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Abstract

Many LDCs have implemented reforms to strengthen the prudential regulation and supervision of their financial systems. This paper examines the progress made by LDCs in implementing reforms, analyses the weaknesses in their prudential systems and discusses policy options for further reform. While considerable improvements have been achieved, the occurrence of banking crises during the 1990s indicates that many countries have yet to build robust prudential systems which can protect their banking systems from systemic crises. The weaknesses include loopholes in the prudential regulations, shortages of skilled supervisors, and regulatory forbearance. Furthermore, there are difficulties in applying the developed country model of regulation, which relies heavily on accurate financial information, highly skilled technicians and an impartial bureaucracy, in an environment characterised by weak accounting and legal frameworks, acute shortages of skilled personnel and pervasive political interference in public administration. Options for further reform include higher capital adequacy standards, explicit rules covering intervention policy in distressed banks, restraints on competition in banking markets and greater use of the market for monitoring banks.

1. Introduction

During the past two decades many developing countries have sought to liberalise their financial systems. There has been a deliberate attempt to move away from an earlier policy of financial controls, as part of a broader move towards a reduced role for the state in the economy. This period has also seen a significant increase in financial fragility, with widespread financial distress afflicting banks and non-bank institutions in many developing countries (LDCs) during the 1980s and 1990s, most notably in East Asia.

As financial markets are liberalised, sound financial regulation and supervision are needed to protect the stability of the financial system. However, most LDCs have yet to create robust prudential systems which can protect their banking systems from the increased risk of systemic crisis following financial liberalisation. Although many countries have adopted regulatory reforms, these measures have often not been properly or fully implemented. There have also been problems associated with the application of a prudential regulatory model which has largely been designed in developed countries, to the conditions prevailing in LDCs where legal and accounting systems are weak, there are often acute shortages of skilled personnel to undertake supervision, and regulators are vulnerable to political interference.

The objective of this paper is to examine the progress made by LDCs in implementing prudential reforms and to analyse the efficacy of these reforms in strengthening their prudential systems. The main focus is on the regulation of banks, as these are the dominant financial institutions in most LDCs, especially low income countries. The second section reviews the empirical evidence on the link between financial liberalisation, prudential regulation and supervision, and banking crises. The third section summarises the experience of prudential reform in LDCs, outlining the characteristics and the progress of the reforms which LDCs have implemented, while the fourth section analyses the weaknesses which continue to afflict their prudential systems. The fifth section discusses a key policy issue in the design of financial sector reforms, namely, the sequencing of prudential reforms with financial liberalisation. The sixth section examines various proposals which have been made for strengthening prudential regulation. The final section provides the conclusions.

2. Financial Liberalisation, Banking Crises and Prudential Regulation

There is widespread evidence that the development of financial markets and institutions plays a crucial role in economic growth and development (Levine, 1997). Using cross country regression analysis, King and Levine (1993) found that "higher levels of financial development are significantly and robustly correlated with faster current and future rates of economic growth, physical capital accumulation and economic efficiency improvements", and that "finance seems importantly to lead to economic growth" (717-18, 730). There are, however, wide differences in causality patterns across countries, and Arestis and Demetriades (1997) provide evidence that the causal link between finance and growth is determined by the nature and operation of the financial institutions and policies pursued in each country.

There has been a marked increase in financial sector fragility in LDCs since the late 1970s. Caprio and Klingebiel (1997) identify systemic banking crises - defined as periods when most or all of the banking system's capital has been eroded - in 44 LDCs since the late 1970s. Lindgren, Garcia and Saal (1996) estimate that three-quarters of the IMF’s member countries experienced significant banking sector problems between 1980 and 1995. The costs of banking crises have often been very large. For example, for the four countries worst affected by the 1997/98 East Asian crisis (Indonesia, Korea, Malaysia and Thailand), the costs of bank recapitalisation have been estimated at between 19% and 30% of GDP (World Bank, 1999).

Several cross country studies have found an empirical link between financial liberalisation and financial crisis. Williamson and Mahar (1998) show that almost all of their sample of 34 economies that undertook financial liberalisation between the beginning of the 1980s and mid-1997 subsequently experienced some form of systemic financial crisis. Kaminsky and Reinhart (1998) use cross-country probit estimation methods to examine recent banking crises in a sample of 20 countries and found that "in 18 of the 26 banking crises studies ...... the financial sector had been liberalised during the preceding five years, usually less" (10-11). Demirguc-Kunt and Detragiache (1997), analysing annual data for 65 countries for the period 1980-94, found that banking crises are more likely to emerge when the macroeconomic environment is weak, and that indicators of financial liberalisation are positively and significantly related to the probability of a banking crisis occurring.

Empirical support for the view that the strength of prudential regulation and supervision matters in terms of whether or not countries can avoid systemic financial crises is provided by several recent studies. Lindgren, Garcia and Saal (1996) assess the status of prudential regulation and supervision in 34 countries in the period preceding banking crises. They find that only five of the countries had an adequate legal and supervisory framework, and even in these countries, enforcement and supervision were weak.

Williamson and Mahar (1998) constructed an index of the level of prudential regulation and supervision in 33 countries which implemented financial liberalisation during 1973 to 1995. Most countries in the study had low levels of regulation and supervision until the mid 1980s, but in the late 1980s a number of countries made efforts to improve their regulatory framework. The index was higher (indicating stronger regulation and supervision), in the period before a banking crisis occurred, in countries that experienced less severe crises than in those that suffered more severe crises. In addition, countries that experienced severe crises after financial liberalisation had weaker prudential regulation and supervision prior to liberalisation than countries that experienced non-severe crises.

Demirguc-Kunt and Detragiache (1998) also test for the relationship between the effectiveness of the regulatory environment, liberalisation and banking crises. Using panel data for 53 countries covering the period 1980-95, alternative proxies for the regulatory environment are employed: the degree to which the rule of law is respected, the extent of bureaucratic delay, the quality of contract enforcement, the quality of the bureaucracy and the degree of corruption. Except for the bureaucratic delay variable, the results are interpreted as confirmation of the argument that improving the quality of the regulatory environment can curb the tendency of liberalised financial markets to develop into systemic banking crises.

The empirical research reviewed in this section indicates that first, financial systems are important for economic growth and development. Secondly, financial crises have afflicted many LDCs and often have been very costly. Thirdly, financial liberalisation may increase the vulnerability of financial systems to financial crisis. Fourthly, prudential regulation and supervision can reduce the vulnerability of the financial system to financial crisis.

3. Prudential Reforms in Developing Countries

The policy justification for prudential regulation and supervision is to prevent systemic risk and to provide protection for small depositors. Banks are subject to moral hazard and adverse selection which can put their depositors at risk (Stiglitz, 1994).[1] The numerous atomised bank depositors do not have the incentives to monitor banks optimally because of free rider problems and also lack the expertise to do so. Hence the need for a regulator to represent the depositors. The challenge is to design bank regulation policy that will deter risk taking by banks subject to moral hazard, through the use of instruments such as risk sensitive capital requirements, cash asset reserve requirements, and bank disclosure policy (Bhattacharya, Boot, Thakor, 1998; Dewatripont and Tirole, 1994).

Before the 1980s, LDCs did not accord a high priority to the prudential regulation and supervision of their financial systems, for two reasons. First, government policy emphasised economic regulation, such as controls over interest rates and the sectoral allocation of credit, because governments throughout the developing world were keen to use controls over the financial system to promote economic, social and political objectives (Long and Vittas, 1992). Second, many LDCs, especially those in sub-Saharan Africa (SSA), had inherited banking and regulatory systems from the colonial era in which the need for supervision by domestic regulators was limited because banks were largely owned by established and reputable foreign banks, were conservatively managed and subject to strict prudential controls from their parent banks (Polizatto, 1992). However, the fragility which emerged in the financial systems of many LDCs in the 1980s exposed the inadequacy of their prudential systems in the face of changes to the structure of their financial systems, notably in the ownership of banks. Supervisory departments were often grossly understaffed, and focused not on prudential issues but on enforcing economic regulations, such as compliance with foreign exchange controls. The banking laws were outdated and inadequate: for example they gave supervisors little independence, and minimum capital requirements had often been eroded by inflation to negligible real levels. Many financial institutions (FIs), such as public sector FIs set up by statute, were not subject to banking laws or to supervision by the regulatory authorities (Brownbridge and Harvey, 1998; World Bank, 1989).
LDCs began to implement major reforms to their prudential systems in the 1980s and early 1990s. These reforms were in many cases stimulated by the financial crises which had occurred in the 1980s and/or were part of broader programmes of financial sector reforms funded by loans from the World Bank or other multilateral agencies. Conditionalities related to bank regulation and supervision featured prominently in World Bank financial sector adjustment loans, with a higher probability of inclusion than interest rate deregulation, bank privatisation or directed credit reforms (Cull, 1997): see table 1.

TABLE 1 Financial Sector Adjustment Loans, post 1990

Reform Area	*Probability of Inclusion (%)*
Bank Re-capitalisation	86
Bank Supervision	79
Prudential Regulations	71
Non-Bank Regulations	64
Interest Rate Distortion	64

[1] Adverse selection refers to situations where one side of the market cannot observe the quality of the goods or services on the other side of the market. Moral hazard refers to situations where one side of the market cannot observe the actions of the other. Both problems involve imperfect or asymmetric information (Varian, 1987).

Independent Monetary Control	50
Bank Privatisation	50
Other Bank Institutional Reform	43
Directed Credit	29
Differential Bank Regulation	29
Central Bank Law	29
Rights/Obligations of Financial Agents	21
Companies Law	14
Liberalise Capital Account	14
Monetary Market Development	0
Foreign Ownership	0

Source: Cull (1997)

Prudential reforms followed a broadly similar pattern, although the details and scope of the reforms varied between countries. An industrial country (in particular the US) model of regulation and supervision has been adopted by most LDCs.[2] The Basle Committee's Core Principles for Effective Banking Supervision, drawn up in 1997, sets out the basic framework of this model (IMF, 1998A). The model involves a set of detailed prudential regulations, set out in the banking law (e.g. minimum requirements for capital to risk assets, restrictions on banks' asset portfolios including restrictions on large loan exposures and insider lending, auditing requirements, etc.), with supervision undertaken directly by a public agency. Supervision entails on-site inspections and off-site monitoring of banks based around the CAMEL principles, in which supervisors evaluate a bank according to its capital asset quality, management, earnings and liquidity (Sheng, 1996B). Supervisors aim to inspect banks at regular intervals and banks are required to submit regular financial reports to the supervisors. Some, but not all, LDCs have also adopted some type of deposit insurance (Kyei, 1995). Prudential reforms have also included considerable institutional strengthening, albeit from very low levels of institutional capacity in many cases. Staffing levels have been expanded, training provided for supervisors, and technical advisors provided to supervisory authorities.

Mehran et al (1998) provide details of prudential regulations, supervisory arrangements and practices, safety nets, etc for the two CFA zones[3] and 18 other African countries. While most of these countries have begun to implement reforms, including the adoption of prudential regulations in line with the Basle Committee's Core Principles and off-site and on site bank supervision, only three countries had well designed and effectively implemented regulatory systems with supervisors well supported at the political level, by 1997. A further nine countries had put in place the basic structures of a regulatory system while the remaining countries were still in the initial stages of building supervisory structures (Mehran et al, 1998: 5, 12-15): see also Table 2.

[2] In referring to the regulatory model as US inspired, we are taking account of specific features of the US model, notably the formal regulations and regular on-site bank examinations conducted by the regulators, which distinguish it from the regulatory systems which existed on the continent and in the UK. The UK model used to be essentially informal and discretionary and did not involve on-site inspections by the regulators, while the continental model did impose legal regulations but relied upon external auditors rather than public regulators for on-site examination of banks (Polizatto, 1992).

[3] The CFA zones are common monetary zones. Each of the two CFA zones in Africa has a regional banking commission which undertakes banking supervision in all of the countries in that zone.

In East Asia, the failures of financial institutions that occurred during the 1980s helped to stimulate reforms to banking legislation and supervisory systems (Dodsworth and Mihaljek, 1997: 41; Folkerts-Landau et al, 1995; Sheng, 1992).

TABLE 2 Selected Sub-Saharan African Countries Classified on the Basis of Status of Banking System Supervision

Group I[1]	Group II[2]	Group III[3]
Angola	Ghana	Botswana
BCEAO countries	Madagascar	Kenya
BEAC countries	Malawi	South Africa
Ethiopia	Mauritius	
Lesotho	Namibia	
Mozambique	Tanzania	
Rwanda	Uganda	
Swaziland	Zambia	
	Zimbabwe	

[1] Initial stage of building supervisory structures.
[2] Basic structure and regulatory system in place.
[3] Well-designed and effectively implemented system with supervisory authority well supported at a political level.

Source: Mehran et al (1998)

Following the banking crises of the 1980s in Latin America, reforms were also enacted in many countries in that region. The banking regulations were modernised in 18 out of 26 countries, but improvements in banking supervision were limited to only 13 of these 26 countries (Inter-American Development Bank, 1997: 45). In Latin America, Asia and Africa, a large number of LDCs have adopted the Basle standards for capital adequacy, in which minimum capital is at least 8% of risk weighted assets.

4. Weaknesses in Prudential Systems

Many LDCs suffered banking crises during the mid to late 1990s, often several years after they had begun to implement prudential reforms. Examples include Indonesia, Korea, Malaysia and Thailand, all of which suffered banking crises in 1997/98 after having implemented prudential reforms during the 1980s and 1990s; and Kenya, which also began implementing prudential reforms in the mid 1980s but suffered several episodes of bank failure during the mid 1990s. Although no prudential system can prevent all bank failures, the more recent banking crises in LDCs, which involved far more than simply isolated cases of bank failure and in some cases were systemic, indicate that their prudential systems are still prone to major weaknesses.

There have been three main sources of weakness in the reformed LDC prudential systems. First, some banking legislations still omit important prudential restrictions, or include provisions which are not strict or precise enough. Second, some regulatory authorities lack the requisite personnel to carry out effective supervision. Third, supervisors have been unable, or unwilling, to rigorously enforce the prudential regulations.

In some countries, the revised legislation was not strict or comprehensive enough to deal with problems that emerged in the 1990s. For example, the minimum capital requirements in the legislation enacted by several countries in SSA were set at levels that allowed many undercapitalised banks, lacking adequate financial or managerial resources, to be set up in the 1990s, which subsequently failed as a result of mismanagement and fraud (Brownbridge, 1998). Many countries in SSA have raised minimum capital requirements since the early 1990s, but in 10 out of 16 national legislations, plus the two supra national legislations (both the CFA zones) reported in Mehran (1998: appendix table A4), the start up capital for a bank was less than $2 million, which was very low in comparison to countries in other regions of the developing world.

The East Asian financial crisis exposed a number of regulatory weaknesses in the countries most badly affected by the crisis. Loan classification and provisioning rules were too lenient, especially for secured loans: they were much less stringent than international standards. Consequently bad debt provisions in East Asian countries were inadequate to provide cover against likely losses, which meant that earnings and capital levels were overstated, and the minimum capital adequacy requirements, which were based on the Basle standard, were rendered meaningless (Brownbridge and Kirkpatrick, 1999; Folkerts-Landau et al, 1995: 39-40). The failure of banks to make proper provisions for their non performing assets, either because the provisioning rules were not strict enough or because the rules were not complied with, has been a problem in many countries besides those in East Asia.

A further omission from the banking regulations in several of the East Asian countries was the absence of restrictions on excessive exposure to high risk sectors, such as real estate. Also, while most of the East Asian countries did impose restrictions on banks' foreign exchange exposures, the regulations did not prevent banks from borrowing in foreign currency and on lending these funds as foreign currency loans to non-traded goods sectors, such as real estate, which were highly vulnerable to a depreciation of the exchange rate. Thus banks were able to comply with foreign exchange exposure regulations by transferring foreign exchange risk into credit risk which was not adequately restricted by the prudential regulations. Although the banking regulations in East Asia included restrictions on insider lending and large loan exposures, poor accounting standards in several East Asian countries assisted banks to evade these restrictions (Alba et al, 1998; Rahman, 1998). Finally, many of the non bank financial institutions (NBFIs), such as finance companies in Thailand and merchant banks in Korea, which failed in the 1997/98 crisis had been subject to less strict prudential regulation, and weaker supervision, than banks.

While supervisory capacities have been expanded as a result of prudential reforms, in some countries the demands on supervisors have grown faster than supervisory capacity, because deregulation has allowed a rapid pace of new entry of banks and deposit taking NBFIs. In some countries, where the numbers of banks and/or NBFIs multiplied within the space of a few years (Nigeria in the late 1980s and Indonesia since 1987 are examples), it is difficult to envisage how supervisory capacities could have been expanded quickly enough to keep pace with the growing demand. Moreover, it is the new entrants, which are often small and lack experienced management, that are most in need of close supervision. However, as Caprio (1996) points out, it would take many LDCs five to ten years to train their bank supervisors to the levels of expertise of the industrial countries. The data in Mehran et al (1998: appendix table A4) indicate that, with the exception of Mauritius and Tanzania, the average experience of bank supervisors in SSA countries is between two and five years. The type of skills needed by supervisors are scarce in LDCs and because of financial constraints in the public sector, supervisory departments often struggle to retain skilled staff in the face of competition from the private sector.

The weak enforcement of prudential regulations by the regulators - known as regulatory forbearance - is described by Honohan (1997) as the "Achilles' heel of any regulatory system". Regulatory forbearance is often the result of political pressure on the regulatory authorities, who are reluctant to alienate the politicians who appoint and oversee them. It may also be attributable to "regulatory capture" or result from regulators' fear that disclosure of problems in banks may have adverse affects on their reputation and career prospects (Boot and Thakor, 1993). It is, however, difficult to empirically assess the extent of regulatory forbearance because much of the actual practice of bank supervision is not publicly observable, given that a degree of confidentiality is essential to maintaining public confidence in the banking system and the trust of the bankers. In many cases the extent of regulatory forbearance only becomes apparent after major bank failures occur, and information on the events leading up to the failures is made public.

Regulatory forbearance takes a number of forms, for example, regulators may not strictly enforce loan classification requirements or loan exposure limits, but it becomes particularly crucial when regulators have to deal with distressed banks. Regulators often face strong pressures to delay taking action, especially when this involves closing a bank because the political costs of bank closures may be high. The mechanisms for dealing with distressed banks set out in banking legislation often lack precision and clarity, with regulators given too much discretion: this was an important weakness in the prudential legislation of many of the East Asian crisis countries. Intervention policy is, as a consequence, often determined on an ad hoc basis, which exposes the supervisors to pressure to exercise forbearance. Consequently, distressed banks are often allowed more time and liquidity support from the Central Bank in the hope that they can resolve their financial distress. A mutual dependence between the regulators and the distressed bank may then develop, whereby the distressed bank requires more finance to remain liquid while it becomes increasingly difficult for regulators to close the bank and realise the losses at the expense of the taxpayer (Glaessner and Mas, 1995). Moreover, distressed banks have fewer incentives for prudent management as they have little, if any, capital left to lose. Instead bank owners have incentives to "gamble for resurrection" with what is left of their deposits and the liquidity support they are able to obtain from the authorities. The result is often an escalation of losses in what have been dubbed "zombie banks"; banks which are insolvent but remain open with liquidity support from the authorities (Kane, 1989). Regulatory forbearance worsens moral hazard since, if regulators acquire a reputation for forbearance, bank owners and managers will have less reason to fear that imprudent management will be penalised, and therefore will be less constrained in taking imprudent risks.

Although weak implementation of prudential reforms clearly accounts for some of the deficiencies which still afflict the prudential systems of LDCs, there must also be doubts over whether a regulatory model designed for advanced economies is optimal for LDCs. The adoption of the developed country model of bank regulation by LDCs is justified, according to Goodhart et al (1998: 99), because "the general analysis of, rationale for, and principles of, financial regulation are not fundamentally different in developing countries". They also contend that because less reliance can be placed on banks' internal mechanisms of control to ensure safe banking in LDCs, there is an even greater need to impose external rules and ratios on banks and for supervision by an external authority (1998: 104).

These arguments are disputed Caprio (1996, 1997) who questions the wisdom of exporting the industrialised country regulatory methodology to LDCs. He also points out that the high incidence of banking crisis in industrialised countries does not necessarily suggest that their regulatory methodology should be regarded as "international best practise". Caprio argues that it is unrealistic to expect supervision to act as the first line of defence against bank failures in LDCs given the constraints which supervisors face in these countries: e.g. severe scarcities of the requisite skills, the length of time needed to train supervisors, political interference and weak accounting and legal frameworks. The industrial country regulatory model is highly intensive in the use of reliable financial information and professional supervisory capacities, both of which are in short supply in most LDCs. It also relies upon a regulator which can enforce prudential regulations consistently and impartially, whereas in many LDCs regulators have neither the incentives nor the political independence to do this.

A further drawback of the industrial country model of prudential regulation for LDCs is its complexity in that it comprises many different components which depend for their effectiveness upon other components of the model also working properly: in other words, the different components do not stand alone, but form part of an interlocking system. If one part of the system fails, the effectiveness of the whole system is impaired. The capital adequacy requirement, for example, which is a central component of the model, is not effective as a prudential tool unless banks accurately value their assets. This in turn requires that proper accounting rules must be in place and that regulators, or external auditors, have the capacities to evaluate the condition of banks' asset portfolios and the adequacy of their loan loss provisions. Restrictions on risk taking, such as limits on insider lending, are also ineffective if regulators do not have sufficient supervisory capacity to examine banks' portfolios and detect infringements. In some LDCs, gross violations of the banking laws, such as insider lending amounting to a multiple of the statutory limit, have not been detected by regulators, or by external auditors, until after a bank has been closed.

5. The Sequencing of Prudential Reforms with Financial Liberalisation

The fact that banking crises have followed financial liberalisation in many LDCs has been attributed to an incorrect sequencing of financial sector reforms, with liberalisation preceding prudential reforms (Alowode and Ikhide, 1997). The conventional wisdom is that LDCs should not liberalise their financial sectors until sound prudential systems have been put in place, or at least liberalise only gradually while prudential systems are strengthened (Villanueva and Mirakhor, 1990). Most LDCs did not follow this path. In a sample of 34 countries, including 25 LDCs, Williamson and Mahar (1998) found that only three LDCs strengthened prudential regulation prior to financial liberalisation, with another three implementing prudential reforms alongside liberalisation. However, the experience of prudential reform in LDCs, discussed in section 3, suggests that strengthening prudential systems is a lengthy process, with some countries still having serious weaknesses in their prudential systems a decade after beginning prudential reforms. If liberalisation was postponed until the prudential system was deemed to be strong, the efficiency losses from retaining controls over the financial system for a long period may outweigh any gains from improved financial stability.[4]

To avoid undue delays in financial liberalisation, Sundararajan (1999) outlines a sequence of financial liberalisation, bank restructuring and supervisory reforms involving three phases. In the first, preparatory stage prudential reforms focus on putting in place the legal and organisational basis for bank supervision, licensing and entry requirements, and a framework for orderly intervention and liquidation of banks, with financial liberalisation confined to limited interest rate liberalisation. In the second stage, direct credit economic controls are removed, accompanied by the phasing in of key prudential reforms and accounting standards such as off and on-site supervision and the strengthening of capital adequacy ratios and asset portfolio restrictions. In the final stage, prudential issues become more complex and include the supervision of securities markets, the regulation of the market and liquidity risk of banks, the completion of reforms to accounting and disclosure rules and the management of liquidity risk in the payments system, while interest rates are made fully flexible.

The advice to postpone liberalisation until after prudential regulation has been strengthened implies that economic regulations are an alternative, albeit a second best alternative, to prudential regulations as a policy tool for maintaining the soundness and stability of the banking system. However, this depends on the nature of the economic regulations. Some economic regulations are likely to worsen banking sector fragility, particularly those which attempt to direct banks to lend to sectors of the economy to which they would not be willing to lend on purely commercial grounds, because the borrowers are not regarded as creditworthy or because the transactions costs of lending are too high. Hence liberalising sectoral credit directives should not be contingent upon stronger prudential regulation.

Liberalising interest rates may allow banks, which are subject to moral hazard because of implicit or explicit deposit insurance and are not constrained by prudential regulations, to engage in excessive risk taking by lending to high risk borrowers at high lending rates. The policy implication is that ceilings on interest rates should be retained as a second best response until stronger prudential regulation reduces the moral hazard in banks (McKinnon, 1988). Interest rate controls, however, could worsen bank fragility by reducing bank earnings below the levels needed to sustain commercial viability. There are also practical difficulties for LDCs in using interest rate controls to promote more prudent bank management. First, it is not clear how the optimal interest rate ceiling can be determined. Secondly, the reason why prudential regulation is weak in LDCs, and therefore a second best instrument is needed, is not so much that the appropriate prudential regulations have not been put in place, but because of the difficulty in enforcing these regulations. These difficulties would apply equally to the enforcement of economic regulations, such as interest rate controls. If lending to high risk borrowers is potentially profitable for banks, they would have incentives to evade the interest rate controls, using some other mechanism such as charging fees.

The arguments for delaying liberalisation until prudential systems have been strengthened appear strongest in the case of bank entry requirements and capital account liberalisation. The restrictiveness of bank entry requirements may involve a trade off between prudential objectives and stimulating more competition in banking markets (and in some countries promoting greater domestic ownership of banks). Nevertheless, the case for a very cautious

[4] Stiglitz (1998: 16) emphasises the costs of instability: "Although there *may* be a trade off between short-run efficiency and this stability, the costs of instability are so great that the long-run gains to the economy may more than offset any short-term losses."

bank licensing policy, with high minimum requirements for start up capital, managerial expertise, and the integrity of the promoters and directors, is compelling for three reasons. First, many of the bank failures in LDCs have involved relatively small, poorly capitalised banks lacking managerial resources, which were set up after entry was liberalised but when prudential requirements for new entrants were low, or were not enforced because of political interference: for example in Nigeria and Zambia (Brownbridge, 1998), and Paraguay (Garcia-Herrero, 1997). Secondly, it is likely to be much easier for the regulators to prevent potentially weak banks from entering banking markets in the first place than to discipline them once they have been set up, let alone to intervene and close them down when they become insolvent. This is because the political costs of refusing to grant a bank license are likely to be relatively low compared to the costs of closing down a distressed bank, which would involve job losses, disruption to depositors and other bank customers and the possible liquidation of businesses owned by politically influential individuals. Thirdly, too rapid a growth in the number of banks is likely to overwhelm the supervisory capacities of the regulators.

Capital account liberalisation could exacerbate banking system fragility for several reasons. It could expose banks to greater foreign exchange risk if they increase holdings of foreign currency denominated assets and liabilities and if exchange rates become more volatile, it may increase the volatility of banks' deposit base and it may also intensify competition for borrowers, forcing the weaker banks into less creditworthy segments of the credit market. Johnston, Darbar and Echeverria (1999) examine the sequencing of capital account liberalisation with other financial sector reforms in Chile, Indonesia, Korea and Thailand. They argue that prudential reforms should be implemented prior to, or concurrent with, the liberalisation of capital inflows through the banking system and that Governments must avoid creating moral hazard by implicitly guaranteeing banks' liabilities. LDCs which have not raised their prudential systems to international best practise might need to retain selected capital controls temporarily, but Johnston, Darbar and Echeverria warn that LDCs should not rely too heavily on capital controls to protect their financial systems because of the fungibility of capital (: 254).

6. How Can Prudential Systems in Developing Countries be Made More Effective?

A number of approaches have been advocated in the literature for making prudential systems more effective in LDCs. One approach involves building upon the current model of prudential regulation which has been adopted by most LDCs, by enacting reforms to introduce regulations covering types of risk not adequately covered in the existing regulations, by making regulations more stringent where appropriate to take account of the prevailing conditions in LDCs' financial markets, and by further institutional strengthening of supervisory authorities. Other approaches involve some reversal of financial liberalisation in order to restrain competition in banking markets, while others would seek greater reliance on market based solutions. These approaches are not entirely mutually exclusive.

Strengthening Capital Requirements

As noted above, most LDCs have adopted bank capital requirements based on the Basle Capital Accord. Dziobeck, Frecaut and Nieto (1995) argue that stricter capital regulations are needed in LDCs because the risks facing their banking systems are greater than in the industrialised countries as a result of a less stable economic environment and less developed financial infrastructures. LDCs should, therefore, consider adopting higher minimum capital adequacy requirements than the 8% of risk adjusted assets specified in the Basle Accord.

Singapore and Argentina have adopted capital adequacy requirements of 12% and 11.5% respectively. Moreover, other elements of the capital adequacy requirement need to be reviewed. For example, the risk weights given to different types of loans are based on observed default probabilities in industrialised countries, which may be too low if applied to LDCs.

Higher capital requirements cannot compensate however, for deficiencies in other prudential norms, such as inadequate provisioning. Furthermore, bank capital in LDCs is often elastic and of poor quality because bank owners are able to finance their equity holdings by borrowing from their own bank, hence in such cases raising capital requirements would neither reduce incentives for risk taking nor provide a buffer against losses (Goodhart et al, 1998: 107-8). Even if capital adequacy standards could be effectively enforced, some models of banking behaviour suggest that in some circumstances raising regulatory capital requirements may be ineffective in reducing risk taking on the part of banks or may even induce greater risk taking (Bhattacharya and Thakor, 1992; Gilbert, 1991).

Tighter Lending Restrictions

Rapid credit growth in the mid 1990s characterised the East Asian financial systems hit by the 1997/98 crisis. Over rapid expansion of lending by banks is often a cause of poor asset quality because the growth of lending may outstrip the lender's capacity to appraise and monitor its borrowers and also because more marginal borrowers are likely to be brought into the credit market, but prudential regulations in most countries do not place restrictions on credit growth, other than indirectly through the capital adequacy requirement. Honohan (1997: 21) advocates "speed limits" to restrict the rate of growth of banks' loan portfolios. He envisages that these would be used in markets with many new and inexperienced entrants, or to dampen a credit boom, but does not envisage their use as a tool of regulation on a permanent basis. Speed limits need not necessarily be applied to the entire loan portfolio, but could be restricted to the types of lending, such as real estate or foreign currency loans, which are regarded as posing the greatest risk to banks' financial soundness and which often grow rapidly after financial liberalisation. LDCs should also impose very strict limits on insider lending.

Financial Restraint

Hellman, Murdock and Stiglitz (1998) advocate deposit rate controls as a tool of prudential policy. They contend that the increased competition induced by financial liberalisation has contributed to financial fragility because it reduces banks' franchise values and thus incentives for prudent bank management. They model a banking market with freely determined deposit rates of interest in which, although raising capital requirements can induce more prudent bank management, this is not Pareto efficient because banks are compelled to hold an inefficiently large amount of capital. Even a market without deposit insurance and with perfect monitoring by depositors may still be subject to moral hazard if deposit rates are freely determined, because there exist equilibria where banks have an incentive to gamble and can still attract deposits by paying higher deposit rates. In their model an efficient Pareto outcome can be induced through a combination of deposit rate controls and capital requirements. Hellman, Murdock and Stiglitz (1995) view deposit rate controls as part of a wider strategy of regulations, including restrictions on entry into banking markets, which create rents for banks and which they term "financial restraint". These rents enhance the franchise value of banks, thereby encouraging more prudent bank management, as well as encouraging greater deposit mobilisation by banks.

Intervention Rules

To prevent regulatory forbearance, Glaessner and Mas (1995) advocate institutionalising intervention policy in a clear set of publicly announced rules which would limit the discretion of the regulators. An example of such rules is the US Prompt Correction Action (PCA) regulations, which specify graduated intervention by the regulators triggered by thresholds linked to capital adequacy. The PCA regulations are derived from the concept of "structured early intervention and resolution" and attempt to imitate the remedial actions which private bondholders would impose on debtors, in the absence of any government insurance or guarantees (Goldstein and Turner, 1996: 51). The value of PCA regulations is threefold. First, PCA forces regulators to intervene in a distressed bank before the level of distress becomes severe. Hence the chances of successfully resolving the distress are higher than if intervention were to be delayed until the financial condition of the bank had worsened. Second, PCA regulations impose a legal requirement on the regulators to take specified actions and thus improve incentives on regulators to intervene promptly. They also provide regulators with a defence against political pressure for forbearance. Third, by making PCA regulations part of the banking law, bank owners and managers will have less reason to believe that regulators will exercise forbearance in the event that their bank becomes distressed: i.e. the existence of rules will enhance the credibility of the regulators as enforcers of the regulations. This will therefore improve incentives for prudent bank management.

There are, however, practical difficulties with implementing PCA rules in LDCs. Defining robust intervention rules may be difficult. The capital adequacy thresholds used in the US may not convey useful information about the true financial condition of a bank in an LDC, because, as discussed above, an insolvent or capital impaired bank can still produce a balance sheet showing that it is well capitalised if it fails to classify its non performing loans accurately and make appropriate provisions. Regulators may not know that a bank has crossed an intervention threshold until long after the event, by which time it may already be insolvent. In addition, however strong the regulator's commitment may be, ex ante, to enforcing intervention rules, such rules are time inconsistent in that, when faced with a major bank failure, governments often face very strong incentives to ignore the rules and bail out the bank rather than close it down. For example, in the mid 1970s the Chilean authorities repeatedly stated that they would not bail out insolvent banks but did so in 1977, when a large bank ran into trouble, because they feared the impact of its insolvency on the confidence of depositors and external creditors in the country's financial system (Diaz-Alejandro, 1985).

While acknowledging that allowing regulators discretion can lead to excessive forbearance, Enoch, Stella and Khamis (1997) argue that discretion and ambiguity by regulators in the operation of lender of last resort (LOLR) facilities does have some value. As noted above, it may not always be possible, or optimal, to enforce intervention rules, such as when a bank is "too big to fail", in which case the rules lose their credibility. A rule-driven intervention policy could penalise bank management for problems, such as those arising from macroeconomic shocks, for which they are not responsible (Dewatripont and Tirole, 1994: 220-221). Furthermore it may not be desirable to publicly reveal that a bank has received assistance from the authorities because it might undermine public confidence in that bank. Enoch, Stella and Khamis distinguish between ex ante and ex post transparency, and argue that some ex ante discretion in the operation of LOLR facilities, balanced by sanctions on those who are responsible for the bank's distress, should be combined with ex post transparency in which the regulators would have to make full disclosure of their intervention (e.g. why, and how much, finance was provided? what were the results?) to the public.

Autonomy and Accountability of the Regulators
Enhancing the legal autonomy of the regulators from Government may also help to insulate the regulators from pressure to exercise forbearance, but it is unlikely to be a panacea in countries where the legal framework is weak, and hence nominally legally independent central bankers may have little protection in practise from political interference, as well as for the reasons noted above (e.g. regulators can be "captured" by the regulated).[5] Kane (1997) argues that it is the ability of government agents to conceal information from, and resist accountability to, the public which lies at the heart of many principal agent problems in this area. As such it is essential to make "the costs generated by regulatory forbearance observable so that regulators can be disciplined in the press and in the labour market for post government employment" (:72). How this could best be achieved will depend upon the specific institutional characteristics of different LDCs: for example in countries which have independent minded parliamentarians, bank regulators could be required to submit a detailed annual report on their activities, including the details of support given to banks and compliance with banking laws.

Market Based Approaches to Regulation
A market based approach to prudential regulations is advocated by Calomiris (1997) who doubts whether Government supervisors have the skill or incentives to identify losses incurred by banks as diligently as would private sector agents with their own money at risk. Calomiris suggests imposing a requirement that banks finance a minimum percentage of their assets with subordinated and uninsured debt carrying a yield capped at a maximum rate above the riskless market rate. To mobilise subordinated debt with a capped yield, banks would have to convince private subordinated debt holders that the quality of the bank's asset portfolio and capital was adequate to justify providing such credit. Subordinated debt holders would have incentives to monitor the bank, and the threat of a run by informed debt holders would mitigate moral hazard on the part of banks. Argentina introduced a requirement that banks should finance 2% of total deposits in the form of subordinated debt, although without a maximum yield, in 1996 (Calomiris, 1997: 36). However this solution is unlikely to be feasible in low income LDCs because capital markets are very poorly developed, accounting standards are low and the veracity of audited accounts is unreliable, hence many banks would have great difficulty in mobilising subordinated debt from genuine private investors irrespective of the quality of their asset portfolio. Even if it were feasible, monitoring by individual creditors would not normally be socially efficient, because monitoring involves positive externalities. Furthermore, if a bank is insolvent or close to insolvency, uninsured subordinated debt takes on characteristics which are similar to those of equity capital, and consequently subordinated debt holders have sub-optimal incentives to impose conservative management on the bank to protect its deposits (Dewatripont and Tirole, 1994: 219).

Another approach which utilises the market is to increase disclosure requirements of banks' financial condition and require banks to obtain credit ratings from private agencies on a regular basis. But enhanced disclosure requirements are unlikely to have an impact on banks' risk taking if bank liabilities are all implicitly insured. Both Chile and Argentina have enhanced disclosure requirements and provide less than full insurance for banks' liabilities. Argentina requires banks to make their balance sheet data publicly available on a monthly basis, requires quarterly external audits of banks, and requires banks to obtain ratings from two established private credit rating agencies (Calomiris, 1997; IMF, 1998B: 161). However, enhancing disclosure requirements in countries in which accounting standards are weak and

[5] There are parallels here with the literature on Central Bank independence and inflation (e.g. Cukierman and Webb (1995), Keefer and Stasavage (1998).

audited accounts are unreliable is likely to have limited value. Even in countries with reliable accounting and auditing standards, the efficacy of disclosure requirements as an instrument to facilitate monitoring of banks by their depositors is limited. The acquisition and use of private information about borrowers, in a manner which is not feasible for depositors, provides one of the key rationales for banks as financial intermediaries. The type of information which banks use to appraise their own borrowers is not publicly observable or verifiable (Marquardt, 1987: 20-22). Borrowers seek loans from banks partly because they cannot credibly transmit information about their risk profiles directly to savers. If this were possible, the borrowers would raise funds more cheaply directly from capital markets.

7. Conclusion

LDCs have made substantial efforts to strengthen their prudential systems. Most now have at least the basic framework of banking laws in place and are able to carry out bank supervision. This is a major improvement on the situation in the 1980s, when in many countries very little prudential supervision actually took place and the banking laws were outdated and deficient. Nevertheless, there are still many weaknesses in LDCs' prudential systems. These weaknesses include loopholes in the prudential regulations (which in principle should not be difficult to rectify), lack of adequately skilled staff and regulatory forbearance. The latter two constraints reflect more fundamental problems in LDCs, notably the scarcities of human capital, especially in the public sector, and the difficulties in establishing efficient and impartial rules-based public administration insulated from political interference.

Given these constraints, it is not yet clear whether the developed country model of bank regulation, based on the imposition of detailed formal regulations and which makes strong demands on both information, supervisory skills and the independence and objectivity of regulators, can be made to work effectively in LDCs. The option of relying more on market based monitoring of banks does not appear to be feasible in low income LDCs because the private agents and capital markets which are needed to undertake monitoring are themselves very poorly developed and because private sector monitoring is also constrained by the lack of reliable financial information.

A number of interesting proposals for improving prudential systems have been put forward, mainly involving incremental changes to the industrial country model, although as yet the efficacy of these ideas in LDCs is largely unproven. If prudential reforms are to be effective in the conditions prevailing in LDCs, they need to be relatively simple, robust in terms of not being highly dependent upon other components of the prudential system working well, and easy to verify and enforce.

Prudential reforms which could satisfy some or all of these criteria include adopting very strict bank licensing criteria with high entry requirements relating to minimum capital and the expertise and integrity of bank owners, directors and managers, raising minimum capital adequacy ratios above the minimum levels set out in the Basle Capital Accord, imposing very stringent restrictions on insider lending, and allowing regulators the discretion to imposing speed limits on growth of credit to high risk sectors. Governments should avoid exacerbating moral hazard, by limiting depositor insurance to small deposits only. Because regulatory forbearance is a major weakness in many LDCs, it is essential that future reforms strengthen the incentives on the regulators for effective supervision and enforcement of the prudential regulations at all stages of the regulatory process. The introduction of prompt corrective action rules, which mandate intervention by the regulators in distressed banks when predetermined thresholds are crossed, could help to reduce regulatory forbearance. PCA rules should be combined with measures which give regulators greater effective independence from political interference and which also strengthen ex post requirements for disclosure of regulatory actions and accountability of the regulators.

The recent history of financial crises in developing countries has clearly shown the critical importance of sound regulation and supervision, as a means of defending financial systems against distress and disorder. It is also clear that the appropriate regulation of financial markets is complex and often specific to an economy's structural characteristics, stage of development and institutional capacities. The frequency with which financial crises occur, and the economic and social costs to which they give rise, confirm that our knowledge of the causes of, and appropriate responses to, financial crisis remains limited. Much more research is needed to advance our understanding of these crucial issues.

References

Alawode, A. and Sylvanus I. Ikhide (1997), "Why Should Financial Liberalisation Induce Financial Crisis", *Savings and Development* No 3, pp261-273.

Alba, Pedro, Amar Bhattacharya, Stijn Claessens, Swati Ghosh and Leonardo Hernandez (1998), "The Role of Macro-economic and Financial Sector Linkages in East Asia's Financial Crisis", paper presented at the CEPR/World Bank conference, Financial Crises: Contagion and Market Volatility, May 8/9, London.

Arestis, P and Panicos Demetriades (1997) "Financial development and economic growth: assessing the evidence", *Economic Journal*, 107 (May), pp783-799.

Bhattacharya, Sudipto and Anjan V. Thakor (1992), "Contemporary Banking Theory", *Journal of Financial Intermediation*, 3, pp2-50.

Bhattacharya, Sudipto, Arnoud W.A. Boot and Anjan V. Thakor (1998), "The Economics of Bank Regulation", *Journal of Money Credit and Banking* Vol 3 No 4, pp745-770.

Boot, A W and A V Thakor (1993), "Self-interest bank regulation", *American Economic Review, Papers and Proceedings,* 83, pp206-212.

Brownbridge, Martin (1998), "Financial Distress in Local Banks in Kenya, Nigeria, Uganda and Zambia: Causes and Implications for Regulatory Policy", *Development Policy Review*, Vol 16, No 2, pp173-188.

Brownbridge, Martin and Charles Harvey (1998), *Banking in Africa: The Impact of Financial Sector Reform Since Independence,* James Curry, Oxford.

Brownbridge, Martin and Colin Kirkpatrick (1999), "Financial Sector Regulation: The Lessons of the Asian Crisis", *Development Policy Review,* Vol 17 No 3, pp243-266.

Calomiris, C W (1997), *The Postmodern Bank Safety Net: Lessons from Developed and Developing Economies*, Washington DC: AEO Press.

Caprio, Gerard Jr. (1996), "Bank Regulation: The Case of the Missing Model", *Policy Research Working Paper* 1574, Washington DC, World Bank.

Caprio, Gerard Jr. (1997), "Safe and Sound Banking in Developing Countries: We're not in Kansas Anymore" Policy Research Working Paper 1739, Washington DC, World Bank.

Caprio Gerard Jr. and Daniela Klingebiel (1997), "Bank Insolvency: Bad Luck, Bad Policy or Bad Banking?" *Proceedings of Annual World Bank Conference on Development Economics*, 1996, World Bank, Washington DC, pp79-114.

Cortes-Douglas, Hernan (1992), "Financial Reform in Chile: Lessons in Regulation and Deregulation", in Vittas, Dimitri (ed), *Financial Regulation: Changing the Rules of the Game*, Washington DC, World Bank, pp163-194.

Cukierman, Alex and Steven B. Webb (1995), “Political Influence on the Central Bank: International Evidence”, *The World Bank Economic Review* Vol 9 No 3, pp397-423.

Cull, R J (1997), “Financial sector adjustment lending: a mid-course analysis”, *Policy Research Working Paper* no 1804, World Bank.

Demirguc-Kunt A and E Detragiache (1997), "The determinants of banking crises: evidence from industrial and development countries", *Policy Research Working Paper* no 1828, Washington DC: World Bank.

Demirguc-Kunt A and E Detragiache (1998) "Financial Liberalisation and Financial Fragility", *Policy Research Working Paper* no 1917, Washington DC: World Bank, May.

Dewatripont, Mathias and Jean Tirole (1994), *The Prudential Regulation of Banks*, Cambridge, MA, MIT Press.

Dodsworth, John and Dubravko Mihaljek (1997) “Hong Kong, China, Growth, Structural Change, and Economic Stability During the Transition” *Occasional Paper* 152, Washington DC, IMF.

Dziobeck, Claudia, Olivier Frecaut and Maria Nieto (1995), "Non G-10 Countries and the Basle Capital Rules: How Tough a Challenge is it to Join the Basle Club?" *Paper on Policy Analysis and Assessment* PPAA/95/5, Washington DC, IMF.

Enoch, Charles, Peter Stella and May Khamis (1997), "Transparency and Ambiguity in Central Bank Safety Net Operations", *IMF Working Paper* WP/97/138.

Folkerts-Landau, David et al (1995), “Effect of Capital Flows on the Domestic Financial Sectors in APEC Developing Countries” in Mohsin S. Khan and Carmen Reinhart (eds) “Capital Flows in the APEC Region” *Occasional Paper* 122, Washington DC, IMF, pp31-57.

Garcia-Herrero, Alicia (1997), "Banking Crises in Latin America in the 1990s: Lessons from Argentina, Paraguay and Venezuela", *IMF Working Paper* WP/97/140.

Gilbert, R.A. (1991) ‘Supervision of Undercapitalised Banks: is there a case for change?’ *Federal Bank of St Louis Review*, 73(3), pp.16-30.

Glaessner, Thomas and Ignacio Mas (1995), "Incentives and the Resolution of Bank Distress", *The World Bank Research Observer* Vol 10, No 1, February, pp53-73.

Goldstein, Morris and Philip Turner (1996), "Banking Crises in Emerging Economies: Origins and Policy Options", *BIS Economic Papers* No 46, Basle, Bank for International Settlements.

Goodhart, Charles, Philipp Hartmann, David Llewellyn, Lilliana Rojas-Suarez and Steven Weisbod (1998) *Financial Regulation: Why How and Where Now?* London, Routledge.

Hellmann, T, Kevin Murdock and Joseph Stiglitz (1995), "Financial restraint: towards a new paradigm” in K Aoki and I Okuno-Fujiwara (eds), *The Role of Government in East Asian Economic Development*, Oxford University Press.

Hellmann, T, Kevin Murdock and Joseph Stiglitz (1998), "Liberalization, Moral Hazard in Banking, and Prudential Regulation: Are Capital Requirements Enough? Research Paper No 1466, Graduate School of Business, Stanford University.

Honohan, Patrick (1997), "Banking System Failures in Developing and Transition Countries: Diagnosis and Prediction", *BIS Working Paper* No 39, Basle, Bank for International Settlements.

Inter-American Development Bank (1997) *Latin America After a Decade of Reforms,* Washington DC.

International Monetary Fund (1998A) *Towards a Framework for Financial Stability,* Washington DC.

International Monetary Fund (1998B) *International Capital Markets: Developments, Prospects and Key Policy Issues* Washington DC.

Johnston R. Barry, Salim M. Darbar and Claudia Echeverria (1999), "Sequencing Capital Account Liberalization: Lessons from Chile, Indonesia, Korea, and Thailand", in Johnston, R Barry and V Sundararajan (eds), *Sequencing Financial Sector Reforms: Country Experiences and Issues* Washington DC, International Monetary Fund, pp245-383.

Kaminsky, Graciela L and Carmen M. Reinhart (1998), "The Twin Crises: The Causes of Banking and Balance of Payments Problems", *International Finance Discussion Paper* no 544, Board of Governors of the Federal Reserve System.

Kane, Edward J. (1989), "The High Cost of Incompletely Funding the FSLIC's Shortage of Explicit Capital", *The Journal of Economic Perspectives*, Vol 3, No 4, pp31-47.

Kane, Edward J. (1997) “Comment on “Understanding Financial Crises: A developing Country Perspective,” by Frederic S. Mishkin” *Annual World Bank Conference on Development Economics 1996,* Washington DC, World Bank, pp69-75.

Keefer, Philip and David Stasavage (1998), “When Does Delegation Improve Credibility? Central Bank Independence and the Separation of Powers” Oxford, WPS/98-18, Centre for the Study of African Economies.

King, Robert G. and Ross Levine (1993) “Finance, entrepreneurship and growth: theory and evidence”, *Journal of Monetary Economics,* 32: pp513-42.

Kyei, Alexander (1995), “Deposit Protection Arrangements: A Survey” IMF Working Paper WP/95/134.

Levine, Ross (1997), "Financial Development and Economic Growth: Views and Agenda", *Journal of Economic Literature*, vol XXXV, No 2, June, pp688-726.

Lindgren, Carl-Johan, Gillian Garcia and Matthew Saal (1996), *Bank Soundness and Macroeconomic Policy*, Washington, IMF.

Long, Millard and Dimitri Vittas (1992), "Changing the Rules of the Game", in Vittas, Dimitri (ed), *Financial Regulation: Changing the Rules of the Game*, Washington DC, World Bank, pp43-57.

Marquardt, Jeffrey C. (1987), "Financial Market Supervision: Some Conceptual Issues", *Bank for International Settlements Economic Papers* No 19.

McKinnon, Ronald I. (1988), "Financial Liberalisation in Retrospect: Interest Rate Policies in LDCs", in Ranis, Gustav and T Paul Shultz (eds*) The State of Development Economics: Progress and Perspectives*, Basil Blackwell, New York, pp386-410.

Mehran, Hassanali, Piero Ugolini, Jean Philippe Briffaux, George Iden, Tonny Lybek, Stephen Swaray, and Peter Hayward (1998), "Financial Sector Developments in Sub-Saharan African Countries", *Occasional Paper* 169, International Monetary Fund.

Ncube Mthuli and Lemma W. Senbet (1997), "Perspectives on Financial Regulation and Liberalisation in Africa under Asymmetric Information and Incentive Problems", *Journal of African Economies*, Supplement to Volume 6 Number 1, part 11, pp29-88.

Polizatto, Vincent (1992), "Prudential Regulation and Banking Supervision" in Vittas, Dimitri (ed), *Financial Regulation: Changing the Rules of the Game*, Washington DC, World Bank, pp283-319.

Rahman, M. Zubaidur (1998), "The Role of Accounting and Disclosure Standards in the East Asian Financial Crisis: Lessons Learned" mimeo, Geneva, UNCTAD.

Sheng, Andrew (1992), "Bank Restructuring in Malaysia, 1985-88", in Vittas, Dimitri (ed), *Financial Regulation: Changing the Rules of the Game*, Washington DC, World Bank, pp194-236.

Sheng, Andrew (1996A), "Banking Fragility in the 1980s: An Overview", in Sheng, Andrew (ed), Bank Restructuring: Lessons from the 1980s, Washington DC, World Bank, pp5-24.

Sheng, Andrew (1996B), "Resolution and Reform: Supervisory Remedies for Problem Banks", in Sheng, Andrew (ed), Bank Restructuring: Lessons from the 1980s, Washington DC, World Bank, pp49-70.

Stiglitz, G. (1994) 'The Role of the State in Financial Markets', *Proceedings of the World Bank Conference on Development Economics*, 1993. Washington DC, World Bank.

Stiglitz, G. (1998) 'Knowledge for Development: Economic Science, Economic Policy and Economic Advice'. Address to the World Bank's 10th Annual Conference on Development Economics, April.

Sundararajan, V. (1999), "Prudential Supervision, Bank Restructuring and Financial Sector Reform", in Johnston, R Barry and V Sundararajan (eds), *Sequencing Financial Sector Reforms: Country Experiences and Issues* Washington DC, International Monetary Fund, pp186-213.

Varian, H. (1987) *Intermediate Microeconomics. A Modern Approach*, 3rd edition. New York and London, W.W. Norton & Co.

Villanueva, Delano and Abbas Mirakhor (1990), "Strategies for Financial Reforms", *IMF Staff Papers* Vol 37, No 3, pp509-536.

Williamson J and M Maher (1998) *A Survey of Financial Liberalisation*, Essays in International Finance no 211, Princeton N J: Department of Economics, Princeton University.

World Bank (1989) *World Development Report*, Washington DC, World Bank.

World Bank (1999A) *Global Economic Prospects*, Washington DC, World Bank.