

The emphasis on risk-based capital requirements as a tool to promote greater financial stability is based on the notion that the higher the capital, the safer is the bank. In other words, bank capital acts as a cushion against bank failures. Some economists, however, argue that while capital requirements may have boosted capital-asset ratios, they have failed to prevent an increase in the overall risk of the banking industry. This implies that stringent capital requirements may, in fact, result in a rise in bank risk-taking. The discussion on the relationship between capital requirements and bank risk-taking is not a trivial issue. Indeed, understanding the impact of capital requirements on bank behaviour is important and the new proposal on the Basle Accord even makes it obligatory. The following paragraphs provide further insight into their effects on the behaviour of the regulated banks and the reasons why such regulations exist in the first place.

THE REGULATORY FRAMEWORK

There is already an extensive and well-established body of banking literature on the impact and effectiveness of financial regulations, including bank capital requirements on controlling bank risk. Most of these studies cover US banks and banks of other developed countries. Both in the empirical and theoretical literature, the conclusions provided are mixed. Some results suggest that capital requirements fail to limit risk-taking by banks while others support the claim that capital regulations act as an insurance against bank crises. At the heart of this

argument, there is also a question about whether the capital regulations have any unintended effects. The imposition of capital requirements may have adverse effects on some banking firms or at least the capital-deficient banks. Capital-deficient banks will be forced to alter their capital structure and the change may result in an adverse wealth effect for the banks' equity holders if the firms were previously operating at or near their optimal structure (Eyssell & Arshadi, 1990). There are others who claim that risk-based capital requirements would lead to a credit crunch and even postulate that the Basle Accord had played a role in the US credit crunch of the 1980s that led to economic downturns.

Over the last 2 decades, the Malaysian central bank has introduced many changes to the country's financial regulations including those covering capital requirements. The capital requirements imposed took two major forms. Besides the mandatory risk-weighted capital adequacy ratio in 1989, a two-tier regulatory system was also introduced in the mid-1990s. According to Bank Negara Malaysia, these regulations were aimed at creating local bank and non-bank financial institutions with a strong capital base, a strong asset base and efficient operations. There is a lack of empirical studies to show that capital regulations have actually increased the local banks' financial stability and soundness. However, we do know, to some extent, that the previous regulations, in general, have been unsuccessful in insulating our financial system from external shocks such as the devaluation of the Thai baht and the ensuing Asian financial crisis. As it turned out, the country's financial sector proved very vulnerable to external shocks as experienced in the late 1990s. We could, therefore, conclude that the risk level of Malaysian banks had actually deteriorated in the 1990s despite the implementation of the risk-based capital requirements in 1992. Most importantly, the previous regulatory changes on bank capital had failed to encourage the under-capitalised banks, in particular, (refer to those with capital ratios below the industry average) to be more prudent.¹

Besides the impact on regulated financial institutions, any new regulation imposed affects the regulatory bodies that supervise and control bank operations. To the bankers, capital requirements, for example, impose an unnecessary burden that translates to higher

costs. When new regulations are imposed, the regulated banks experience a rise in their compliance costs while the regulators' direct costs rise too. The bank regulators have to redesign existing regulations, re-train and increase their staff workload, arrange visits to banks and organise workshops on the proposed regulations. At the same time, a successful implementation of capital requirements requires the regulators' firm commitment and good supervision. However, the likelihood of capital regulations achieving their stated goals greatly depends on the manner and stringency with which regulatory bodies enforce regulatory requirements.

MORE OR LESS REGULATION: WHICH IS BETTER?

Given the uncertainty over the banks' reaction to new financial regulations and based on the experience in some countries, tightening rather than loosening regulatory restrictions is not necessarily better. Similar comments can be made on developed versus less developed banking systems: highly 'developed' banking systems are not necessarily less prone to crisis than less 'developed' systems. The thrift industry crisis in the US in the late 1980s is a good example. Another case is Japan, which has suffered many years of banking crises caused by bad loans and business decisions. Banking crises are indeed common phenomena in developing countries – the Mexican banking crisis in the early 1990s and, more recently, the 1997 Asian financial crisis.

On the one hand, it may be agreed that there is a higher probability of banks suffering crises when there are fewer rather than more regulations, although, whether the former is better than the latter is moot. Some countries gain a lot from having a less restrictive regulatory system while others suffer greater instability. For the last two decades, national bank regulatory and supervisory authorities around the world have often been criticised for committing to either an over- or under-regulated environment. There is a view among academicians that regulators create an unnecessary regulatory burden for the banking industry; many regulations represent a deadweight economic loss, wasting resources without measurable benefits to safety and soundness (Benston & Kaufman, 1996). Undoubtedly, there is a tendency towards over-regulation given that regulation is not usually supplied through

¹ A recent study by Ahmad, Ariff and Skully (2004) suggest that the observed increase in equity-to-asset ratios of Malaysian banks during the period 1995-2002 is unrelated to the stringent regulatory standards

a market mechanism. Public pressure can encourage regulators to impose too many regulations, perhaps because bank customers treat regulation as a free good. In contrast, some policy makers, academicians and professionals have criticised some countries' bank regulatory and supervisory authorities for not controlling their banks stringently. For example, the low capital requirement has been cited as a potential flaw in the current design of bank capital regulation (Furfine, 2000). According to Llewellyn (2000), weak regulations, poor supervision and inadequate information disclosure are examples of the major causes of the developing countries' banking crises. The problem could also be due to poor enforcement of financial regulations by the regulatory bodies. It is suffice to say that regulatory bodies in these countries are less independent than their counterparts in developed countries. The performance of regulatory bodies does matter, to some extent, in managing the risk levels and soundness of banking systems.

WHY WE NEED TO REGULATE THE BANKS

There are several reasons why financial institutions and financial markets are subject to extensive regulations. Bankers, insurers, stockbrokers and fund managers collect funds from their clients and these funds are either lent out to other clients or invested in financial assets. Their clients vary from informed to uninformed investors. The majority of these investors rely on information these financial intermediaries provide. Hence, investors have imperfect knowledge about the price and riskiness of the products invested in by the various financial institutions. The problem that arises from having poor price and product information and also from informational symmetries between the suppliers and users of financial services justify the need for financial regulation (Saunders, 2000). Banks are subject to moral hazard and adverse selection and thus they must be monitored. However, monitoring is costly and requires access to information. Since depositors are small and uninformed investors, they are not in the position to monitor the banks. They need a regulator to monitor the banks on their behalf.

Another reason used to justify financial regulation is that the financial sector is one of the most important sectors in any country. The performance of other sectors may depend heavily on the financial system's efficiency and stability. Financial regulations are used to ensure that banks and other financial institutions are financially sound. The collapse of one financial institution

– particularly a large commercial bank - can have detrimental consequences for the whole economy. Even with the growth of the mutual funds and pension funds, commercial banks remain the kingpins of every financial system (Sinkey, 1998). Banks are exposed to, among other things, credit and liquidity risk. While the former refers to the possibility of the borrowers defaulting on loan repayments, the latter refers to banks not having enough cash to meet deposit withdrawals. The riskier a bank's assets (i.e. the higher the ratio of loans to total assets), the more vulnerable the bank is likely to be. A country cannot afford to suffer from bank failures as they are contagious and must be contained to prevent the collapse of the whole banking system. The banking system's collapse can result in severe economic crisis as seen in the recent Asian crisis that hit Indonesia, Malaysia, South Korea and Thailand.

Hence, every government attempts to prevent bank failures and gives bank regulators the responsibility to ensure that the banks are safe. Bank regulators are presumed to impose regulations to force or coerce banks and other financial institutions to lessen their risk exposure. Some form of regulations is undoubtedly required. At the same time, there is a view among academicians that in some financial systems the majority of regulations may not be useful and could be eliminated. Academicians thus disagree on the way these markets and institutions should be regulated rather than on the existence of the regulations per se.

THE DIFFERENT FORMS OF REGULATIONS

Financial regulations come in various forms and are usually grouped under either prudential or protective regulation. While the former is used to limit competition and avoid bank failures, the latter is imposed to protect banks against the consequences of bank failures. Examples of protective regulation are deposit insurance, minimum capital requirements and restrictions on market entry. In the case of prudential regulations, the most common instruments used are liquidity requirements, credit limits, risk management systems, interest rate controls and maximum loan concentration requirements. In the case of protective regulations, regulatory bodies prefer capital adequacy requirements as an instrument of control, believing that low capital is a frequent reason for bank failures. Hence, capital adequacy regulation is the most widely used and internationally accepted means to discipline banks. It is used to reduce the risk of systemic failures.





Before the 1980s, capital requirements in most countries took the form of minimum capital-asset ratios that were independent of risk. When these failed to prevent an increase in overall risk in the banking industry, bank regulators in developed countries felt that capital requirements would be better able to contain bank risk if the requirements were based on the riskiness of each bank's activities. For that reason, the Basle Committee, which consisted of banking officials from 12 industrial countries, finally agreed in 1988 on a common framework of capital adequacy measurement and a common minimum target risk-based capital standard for banks operating internationally. The 1988 risk-adjusted capital requirements recommended by the Committee incorporated the measurements of credit risks. It was no surprise that some academicians criticised the new framework claiming that it was a misleading indicator of capital adequacy as it contained many deficiencies particularly in relation to risk management procedures and concepts (Hogan & Sharpe, 1990). This 1988 framework was designed to strengthen the soundness of the international banking system by relating capital requirements exclusively to credit risk, which indicated the absence of a comprehensive portfolio approach to risk assessment. Besides ignoring other risks that banks faced, the framework also failed to provide a good indicator of total bank risk because it relied heavily on the historical-cost accounting technique (Hogan & Sharpe, 1990). It was claimed that the proposed initial framework was somewhat spurious as a measure of risk.

Another alleged shortcoming of the Basle I Accord is that it ignores operational risk. Operational risk refers to risks connected to banking operations such as loss from computer failures, poor documentation and fraud. In 1996, the Basle I was extended to include only the use of models for measuring market risks but still discounting operational risks. For regulators, then, the framework for measurement of operational risks was not as important as the other two risks. Today, many regulators take a different view. With the on-going transformation of the banking business, risk management practices, supervisory approaches and financial markets, a more risk-sensitive framework is required that places more emphasis on the banks' own internal control and management, supervisory review process and market discipline (BIS 2001). The newly recommended Basle II Accord explicitly contains, for the first time, a measurement of operational risk as well as an improved measurement of credit risks. In a way, the

latest framework bears a strong relationship to total bank risk.

IMPACT OF CAPITAL REGULATION

Capital regulation is viewed as a tax on the regulated institutions or its customers. The use of differential weighting shows that it is a form of differential tax with the intention to encourage low risk category activities at the expense of high ones, to segment financial markets and to alter interest differentials between alternative forms of financing (Hogan & Sharpe, 1990). There must obviously be an appropriate assessment of risk to avoid market distortions.

Risk-based capital requirements, in theory, should improve control over risk-taking by reducing risky banks' chances of failing without driving up safe banks' cost of funds by rewarding banks for shifting to safer activities and by discouraging risky banks from outgrowing safe banks (Keeton, 1992). The whole idea behind risk-based requirements is to force risky banks to hold more capital and fewer deposits or shift to safer activities like investing more in government securities instead of loans. With risk-based requirements, market participants perceive capital-deficient banks as risky banks and, hence, the cost of funds for risky banks will be higher than that for safe banks. This induces risky banks to grow slower and safe banks faster. On the other hand, the minimum capital requirement can motivate banks to replace low risk assets with higher yielding, riskier assets. This is most certainly true for banks that strive to maximise the banks' value (Kahane, 1977). In his study, Kahane (1977) shows that capital requirements are not always effective in lowering the bank's probability of failure. Under certain circumstances, capital requirements may motivate banks to take greater risks by holding more risky assets.

Capital requirements, therefore, affect bank risk and value in many ways. As described earlier, capital requirements are intended to influence banks' capital ratios, particularly where a bank is thought to be undercapitalised. The imposition of a minimum capital requirement is intended to force such a bank to adjust its balance sheet to comply with the new requirement. The affected banks have to decide whether to raise more capital, (holding assets constant) or to reduce risk-weighted assets, (holding capital constant). For example, risk-weighted assets can be reduced by selling assets and using the proceeds to retire liabilities, switching from higher- to lower-weighted assets or

engaging in capital arbitrage practices such as securitisation (Basle Committee Report 1999). Capital, on the other hand, can be increased by either issuing additional equity or by increasing earnings retention. Banks can also raise their capital ratios over time - by either increasing capital growth relative to asset growth or vice versa. Keeley (1988) claims that slower asset growth appears to be the main way that capital-deficient banks increased their capital-to-asset ratios relative to capital-sufficient banks.

Banks are reluctant to increase bank capital because it is not an easy task. Furthermore, issuing additional equity involves high transaction costs while lowering dividend payout rates, which can have an adverse effect on bank stocks. On the other hand, a substantial increase in new issues of bank capital may not have a damaging effect on bank stock prices and, therefore, on the cost of capital, which was found to be the case in Japan when the Basle Accord was introduced (Norton, 1991). Theoretically, the rise in capital adequacy ratios due to banks decreasing their assets or increasing their capital could have a positive effect on bank operations. Bank leverage falls when banks reduce their assets as loans make up most of the assets. This then will cause the bank's default risk to fall too. At the same time, there are several academic studies reporting risk-based capital requirements as being ineffective in forcing capital-deficient banks to raise their capital ratios.

SUMMARY

Like other forms of regulations, the announcement of new capital requirements can have both good and bad effects on the targeted financial institutions and markets. Capital requirements create pressure on the targeted financial institutions: in this case there is pressure to maintain higher capital ratios and to hold a higher percentage of equity capital per loan than per government security. Loans are more risky than securities. Thus, bank risk-taking presumably falls as banks shift their portfolios away from loans and into securities. On the other hand, increasing capital requirements can raise rather than reduce bank risk. Instead of switching to less risky assets, capital requirements can motivate banks to take greater risks by holding more risky assets in order to maximise return on capital. Clearly, there is no guarantee that capital requirements will lead to greater stability and wealth for banks **BJM**

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