Why is the Basel Regulatory Framework Not Necessarily a Universal Panacea?

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Abstract

In this article, we argue that banking regulators under the Basel regulatory framework could benefit from the capital requirements in terms of reducing the likelihood of insolvency of banks, but these standards have possible ill-effects for other important objectives of banking regulations: in particular, the Basel framework does not necessarily contribute to the improvement of financial intermediation and accumulation of credit risk management skills in the monitoring process. Moreover, blind adoption of the Basel regulatory framework in most of the developing countries, where the preconditions are largely absent, creates adverse consequences on economic activity. We raise related experiences from Japan, Indonesia and Sri Lanka.

Keywords:

Basel regulatory framework; capital regulations; financial intermediation; bank solvency

RITSUMEIKAN INTERNATIONAL AFFAIRS Vol.11, pp.71-94 (2013).

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INTRODUCTION

"Ideas, knowledge, art, hospitality, travel – these are the things which should of their nature be international. But let goods be homespun whenever it is reasonably and conveniently possible; and, above all, let finance be primarily national."

-Keynes (1982)

The Basel Committee on Banking Supervision (BCBS) was established at the end of 1974 under the Bank for International Settlement (BIS) mainly as a response to implications of the failure of Herstatt Bank in June 1974. BCBS is composed of senior representatives of bank supervisory authorities and central banks of the Group of Ten countries (G-10), i.e., Belgium, Canada, France, Germany, Italy, Japan, Luxembourg, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

The high-water mark in the Basel framework remains the 1988 Basel Capital Accord (Eichengreen 1999, p. 24). Currently, over 100 countries voluntarily adopt the 8 percent Capital Adequacy Requirement (CAR) that the BCBS agreed upon in 1988 to shore up the equity cushion of internationally active banks in member countries (Miyoda 1994, Rosenbluth and Schaap 2000). During the 1990s and subsequently after the millennium, the expanded role of the BCBS as the institution responsible for globally applicable standards for banking regulation and supervision has been acknowledged. For example, Cornford (2001) has referred to the BCBS as *'a global standard setter'*, though the BCBS *per se* has no enforcement power. Its Accords, Concordats and Core Principles are not legally binding. Nevertheless, it has become the regulatory standard for virtually all countries with international banking activities (Emmenegger 2006).

A logical development for managing risk for banks was the increasing codification of risk in the decision-making process of banks. The codified assessment of credit risk developed by US banks aimed to estimate their portfolio's Probability Density Function (PDF) of credit losses and the amount of capital needed to support their credit risk activities. The process for determining this amount was analogous to *value at risk* (VaR) methods, which was used in allocating economic capital against market risks (volatility risks), a common financial methodology used in US in the late 1980s. In other words, US banks applied the financial technology and

engineering developed for calculating volatility of financial market products and derivatives (such as swaps and options) to quantify credit risks as well. In these exercises, banks express the risk of the portfolio with an *algorithmic* measure of unexpected credit loss (i.e. the amount by which actual loss may exceed the expected loss) such as the standard deviation of losses or the difference between the expected loss and some selected target credit loss quintile (BCBS 1999a, BCBS 1999b, BCBS 2000, BCBS 2001, BCBS 2006).

The codification of risk and the development of arms length banking are not isolated from the tight rein that US regulators kept on the lending business of banks (Dymski 1999). In US corporate finance, bank loans, most of which are short-term contracts for working capital, have historically contributed to no more than 30 per cent of the total funds that US firms raised (Davis 1995, p. 37). In spite of this, regulators held to the conservative strategy of enforcing tight CAR and disclosure rules on banks to prevent *bank runs*. The constant demand, which was further intensified in the 1980s, by the US for level playing field regulations in other national banking regions emanated from the fear of US regulators that tighter capital adequacy requirement on their own national banks might impede competitive edge of US banks in the international financial markets. This can explain why US regulators were at the forefront of the pressure for setting up international capital adequacy standards at Basel.[1)] In this paper, we review why the Anglo-American financial system is not necessarily universally applicable, in particular, in the countries where banks play a pivotal role as financial intermediaries for mobilising household savings to investments in firms. We critically assess the expansion of the Basel II capital adequacy framework and argue that banking regulators under the BIS regime could benefit from the capital requirements in terms of reducing the likelihood of insolvency of banks, but these standards have possible ill-effects on other important objectives of banking regulations, in particular the role of banks as effective financial intermediaries and delegated monitors.

Section 1 begins with an overview of the theories of solvency regulation by means of capital requirements, then, reviews the expanded role of the

1) See Eichengreen (1999) and Miyoda (1994) for historical perspectives on the 1988 Basel Accord

BCBS as the institution responsible for globally applicable standards for banking regulation and supervision. Section 2 critically assesses the codified assessment of credit risk developed by US banks and points out the crucial limitations of the standardized credit risk modelling. Section 3 critiques the new regulatory framework. Section 4 investigates the experiences of Japan, Indonesia and Sri Lanka, to see how the Basel standards have possible ill-effects for other important objectives of banking regulations and to see whether preconditions were satisfactory. Section 5 concludes.

THEORIES OF SOLVENCY REGULATION AND BASEL STANDARDIZED CREDIT RISK MODELLING

It is worth noting that a key feature of the 1988 Basel Accord was a minimum CAR determined at 8 per cent of aggregate risk-weighted assets as a common framework for maintaining capital adequacy and solvency. We investigate theories of solvency regulation by means of capital requirements. These approaches have been controversial. Although there are several approaches attempting to analyze and model the optimal regulatory scheme, partly following Freixas and Rochet (1997), we broadly classify them into two: the *portfolio* approach and the *incentive* approach.

The *Portfolio* Approach was originally developed by Kahane (1977) and examined later by Koehn and Santomero (1980), Kim and Santomero (1988) and more recently by Freixas and Rochet (1997). The main idea was that if banks behaved as portfolio managers when they selected their portfolio of assets and liabilities, it was important that they use risk-related weights for the computation of their capital asset ratio. Interestingly, using a mean-variance model, Kim and Santomero (1988) compared the bank's portfolio choice under incomplete markets for diversifying their risks before and after a solvency regulation is imposed. They showed that the solvency regulation entailed a re-composition of the risky portion of the bank' s portfolio in such a way that its risks were increased, particularly because some small banks could not completely diversify their risks. Ironically, the probability of the bank's failure often increased after the solvency regulations were imposed. This is a controversial point for this approach. For instance, Freixas and Rochet (1997) show that this distortion in the banks' asset allocation would disappear when regulators used *correct* measures of risks for computing their risk exposure and solvency ratio. However, get-

ting the *correct* measures of risk is critical for this approach and it is not clear whether *market-based* risk weights can be reliable.

In the *Incentive* Approach, solvency regulations were modelled as solutions to principal-agent problems between a public insurance system and private banks. Since insurance by the regulators was costly, solvency regulations were required to create incentives that limited the potential cost in terms of public funds being used to bail out depositors. The new capital adequacy framework was, in reality, more likely to have been driven by such an incentive (principal-agent) approach, which was consistent with the traditional concern of US regulators to limit the freedom of banks to expose themselves (and thereby the regulator) to large risks. This approach attempted to capture the social cost of an insured failure to justify a capital adequacy ratio. However, this approach also faced difficulties in getting *correct* measures of risks for computing the exposed risks and the solvency ratio as well as for calculating the optimal level under information problems. Furthermore, the social utility of the banks' own screening and monitoring efforts as financial intermediaries and delegated monitors was not sufficiently reflected in this approach.

Here, we should note that the instruments of banking regulation are specific to national characteristics of each banking sector. Freixas and Rochet (1997, p. 259) classified safety and soundness regulatory instruments used in the banking industry into six broad types: (i) Deposit interest rate ceilings, (ii) Entry, branching, network, and merger restrictions, (iii) Portfolio restrictions, including reserve requirements and even, as an extreme case, narrow banking, (iv) Deposit insurance, (v) Capital requirements, and (vi) Regulatory monitoring including not only closure policy but also the use of market values versus book values. Except for entry and merger restrictions, these regulatory instruments are specific to the banking industry. They concluded that banking regulation appeared to involve diverse issues that were so heterogeneous that no general model could encompass the main issues.

It is worth noting that the main approaches of designing the optimal bank solvency regulation focus on how to ensure financial stability, with less emphasis on how to improve the appropriate financial intermediation for economic development. There is, however, another interesting approach which looks at this issue. For example, Campbell et al. (1992) emphasize the *substitutatbility* between prudential monitoting and capital regula-

tions in controling the risk taking by bank managers. In their approach they consider three sets of possibilities:

(1) Monitoring of banks' assets is impossible, and the regulator uses capital requirements to prevent excessive risk-taking by the bank.
(2) Monitoring is feasible, and the regulator is benevolent. There is substitutability between bank capital and monitoring efforts. At the optimum, capital requirements are less severe and simultaneously the banks' monitoring efforts may prevent them from taking risky loan exposures.
(3) Monitoring is still feasible, but the regulator is self-interested. The crucial limitation is that the monitor (regulator) has limited liability and is unlikely to put much effort into monitoring. This induces distortions in the levels of capital and monitoring that were achieved in version (2). As expected, more will be the bank capital needed for solvency; less will be the monitoring effort offered on the part of regulators.

This model does not suggest the optimal level of capital requirements. The monitoring by the regulators aims not only to maintain financial stability but also to make banks undertake the important role of acting as financial intermediaries and monitors for efficient flows and allocations of financial resources. In this model, assuming that monitoring of banks' assets is feasible, a lot would depend on whether the regulator is benevolent or self-interested in optimizing the required bank capital and the banks' monitoring efforts. Although the causality suggested in the model requires further testing, it sheds light on the relationship between the regulator and the banking industry when designing a financial system that can ensure sound financial intermediation and appropriate monitoring efforts.

The most important regulatory objectives for any financial regulatory authority are (1) to maintain financial stability, in particular, by preventing contagious *bank runs*, and (2) to improve sound financial intermediation, including the acquisition and accumulation of skills and knowledge for credit risk management in the monitoring process. According to The BCBS, the 1988 Accord was expected to be the cornerstone of the international financial architecture and its overriding goal was to promote safety

and soundness in the international financial system (BCBS 1999b, p. 9, BCBS 2004). The introduction of 8 percent CAR under Basel framework aimed to strengthen the international banking system by making internationally active banks maintain an acknowledged buffer particularly to cover unexpected losses.

In the subsequent New Accord, the BCBS has urged banking regulators to adopt an internationally accepted model for quantifying and aggregating credit risks (BCBS 1999a, p. 8). Since then, standard credit risk modelling has become increasingly important in banks' risk management and performance measurement processes, including performance-based compensation, customer profitability analysis, and risk-based pricing, even for domestic banks. Although there is a range of practices in conceptual approaches in modelling risk, the BCBS focus is on models that estimate a portfolio's current value and the probability distribution of its future value at the end of the planning time horizon. In general, a portfolio's expected credit loss can be defined as the difference between the two, and the key issue is how to determine the expected probability of default (often termed the expected default frequency or EDF) which is a critical model variable.

In the Anglo-American financial system, the internal credit risk rating for each client firm of a bank is determined by the bank's credit staff and used in the calculation of EDFs. Thus, the EDFs adopted in each bank may vary according to its own circumstances and credit strategy. But the Basel regime has also encouraged lenders to utilize external rating systems, such as Standard & Poor's (S&P) or *Moody's* ratings for corporate bonds, to justify their own EDFs. The BCBS has decided, in its New Accord, to promote the replacement of prevailing approaches with a new system in which the risk weights are determined based on credit assessments made by external organizations. The Committee wants to ensure that the regulatory capital charge under the internal rating-based approach is determined in a manner that ensures accuracy and consistency with the standardized approach based upon external credit assessments (BCBS 1999b, pp. 37–40, BCBS 2004). The standardization of the basic methodology in credit risk models promoted by the BCBS has also been driven by US regulators' pursuit of a *'level playing-field'* for US banks subject to the constraints of Anglo-American financial rules.

The fundamental question that arises is how would the convergence to the Basel Accord conditions affect financial stability and financial inter-

mediation? Apparently, the US Sub-Prime crisis of 2007 tells us that the idea of promoting convergence to international standards would not necessarily improve the trade-off between financial liberalization and financial stability.

LIMITATIONS OF THE ANGLO-AMERICAN METHODS OF CREDIT SCREENING AND MONITORING

To see how the algorithmic approach under the Basel rules works, consider the credit rating transition matrix provided by S&P in table 1, which shows the probability of migrating from current rating to another rating within one year based on historical data. EDF can be interpreted as a loan' s probability of migrating from its current rating grade to default within the credit model's time horizon. For example, the likelihood of a B rated loan migrating to a default state within one year would be 4.93 percent.

Table 1: Average one-year global corporate transition matrix, 1981-2009

Current	Credit rating one year in the future								
Credit Rating	AAA	AA	A	BBB	BB	B	CCC/C	D	NR
AAA	88.21	7.73	0.52	0.06	0.08	0.03	0.06	0	3.31
AA	0.56	86.6	8.1	0.55	0.06	0.09	0.02	0.02	4
A	0.04	1.95	87.05	5.47	0.4	0.16	0.02	0.08	4.83
BBB	0.01	0.14	3.76	84.16	4.13	0.7	0.16	0.26	6.68
BB	0.02	0.05	0.18	5.17	75.52	7.48	0.79	0.97	9.82
B	0	0.04	0.15	0.24	5.43	72.73	4.65	4.93	11.83
CCC/C	0	0	0.21	0.31	0.88	11.28	44.98	27.98	14.37

Source: Standard & Poor's (2009)

The most crucial limitation of the EDF is that it is not appropriate for calculating the probability of default in a long-term loan. One of the authors interviewed an ex- Long-Term Credit Bank of Japan (LTCB) staff member who surveyed the so-called 'KMV model', which was provided by KMV Co. and was widely used as a model for calculating the EDF. The model defines a situation where the asset value of a firm falls below the nominal amount of debt as constituting a default based on the trend of the firm's stock price as an indicator of the firm's value. According to the ex-LTCB staff, KMV provided banks using the model with a one-year EDF estimate. KMV was confident of the significance of their one-year EDF, but

admitted that it would be difficult to use even a 3-year EDF in real applications. An ex- Industrial Bank of Japan (IBJ) staff reports an almost identical problem with the model in an interview with KMV (FISC 1999, Ohno and Nakazato 2004, pp. 182-190).

Another key feature of algorithmic monitoring models is the use of external ratings provided by rating agencies such as S&P and Moody's. This implicitly assumes that each country is equipped with sufficient ratings penetration, though such assumption is fairly unrealistic as far as developing countries are concerned. Moreover, these ratings are provided at the discretion of ratings agencies where the detailed criteria for credit risk assessments are not clearly disclosed. An investigation by Nikkei Research in collaboration with the Japan Investor-Relations Association in 2003 reveals that 53.8 percent of 1,344 valid responses (out of 3,615 publicly listed companies as of December 2002) in their sample have not been rated. Moreover, only 11.8 percent of companies have deliberately requested to rate their companies. According to this survey, in assessing credit risk, credit rating agencies have relied mainly on (a) consolidated as well as unconsolidated financial statements, (b) prospective operating profits for the next fiscal year or later including mid- and long-term business plans, (c) business strategy and management strategy statements, and (d) information from operating units. Interestingly, around 59 percent of respondents revealed that they did not fully disclose information to the agency mainly due to their own internal rules about confidentiality. This shows that some critical information was not fully reflected in the credit assessment by the external agencies. Besides, substantial number of companies believes that the rating evaluation criteria were vague and thus, are dissatisfied with the rating. Further, some companies believe that rating agencies do not have competency in rating their companies and claim that the competition among rating agencies is constrained. These findings clearly highlight the inherent limitations associated with rating agencies and process.

Undoubtedly, some risk management instruments become necessary as economies become more complex. Intensified internationalization and technological change make it more difficult for lenders to undertake the role of monitoring investments, which involves making judgements about the viability of different firms to carry out innovations and develop new products. Bounded rationality accordingly encourages lenders to use codified approaches for measuring credit risks and to use external sources of risk as-

sessment whenever possible, instead of trying to rely on in-house skills and knowledge for monitoring. But the codified assessment of credit risks under the Anglo-American system does not necessarily solve the problem of uncertainty. As a complete set of risk markets is necessarily absent, it is impossible in practice to determine a definite value of the EDF without risk of error, even using all available data sets. Thus, even if the credit rating transition matrices provided by external rating agencies are statistically significant, it cannot indicate in which direction a particular customer will probably migrate. Our knowledge about the past cannot provide a basis for precise calculation of mathematical expectation (Simon 1983).

When it comes to evaluating innovations as opposed to observing firms, the indeterminacy becomes significantly greater. Nevertheless, regardless of the arbitrariness of the rules of inference applied to financial data sets, lenders may be persuaded to use statistical EDF and external ratings in measuring credit risk because they are required by regulators to adopt normative procedures for calculating capital adequacy requirements as well as for risk-based pricing. In the past, bankers were considered professionals in screening and monitoring, and banks played important roles in mediating stable flows of long-term funds to new industries and enterprises. External-rating agencies played a very limited role in providing credit profiles of bond issuers for non-professional investors who had limited capacities to assess credit information. As lenders increasingly came to rely on statistical EDF provided by external rating agencies for publicly rated corporate bonds, bank lending began to conform to investors' behaviour in bond markets.

A CRITIQUE ON THE NEW REGULATORY FRAMEWORK

The fundamental definition of capital in Basel II remains unchanged from that of the original Accord as amended and clarified since 1988. The BCBS, however, proposes to clarify and broaden the scope of application of the current Accord to improve the way CAR reflects underlying risks (BCBS 1999b) and sets forward various approaches for making the Accord more sensitive to credit risks. The new risk weighting scheme increases the reliance of regulators on external credit assessment institutions. The BCBS specifies objectivity, independence, transparency, credibility, international access, resources and recognition (BCBS 1999b, p. 34) as criteria

for eligibility of external assessment agents. The BCBS seems to have endorsed the effective power of the external rating houses that already have a vested interest in the industry and a track record in credit assessments.

The risk weighting system in the 1988 Accord aimed in part at ensuring that banks were not deterred from holding low risk assets (for example, sovereign debt) by risk-weighting loans according to the institutional nature of the borrowers (BCBS 1999b, p. 8). At the same time, the immediate concern of banking regulators was to discipline internationally active banks to set a *buffer* to cover expected as well as unforeseen losses. Therefore, the risk weighting of assets has been arbitrary, at best, resulting in a crude measure of economic risk. The most salient feature in the new framework is to suggest a more extensive use of external credit rating and standardized approaches for applying the risk weights to respective exposures. In particular, the ratings offered by S&P using its methodology (as an example, where rating structure of some other agencies could be equally used) are emphasized by the BCBS as useful for extracting risk weights of booking assets (BCBS 1999b). The subscription of the IMF's Special Data Dissemination Standards is described as another important method for applying risk weights to exposure to *sovereign* debt. A summary of illustrative risk weights prepared by BCBS (2006) based on S&P credit assessment scheme is shown in table 2.

Table 2: Risk-weights used in standardized approach for credit risk in Basel II

Claim	Assessment					
	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Sovereign	0%	20%	50%	100%	150%	100%
Bank option 1	20%	50%	100%	100%	150%	100%
Bank option 2	20%	50%	50%	100%	150%	50%
Bank option 2 (short term)	20%	20%	20%	50%	150%	20%

	AAA to AA-	A+ to A-	BBB+ to BB-	Below BB-	Unrated
Corporate	20%	50%	100%	150%	100%

	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to BB-	B+ and below, Unrated
Securitisation	20%	50%	100%	350%[a]	Deduct from Capital

Notes: [a] Investors only. Originating banks must deduct from capital

Source: BCBS (2006)

The BCBS points out the possible negative incentive effects of a more extensive use of external assessments on the agencies themselves (BCBS 1999b). However, the BCBS seems to leave the problem behind without giving any suggestions on how to deal with potential negative effects, implicitly expecting each banking regulator to devise systems to prevent banks from using external assessments in a problematic or mechanical fashion. Meanwhile, the New Accord encourages a number of arbitrary developments.

Even thought the risk weighting for exposures to corporations have been slightly revised in the new accord, as illustrated in table 2, the 100 per cent weight for unrated corporations still remains unchanged. In contrast, the risk weightings for *asset securitisations* (collateralized debt obligations) as proposed are more sensitive to external credit ratings. This proposal may create an externality of enhancing the presence of major external rating houses in loan securitisation and secondary loan trading business. According to the BCBS, the securitisation market is a global one in which a significant number of internationally active banks participate. Furthermore, asset-backed securities issued in the international market typically have a credit rating.

According to *Financial Times*, there was a conflict between US and Germany until the last moment on the proposed framework on 'to what extent external ratings and assessments should be applied for the calculation of an adequate *buffer*?' and on 'how to deal with commercial mortgages for capital purposes in the new framework?' Each regulator was motivated to protect its own practices in supervising. The final proposal seems to have been reflected the political conflicts and compromises between the two countries. The revised consultative paper in 2001 proposes alternative approach, a *comprehensive* and a *simple* one. Under the former approach, the underlying risk exposure is reduced by a conservative estimate of the value of the collateral (See Cornford 2001, pp. 17-19 for details).

The BCBS does not propose to take the *maturity* of claims into account for capital purposes (BCBS 1999b, p. 33). In principle, an exposure to one borrower with longer final maturity (for instance, three years) should be considered riskier than that to the other with shorter final maturity (for instance, three months) given the credibility of two borrowers are same. Needless to say, the maturity or remaining period of claims is an important factor for banks to make decisions for granting credits.

The BCBS does not take the portfolio effect by concentration or diversification into account for capital purposes. In portfolio theory, a portfolio concentrating its investment in particular firms (for example, granting $100million each to ten firms) would be considered riskier than a diversified portfolio (for example, granting $1million each to thousand firms), given these firms have the same credit rank.

The Basel Accord involves possible effects on regulatory arbitrage (Cornford 2001), leading to a vicious circle. For instance, the 1988 Accord has given lenders the incentive of arranging collateralization with securities or getting guarantees by selected OECD public-sector entities for reducing the risk weights of their exposures.

These types of arbitrage, in turn, led the BCBS to expand the scope of application of the Accord so that it could capture residual risks. However, the New Accord unavoidably becomes a source of new opportunities for arbitrage, in particular, in the field of loan securitisation or credit derivatives. The BCBS recognizes, on the one hand, that asset securitisation can serve as an efficient way to redistribute credit risks of a bank to other banks or non-bank investors. On the other hand, the BCBS is concerned with some banks' use of structured financing or asset securitisation to avoid maintaining capital commensurate with their risk exposures. Therefore, BCBS proposes to revise the Accord that makes use of ratings by eligible external credit assessment institutions for setting capital charges for asset securitisations (see table 2). The BCBS proposes risk weights for claims on securitisation tranches that may result in a special purpose vehicle issuing papers secured on a pool of assets (BCBS 1999b, p. 36). The BCBS also claims that bank guarantees in the form of credit derivatives have gained widespread usage. These developments have had important effects on the credit risk profile of many banks (BCBS 1999b, p. 42). This is a never-ending *vicious circle.* Although the regulation has an aspect of encouraging financial innovation in mitigating and hedging risks, more accuracy would be at the cost of more complexity.

Cross country evidence on the implications of Basel Framework

Japan

It is worth noting how Japan's economic and financial slump has been

prolonged and deep, though Japan's financial deregulation was almost complete in 2001 after the financial '*Big Bang*'. We know this made a very limited contribution to bailing Japanese banks and recovering Japanese economy from the prolonged stagnation. The average real GDP growth rate in the period from 1992 to 2008 stayed at the lower level of around 1.20 percent p.a. The credit crunch problem particularly to those small and medium enterprises (SMEs) that rely heavily on bank loans for funding continues. In the first half of the 2000s, the change in the classification standards for non-performing loans (NPL) under Basel framework resulted in a steadily increase of NPLs in financial institutions. Increased NPL disposals and heightened managerial resources devoted to deal with NPLs together with increased capital requirements created extra pressure on bank profitability. The erosion of profitability combined with an increase in transaction costs further lead to a downward pressure on banks' equity capital (net worth) which in turn lowered banks' ability to take risks, such as acquiring new customers, investing in new industries and particularly the risk of lending to SMEs.

The Japanese SMEs play an important role in the economy. The SMEs' share in the Japanese economy was 99 percent in terms of the number of firms (SMEA 2005) and 72.6 percent in terms of the number of employees in 2004 while in the manufacturing sector the SMEs' share was around 50.5 percent of the overall industrial output and around 56.8 percent of the overall value-added (METI 2005). According to statistics of JSBRI (2003) and JSBRI (2009), the outstanding loans towards SMEs had dropped sharply from JPY 355 trillion at the end of 1997 to JPY 260 trillion in December 2003, then to JPY 256.9 trillion in December 2006. And the balance of loans from banks to SMEs stayed below 260 trillion on average during 2006-2008 and remained at JPY 253 trillion in 2009 (SMEA 2010).

According to a survey by Small and Medium Enterprise Agency (SMEA 2004), more than 80 percent of the SMEs whose number of employees numbered less than 300 were required to provide their main banks with a mortgage on their assets or a guarantee by the Credit Guarantee Association (a governmental agency). Clearly, the Japanese banks were very conservative when it came to assessing the credit risk of SMEs. Some researchers insist that Basel II was not so related to the Japanese banking crisis in the 1990s and the subsequent financial slump until its

implementation in March 2007. We do not agree to the suggestion because from one of the authors' experience as a Japanese bank insider, most Japanese bank managers began to change the mode of credit risk monitoring even in the 1990s, with the expectation that proposed Basel II regulations and methods of credit risk monitoring would be sooner or later introduced.

According to SMEA (2004), an examination of the rate of growth of *'total factor productivity'* in present-day Japanese manufacturing by size reveals that growth, on average, is higher in SMEs than in large enterprises and thus argue that Japanese SMEs are playing an active role in technological innovation. Nagahama (2002) has estimated the contribution of SMEs to the change in the composition of value-added by industry and by size of firms. According to this survey, the SMEs contributed no less than 75 percent to structural change in the 1990s after the collapse of the bubble economy.

To ensure the supply of sufficient financial resources to innovative SMEs is the most important issue for the Japanese economy and would be a key requirement for revitalizing it. At the same time, innovative SMEs are exposed to severe competition and as a result their future has become more uncertain as clearly visible from the decline of life cycle of *hit products*[2] (SMEA 2005). This inevitably increases the credit risk of SMEs where banks and credit risk monitors may find difficulties in the assessment under the Basel II standards. This makes long-term financial intermediation to SMEs more difficult which has become the biggest dilemma facing the contemporary Japanese financial system

Indonesia

After a series of deregulation packages, Indonesian banking industry activities have gradually been globalized. To maintain their soundness and to be able to compete in the international banking market, the Indonesian banks have to comply with minimum capital requirements to be consistent with BIS standards. Accordingly, commencing from February 1991, the regulator launched CAR framework of Basel and the fulfilment of 8 percent capital will be gradually required as follows: 5 percent by the end of March 1992, 7 percent by the end of March 1993 and 8 percent by the end of December 1993 (Binhadi 1995, p. 348).

2) Best-selling products

In addition to that, banks are also required to make provisions for non-performing loans, which is not part of the capital that needed to be raised to fulfil CAR. At the same time, to fight inflation, Bank Indonesia set high cut off discount rates on SBI and SBPU in the open market operations.[3)] Banks struggled to fulfil their CAR while the requirement on provisioning for non-performing loans also pushed banks to be more careful in extending loans. The SBIs became their safe haven, especially since then SBI was considered as a risk-free asset. This combination of policy substantially contributed to the deceleration of credit and reduced the degree of intermediary function that banks carry in the economy. For example, after growing at 56-58 percent in 1989 and 1990, the growth rate of bank credit dropped to only 16 percent in 1991 and 9 percent in 1992. Even the growth rate of bank credit for the private banks in 1992 was only 1 percent. Of course, the additional loans granted in 1991 and 1992 were not sufficient for smooth running of the economy. This situation caused difficulties for both businesses and banks (Cole and Slade 1996). This credit contraction which was also compounded by the tight monetary policy might have induced quasi adverse selection by banks and possibly hampered their lending business opportunity of earning interests, starting to shake the financial soundness of Indonesian banks, partly contributing to the 1997-98 financial crisis in Indonesia. Meanwhile, by 1995, there were 22 banks (out of the total of 240 banks) that did not meet the 8 percent CAR (World Bank 1996). The important lesson learned from this episode is that, requiring banks to meet the 8 percent CAR requirement in considerably short time, even shorter than had been the case for the OECD countries has created problems to the economy.

After the 1997-98 crisis, Bank Indonesia has introduced the Indonesian Banking Architecture (IBA) in 2004. The IBA mainly focused on establishing a resilient and competitive banking system structure with a system of effective regulations and governance, while ensuring customer protection and providing a comprehensive infrastructure system required for an effective banking system. It sets forth the direction, outline and working structures for the banking industry over the next five to ten years (Goeltom 2005).

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3) SBI (Sertifikat Bank Indonesia) is a security issued by Bank Indonesia while SBPU (Surat Berharga Pasar Uang) is money market security of Bank Indonesia

In preparing for the implementation of Basel II, Bank Indonesia issued a road map and action plan in 2007. Though the Basel II was stipulated to be implemented commencing from 2008, considering the readiness of the banking sector, however, the time framework was amended and Basel II was effectively introduced in Indonesia in January 2010, covering the standard approach for credit risk, the standard and internal model approaches for market risk, and basic indicator approach for operational risk. Implementation of pillars two and three will be carried out gradually. It seems that, this gradual application of Basel II aims to avoid any possible negative effect such as a severe credit contraction as was happened in the early 1990s when the authority introduced Basel I.

Sri Lanka

The Central Bank of Sri Lanka (CBSL) acts as the main regulator by regulating and supervising around 70 percent of the financial system in Sri Lanka. According to CBSL statistics, the banking system dominates by holding around 70 percent of the total assets of the financial system. The equity market as a percentage of GDP remains around 23 percent while the corporate bond market is at its infancy accounting bellow 1 percent of GDP at the end of 2008. These factors highlight the primary importance of banks as financial intermediaries in Sri Lankan Economy.

Basel CAR was first implemented in Sri Lanka in 1993. Later in January 2003, CBSL set minimum capital requirements at 10 percent for risk weighted assets to accommodate any unforeseen risks. As a result of aggressive efforts to improve capital positions, risk management practices, prudential regulations, financial reporting standards and supervisory framework etc. as part of the recommendations of Financial Sector Assessment Program of IMF in 2002 significant improvements can be observed in the financial system (IMF 2007). Draft guidelines for Basel II were issued in 2006 and parallel computations of capital adequacy started since then. In January 2008, CBSL started implementing Basel II with the initial intention to adopt standard approach to credit risk and market risk while basic indicators approach for operational risk assessment. CBSL plans to adopt advanced approaches commencing from 2013 when all the banks are adequately equipped with management skills and appropriate approaches for risk management (SLBA n.d.).

Current institutional framework complies with most of the core prin-

ciples for effective banking and supervision and remains modern and sophisticated with regular amendments and updates together with standard set of approaches for credit and market risk assessment. Present, banking system encompasses most of the institutional elements of a modern banking system and remains substantially resilient (ADB 2005). NPL ratio has substantially reduced in recent years. Further, capital requirements are maintained well above the Basel CAR except for few banks. Importantly, the financial system remained substantially insulated from the recent US subprime crisis despite indirect adverse effects created by worsened international trade conditions where slight increase of NPL can be observed.

Nevertheless, number of weaknesses such as outdated concepts, absence of laws for new developments, and unconsolidated and overlapping laws are still embodied in Sri Lankan regulatory and supervisory framework (Batra 2006). For example, regulations and directives issued by CBSL do not explicitly stipulate general requirements for risk management processes and procedures for dealing with specific risks (IMF 2007). The supervision framework is currently lacking an approach to consider credit concentration. Moreover, the quality of internal control mechanisms and management skills are not given adequate emphasis.

Partly reflecting the insufficiency of codified modes of risk assessment and reduced regulatory attention, Sri Lanka experienced its first bank failure in December 2002 where almost 80 percent of a small licensed specialized bank's credit portfolio was non-performing due mainly to mismanagement. Signalling the impact of global financial crisis, another private commercial bank faced difficulties in 2008 resulting from confidence crisis in the light of global financial crisis even though the bank was maintaining stipulated 8 percent CAR despite the fact that it was sometimes bellow the 10 percent requirement set by CBSL. In this case the CBSL stepped in to restructure the bank and to assure the safety of deposits.

Most of the Sri Lankan banks still adopt local accounting and financial reporting standards where necessary adjustments are made to comply with international standards recommended by Basel II. Lack of international financial standards, audited financial statements for large part of the borrowers (majority SMEs) together with lack of domestic rating agencies and limited rating penetration also seriously undermine the capacity of banks to relate capital requirements to actual risk exposures. Thus, banks extensively rely on collaterals though such an approach to mitigate

credit risk is highly discouraged by the regulators worldwide including CBSL. Increased cost of compliance with Basel II due mainly to existing lapses in the areas of infrastructure, legislature and financial reporting standards etc. discourages implementation, whereas improvement of awareness and perceptions of stakeholders is challenging.

In view of above discussions, it is clear that, substantial lapses still remain in terms of infrastructure, supervisory review process and market discipline in addition to inherent limitations associated with CAR framework. Setting up of necessary data bases, adoption of international financial reporting standards and IT infrastructures and management skill development etc. remain as critical areas needing immediate attention. These factors seriously undermine the successful implementation of Basel II framework. On the whole, Sri Lanka still focused on compliance-based approach with minimum and simplest approaches available under Basel II. Though it is too early to assess the actual implications of Basel Accord in Sri Lanka, based on the experiences of two bank failures, closer coordination among regulators and financial intermediaries through binding relationships can still be identified as more practical and viable way for regulating and supervising Sri Lankan financial system.

Concluding Remarks

We argued why the Anglo-American financial system is not necessarily universally applicable, in particular, in the countries where banks play a pivotal role as financial intermediaries for mobilising household savings to firms' investment. To promote the stability of international banking and credit markets, banking regulators at the Basel Committee on Banking Supervision (BCBS) established a minimum capital ratio of 8 percent as the international norm for a capital cushion; lenders are discouraged from assuming credit liabilities that cause their capital ratio to fall below this threshold. But the convergence to standardized credit risk modelling may create a misleading homogenization of information flows and can undermine the financial stability by amplifying herd behaviour in lending, possibly causing, for instance, a severe credit crunch and prolonged financial slump as was seen in Japan after 1998 (See also Suzuki 2005 for the details).

Banking regulators under the BIS regime could benefit from the capi-

tal requirements in terms of reducing the likelihood of insolvency of banks. From our cross country evidence, for instance, in Indonesia and Sri Lanka the implementation of Basel accord resulted in good outcomes due mainly to increased supervisory attention on the banking system and to increased efforts to strengthen skills and infrastructure (though Indonesia faced ill-effects, because Basel framework stressed out seemingly hidden problems causing a sudden confidence collapse leading to a financial turmoil). But, we argue that once the system starts to completely rely on Basel algorithmic standards it probably losses intelligence and expert attention. Instead, it starts to rely on judgments based on mere quantitative estimates that lack realistic interpretations and logic. Thus, rather than blindly adopting Basel mechanistic framework, we should keep human intelligence based supervision and relationship based monitoring as a complementary part in the financial system to fit each country's model of financial intermediation.

US Anglo-American financial system relies on banks financing only for a limited range of capital requirements whereas long-term investments are generally financed through securities markets. Stock markets and investments more generally require *animal spirits* (Keynes 1936) in individual initiatives that supplemented and supported reasonable calculations of risk. Thus, credit risks and uncertainty in the US financial framework were ultimately absorbed by a large and diversified base of private investors mainly in the securities market who could afford to take credit risks on their own as fund providers, having assessed the information packaged by investment bankers or venture fund managers. This large and diversified base of relatively small investors with animal spirits in securities markets is a critical and essential foundation for the Anglo-American financial system and for financing the entire range of economic activities in a growing and changing economy.

We should, however, ask; to what extent can the US system continuously rely on its broad, diverse and enthusiastic investor base which had made the financial model workable for most of the time in the past? If a range of *animal spirits* in the investors becomes shrunk, it would exacerbate the crowd psychology in lending and investment, and consequently have a deleterious effect on the mediation of financial resources. The US Sub-Prime crisis of 2007 tells us that the idea of promoting convergence to international standards would not necessarily improve even the trade-off

between financial liberalization and financial stability. The next plausible question is that, whether such an investor base is available in vast majority of other countries, particularly in developing countries? Needless to say, an ill-planned and blind adoption of Basel framework would amount to a risky strategy for the countries which do not possess a diversified base of investors with animal spirits.

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