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Working Paper

The role of market discipline in handling problem banks

Bank of Finland Discussion Papers, No. 21/2003

Provided in Cooperation with:
Bank of Finland, Helsinki

Suggested Citation: Llewellyn, David T.; Mayes, David G. (2003) : The role of market discipline in handling problem banks, Bank of Finland Discussion Papers, No. 21/2003, ISBN 952-462-077-4, Bank of Finland, Helsinki, https://nbn-resolving.de/urn:nbn:fi:bof-20140807581

This Version is available at:
https://hdl.handle.net/10419/211954

BANK OF FINLAND DISCUSSION PAPERS

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2.9.2003

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Suomen Pankin keskustelualoitteita
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We are grateful to Larry Mote and Don Morgan for their comments.

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Finlands Banks diskussionsunderlag

http://www.bof.fi

ISBN 952-462-077-4
ISSN 0785-3572
(print)

ISBN 952-462-078-2
ISSN 1456-6184
(online)

Suomen Pankin monistuskeskus
Helsinki 2003

The role of market discipline in handling problem banks

Bank of Finland Discussion Papers 21/2003

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Abstract

This paper considers the conditions that are necessary for market discipline to complement prompt corrective action (PCA) by the authorities in handling problem banks. We initially consider precisely what market discipline means in this context, who exercises it and the preconditions that are necessary for it to operate effectively. We explore the incentives that are necessary for PCA and market discipline to reinforce rather than cancel each other and in particular consider the limits to market discipline in this context from corporate governance and from difficulties in valuation. While our analysis is primarily aimed at advanced countries, we also examine problems in emerging markets and how deposit insurance arrangements might conflict with the aims of both PCA and market discipline.

Key words: market discipline, banks, prompt corrective action

Markkinakurin merkitys vaikeuksissa olevien pankkien käsittelyssä

Suomen Pankin keskustelualoitteita 21/2003

David T. Llewellyn – David G. Mayes
Tutkimusosasto

Tiivistelmä

Keskustelualoitteen aiheena on kysymys, millä ehdolla markkinakuri voi tukea viranomaisten aikaista puuttumista (Prompt Corrective Action, PCA) vaikeuksissa olevien pankkien toimintaan. Aluksi tarkastellaan markkinakurin käsitettä ja sen tehokkaan toiminnan edellytyksiä. Sen jälkeen tutkitaan kannustinjärjestelmiä, jotka ovat välttämättömiä, jotta aikaiset viranomaistoimet ja markkinakuri voisivat heikentämisen sijasta vahvistaa toisiaan. Erityisesti tarkastellaan pankkien omistajavalvonnan ja taseen arvostusongelmien markkinakurille asettamia rajoja. Vaikka analyysi lähinnä koskee kehittyneitä talouksia, käsitellään myös kehittyvien markkinoiden erityisongelmia ja sitä, kuinka talletusvakuutusjärjestelmät voivat heikentää viranomaisten toiminnan ja markkinakurin tehoa.

Avainsanat: markkinakuri, pankit, PCA

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1 Introduction

This paper addresses the issue of how to ensure that market discipline and the authorities' requirements for Prompt Corrective Action and resolution in the event of failure act as complements and reinforce each other. A central theme is that PCA based on a set of explicit rules reinforces the role of market discipline. Equally, enhanced market discipline arrangements should both enhance the credibility of PCA and provide valuable information to supervisory authorities in their decisions to apply PCA. The complementarity of PCA and market discipline is central to the paper.

The underlying theory of market discipline is clear: well-informed creditors and, in some cases, rating agencies have the resources, incentives, expertise and market knowledge to monitor banks, and that their behaviour will discipline banks through various equilibrating market price and quantity adjustments. However, the precise nature of functioning market discipline and its prerequisites are somewhat unclear.

Four key issues arise in considering the role and effectiveness of market discipline:

(1) what are the precise channels of market discipline and the distinction between *direct* channels (prices, quantities and managerial incentives) and *policy* channels (eg how supervisors respond to market signals),
(2) the required conditions for market discipline to work effectively and efficiently,
(3) the nature of the impediments (both market and policy-induced) to the effective and efficient operation of market discipline, and
(4) what regulatory and supervisory agencies can do to enhance the role of market discipline and raise its effectiveness.

By the nature of the contracts that banks issue (incomplete contracts on both sides of the balance sheet) and the potential systemic implications of hazardous bank behaviour, banks need to be monitored. Four central questions arise:

(1) who are the relevant monitors?
(2) what are their respective incentives?
(3) might intervention of various kinds by the official sector have the unintended consequence of impairing the role of other monitors (eg debt-holders) because it blunts the latter's incentives?
(4) how are the roles of the various monitors related to each other and are there positive or negative feedbacks?

In this context the paper begins by considering the concept of *Stakeholder Monitors*.

Because of the ambiguous and unclear nature of market discipline, the paper derives a set of pre-conditions for market discipline to operate effectively. These relate to, *inter alia*, the information that has to be disclosed, the structure of the monitoring system, the ability of stakeholders to act, the nature of corporate governance, the incentives from the regulatory system and previous experience. In practice there are many impediments to the operation of market discipline in banking that are not addressed, for example, in the Third Pillar of the Basel 2 proposals. The paper focuses on those impediments that relate to the interaction of supervisors and related authorities' behaviour and the actions of the other stakeholders in the 'market'. The paper seeks to establish at the outset which 'markets' are being considered – subordinated debt, corporate control, for example.

Although the issue of moral hazard emanating from aspects of deposit insurance and anticipated public assistance in the event of difficulty is well known, the paper also considers similar issues relating to various incentive structures both internal to the bank and of external market participants. These include the extent to which the private sector might react to increased supervisory scrutiny by easing its own monitoring, and the degree to which supervisors can use market signals in directing the focus of their activity in these circumstances. The paper focuses on the contradictions that emerge in the tackling of problem banks that are actually or imminently in breach of capital adequacy or other risk-limiting measures. The nature of the Prompt Corrective Action obligations for the authorities laid down in advance will affect the nature of market discipline both before difficulty becomes apparent and when it is revealed. Revelation of difficulty is not only a disciplining device at the time but also in prospect. There is, however, a potential conflict between market valuations based on transactions that need to be undertaken rapidly and the longer-term valuations that would apply if a bank had to go into liquidation under insolvency. It is important that market discipline assist stability of the financial system as a whole and not worsen it, as it can in some circumstances. The analysis considers isolated events of bank difficulty and more general problems associated with 'herding' and the economic cycle.

In suggesting ways to help lessen these potential conflicts the authors come down in the direction of credible rules for prompt corrective action (and ultimately resolution if a bank becomes insolvent) rather than for discretion. In addition to the issues of transparency for the market, the same transparency needs to apply to actions by the authorities and their accountability for the actions taken (or not taken). The proposals seek to move the balance of responsibility first towards the management of the banks themselves, and second towards the large and well-informed shareholders and creditors and away from excessive reliance

on the authorities beyond their realistic abilities. In suggesting an appropriate balance it is necessary to take account of the limitations of market discipline, from insufficient information, differences between private and social costs and benefits, freeriding and extent of expertise. The fact that market signals exist does not mean that stakeholders and bank managements, in particular, respond to them. A key issue, therefore, is how to create appropriate incentive structures.

2 What is market discipline?

While market discipline is a widely-used term in the context of supervising and regulating banks, it is frequently not precisely defined. Lane (1993) in his seminal work defines market discipline as "financial markets providing signals that lead borrowers to behave in a manner consistent with their solvency". The new Basel proposals (Basel Committee, 2003), in presenting the 'Third Pillar' (which is labelled 'Market Discipline') leap straight into a discussion of disclosure. The availability of adequate information is certainly a necessary condition for markets to operate effectively but it is not a sufficient criterion on its own.

Market discipline is a general concept, which can be applied to all activity and normally incorporates both price and quantity adjustments. While there are many special features that affect its application in the field of banking, this does not alter the basic idea. Firms operate in a number of markets (Bollard et al, 1993) some of which are internal but for our purposes it is worth discussing simply product markets and factor markets. Normally regulators would be satisfied that society's objectives are being met if there is widespread and 'fair' competition in these markets. An element of consumer protection will also usually be added, as it is difficult for the consumer to be adequately informed about the particular product to make a good choice and it is easy for firms to misinform. In a competitive product market firms enter, alter their market size and exit on the basis of the price and broadly defined quality of the products. In banking the product market is heavily restricted. Entry is controlled by the authorities, the range and nature of products is controlled and most importantly in the current analysis exit is also controlled. The authorities are not prepared to see the unfettered collapse of banks, largely because this could damage confidence in the financial system as a whole and inhibit the efficiency of operation of the economy. In essence, and because of externalities, exit is controlled because the social cost of bank failure exceeds the private costs (Goodhart et al, 1999).

In any case the nature of the 'products' that banks provide, particularly in taking deposits and making loans, is very different from much other activity. Borrowers have difficulty taking their business elsewhere, while depositors can usually do so with all too much ease for the stability of the system. Discipline on

banks through the product market is therefore severely impaired in many countries and this in itself should be a cause for concern to regulators in designing and supervising the operation of the system.

Attention in the banking industry therefore tends to focus on factor markets and on the capital market in particular. We can debate whether deposits should be regarded as inputs and loans as outputs or what the form of the product is in terms of the services provided, but the primary focus for market discipline is on the provision of financial capital. However, particularly since banking is a service industry, the labour market is an important ingredient in the process. In investment banking, teams can be bid away from one bank to another and the business will tend to move with them. The operation of the labour market is particularly important for senior management. One of the key features governing how problem banks behave relates to the expectations of senior management over their future. In the market for corporate control, the senior management may be part of what the acquirer wishes to purchase or they may be precisely what the acquirer wishes to dispose of as being the main reason for poor performance of the company compared to its potential.

The functioning of the market for corporate control is likely in many cases to be the most important in handling a problem bank. The existing owners retain control of the bank up to the point of insolvency (and appointment of the FDIC as receiver in the United States), although their actions may be increasingly circumscribed as the problems worsen. If a bank can be bought on the open market either directly or through an open bid for the holding company then the discipline on the bank from the 'market' will be much more effective. If the bank has a mutual structure, is largely private in character or part of a large industrial group (or owned by central or local government) then these pressures will operate very differently and generally with less (if any) power and effectiveness. The incentive structure faced by decision-makers within these banks is quite different from those faced by the generality of publicly-quoted banks. If there is a board of directors, independent of management and responsive to shareholders, that can be expected to replace the top management in the face of poor performance, incentives will be much sharper. Insisting on the appointment of independent non-executive directors who will be liable in the prudential management infractions, as in New Zealand, should heighten the focus (Mayes, 1997).

It is because of all the possible constraints on the other markets that there has been a focus in the literature on the market for subordinated debt (see Evanoff and Wall, 2000, for a survey). If all banks were required to hold a proportion of their capital in the form of subordinated debt that was actively traded and needed to be rolled over frequently, then it might be possible to get some fairly clear market signals that would act as a disciplining device on the bank. Emphasis here is given to the *mandatory* nature of subordinated debt because, if subordinated debt issuing is voluntary, market signals may become inefficient. For instance, a rise in the

cost of debt faced by a bank which comes to be perceived as more risky, may simply reflect a liquidity premium because the bank chooses to issue no subordinated debt. In this case, it is not clear whether the rise in the price of debt represents a true risk premium or a liquidity premium. Even so, as Bliss and Flannery (2000) point out it is necessary to have more than a clear market signal for it to act as a disciplining device. People have to be able to act on it in a way that makes bank managements respond. Agents must be both able and willing to act. Thus the vital ingredients for market discipline are twofold: that there should be an open active market with sufficient well-informed players that the resulting 'price' signal reflects a general view. Second that the corporate governance of the bank and the financial system should be such that this signal is translated into action. Given the constraints we have mentioned affecting markets that impinge on banks it is likely to be a combination of effects on all of the 'stakeholders' in the bank that is required to offer effective market discipline.

To reflect this two-sided concept of both the market signal and the willingness to act, Llewellyn (2002a) develops the concept of a 'stakeholder monitor'. Stakeholders, as the name implies, have something at stake in the relative success or failure of the firm. Those who participate in the process of observing the behaviour of the firm and forming judgements in the light of it can be described as 'monitors'. Such monitors may have access to both market and private information. Combining these ideas, 'stakeholder monitors' are all those agents who have an interest in the outcome of the monitoring process:

- supervisory agencies,
- rating agencies
- market traders,
- shareholders,
- board of directors,
- debt-holders,
- depositors,
- managers,
- borrowers,
- employees.

The list is not necessarily complete. The group clearly includes borrowers because they may be heavily affected as a bank gets into difficulty. Loans may be called in rather than rolled over and new business may become difficult.

3 Pre-requisites for effective market discipline

There is almost universal agreement that the role of market discipline in regimes for systemic stability should be enhanced. This is reflected, for instance, in Pillar 3 of the Basel 2 Accord. However, its precise meaning and the necessary requirements and pre-requisites for it to operate effectively are not always clear and are seldom made explicit. It is something of a 'black box'. However, it is possible to identify at least eight necessary conditions for market discipline to work effectively, which between them offer a framework for a rather closer understanding of the contents of the box. All are necessary but none alone is sufficient.

(1) Relevant and accurate information about the status of banks needs to be publicly available on a timely basis to all *stakeholder monitors* (SHMs).
(2) There needs to be a sufficient number of SHM groups who are capable of analysing the information made publicly available.
(3) SHMs need to have clear incentives to monitor the behaviour of banks and to incur the costs of doing so. This may include the possibility of losing money. As put by Morgan and Stiroh (2000), effective market discipline requires that investors first consider themselves to be at risk in the event of insolvency. The potential benefits of monitoring need to exceed the costs.
(4) A sufficient cohort of SHMs needs to adjust their behaviour on the basis of relevant information about the status of the banks in which they have an interest.
(5) SHMs need to respond rationally to relevant information which, for instance, implies that they are not subject to the same errors or misperceptions as the banks being monitored. In a world of herding this can be a demanding requirement as, under some circumstances, the euphoria that leads banks into hazardous positions may also be shared by those undertaking monitoring. There is a hint of this in Birchler and Maechler (2001). This raises the general issue of how well market participants process the information available to them.
(6) Such rational responses need to lead to equilibrating changes in market quantities and/or prices (eg the supply and pricing of debt available to banks).
(7) Bank managers need to have incentives, and the ability, to respond to these market changes, or must be conscious of the potential threat of such changes because, for instance, they would affect the competitiveness of the bank with respect to the business it is undertaking with depositors, other suppliers of debt, shareholders and borrowers. In particular, managers need to respond to actual or threatened rises in the cost of deposits, debt and equity capital. For instance, if banks issue only a small amount of subordinated debt, changes in

its price may be insufficient incentive for managers to alter their behaviour simply because they are not sufficiently costly to the bank. The truth is that we know remarkably little about the incentives and motivations of bank managers and how they respond to incentives. Having said that, we do know that internal managerial incentives can be dysfunctional by, for instance, relating managerial rewards to volume without incorporating risks, by the substantial turn-over and movement of managers, and by herd behaviour. Managers may also have incentives to adopt a very short time horizon in their decisions. It is also well established (eg Billett et al, 1998) that banks may react to adverse market signals by shifting into less-disciplinary funding sources. There is also a host of principal-agent issues to consider in this area, particularly involving the role of the board of directors. In this context, the Basel Committee emphasises the importance of good and effective corporate governance arrangements for effective market discipline to operate.

(8) It follows from the above seven conditions that the market should efficiently incorporate information about risk into prices, ie that prices truly reflect risk.

In essence, market discipline ultimately works through price and quantity signals as in any other market. This includes the cost of capital, cost of deposits and other forms of debt financing, the supply of deposits and debt, and the market in corporate control where inefficient managers may lose control of the bank. However, there may be impediments to the signalling process and insufficient incentives to respond to those signals that do emerge. Applying a different approach, Hämäläinen et al (2003) make a useful distinction between a *recognition* phase and a *control* phase in the operation of market discipline.

Two immediate conclusions follow from this simple paradigm. First, market discipline will not work effectively if any of these eight routes are impeded (sometimes as the unintended consequence of regulation of one sort or another) or, for any other reason, do not operate. Second, the role and power of the market can be enhanced by various mechanisms to strengthen each of these routes. In this latter respect, three examples can be cited:

- a high priority can be given to the timely publication of relevant information about the status of banks; the Basel Committee stresses the need for *sufficient, comparable, accurate* and *relevant* market disclosure.
- factors that reduce the incentives of SHMs to conduct monitoring can be removed or eased, and
- mechanisms need to be in place to ensure that there is a sufficient number of SHMs who know they would lose in the event of a bank failure.

One of the central challenges in regulatory and supervisory arrangements is to improve the conditions under which market discipline can operate effectively and

efficiently which implies addressing each of the eight components within the black box.

There are several reasons why, in practice, market discipline may not operate effectively with lack of transparency and of relevant, accurate and timely information being the starting point. A perception that a bank will be rescued in the event of distress (perhaps because it is judged to be TBTF) diminishes the incentives for effective market monitoring. The key issue is that a no-bailout policy must be credible for it to be effective.

The moral hazard attached to badly constructed deposit insurance schemes has been well established. If deposit insurance is (or is perceived to be) total, or is mis-priced, banks have an incentive to take excessive risk because risk-taking is effectively subsidised, and depositors may have an incentive to seek high-risk banks offering a higher expected rate of return on deposits. Similarly, the perception that official agencies conduct effective monitoring and intervention (perhaps based on an assumption of superior information) may also weaken the incentives for others to conduct costly monitoring in the belief that they are only duplicating monitoring which is already being undertaken by an official agency. Market participants might also judge that official supervisors have the advantage of economies of scale and also information advantages that private market participants do not have. The position has been put in this way by Soifer (1991): "What matters to (fund managers) about capital and models is not whether they think (capital and risk models) are adequate but rather whether the bank satisfies the requirements of regulators and rating agencies … Regulators have access to internal data which market participants do not. Hence, from the standpoint of capital adequacy, *public disclosure of validation data is largely irrelevant*. The people who need to know already have access to the information with which they will formulate their findings upon which analysts and investors have no choice but to rely ... "

Several contributions can be made to enhancing the effectiveness of market discipline including more demanding and relevant disclosure requirements. For market discipline to work effectively, disclosure should be based on common data as between different banks. The incentives of SHMs to conduct monitoring can be increased through, for instance, a mandatory subordinated debt capital requirement, and limits set on deposit insurance. Also, a regime of credible PCA within a SEIR (Structured Early Intervention and Resolution) framework (and most especially a credible commitment to no bail-outs) can contribute to several of the routes within the paradigm outlined above. The requirement for behaviour to be influenced by information includes arrangements for effective corporate governance mechanisms. The requirement that behaviour leads to changes in quantities and prices can be addressed also by, for instance, a mandatory subordinated debt rule. Whether bank managers respond to market signals

depends *inter alia* on competitive conditions in the banking industry and the internal incentive structures within the bank.

4 Market discipline and problem banks

Within the framework we have established, we now turn to the issue of market discipline and intervention arrangements with problem banks. Bank supervisory and regulatory systems have an armoury of weapons available for handling problem banks. These fall into two groups:

– measures designed to stop banks becoming problems in the first place, and
– measures designed to resolve problems.

These amount to mechanisms designed to reduce the probability of bank failures (though not to zero), and to minimise the cost of those bank failures that do occur.

The first group includes:

– capital adequacy requirements in an attempt to prevent the realisation of expected and unexpected risks from having too drastic consequences for the viability of the bank;
– supervisory reviews to ensure that the banks' risks and risk management methods are being adequately addressed, and
– market discipline through disclosure and the need to issue subordinated securities that are marketed.

The second group includes:

– a raft of requirements for Prompt Corrective Action to resolve the problem at an early stage before it threatens the viability of the bank
– procedures for exiting the bank and limiting the losses, often through insurance, should corrective action prove impossible or ineffective.

The incentives for behaviour by banks, their shareholders, boards, creditors, customers and the authorities, with respect to the avoidance and resolution of problems are affected by both groups of measures. Not only do the two groups of measures interact but their incentives may conflict. Thus for example if a competitor expects to be able to pick up a problem bank at a discount in the resolution process that will affect its willingness as a creditor to push the bank all the way into insolvency. The pricing of the problem bank in the market will be affected by the willingness of the supervisor to disclose the bank's problems. The

effectiveness of the insurance scheme will affect the willingness of the insured to exercise much discipline through the market. Such schemes do not have to be explicit. If bank creditors expect to be bailed out through the sorts of unconditional guarantees that were issued during the Finnish and Swedish banking crises at the beginning of the 1990s, then the pricing of the securities they hold in the bank will not give a clear signal.

Eisenbeis and Wall (2002) suggest that the balance of change in regulation during recent years has been to increase the emphasis on the first group of measures – avoiding bank failures/problems – rather than trying to decrease the costs of those that do occur. As they emphasise, the prevention of failure tends to increase the burden of responsibility placed on bank supervisors compared to the other SHMs we have outlined. If, on the other hand, the aim is minimising the cost of failures then far more of the banks' SHMs are at risk.

There is a downward slope of difficulty down which problem banks tend to slide and which require increasingly drastic action to be taken. Although categorisation is arbitrary, we can distinguish four main circumstances for 'problem' banks that have encountered losses:

(i) Banks whose capital is inadequate from a market (or their own) point of view but who meet regulatory standards
(ii) Banks that breach regulatory capital standards but are generally thought to be solvent
(iii) Banks that breach regulatory capital standards and are economically but not legally insolvent (net worth is negative)
(iv) Banks that are insolvent and can no longer continue trading without a capital injection.

Banks that lie in the first group do not require regulatory intervention but their plight will have been reflected in market prices and eventually in their ratings. Here we would expect private sector solutions. The bank might be able to continue by raising more capital from its owners and making drastic improvements to the business – cutting costs, selling profitable non-banking or banking parts of the business to improve both the capital position and the cash flow. More likely, they will find themselves in merger or takeover talks.

Banks in the remaining groups require action by the authorities. Asser (2001) labels them jointly as banks in 'distress', although terminology tends to differ among authors. The Basel Committee (2002) refers to 'weak' banks "one whose liquidity or solvency is or will be impaired unless there is a major improvement in its financial resources, risk profile, strategic business direction, risk management capabilities and/or quality of management." (p. 1) This is a much more difficult definition from our point of view as it entails a judgement and not necessarily one that is reflected clearly in an observable market price. Banks in Group (iv) have

reached the point of closure or taxpayer bailout, everything else having failed (or the shock being too large). There are some circumstances, as with Barings, where the shock (loss) is so large that the bank goes straight into Group (iv) without any prior warning. In those cases a market solution may still be possible because it has not previously been tried. It is well known that a bank is worth more alive than dead (Guttentag and Herring, 1983) even though its value may be negative. In any case, whatever the value of the bank is will be reflected in its purchase price.

Banks in Groups (ii) and (iii) can continue trading at least for a while even if what they are effectively doing is realising their assets at steadily deeper discounts in order to pay off depositors and uninsured creditors who are unwilling to bear the increased risk. The crucial difference between the two groups is that in Group (iii) there is no longer enough value in the bank to pay out all the creditors and depositors if they should wish it. Such a bank is not legally insolvent, as it is still able to meet its day to day obligations. In some environments it could continue almost indefinitely in this state, for example, if the market believes that the bank will be bailed out should it ever fail to meet its obligations. However, banks that are in this Group, either where there is no guarantee or where the market's belief in the implicit guarantee is erroneous, are in effect trading at the expense of the uninsured depositors and creditors and the underwriters of the insurance fund. Such beliefs are frequently held in the TBTF case or if the market thinks that too many banks are under strain at one time for the authorities to start letting them fail (the too many to fail argument). The window in which the junior or subordinated debtors will receive anything much in the way of payout in the event of failure is quite small as the costs of insolvency normally mop up quite a substantial part of the value of the company, all of which is set off against the claims of the creditors in reverse order of seniority. Mayes et al (2002) and Mayes and Liuksila (2003) argue that banks in Group (iii) should be treated in the same way as banks in Group (iv), as they are only viable through the contingent claim on the taxpayer. Our starting point is that taxpayers should not have to pay for bank insolvency any more than they pay for the insolvency of any other nonfinancial company. There is no clear reason outside the concerns for systemic stability that the authorities should offer a subsidy to banking rather than other sectors nor to insolvent banks at the expense of those that are trading more prudently or were lucky enough to avoid the shock.

Our principal focus here is on Group (ii), where the bank has positive value in a market sense but the authorities require it to improve its risk position/management and capitalisation in order to give adequate confidence about its ability to withstand future shocks. We are dealing in this case with banks that have been unlucky or poorly managed not with those that have disregarded either supervisory rules or have been subject to fraud. In those cases the authorities have a requirement to act irrelevant of the views of the market. In this group both the market and the authorities have something to contribute to the

resolution of the problem. One would no more wish to concentrate monitoring and responsibility for action on a presumably risk-averse insurer than one would on shareholders who may have little to lose from taking further large risks (Miller, 1999).

However, as things stand at present, in most countries we do not have the information available to tell whether a bank is Group (ii) or Group (iii). In the US the FDIC is compelled to close a bank once its capital ratio falls to 2 percent. The assumption in this case is that all such banks will be very clearly in Group (iii) and hence closing them and taking them away from their owners and into administration will not deprive their owners of any value because their shares will already be worthless. If the system is to be fairer and more efficient in its operation, banks in Group (ii) need to be assessed not so much in terms of their regulatory capital but in terms of their net worth or economic value.

Not only does the assessment of the capital position of the banks for regulatory purposes not normally relate to the market value of the bank but a bank meeting the Basel 1 criteria could be insolvent (as was the case with SKOP Bank in Finland in 1990, a year before it revealed its insolvency to the authorities). Basel 2 may help where it improves the measurement of risk. But where many assets in the balance sheet are at book value or other artificially high levels when a bank is in difficulty, regulatory capital will underestimate the threat of insolvency and the urgency of the need for action by the market and the authorities alike. It is very obvious from the rating agencies' attitude to the adequacy of bank capital, that from their point of view a bank starts looking increasingly risky well before it gets close to breaching the regulatory limits (Ridpath, 2003).

Mayes and Liuksila (2003) argue that the authorities should switch the focus of their analysis of the capital position of the bank from compliance with regulatory capital rules to net worth as soon as the regulatory boundary has been breached.

5 Prompt corrective action

Within this paradigm there is a strong and direct case for a credible PCA regime. A key component of any set of regulatory and supervisory arrangements is the nature, timing and form of intervention by supervisory agencies in the event of financial distress with banks (Llewellyn, 2002b). A key dimension in this is the impact interventions have on future incentive structures of banks and their appetite for risk. The central issue is when intervention is to be made. The experience of banking crises in both developed and developing countries indicates

that there should be a well-defined strategy for responding to the possible insolvency of financial institutions.

In this regard, a major consideration relates to rules versus discretion in the event of bank distress, ie the extent to which intervention should be circumscribed by clearly-defined rules (so that intervention agencies have no discretion about whether, how and when to act), or whether there should always be discretion. The obvious *prima facie* advantage for allowing discretion is that it is impossible to foresee all future circumstances and conditions for when a bank might become distressed and close to (or actually) insolvent. It might be judged that it is not always the right policy to close a bank in such circumstances.

There are, nevertheless, strong arguments against allowing such discretion and in favour of a rules approach to intervention including those embodied within a PCA programme. First, it enhances the credibility of the intervention agency in that market participants, including banks, have a high degree of certainty that action will be taken. Second, allowing discretion may increase the probability of forbearance, which usually eventually leads to higher costs when intervention is finally made. Third, with discretion there are potential hazards associated with risk-averse regulators who might be disinclined to take action for fear that it will be interpreted as a regulatory failure. There will be a temptation to allow a firm to trade-out of its difficulty, which amounts to the regulator 'gambling for resurrection'. Fourth, and this was relevant in some countries which recently experienced banking distress, it removes the danger of undue political interference in the disciplining of banks and regulated firms. Experience in many countries indicates that supervisory authorities face substantial pressure to delay action and intervention. Fifth, and related to the first, a rules approach to intervention is likely to have a beneficial impact on ex ante behaviour of financial firms. A rules-based approach, by removing any prospect that a hazardous bank might be treated leniently, has the advantage of enhancing the incentives for bank managers to manage their banks prudently so as to reduce the probability of insolvency or distress.

Put another way, time-inconsistency and credibility problems can be addressed through pre-commitments and graduated responses with the possibility of over-rides. The case for a graduated and structured response is that there is no magical capital ratio below which an institution is in danger and above which it is safe; potential danger gradually increases as the capital ratio declines. A policy of Prompt Corrective Action may specify graduated intervention by regulators with pre-determined responses triggered by capital thresholds. Several countries have such rules of intervention (Basel Committee, 1999).

The need to sustain the credibility of supervisory agencies creates a strong case against forbearance. The overall conclusion is that there should be a clear bias (though not a bar) against forbearance when a bank is in difficulty. While there should be a strong presumption against forbearance, and that this is best

secured through having clearly-defined rules within a PCA framework, there will always be exceptional circumstances when it might be warranted in the interests of systemic stability. However, when forbearance is exercised the regulatory agency should, in some way or another, be made accountable for its actions.

A key issue in the alignment of incentives in PCA is the objectives of the authorities. If, as in the US, the principal objective is the minimisation of the potential loss to the deposit insurance fund, then there will be substantial alignment among the aims of the SHMs. There is a slight misalignment even in the US case as the FDIC succeeds to the claims of the depositors in the event of failure and moves to the top of the priority list. The groups with the sharpest incentives under PCA will be those who lose first under failure, namely, shareholders, who are wiped out, the subordinated and uninsured creditors/depositors and the employees who fear for their jobs. In many EU countries the deposit insurance fund has no such ability to affect the corrective action applied by the bank and has to take its place along with other unsecured creditors. Indeed, since it holds a contingent liability it can do relatively little to protect its position, as it has no particular access to market pressure. Other creditors have the ability to withdraw or at least increase the price of their lending along with the risk. In some cases deposit insurers can increase the price in the form of increasing premiums to those whose risk has risen but in others, premiums are uniform across categories of banks.

It would be better for market discipline, as Eisenbeis and Wall (2002) suggest, if there could be rather wider incentives for the contributors to the deposit insurance fund. In the event of failure the surviving banks have to replenish the fund. If they have a continuing interest in the performance of the fund then they will also have an incentive to see the programme of PCA work. Thus for example, if the fund has a low level of claims such banks could be entitled to a rebate on their premiums each year. Since other banks are the most likely injectors of capital into a bank in difficulty, there is then an incentive for them to find the least-cost route since they may end up paying one way or another. If the bank fails they pay, if the hole is larger rather than smaller they pay more, if they acquire they pay and if a competitor acquires the bank in difficulty they may pay if their competitive position is worsened. Such neat alignments are more difficult in smaller countries, where major domestic banks may be excluded by the competition authorities from making an acquisition under PCA, or where resources may be such that only foreign banks can finance the acquisition. Nevertheless, exposing the taxpayer alone to the primary loss is unlikely to maximise SHM incentives.

A major discrepancy in the system comes through the pressures for delay rather than prompt action. Bank losses tend to be cyclical and indeed under Basel 2 the pressures on them may be procyclical, especially if ideas, such as dynamic provisioning that can mitigate the tendency, are not permitted or encouraged.

There is therefore strong pressure, particularly in times of more general stress to the banking system, to try to prolong action until the economy picks up. At that point firms may be able to service impaired loans again, the costs of capital may fall and the ability of others to take on problem banks will improve. The authorities may have similar systemic concerns that the revelation of problems in the short run and indeed attempts to resolve them through shrinking under PCA, may run the risk of exporting a more general debt-deflation spiral. Growing a bank back to better capitalisation rather than shrinking it may have a variety of attractions for its owners and managers.

As the Japanese example makes clear, it is by no means obvious that deferring the problem reduces the overall cost. Indeed the uncertainty for those involved with contingent liabilities may both increase the cost and impair the chance of the economic recovery on which the whole strategy is based.

6 The role of market discipline

Monitoring is not only conducted by official agencies whose specialist task it is. In well-developed regimes, the market has incentives to monitor the behaviour of financial firms. The disciplines imposed by the market can be as powerful as any sanctions imposed by official agencies. The disciplining role of the markets (including the inter-bank market) was weak in the crisis countries of South East Asia in the 1990s. This was due predominantly to the lack of disclosure and transparency of banks, and to the fact that little reliance could be placed on the quality of accountancy data provided in bank accounts. This is not an issue for less developed countries alone. For instance, market discipline has not operated efficiently in Japan due largely to insufficient financial infrastructure (weak accountancy rules, inadequate disclosure etc).

Several parties are potentially able to monitor the management of banks and other financial firms: owners, bank depositors and customers, rating agencies, official agencies, and other banks in the market. In practice, excessive emphasis has been given to official agencies. The danger in this is that a monopolist monitor is established with many of the standard problems associated with monopoly power. There may even be adverse incentive effects in that, given that regulatory agencies conduct monitoring and supervision on a delegated basis, the incentives for others to conduct costly monitoring may be weakened.

The merit of increasing the role of market discipline is that large, well-informed creditors (including other banks) have the resources, expertise, market knowledge and incentives to conduct monitoring and to impose discipline. A further advantage to having agents other than official supervisory bodies monitor banks is that it removes the inherent danger of having it conducted by a

monopolist with less than perfect and complete information with the result that inevitably mistakes will be made. A monopolist supervisor may also have a different agenda than purely the maintenance of financial stability. It has been noted that "Broader approaches to bank supervision reach beyond the issues of defining capital and accounting standards, and envisage co-opting other market participants by giving them a greater stake in bank survival. This approach increases the likelihood that problems will be detected earlier ... [it involves] broadening the number of those who are directly concerned about keeping the banks safe and sound" (Caprio and Honahan, 1998). Strengthening the role of market discipline may also limit the danger of official forbearance. In addition, Caprio (1997) argues that broadening the number of those who are directly concerned about the safety and soundness of banks reduces the extent to which insider political pressure can be brought to bear on bank regulation and supervision. As neither the market nor regulatory agencies are perfect, the obvious solution is to utilise both with neither having a monopoly of wisdom and judgement.

7 Limits on market discipline

While market discipline is potentially powerful, it has its limitations. This means that, in practice, it is unlikely to be an effective complete alternative to the role of official regulatory and supervisory agencies:

- Markets are concerned with the private costs of a bank failure and in principle reflect the risk of this in market prices. The social cost of bank failures, on the other hand, may exceed the private cost and hence the total cost of a bank failure may not be fully reflected in market prices.
- The private cost of market monitoring and information collection may exceed the private benefits to those undertaking it.
- Market discipline is not effective in monitoring and disciplining public sector banks.
- 'Free-rider' problems may emerge.
- The market is able to price bank securities and inter-bank loans efficiently only to the extent that relevant information is available, and in many cases the necessary information is not available. Disclosure requirements are, therefore, an integral part of the market disciplining process.
- It is not self-evident that market participants always have the necessary expertise to make risk assessment of complex, and sometimes opaque, banks. In addition, there are some areas within a bank (eg its risk analysis and control systems) where disclosure is not feasible.

– In some countries, markets in debt of all kinds (including securities and debt issued by banks) are limited, inefficient and cartelised.
– When debt issues are very small it is not always economic for rating agencies to conduct a full credit rating on a bank's subordinated debt.

The conclusion, therefore, is not that market monitoring and discipline can effectively replace official supervision, but that it has a powerful role, which should be strengthened within the overall regime.

8 A problem of assessment

At the point in the process of decline in a bank that the authorities become concerned about its possible failure in the sense that the insurance fund may be called upon to pay out insured depositors, the nature of the valuation also changes. The exposure of the insurance fund depends upon the ultimate value of the bank under insolvency, a value that may not be revealed for many years, as insolvencies are typically very slow. The stock of bad assets acquired in the Finnish banking crisis of 1991/2 has still not been finally disposed over ten years after the event. The problem thus applies even if the authorities decide on a bailout and acquire the bad assets through purchase and assumption or through loans to a continuing bank.

The value will therefore remain hypothetical until the process is completed. Thus at the time of taking decisions, whether under PCA or at the point of insolvency, those involved have to use other valuations of the bank. Technical, book valuations are likely to be least helpful in these circumstances, as they give no real indication of the price of the various alternatives. Market valuations are likely to be the most useful. There is a temptation to argue that because it is very difficult to value various of the assets of the bank and indeed some of its contingent liabilities, that this route should not be followed. Ideally, marking to market would provide the most helpful valuation for both potential private sector solutions and for the authorities in trying to decide when to intervene. One objection placed on mark to market is that it places too harsh a valuation on the bank's assets as there will inevitably be some element of a fire sale valuation, as the time for decision-making is short. However, those involved are entitled to take a different view if they are prepared to take a longer time horizon than the market as a whole and hold the assets to maturity or at least until the market picks up. This is precisely what a central bank will do in trying to value collateral. Since it is unlikely to face short-run liquidity constraints itself it can wait to resell assets. However, the LOLR facility is designed only to come into effect when the market

is not working and hence to offer short-run lending at a margin above market rates.

Marking to market is clearly appropriate if the bank's alternative in these circumstances is to realise its assets in an effort to meet the demands caused by withdrawing depositors and creditors. If such a valuation can be used then it will push the SHMs, including the authorities, the shareholders and the creditors into action earlier. The value of the bank as a going concern will reflect the expectation that the authorities will intervene and close the bank as soon as the apparent net worth on their assessment of the current valuations reaches zero. Mayes et al (2001) and Mayes and Liuksila (2003) argue that the intervention point should be as near to zero as possible, so that the degree to which a haircut has to be applied to the claims on the bank to restore solvency is small.[1]

In these circumstances the authorities still have to make a valuation of the bank in order to apply the appropriate haircut to restore solvency. Since the bank is not going to be made insolvent, the value under insolvency will always remain hypothetical. Nevertheless, if the authorities have under-valued the bank and applied too harsh a haircut, the shareholders and creditors who have thereby been harmed will have a legitimate claim on the authorities for compensation. Similarly, if the authorities impose too small a haircut, they will expose themselves to the residual loss, since one requirement of the scheme is that the authorities would have to guarantee the new bank established immediately after the haircut, if they are to avoid a run and existing and new customers are to have confidence. Hence either way round the authorities have a strong interest in obtaining accurate valuations of the bank in the short run.

In the event of a problem that is initially small there may be a fairly extended period where these economically meaningful, more market based valuations can be obtained. During this time the provisions of PCA will be in force if the bank has breached the regulatory capital requirements. Of course, if the problem is immediate and the issue has to be resolved over the weekend then the assessments will be that much cruder. Either way, there is a strong incentive to try to bring accounting conventions and valuation rules as close to market values at possible so that the operation of the market can be eased and the intervention of the authorities matched as closely as possible to those market valuations.

We noted earlier, the advantages of the feedback from market valuations to supervisory actions. In so far as regulatory capital is not a good measure of net

[1] MHL (2001) suggest a simple three step framework for handling insolvent banks that could lead the market to believe that there will be no bailout with taxpayers money. 1) A requirement to intervene early (when the net worth of the bank falls to zero). 2) A takeover of the bank by the authorities from the existing owners and a writing down of the claims on the bank (following the absolute priority principle) sufficient to restore positive net worth. 3) Reopening of the bank without interruption of trading, with a government guarantee of the new entity, under administrative management until such time as private sector ownership can be reinstated.

worth, particularly because it can be a lagging indicator of the bank's actual position, the market valuations will be helpful to the authorities for gearing up supervisory attention and the sort of regulatory inspection necessary for a formal triggering of the provisions of PCA. The better the quality of the information about the bank, the more likely it is that market prices will reflect the position in prospect.

9 The role of deposit insurance

There have been several recent studies that help illuminate the relationship between market discipline and PCA through the medium of the deposit insurance arrangements. While the deposit insurance fund does not necessarily have to be the agency responsible for ensuring PCA, the coincidence of incentives makes this attractive. Certainly, as Mayes and Liuksila (2003) point out, it is very difficult to get *prompt* or indeed any corrective action if there are multiple authorities involved, particularly if they run across borders. Gruben et al (2002) and Beck (2003) consider two related issues: the extent to which the absence of market discipline (often due to the existence of deposit insurance) induces banks into risky behaviour; and the difference that the existence of market discipline makes in determining the impact that financial liberalisation has on banks adopting higher risk profiles. The analysis is based on an empirical investigation of six countries with different deposit insurance regimes: Canada, Mexico and Argentina (Gruben et al, 2002) and Brazil, Germany and Russia (Beck, 2003). This is only a limited sample of countries and, therefore, care is needed when generalising to other countries. Nevertheless, subject to this reservation, the analysis is instructive and yields useful insights. Gruben offers three main conclusions. First, in countries where market discipline arrangements are weak (Canada and Mexico) lending risks rose significantly in the post-liberalisation period. Second, when market discipline is imposed by depositors, banks did not behave hazardously and risks did not rise in the post-liberalisation period (Argentina). In this respect, the results are in line with those of Demirguc-Kunt and Detragiache (1998) who find that, while financial liberalisation increases the probability of a banking crisis, the probability is reduced the stronger are the institutional pre-conditions for liberalisation and market discipline. Third, there is a correlation between depositor-imposed discipline and the predisposition of banks towards risky behaviour. The overall conclusion is that liberalisation increases risk when market discipline is weak.

Beck is concerned with the incentive structure rather than the performance of the deposit insurance system in encouraging action prior to insolvency. He argues that the Russian case is actually perverse in that the authorities delayed rather than

encouraged action and when they have intervened have tended to do so "in favour of shareholders and managers who have taken the decisions that led to fragility in the first place." (p. 112). Germany, on the other hand, by having a completely private deposit insurance system encourages existing banks to find solutions for problem banks because they know they will ultimately have to pay anyway.

In the case of Mexico there also seems to be a perversity in that, with the one-way-bet option of deposit insurance, weakness in asset quality seems to have induced more substantial deposit growth. It is not clear what the causal mechanism is. The normal model of the moral hazard associated with deposit insurance operates through interest rates, in that banks are able to finance high-return and risky loans by inducing a higher deposit inflow by offering a slightly higher rate of interest on deposits but without the incorporation of the full risk premium which is unnecessary as depositors are protected.

Gruben's analysis is helpful in that it illustrates what happens when one changes the prevailing system to one where the market has a greater role to play in a less restricted system. Two qualifications are made: first, about the nature of increased risks in the post-liberalisation period, and second, a distinction needs to be made between the *stock-adjustment* effect and the *steady-state* effect of liberalisation. With respect to the nature of risks in the post-liberalisation period, the subsequent rise in the risk profile of banks may not be a reflection of ex ante intentions to take more risk, and banks may not necessarily be aware they are taking more risk. One of the characteristics of liberalisation (though it depends upon the precise nature of the liberalisation process and the nature of the controls that were previously in force) is that it is often followed by a period of rapid bank lending and a herding instinct towards balance sheet growth as a business strategy following the abandoning of regulatory-imposed restraints. This has been found in many countries including in the Nordic region prior to the Nordic banking crises of the early 1990s. Higher risk profiles ex post may simply reflect the same behaviour as in the past becoming more risky when all banks undertake the same behaviour simultaneously and on a larger scale than previously. Unanticipated changes in either the banking or economic environment following liberalisation (such as a sharp acceleration in asset-price inflation) can make given bank portfolios inherently more risky than was previously the case. This raises the very important point that the timing of the changes in the existing regime to one where early action, including early exit, and no taxpayer bailout is the expected norm, is crucial. If banks are already known to be weak, an increase in the likelihood of failure could generate a run on the banking system in general, as in Indonesia in 1997.

A distinction needs to be made between liberalisation that induces banks to choose to take more risk, as opposed to liberalisation which makes the environment more risky and banks to under-estimate the risks they take. In this way, the risk profile of banks may increase either because they knowingly choose

to take more risk or because, for various reasons, they underestimate and under-price the risks they are taking. Simply because risks are observed to rise after a period of liberalisation does not in itself mean that liberalisation raises the risk appetite of banks. Here is a second 'black box': what are the precise mechanisms that operate between liberalisation and subsequent bank distress? In particular, to what extent is subsequent bank distress the result of banks adopting a greater risk appetite, the environment becoming more risky, or simply banks underestimating and under-pricing risks perhaps because they misunderstand the new market environment?

A second distinction needs to be made between the *stock-adjustment* effect of liberalisation (the impact on behaviour as the banking system moves from a controlled to a more liberalised environment – the transition period) and the *steady-state* characteristics of a liberalised financial system. There are many reasons why the risk profile of banks might rise in the transition period: banks expand their loan portfolio very sharply in the immediate aftermath of liberalisation and risk analysis systems are often not suited to the new environment; a balance sheet growth momentum develops in a phase of generalised euphoria following liberalisation; rapid asset growth appears to be very profitable in the short-run; as all banks expand loans simultaneously, and herd behaviour emerges, behaviour that might involve acceptable risk for individual banks acting alone, becomes excessively risky when all banks behave in the same way; liberalisation usually implies more competition and the erosion of economic rents which in itself may induce banks into more risky behaviour than in the pre-liberalisation period.

In the stock-adjustment phase (ie during the period immediately following the liberalisation process) uncertainty is created, as financial firms are unfamiliar with the characteristics and management requirements of the new regime. Previously protected institutions need to adapt behaviour though this may occur only with a time lag. New behaviour patterns need to be learned. Some mistakes during the process of liberalisation occur because banks do not adjust quickly enough to the requirements of the new regime. Behaviour which is appropriate under one regime may be inappropriate in another (see Llewellyn, 2000 and Benink and Llewellyn, 1994 for a more formal discussion). At the same time, official supervisory arrangements may not adjust sufficiently to the new environment. Bisignano (1998) argues that this represents a combination of 'excess momentum' by the private sector (banks) and 'excess inertia' on the part of supervisory authorities. Thus if the market discipline and PCA are not introduced in a balanced manner, the pressure from the market could drive the authorities towards bailouts and forbearance rather than away from them.

The reservation about the conclusions that fragility follows liberalisation is that the characteristics of the immediate stock-adjustment phases (the transitional phase of moving from one regulatory environment to another) do not necessarily

apply once the new steady-state has been reached. Many of the banking crises that have emerged following a period of liberalisation have been associated more with the uncertainties and mistakes during the transition phase rather than the inherent characteristics of a liberalised financial system. This can be seen in the now profitable banking systems in Nordic countries following the extreme distress experienced in the immediate post-liberalisation period.

10 Market discipline in practice

Birchler and Maechler (2001) presents an interesting case study of the discipline imposed by bank depositors in Switzerland. The main hypothesis underlying the empirical tests is that "depositors exert market discipline by monitoring their banks and by withdrawing *uninsured* deposits whenever performance of their bank is no longer satisfactory. Bank fundamentals should thus help to explain the amount of *uninsured* deposits a bank is able to attract." (emphasis added). The authors use quantity indicators (supply of bank deposits) rather than price indicators. The key conclusions may be summarised as follows:

- contrary to conventional wisdom, depositors do seem to monitor their banks;
- uninsured savings deposits react to business conditions and deposits are withdrawn when the fundamentals of the bank deteriorate;
- depositors responded to changes in the Swiss deposit protection system;
- depositors were found to be sensitive to institutional differences across banking groups, and
- state guarantees have tended to weaken market discipline.

While these conclusions suggest that market discipline does work when the conditions are propitious, one also suggests that depositors do not always respond rationally (see condition (5) in the paradigm outlined in section 3). The episode concerns how depositors responded in the event of a sharp rise in bank lending in a bubble period. Depositors did not seem to be concerned about the banks' strong credit growth during the real-estate bubble before 1994 though they become concerned once the bubble had burst. This is a reservation to the efficiency of this form of market discipline. There is ample evidence that problems build up during a period of sharp asset growth most especially when this is associated with real-estate euphoria. As put by the authors: "The fact that investors use their information, does not imply that they use it correctly. … Market discipline thus does not shield banks and depositors from irrational swings in general market discipline." This, of course, is not an argument against creating an enhanced role for market discipline in the overall regulation and supervision of banks. It does,

however, suggest that total reliance cannot be placed on it, and that all the mechanisms within the paradigm outlined at the outset need to be strengthened.

The encouraging aspects of the conclusions are that, contrary to conventional wisdom, depositors are in a position to monitor banks and to respond to bank-specific risks, that quantity indicators rather than price signals have a role in potentially disciplining banks, and that, when conditions are conducive, market discipline can be a viable disciplining mechanism on banks. Combined with the evidence from Boyle et al (2002) – that banks in Denmark were realistic in disclosing their potential losses during the banking crisis and did not try to hide losses in the hope that the problem might ease in the future – gives some confidence for the way in which more market discipline backed up by more disclosure might operate in practice.

11 PCA and market discipline in practice in weak regimes

Aristobulo de Juan (2002) considers the applicability of PCA to countries with poor banking supervision, and the necessary conditions for PCA regimes to be feasible and effective. While accepting the case for PCA, and welcoming the FDICIA arrangements, the author argues that final judgement must be suspended until they have been put to a real test. Care is needed when transplanting models such as PCA and FDICIA to other countries where the conditions are different and the necessary prerequisites for success might be absent. Country-specific considerations always need to be taken into account when considering the relevance and suitability of such regimes. These regimes may be suitable only for a small number of developed countries. In many other countries the necessary prior conditions for a FDICIA and PCA regime are not in place. Beck (2003) is rather more optimistic in this regard.

A major practical constraint is that availability and reliability of data are often insufficient for PCA. PCA will not work effectively when supervision is inadequate and unreliable and when, in other ways, supervisory arrangements are weak. Aristobulo de Juan emphasises in particular the accuracy of data on the true value and quality of bank assets (and hence of capital) which in many countries is weak. In many countries the stated value of bank assets (and hence capital) is something of a fiction. This is often the result of questionable accounting procedures and norms.

On the basis of experience in many countries, de Juan outlines several pre-requirements and pre-conditions for an effective PCA to be implemented:

- accurate and transparent data on the true position of banks and, in particular, on the quality of their assets;
- as strong supervision is a precondition for effective PCA, there need to be rigorous supervisory arrangements including on-site inspections;
- a prerequisite for an efficient assessment of solvency and good asset classification is a good and properly implemented accounting system which, according to the author, is conspicuously absent in many countries;
- sound authorisation conditions for banks;
- effective reporting to supervisors;
- adequately resourced and suitably remunerated supervisory agencies;
- a political will to be realistic about the status of banks and their true financial predicament coupled with a political willingness to act decisively and timely;
- institutions and mechanisms in place for effective resolution of problem banks.

These are demanding conditions and, for this reason, the author concludes that PCA may in practice not be feasible at the current time for a large number of countries.

12 Concluding remarks

The main purpose of this paper has been to consider the required conditions for market discipline to operate effectively and efficiency. A set of questions was outlined at the outset. Five general conclusions emerge from our analysis:

(1) market discipline does work when the conditions are propitious and when it is allowed to work;
(2) conversely, market discipline frequently does not work when the required conditions are not met and when regulatory intervention has perverse effects on the required conditions for market discipline to play its role,
(3) governments and supervisory agencies have the capacity to impede the operation of market discipline but also have powers to enhance its role: the former should be minimised and the latter maximised,
(4) deposit insurance has the effect of lowering the incentives for market discipline to operate, and
(5) the absence of market discipline imposes avoidable costs.

More widely, we can suggest:

- the relationship between market discipline and intervention arrangements in the event of bank distress can be complementary or contradictory;
- PCA strategies and market discipline are essentially complementary and a credible PCA regime has the power to enhance the role of market discipline;
- there is an overwhelming case for both enhanced market discipline and PCA in creating conditions for stable financial systems;
- PCA regimes need to be viewed as part of a more general policy of enhancing the role of market discipline;
- the evidence is that, if the conditions are appropriate, market discipline can be an effective part of an overall regime designed to bolster systemic stability;
- conversely, if the necessary conditions are absent, market discipline fails to work effectively;
- as recognised in the proposed Basel 2 Capital Accord, information disclosure and transparency are key requirements for market discipline to operate effectively;
- there are, nevertheless, limits to what can be expected from market discipline and hence it is not an alternative to effective regulation and supervision by official agencies.

While the proposed Basel 2 Capital Accord makes reference to the need for early intervention in the event of bank fragility or potential fragility, and Pillar 3 focuses on the role of market discipline, it remains to be seen how much emphasis is given to these in practice. There is also a danger that some aspects of Pillars 1 and 2, and most especially the detailed and prescriptive nature of some of the rules in Pillar 1, might in practice weaken market discipline mechanisms.

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