Multiple safety net regulators and agency problems in the EU: Is Prompt Corrective Action partly the solution?

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Abstract

Prompt Corrective Action (PCA) provides a more efficient mechanism for dealing with problem banks operating in more than one European country. In a PCA framework, a bank's losses are likely to be substantially reduced. This reduction in the losses to deposit insurance and governments will improve the problem of allocating those losses across the various insurance schemes and make it less likely that any deposit insurer will renege on its obligations in a cross border banking crisis. This paper presents a stylized mechanism aimed at dealing with the cross-border agency problems that arise in supervising and resolving cross-border banking groups in the European Union (EU). The authors assume that PCA policies have been implemented by the national supervisors and explore the institutional changes needed in Europe if PCA is to be effective as an incentive compatible mechanism. The paper identifies these changes starting with enhancements in the availability of information on banking groups to supervisors. Next, the paper considers the collective decision making by supervisors with authority to make discretionary decisions within the PCA framework as soon as a bank of a cross-border banking group falls below the minimum capital standard. Finally, the paper analyzes the coordination measures that should be implemented if PCA requires the bank to be resolved.

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Introduction

The European Union (EU) has been fostering the development of regional and pan-European banks as a part of its efforts to develop a single financial market.[1] However, the creation of such large banks leaves the region vulnerable to financial distress or failure of an important cross-border bank.[2] This means that the existing national authorities, including supervisors, central banks and ministries of finance have to work out together how to handle these banks and any problems they may encounter. Cross-border conflicts about appropriate bank supervision are inevitable in this context, especially when large bank groups become systemically important in more than one country and each of the group's national supervisors are accountable to a different group of voters and taxpayers.[3]

While the EU has harmonized some aspects of banking policy, such as capital regulation and minimum deposit insurance requirements, there are no standards for determining when a bank is insolvent, no common standards for bank resolution, no agreement on how to share any costs of recapitalization or resolution, no clear common objective of what is to be achieved in resolution, and no common decision making structure across countries.[4] The result is that the resolution of a failing cross-border bank could be determined by the laws and decisions of the bank's home supervisor without any obligation to take in account the impact on other affected countries or any direct accountability to those states or the EU as a whole.

This paper takes the view that the weaknesses in the current system for dealing with failing cross-border banks can be addressed by harmonizing the supervisory treatment of distressed and failing banks, including a mechanism to coordinate supervisory policies across national boundaries. This approach would be consistent with the existing decentralized bank supervisory structure in the EU. Moreover, the creation of a common rule book and mandatory coordination of actions on cross-border banks would limit the

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[1] We refer to the European Union (EU) throughout but these remarks actually apply to the wider European Economic Area (EEA) including Iceland, Liechtenstein and Norway, where the same legal framework is in force.

[2] While this paper is set in an EU context, the same issues also arise in other cross-border banking contexts. What is unique about Europe is the range of possible solutions. In contrast to most other cross-border banking situations, the goal of a single financial market precludes European countries from adopting a New Zealand style solution (as discussed by Mayes (2006b)) that requires foreign banks be able to operate as stand-alone entities. On the other hand, EU Directives create the potential for implementing common rules and cross-border coordination that would be very difficult to adopt in other multilateral settings.

[3] We do not attempt a full definition of systemic importance but use the behavioral that a bank is of systemic importance in a particular country if the authorities are not willing to see some or all of its operations close without intervention. Although similar in some respects to the concept of 'too big to fail', we place no restriction on whether the bank's current legal personality might not be terminated and the bank reopened in full or in part under new ownership without any cessation in the systemically critical functions.

[4] Under insolvency the job of the receiver is to maximize the value of the insolvency estate. In bank resolution in the US the FDIC is required to act so as to minimize its own losses. But in the special case of large banks, where there might be a wider impact on the economy, other factors could the taken into account. (This is known as the Systemic Risk Exemption (Mayes, 2006a), which has not as yet been invoked.) Such objectives are typically not spelled out in the EU and not agreed among the member states.

scope for self-interested behavior by national supervisors at the expense of other countries and facilitate ex post accountability.[5] [6]
A more obvious and more radical solution would be to introduce an EU-level regime to handle these cross-border banks but in recognition of the lack of political enthusiasm for this at present, we build on the existing supervisory and other regulatory institutions in the EU to the extent feasible. We identify gaps between what presently exists and what is needed for effective prudential supervision, deposit insurance and reorganization of cross-border banking groups, some of which can only be covered by substantial changes to existing legislation in the EU countries. While the general approach to disciplining large cross-border banking groups advocated in this paper provides an opportunity for an effective system in the absence of EU-level institutions, this paper does not consider the desirability of EU-level institutions and arrangements should they become politically feasible.

The current efforts to work out burden-sharing arrangements are likely to aggravate the conflicts between home and host country supervisors. The problem with burden sharing is that it can increase the exposure of host countries to home country supervision while reducing the cost to the home country of inadequate supervision and supervisory forbearance. As such, it is more likely to aggravate the existing agency problems than to mitigate those problems.

A critical element underlying our proposal is the adoption of an effective version of what is labeled 'prompt corrective action' (PCA), as the common rule book for dealing with inadequately capitalized and failing banks.[7] First adopted by the United States, PCA provides a set of mandatory and discretionary corrective actions to be taken by bank supervisors as a bank's capital ratio declines, culminating in resolution (withdrawal of the bank charter and takeover of the bank by the authorities) before the bank's capital reaches zero. European Shadow Financial Regulatory Committee (1998), Benink and Benston (2005), Mayes (2004), and Nieto and Wall (2006) all discuss the potential benefits of a PCA type structure at the EU Member State level but without coordinating mechanisms.

The advantages of PCA for dealing with cross-border banking problems are not restricted to the collaborative approach we explore. PCA would also facilitate the development of EU level supervision and deposit insurance (Eisenbeis and Kaufman, 2006). PCA seeks to avoid the need for burden sharing in two ways. First, it reduces the risk of bank failure by requiring firm supervisory intervention at relatively high levels of capital to try to stop the problem from escalating. Second, if a bank's condition continues to deteriorate, PCA requires that its charter be taken away while the bank's regulatory capital is still positive. Thus, PCA would eliminate, or at worst substantially reduce, the burdens to be shared under any burden sharing arrangement. In our context, the minimum supervisory

[5] The related question of the relationship of the bank supervisor to the lender of last resort when dealing with cross-border banking groups is also important but it is beyond the scope of this paper. See Repullo (2004), and Kahn and Santos (2002, 2004).
[6] Čihák and Decressin (2007) offers an appraisal of a European Banking Charter, which is a fully fledged EU-level supervisory regime that would operate alongside the national regimes.
[7] The access to a broad and equal range of supervisory measures throughout the EU is in line with the objective of supervisory convergence of the Committee of European Banking Supervisors (CEBS).

responses to the deterioration in a bank's condition and the additional discretionary actions that may be taken, which would be laid down in the common PCA rule book, both set bounds to the cross-country supervisory coordination problem. PCA provides a clear goal which facilitates supervisory accountability both to the supervisor's own government and to other supervisors and limits governments' exposure to losses from a failed bank by setting a clear closure rule.

The form of PCA applied in the US poses two problems for its implementation in Europe. First, PCA was designed to work with the institutional structure of U.S. bank regulation and U.S. banks. Nieto and Wall (2006) identify several institutional changes that would be needed in European bank regulatory institutions in order for PCA to be effective (described in the second section of this article). Second, acceptance of PCA is often taken as acceptance of the US practice of using the leverage ratio as the primary measure of a bank's financial condition.[8] This is not necessary. While the leverage ratio has some advantages, it also has the increasingly important disadvantage of not recognizing the complex risk management strategies adopted by leading banks and activities recorded off-balance sheet.[9] An effective PCA could be based entirely on a transparent system of risk-based capital measures.[10]

The paper is organized as follows. The first section analyzes the potential problems with the current institutional framework of bank supervision. The second section evaluates the potential contribution of adopting a PCA type regime in setting minimally acceptable supervisory responses. As the second section discusses, PCA was developed for banks operating in the US and, as such, does not address some important cross-border concerns. Thus, the third section considers additional measures that may be taken to supplement PCA and make it more responsive to cross-border issues. After the last section concludes, an Appendix develops several scenarios that highlight the differences between the current European situation and a Europe that had adopted PCA and authorized colleges of the relevant supervisors to make any discretionary decisions required under PCA.

1. Supervisory discretion and cross-border banking

Cross-border groups increasingly operate as integrated entities with provision of services, such as risk management, liquidity management, data processing, and loan evaluation, each centralized in one part of the group (though not all services are necessarily centralized in the same country). They often do not have a neat structure of a parent and

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[8] However, the U.S. legislation authorizing PCA (the Federal Deposit Insurance Corporation Improvement Act of 1991, FDICIA) allows the use of risk-based capital standards to categorize a bank's condition and U.S. regulations use risk-based thresholds for all but the lowest level of capital adequacy (critically undercapitalized) as set out in Table 3, so even there the importance of the leverage ratio should not be exaggerated.

[9] The principal advantage of the leverage ratio is that simplifies the monitoring of supervisory implementation of PCA.

[10] Whatever capital measures are used, we recommend that it be backed up by the supplemental use of observable market-based risk measures. Valuations can become particularly distorted when an institution comes under pressure and a conservative approach that tends to indicate the existence of problems is to be preferred for resolution authorities.

free-standing locally incorporated subsidiaries, but a complex interweaving of branches and subsidiaries that cannot survive on their own. In this context, bank supervisory structures must also be structured for efficient cross-border operations. The need for efficient cross-border prudential supervision implies someone has to be clearly responsible, it needs a clear objective whose attainment can be transparently and objectively assessed and, most importantly, it needs the tools and powers to undertake the tasks efficiently and effectively in practice and in prospect. This has long been recognized in the work of the Basel Committee of Banking Supervisors (Basel Core Principles for Effective Banking Supervision, 1997)[11]. Some authority has to take the lead, normally one in the 'home' country where the bank or holding company is headquartered, and the other, 'host' country authorities have to co-operate with them and with each other if the system is to work. Moreover, since there are multiple authorities in each country, whose range of powers and competences often do not match, this coordination is very difficult to achieve.[12] Each country remains responsible for its own financial stability, yet, where there are large cross-border institutions such stability will depend on the actions of the authorities in other countries. In a crisis, national authorities will tend to put their own national interests first, so any process of recognition of international claims in advance needs to be very carefully structured so that the joint actions match an agreed means of addressing and, where necessary, trading off the possibly conflicting interests of the countries involved.[13]

The present structure of supervision, deposit insurance coverage and bank resolution in the EU largely follows the legal structure of banking groups. As shown in Table 1, prudential supervision, deposit insurance and resolution are generally the responsibility of the regulators of each country in which a bank is incorporated. The principal exceptions are that: (1) the home country supervisor of a bank parent will exercise supervisory authority over a *bank subsidiary* incorporated in another country through its supervision of the consolidated group and the home country supervisory may be the sole prudential supervisor if the host country supervisor of the subsidiary delegates its responsibility,[14] and (2) the host country deposit insurer of a *branch* may supplement the coverage provided by the insurer of the home country of the bank to bring it up to the host country's level.

The problem with supervising banking groups as collections of separate legal banking charters is that the legal approach does not reflect how these organizations function in

[11] The Basel Core Principles for Effective Banking Supervision have been revised in 2006.
[12] This mismatch of responsibilities relates to the different financial sectors – insurance, banking, securities markets – to the different functions – prudential supervision, deposit insurance, crisis resolution – and to the powers each holds under the variety of legal and regulatory systems that currently exist.
[13] If there is a threat to the financial system as a whole from bank failure or distress, countries tend to permit special measures to be taken, as in the case of the systemic risk exemption in the United States (Mayes, 2006a).
[14] This delegation is contemplated in Article 131 of the Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast) (Official Journal of the European Union L177/201 30 June, 2006) so called CRD. In addition, according to Article 44, the home country authorities are responsible for the prudential supervision of consolidated banking groups including bank subsidiaries and affiliates in other Member States.

practice. A well-known example of cross-border banking regional integration is Nordea (see Table 2), which is currently organized in the form of subsidiaries that operate with a highly integrated operation. This is set to go further if Nordea changes to a branch structure across the whole region under the European Companies Act, as currently planned. Indeed such a change in Nordea would make its legal form a much closer match to the actual structure of its current operations. It is actually an illusion that many subsidiaries can somehow be cut off from their parent in the event of difficulty and asked to function on their own, with or without statutory management (Mayes, 2006). As Schmidt Bies (2004) puts it: 'entities can be created within the structure of the group to transfer and fund assets [that] may or may not be consolidated for accounting purposes, depending upon their structure.' (p.1). The idea that the various deposit insurers or supervisors can take independent decisions to minimize their losses in these circumstances is thus not realistic.

The interdependence of prudential supervision of banks operating across borders creates a principal-agent relationship between the society (voters and taxpayers) of one country as principal and the various supervisors of the rest of the banking group as the agents.[15] The delegation approach has also been used recently to debate financial supervisory issues (Bjerre-Nielsen, 2004). The standard set of principal agent problems are made substantially worse when some of the principals have no direct authority over the agent, as when supervisors in one country may expose the taxpayers in another country to losses. The problem is that the agent's incentives will be to follow the goals of the principal that has some direct authority over the agent. That is, when conflicts arise among the principals, the supervisor (agent) is likely to follow the perceived interests of their own country's government and voters (principle). Eisenbeis and Kaufman (2006) describe the agency problems and conflicts of cross-border banking in general and, in particular, in the EU.

2. Structured Early Intervention and Resolution /Prompt Corrective Action as a limit on prudential supervisors' discretion

SEIR was first laid out by Benston and Kaufman (1988) as a means of minimizing deposit insurance losses by requiring a series of mandatory supervisory interventions as a bank's regulatory capital ratio falls.[16] Although SEIR was not intended to prevent losses due to massive fraud or large drops in portfolio values, it does provide a mechanism for limiting losses due to gradual deterioration of banks' portfolios. One way that this proposal could work is illustrated in table 2 of Benston and Kaufman (1988, p. 64), in which they propose that banks be placed in one of four categories or tranches: 1) "No problem", 2) "Potential problems" that would be subject to more intensive supervision and regulation, 3) "Problem intensive" that would face even more intensive supervision

[15] See Alessina and Tabellini (2004, 2005) for a discussion of the conditions for the delegation of the tasks to agents. The principal- agent problem has been broadly dealt with in the corporate governance literature in which the typical solutions are covenants (restricting actions of agents-managers) and bankruptcy laws (transfer of control).

[16] See Benston, George J. and George G. Kaufman (1988). For a discussion of the intellectual history of PCA see Benston, G., and Kaufman, G. (1994).

and regulation with mandatory suspension of dividends and 4) "Reorganization mandatory," with ownership of these banks automatically transferred to the deposit insurer. Although the deposit insurer would assume control of the bank, Benston and Kaufman (1988, p. 68) ordinarily would have the bank continue in operation under the temporary control of the FDIC or be sold to another bank, with liquidation only as a "last resort". The deposit insurer would remain at risk under SEIR, but only to the extent of covering losses to insured depositors. However, Benston and Kaufman did not expect such a takeover to be necessary, except when a bank's capital was depleted before the supervisors could act, perhaps as a result of a massive undetected fraud. Because the bank's owners would realize that the supervisors were mandated to take over a bank while it was solvent (3 percent market value of capital-to-asset ratio under the SEIR proposal), the owners had strong incentives to recapitalize, sell, or liquidate the bank rather than put it to the FDIC.[17]

A version of SEIR was adopted under the title prompt corrective action (PCA) with the 1991 passage of the Federal Deposit Insurance Corporation Improvement Act (FDICIA) as shown in Table 3. PCA deals with prudential supervisors´ agency problem by first allowing and then requiring specific intervention by the supervisory authorities on a timely basis.

Whereas SEIR sketches out how supervisors would respond to a drop in capital adequacy, PCA provides a list of actions the supervisors may take and another set of actions the supervisor must take to further the goals of PCA (minimizing losses to the deposit insurance fund). While PCA reduces supervisory discretion as a bank's capital level falls, supervisors retain substantial discretion over almost all banks. Even the "mandatory provisions" often include a significant element of supervisory discretion. For example, while an undercapitalized bank must submit a capital restoration plan, the supervisors have discretion over whether the plan will be approved as "acceptable."

PCA may appear to be simply a set of supervisory corrective measures that should be taken as a bank's capital declines that any country could easily adopt. However, PCA is unlikely to work as intended if a country has not accepted PCA's underlying philosophy or lacks the necessary institutional prerequisites. Focusing specifically on the EU, Nieto and Wall (2006) identify three important aspects of the philosophy underlying PCA: (1) "that bank prudential supervisor's primary focus should be on protecting the deposit insurance fund and minimizing government losses," (2) "that supervisors should have a clear set of required actions to be taken as a bank becomes progressively more undercapitalized," and (3) "that undercapitalized banks should be closed before the economic value of their capital becomes negative." The four institutional prerequisites identified are: (1) supervisory independence, and accountability;[18] (2) adequate

[17] Table 2 in Benston and Kaufman (1998) gives "Illustrative Reorganization Rules" with mandatory reorganization at a 3 percent market value of capital-to-asset ratio. However, the text talks about the possibility that this ratio should be revised upwards.

[18] Independence in Nieto and Wall (2006) refers to the ability of the supervisors to intervene at troubled banks without the need for prior approval of the political or judicial authorities. The accountability arises ex post both in the form of judicial review of the legality of their intervention and to the political authorities for the appropriateness of their decisions.

authority,[19] (3) accurate and timely information; and (4) adequate resolution procedures. They find that European countries currently comply with these institutional requirements to varying degrees.

The adoption of a version of PCA would provide the EU with a set of minimum supervisory responses to violations of the Capital Requirement Directive (CRD).[20] In this regard, PCA´s preventive approach on when and how a supervisor should intervene is broadly in line with the CRD approach.[21] The definition and level of the capital ratios that would trigger mandatory supervisory action and eventually intervention are relevant subjects, which are beyond the scope of this paper. Moreover, the original PCA was designed to address principal-agent problems in the supervision in the US and does not explicitly contemplate the complications introduced by cross-border banking groups. A number of authors discuss the merits of adopting PCA in the EU, including in some cases the recognition of the gains from using PCA in supervising cross-border groups. However, none of these authors (Nieto and Wall, 2006; Benink and Benston 2005; Mayes 2004) and policy analyst recommendations (ESFRC, 2005) explicitly consider the changes needed in the EU if PCA is to be effective in resolving the cross-border agency problems that arise in supervising cross-border banking groups.

3. A Prompt Corrective Action for Cross-Border Banking Groups in the EU

Banks operating under PCA can fall into one of three categories: (1) adequate capital, (2) undercapitalized but still having a good chance of rebuilding its capital, and (3) sufficiently undercapitalized that the bank should be placed into resolution to minimize the losses. Cross-border banking groups that are being supervised by national banking supervisors introduce additional supervisory challenges in each of these three categories. The following subsections consider those challenges and recommends additions and modifications of PCA adopted with the 1991 passage of the FDICIA to address the challenges of cross-border groups in the EU.

[19] Nieto and Wall (2006) refer to the Principle 22 of the Core Principles of Banking Supervision by the Basel Committee on Banking Supervision, which talks about "adequate supervisory measures to bring about timely corrective action when banks fail to meet prudential requirements .... In extreme circumstances, this would include the ability to revoke the banking license or recommend its revocation." Nieto and Wall (2006) go further and support giving the supervisors the authority to revoke the license rather than merely recommend its revocation, as does Mayes et al. (2001).

[20] Directive 2006/49/EC of the European Parliament and of the Council of 14 June, 2006 on the capital adequacy of investment firms and credit institutions (recast). Official Journal of the European Union L177/201 30 June, 2006.

[21] The general concept that supervisors should intervene promptly is reflected in three of the four principles in Pillar II of the Basle II. although PCA goes well beyond them because it establishes leverage ratios that require minimum supervisory action. Moreover, Pillar II contains neither mandatory nor discretionary provisions to replenish capital and turn troubled institutions around before insolvency. Also, it does not contain a closure rule. Those principles in Pillar II are broadly dealt with in article 124 of the CRD. This article is developed in the so called Supervisory Review Process (SRP). SRP requires a review and evaluation of the banks´ risk profile and management system and calls for prudential measures to be applied promptly. Those prudential measures include setting a capital requirement above the Pillar 1 (own funds or Tier 1).

In what follows we focus on the issues to be addressed if any such scheme is to be workable. However, in practice the similarity in the detail of the PCA to be adopted by each country in respect of cross-border banks needs to be considerable if it is to work. As mentioned in the introduction, the same range of supervisory measures to bring about timely corrective action is needed. Triggers for action may readily occur elsewhere in the group. For example, divestiture of an enterprise in one country might be generated by the existence of related risks in another country.

3.1 Assuring accurate and timely information of banking groups financial condition

In order for bank supervisors to use their powers effectively, they must have an accurate understanding of the bank's and banking group's financial condition. A potential problem for a prudential supervisor of a cross-border banking group is that of determining the status of those parts of the group outside its supervisory control.

The need for information sharing among the supervisors is recognized in the CRD, Article 132, which establishes that the:

> competent authorities shall cooperate closely with each other. They shall provide one another with any information which is essential or relevant for the exercise of the other authorities' supervisory tasks under this Directive. In this regard, the competent authorities shall communicate on request all relevant information and shall communicate on their own initiative all essential information. […] Information shall be regarded as essential if it could materially influence the assessment of the financial soundness of a credit institution or financial institution in another Member State. In particular, competent authorities responsible for consolidated supervision of EU parent credit institutions and credit institutions controlled by EU parent financial holding companies shall provide the competent authorities in other Member States who supervise subsidiaries of these parents with all relevant information. In determining the extent of relevant information, the importance of these subsidiaries within the financial system in those Member States shall be taken into account.

This obligation for information expands to encompass also:

> (c) adverse developments in credit institutions or in other entities of a group, which could seriously affect the credit institutions; and (d) major sanctions and exceptional measures taken by competent authorities in accordance with this Directive, including the imposition of an additional capital charge under Article 136 … .

These provisions for information sharing have also been strengthened with the adoption of Pillar 3 of the new Capital Accord.[22] For example, banks are required to report the

[22] Pillar 3 aims to encourage market discipline by developing a set of disclosure requirements which will allow market participants and foreign supervisors to assess relevant pieces of information on the scope of

total and Tier 1 capital ratios for the consolidated group and for significant bank subsidiaries. In this case, the host supervisors of the subsidiaries could use this information (that would be reflected in a market indicator) as justification for triggering consultations with the home country supervisor and/or for undertaking a special examination of the banking group.[23] While the information sharing mandated by the CRD should provide national supervisors with the information they need, ad hoc sharing on a banking-group by banking-group basis is likely to be inefficient and leave room for gaps in information sharing.

The enhanced sharing of information among supervisors is aimed at reducing the incentives of supervisors of the subsidiaries or parent bank to exploit the information to their advantage and it is a precondition for the effective implementation of PCA as a mechanism aimed at resolving the cross-border agency problems that arise in supervising and resolving cross-border banking groups. Mayes (2006b) and Vesala (2005) advocate a policy of information sharing via the establishment of a common data base. At a minimum this data base should contain quarterly consolidated financial statements from all insured banks and their nonbank corporate parents (when one exists) that is available to all bank supervisors and ideally these financial statements would be publicly available.[24] Additionally, there would be some merit in establishing a data base with confidential supervisory information and analysis would also be available to the appropriate national supervisory agencies to assist all prudential supervisors in understanding the condition of the group as a whole and its relationship to the bank they each supervise. The European Central Bank (ECB) or the Committee of European Banking Supervisors (CEBS) could harbour that database. In the case of the ECB, this responsibility would be consistent with article 105.5 of the EC Treaty: "the ESCB shall contribute to the smooth conduct of policies pursued by the competent authorities relating to the prudential supervision of credit institutions and the stability of the financial system." This proposal would also require modification of the professional secrecy imposed by article 44 of the Directive 2006/48/EC of the European Parliament and of the Council of 14 June, 2006 relating to the taking up and pursuit of the business of credit institutions (recast).[25]

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application, capital, risk exposures, risk assessment processes, and hence the capital adequacy of the institution. Since domestic supervisors typically request additional information from the banks it is unlikely that this public disclosure will be thought sufficient.

[23] The required level of disclosure is both limited in its relevance and its timeliness (Mayes, 2004). Mayes (2004) believes that the requirements fall well short of what has been required of banks in New Zealand since 1996, where disclosure statements are required quarterly to reveal peak exposures and where bank directors are legally liable for their accuracy.

[24] The U.S. has long required its banks and bank holding companies to file standardized reports of income and condition with their federal supervisor. These reports have been made publicly available for well over a decade, and are currently available at no charge on the Internet from the Federal Reserve Bank of Chicago. For example, the commercial bank files (as of June 2007) are available at < http://www.chicagofed.org/economic_research_and_data/commercial_bank_data.cfm >.

[25] L 177/ 1 OJ of 30 June, 2006.

Nieto and Wall (2006) note that the enforcement of PCA depends on the accuracy of reported capital adequacy ratios. They survey several studies suggesting that market signals, primarily subordinated debt spreads, provide useful information about banks' financial conditions and that in some cases these signals have proven more accurate than the banks' reported Basel I capital ratio. These studies (e.g., Sironi, 2001; Evanoff and Wall, 2002; Llewellyn and Mayes, 2004) show that the information is sufficiently reliable for use as a failsafe mechanism to identify critically undercapitalized organizations. We concur that the use of such market risk measures would provide a valuable supplemental measure for PCA.

Supervisors, though have been reluctant to use market signals to determine the capital category of banks operating under PCA. A less controversial and perhaps easier approach to implement would be to use market-risk measures as triggers for closer supervisory scrutiny of a bank. These measures could include subordinated debt spreads and other measures such as the pricing of credit derivatives, or equity based measures, such as Moody's KMV Expected Default Frequency. The measures could be used informally by individual supervisors to trigger closer scrutiny of the various parts of the group. The use of such market measures would be consistent with Pillar 2 of the new Capital Accord, which requires supervisory review of bank's reported capital adequacy and with Pillar 3, which seeks to encourage market discipline. Market risk measures could further be used to trigger a mandatory meeting of the college of supervisors (discussed in subsection 3.2) to review the group's condition and, when appropriate, for triggering a coordinated special examination of the banking group.

3.2 Co-ordination of PCA disciplinary measures short of resolution

Although PCA reduces supervisory discretion, some element of discretion is inevitable. While a supervisor can be compelled to employ some measures, the choice of what limits the risk best and reduces any impending loss is bound to be substantially case specific. For example replacing existing management, might be essential to restore the banks´ financial health in some cases, but counterproductive in other cases.[26]

The existence of supervisory discretion raises the possibility of a supervisor taking or failing to take a variety of actions that are harmful to the overall banking group but which yield net benefits to the supervisor's particular country. For example, a supervisor could impose draconian limitations on a bank that is small relative to its financial system, even though the bank provides valuable services to the rest of the group elsewhere. Alternatively, a supervisor may forbear from disciplining or closing a bank that has a large presence in its country. Such forbearance could take the form of a supervisor accepting inadequate capital restoration plans and imposing only the minimum disciplinary measures required under PCA, even though additional measures are likely to

[26] As noted in the introduction, this analysis assumes the adoption of a uniform system of PCA by all EU countries so that the authorities in each of the EU countries would have a similar if not identical range of powers. Currently this is far from the case and, although the toolkit may be similar, what can or must be done in each circumstance varies considerably.

be necessary to rebuild the bank's capital. The consequences could be that weakness at the group level that would adversely impact subsidiaries (even the banking systems) in other countries and may substantially raise the cost of resolving the group should it become insolvent.

The EU has some mechanisms that could be extended to provide an element of coordination in the use of discretionary measures. The CRD provides for some coordination of banks supervision and allows for the delegation of some supervisory responsibilities to another Member State's prudential supervisor. Article 131 establishes that:

> in order to facilitate and establish effective supervision, the competent authority responsible for supervision on a consolidated basis and the other competent authorities shall have written coordination and cooperation arrangements in place. Under these arrangements additional tasks may be entrusted to the competent authority responsible for supervision on a consolidated basis and procedures for the decision-making process and for cooperation with other competent authorities, may be specified. The competent authorities responsible for authorizing the subsidiary of a parent undertaking which is a credit institution may, by bilateral agreement, delegate their responsibility for supervision to the competent authorities which authorized and supervise the parent undertaking so that they assume responsibility for supervising the subsidiary in accordance with this Directive.

Thus, the CRD provides for a general mechanism of coordination and cooperation among supervisors and it also envisages a stronger form of coordination, which is the possibility that the host supervisor of a subsidiary may delegate its responsibility to the home country prudential supervisor of the subsidiary's parent.

The primary problem with using the authority provided by the CRD is that delegating supervisory responsibility to the home country supervisor of the parent bank is likely to worsen the principal-agent conflict between the parent's supervisor as agent, and the subsidiary's country's taxpayers and voters, as principal. The parent's supervisor would be responsible for the impact of its supervisory action on the deposit insurance fund and possibly the financial stability of the host country of the subsidiary, but the parent's supervisor would not be directly accountable to the host country government and the taxpayers, thus increasing the agency problem.

Another mechanism for coordinating discretionary PCA actions would be the creation of a college of the prudential supervisors of the banks in the group. The college would be fully compatible with Article 129 of the Directive 2006/48/EC of the European Parliament and of the Council of 14 June, 2006 relating to the pursuit of the business of credit institutions (recast), which envisages the cooperation of the consolidating supervisor with the competent authorities of the subsidiaries.[27] The coordination mechanisms could be merely advisory, leaving the final decision up to the national

[27] L 177/48 Official Journal of the European Union of 30 June, 2006.

supervisors of each bank, or it could be binding upon the members. In some cases allowing each supervisor to take disciplinary action would likely be acceptable, especially if the action would be unlikely to have adverse consequences on other group members. However, leaving the final decision in the hands of each bank's national supervisor would likely not result in effective coordination to the extent that different supervisors reach different conclusions about the appropriate actions either because they have different incentives or because they have reached different judgments. Thus, for an effective implementation of a PCA policy as a coordination mechanism between supervisors, a better solution would be to give the authority to take discretionary actions that will be binding on all prudential supervisors in the college (see Appendix for a description of different scenarios of collegial binding decision). The idea behind such a grouping is that the supervisors can become in some sense jointly responsible for the actions the group takes. In such a case it may then be easier to agree to remedial actions.

Ideally, a college of supervisors for each cross-border banking group should be formed before the need arises to invoke PCA's disciplinary provisions.. However, the formation of a college with authority to make discretionary decisions within the PCA policy framework should be mandatory as soon as a bank owned by a cross-border banking group falls below the capital standard.[28] The formation of the college does not mean that decisions will always be made in a timely and harmonious fashion. Even the best of colleges is likely to be an inefficient mechanism for addressing most issues that require consultation or negotiation with the banking group. For example, if a cross-border banking group with capital below the minimum capital requirements is required to develop a capital restoration plan that is acceptable to its supervisors, having the bank negotiate the plan with each of the college members would be slow and inefficient. Where such consultation or negotiation is required, a better alternative would be for the committee to select one supervisor as the primary contact with the bank.[29] The role of the college would then be to review and approve the contact supervisor's agreement with the bank.

For a variety of reasons, a college of supervisors may at times find reaching a decision difficult. One way of forcing timely action would be for PCA to establish a presumption that a certain action will automatically be effective say 30 days after a bank violates one of the PCA triggers, unless the college determines that taking the action will not further the purposes of PCA. Similar provision is envisaged in Article 129 of the Directive 2006/48/EC of the European Parliament and of the Council of 14 June, 2006 relating to the pursuit of the business of credit institutions (recast), which foresees that the consolidating supervisor will decide in a time framework in the absence of a joint decision. This would prevent a subset of the college from using committee deliberations to stall effective action. Additionally, the colleges may somewhat reduce the scope for relatively unimportant disagreements to stall decision making by specifying in advance that the college will follow decision rules that give greater weight to the judgments of

[28] There is a clear complexity if responsibility for ongoing supervision and resolution (whether or not least cost) belong to different agencies.

[29] Ordinarily the contact would be the parent's supervisor unless the problems are focused in particular subsidiaries or markets.

supervisors of the larger banks in the group and the supervisors from countries where the banking group is systemically important.

Although a college provides a mechanism for all affected countries to have a voice in the corrective measures´ decision taken under PCA, the college does not solve the agency problem caused by the mismatch between supervisory powers and supervisory accountability to voters. Giving each country's supervisor a say in a coordinating college is not equivalent to the power that the supervisor would have to protect its country's interests as it could with a purely domestic bank. However, the inability of supervisors in each country to have the same control as they would over a purely domestic group is an unavoidable consequence of groups operating as integrated entities in more than one Member State. Corrective measures taken (or left untaken) will have sometimes different consequences for different countries.[30] The best that can be said is that a college structure will typically provide better representation of each of the affected countries than would a system that gives all of the power to a single supervisor, hence, reducing the agency problem by increasing supervisor's accountability to the government and the tax payer.

3.3 Coordination of resolution

PCA requires timely resolution, which is to say it sets a hard boundary which, when crossed by the bank, requires that the bank be forced into resolution.[31] Timely resolution of banks can enhance financial stability in a variety of ways. First, the lack of a deposit insurance subsidy to risk taking and the threat of losing the bank's charter may deter the bank from taking excess risk. If problems should arise, the bank has an incentive to quickly rebuild its capital or sell itself to a stronger bank before the supervisors must withdraw the bank's charter.[32] Moreover, timely resolution should reduce or eliminate the losses to be borne by depositors, the deposit insurer and any non-subordinated creditors and depositors.[33] This reduction in expected losses reduces the incentive of depositors and other non-subordinated creditors to run on a failing bank. Further, the

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[30] Giving every supervisor a veto over taking an action would not prevent problems if failure to act would have large adverse consequences for some country. Similarly, giving every supervisor a veto over failing to act would not help if taking a given action would have large adverse consequences for some countries.

[31] SEIR calls its lowest category "mandatory reorganization." Banks in PCA's "critically undercapitalized" category are to have a receiver or conservator appointed within 90 days unless the supervisor can show that another action would better meet PCA's goal of minimizing deposit insurance losses.

[32] Kane, Bennett and Oshinsky (2006) find evidence that distressed banks are more likely to recapitalize or sell themselves in the period after the adoption of PCA than in a prior period.

[33] Losses to non-subordinated creditors would necessarily be zero if banks are closed with positive levels of regulatory capital and accurate measures of the liquidation value of the bank were used to calculate the bank's regulatory capital. More generally, the realized value of a closed bank's portfolio may be negative due to errors in measuring portfolio values (including errors due to fraud) and possible losses resulting from the supervisors assuming control of the bank (that is, the loss of some going concern value). Nevertheless, the losses, if any, borne by the creditors and deposit insurer would almost surely be substantially less if banks are closed at positive values of measured economic capital than if the banks are not closed until after their book value of capital became negative.

reduction in expected losses to deposit insurers reduces the problem of allocating those losses across the various insurance schemes and reduces the probably that a deposit insurer would renege on its obligations. In a PCA *cum* closure rule at a positive level of regulatory capital, losses will be by definition smaller than in the absence of PCA to the extent that deposits would be backed by assets of at least the same market value, except in the case of rapid decline in asset value, massive fraud or inadequate monitoring by the regulatory agencies.

If this hard boundary is to be credible, Nieto and Wall (2006) argue that it must be accompanied by a credible process for resolving insolvent banks, particularly. Absent a credible process for resolving banks, especially banks whose operation is important to the financial system, the supervisors are more likely to exercise forbearance than to implement timely closure.

In the EU, there is no a framework of commonly accepted standards of bank resolution practice there is no common definition of bank insolvency nor a fully-fledged single legal framework or a common decision-making structure across countries. Hadjiemmanuil (2004) argues that a single pan-European legal and administrative framework for bank resolution is not only still lacking, but also it is unlikely to emerge in the foreseeable future. As a result, bank resolution procedures largely depend on national laws, which often fail to meet many of the requirements for a credible, efficient resolution system. Even if consideration is limited to the requirements for a large domestic bank group operating in a single country, most EU countries lack an adequate system. Nieto and Wall (2006) highlight two requirements that are generally not met by EU national resolution systems: (1) the need for special bankruptcy provisions for banks in which a banking authority is given authorization to create and operate a 'bridge' or similar bank,[34] and (2) a requirement that depositors be provided prompt access to their funds. These weaknesses in most EU national resolution systems are likely to give policymakers little choice but to recapitalize a large, banking group, even if it is deeply insolvent.

Additional problems arise if the failing banking group operates across borders and needs to be recapitalized or resolved. Goodhart and Schoenmaker (2006) focus on the issues associated with recapitalizing a distressed bank that operates in two or more countries, many of which have parallels to the issues likely to arise when a cross-border bank is forced into resolution.[35] The following subsection summarizes their key findings and the next subsection discusses how the issues would be addressed in a PCA framework.

3.3.1 Recapitalizing a cross-border banking group in the absence of PCA

[34] In the US the most obvious way to do this in the case of a large bank is to form a 'bridge bank', which is a national bank newly chartered by the Comptroller of the Currency under the control of the FDIC.

[35] Goodhart and Schoenmaker (2006, p. 37) note that early closure of a bank as provided for by the U.S. version of PCA would “reduce the problem.” Their focus on recapitalization presumably reflects their views about the political viability of adopting PCA in Europe for the foreseeable future rather than its economic merits.

The withdrawal of the charter of a cross-border banking group, especially a large group, could have severe adverse consequences for the financial stability of one or more countries. Given the limitations of other existing EU resolution options, the only option that is likely to forestall financial instability may be for the affected countries to recapitalize the bank at taxpayer expense. However, disagreements about whether a bank should be recapitalized and, if so, how the burden should be apportioned are likely to delay action until the market losses confidence in the bank.

By the time confidence is lost, the time for organizing a recapitalization will be very short (likely only a few hours) and the costs of recapitalization are likely to be a substantial fraction of the bank's assets. Without any *ex ante* agreement on sharing the cost of recapitalization, the country most affected may be forced to decide whether to bear all of the recapitalization cost or to let the bank be forced into bankruptcy proceedings where liquidation is possible. While this may be the largest country, this is by no means certain. Nordea, for example is more important in Finland than it is in the home country, Sweden. Small countries may simply not have the resources for such a recapitalization and will hence be forced into having the crisis.

An alternative to negotiating an agreement during a crisis would be for an *ex ante* agreement on burden sharing involving the various national ministries of finance. There are several ways in which such an *ex ante* agreement could be structured. Goodhart and Schoenmaker (2006) recommend that all countries in which the bank operates share the burden according to some measure of the operations that the bank has in their country, assets being their preferred measure. However, obtaining agreement on any single measure (a proxy) for a fair distribution may be difficult. For example, assets may not be a good proxy for the real and financial impact of a bank's failure. Such impact may depend, for example, on the structure of the local deposit market or on the bank's role in the country's securities and derivatives markets.

It is also not clear how decisions would be taken. Access to pubic funds is presumably a matter for the relevant ministries of finance. However, ministries of finance would no doubt want to be advised by supervisors, deposit insurers and central banks. Whether they should all sit round the table or whether different parties should meet for different purposes during the process of managing the problems is an open issue. Goodhart and Schoenmaker (2006) recommend that all three parties from each of the countries being there in addition to EU level representation from the Committee of European Banking Supervisors (CEBS), the European Central Bank, ECOFIN and the European Commission, subject to a '*de minimis*' threshold of 5 percent of the group's assets and 15 percent of the country's banking assets.

3.3.2 Resolution of a cross-border banking group under PCA

A version of PCA that was effective for groups operating only in one country would by itself substantially reduce the problems of resolving a large cross-border banking group.

PCA provides for early resolution (charter withdrawal) before a bank can incur losses substantially in excess of its regulatory capital.[36] At best, such a PCA would give supervisors time to organize an orderly resolution of a problem bank because it would result in the bank's charter being withdrawn while creditors were confident the bank had sufficient assets to honor their claims. More likely, given the U.S. experience, some bank runs will occur because at least some uninsured creditors are likely to take losses in bank resolutions and will act to protect themselves. However, even if market participants control the timing of the bank resolution, PCA will still reduce the problems of resolving a failing banking group. PCA's requirement that bank charters be withdrawn at positive values of bank´s regulatory capital should substantially reduce the losses to taxpayers and significantly reduce any conflicts over how best to share the burden. The losses may even be sufficiently low so that they can be absorbed by the banking industry through payments to their deposit insurer.

The first part of cross-border resolution version of PCA would require that that the parties to the process start meeting as soon as a bank not later than when a bank falls below the minimum capital standard required by the CRD. When a bank falls below its minimum capital requirements, market participants are likely to start looking for signals that its resolution is imminent and that they should cut their credit exposure to the distressed bank. The formation of the college long before resolution becomes likely would allow all concerned safety net regulators to plan for the possibility that the bank will need to be recapitalized or resolved, without sending the signal that the supervisors consider such action likely.

The resolution college will need to reflect the views of most, if not all, of the participants as noted in the Goodhart and Schoenmaker (2006) proposal. Even if the bank is closed without any losses to the taxpayer, at least some finance ministries/national central banks may need to advance funds to the deposit insurer to cover the insurer's share of the losses, in part because some deposit insurers collect funds on an *ex post* basis. In theory, such support by national governments is limited by the Directive 94/19/EC on deposit insurance, which discourages governments from providing funding to their deposit insurer and support by the central bank is limited by EC Treaty (article 101). In practice, these restrictions may not prove viable given the importance of giving depositors immediate access to their funds discussed in Nieto and Wall (2006) and the limited funds available to many deposit insurers.

It is likely that the balance of interests needed to be taken into account in deciding whether to intervene will also be appropriate for decision-making about the subsequent resolution of the bank. The fact that a bank had to be put into resolution suggests that a quick sale of the entire group is unlikely. The group is likely to have arranged such a sale before resolution, if that were possible. Thus, the resolution of almost all large cross-border groups is likely to involve their being operated as some equivalent of a bridge bank (or bridge banking group) pending the return of its assets to the private sector. The

[36] Such a PCA would include a credible resolution mechanism, as advocated by Nieto and Wall (2006).

creation of a bridge banking group would be roughly equivalent to a government recapitalization of the bank, except that the shareholders in the failed group would permanently lose their claim on the group and losses may be imposed on some classes of creditors.[37] Someone will have to have managerial authority over the bank and in almost all cases the home country supervisor will be the logical party to appoint the new management. The bank's management should be overseen by a board with representatives from all of the affected countries, perhaps reduced by the same *de minimis* rule used before the bank went into resolution. This function can be performed by the resolution college. Whether each nation needs to be represented by its banking supervisor, its ministry of finance and its national central bank may depend on the circumstances. If the respective national ministries of finance or national central banks are not making an important contribution to the resolution, they should probably be dropped from the oversight board to help keep the size of the board manageable.

The conflicts between different stakeholders will not end after the formation of a bridge bank.[38] The managers and overseers of the bridge bank will have a variety of decisions to make that could provoke sharp controversies. One such decision is where the banking group should continue lending and where it should reduce or stop lending. Those countries and industries facing reduced lending may be concerned about the impact of the cuts on their domestic economic activity. However, having the bank continue to lend to loss-making geographical areas and industries is likely to provoke concerns from some college members about the likely losses to the bank. Another potentially controversial decision is that of closing some branches and subsidiaries. The managers may also recommend these closures to improve the efficiency of the surviving organization. Again, those countries that face the cuts may view the situation differently from those that are concerned about further losses. A third potential source of controversy is the weight given to various considerations when the group's assets are returned to the private sector. Many on the board of the bridge bank (formerly resolution college) will likely favor accepting the highest bid for the group (or parts of the group) but others on the board may want to include other considerations, such as any labor force reductions planned by the prospective acquirers, or keeping the national charter of the bank. In line with the rational of our proposal, our preference would be to focus on minimizing the expected cost of

[37] The shareholders would lose their claim in the sense that their control rights over the bank would be permanently terminated. If the proceeds from selling the group back to the private sector exceed all of the creditors' claims on the bank, the excessive would be returned to the shareholders. On the other hand, any losses in excess of equity would be allocated to the bank's creditors, the governments that provided assistance, and the deposit insurers. Ideally, deposit insurance and government assistance would be limited to covering the losses of uninsured creditors. However, the governments may determine that some creditors should be protected for systemic reasons. At a minimum, subordinated creditors who agreed to take additional risk in return for higher interest payments should lose their entire investment before the governments or deposit insurers absorb any losses.

[38] The same sorts of conflicts are likely to occur under the current system if the national ministries of finance decide to recapitalize a distressed bank. To the extent the various ministries hold a sizeable part of the bank's stock; they will likely expect to participate in the decisions of the bank before privatization and also in the decisions on how best to privatize the bank.

resolution, with governments finding other, more transparent vehicles when required to achieve their other objectives.

4. Conclusion

PCA was designed to improve the prudential supervision of banks in the U.S., most of which operate in a single market. An EU version of PCA could also improve the prudential supervision of banks operating in more than one Member State. However, to be as effective as possible, the EU version should address a number of cross-border issues that are compatible with the existing decentralized structure of the EU safety net.
Our proposal facilitates the resolution of conflicts among supervisors of different countries so that the cost of reconciling the conflicts is less than the cost of going it alone. In this respect, PCA is a critical element of our proposal.

Bank supervisors need to understand the overall financial condition of a banking group and its various individual banks if they are to effectively anticipate problems and take appropriate corrective measures. The effectiveness of PCA as a mechanism to reduce agency problems among supervisors would rely on the availability of information to prudential supervisors as well as supervisor's use of market information. Availability could be improved by reducing information asymmetries among supervisors on individual bank's financial condition. The use of market based risk measures could be mandated in the supervisory process. At a minimum, this would include requiring additional examinations of banking groups whose reported capital exceeds minimum required levels but which are identified as high risk by financial markets and mandating that the relevant banking supervisors meet to share their evaluations of the group.

PCA reduces supervisors’ ability to exercise forbearance, but it by no means eliminates supervisory discretion. Supervisors retain substantial discretion in their implementation of PCA so long as a bank’s regulatory capital exceeds the critical level at which it is forced into resolution. If the consequences of bank supervision in one country can have large consequences for the group’s banks in other countries, then deciding how best to exercise this discretion should be decided by the supervisors of all the banks (or at least all of the significant banks) in a collegial format. However, even if a satisfactory means of deciding what to do can be implemented, the actual powers of supervisors in the EU are not identical. Some may not be able to implement the actions others wish to vote for. Hence, effective implementation would require as a precondition that prudential supervisors be given the same and comprehensive authority to take the corrective measures in PCA (Nieto and Wall, 2006).

Finally, should a bank that is part of an integrated cross-border banking group reach the point where PCA mandates resolution, its resolution could have implications for a number of EU countries. The timing of the resolution is unlikely to remain in the supervisor’s hands, so the process of making these decisions needs to begin before markets perceive that the bank must be resolved. The parties from each country that will play a role in the resolution (the banking prudential supervisor, the ministry of finance and the national central bank) should begin planning for the resolution with the appropriate EU institutions and the ECB no later than the time the bank first falls below the minimum capital adequacy requirements set in the CRD. In a PCA *cum* closure rule at a positive level of regulatory capital, losses would be zero to the extent that deposits would be backed by assets of at least the same market value.[39] In almost all cases, the best resolution of a large cross-border bank will involve the creation of the equivalent of a bridge bank or bridge banking group. This would require as a precondition special bankruptcy provisions for banks in the EU as described in Nieto and Wall (2006). A number of additional decisions will then be needed as to how to run the bridge bank(s) until its assets are returned to the private sector as well as decisions about how best to return the assets to private owners. Thus, on-going oversight of the bridge bank should be provided by a board with safety net regulators from all of the affected Member States (banking prudential supervisor, ministry of finance and national central bank), perhaps reduced by the same *de minimis* rule used before the bank went into resolution.

The minimization of losses that the implementation of PCA at national level implies and our proposed stylized mechanism based also on the PCA policy, combine to improve the incentives for cooperation among prudential supervisors as well as between them and the deposit insurance and resolution authorities. As a result, our proposal would be an improvement on the existing bank resolution procedures in the EU.

[39] Of course, losses could be greater than zero to the extent that that asset values were not properly measured (for example, as could happen in the case of fraud or inadequate monitoring by supervisors) or the asset values rapidly decreased in value after resolution.

Appendix
Potential problems and their resolution under a cross-border PCA with collegial binding decision making

1. The consolidating supervisor wants to exercise forbearance [consolidating supervisor is taken to mean the supervisor of the parent bank (where the publicly traded entity is a bank) or supervisor of the lead (largest) bank where the publicly traded entity is a holding company][40]

If a cross-border banking group encounters problems on a consolidated basis, weakness at its largest bank (which may also be the parent) is likely to be the cause.

1.A Existing Situation

The CRD calls upon supervisors to require that banks maintain capital at least equal to the minimum risk-based capital ratio. If the home country consolidating supervisor (CS) wants to forbear, the CS can take the minimum disciplinary measures required under national law, even if these measures are unlikely to induce the bank to change its operations. Moreover, this forbearance could continue even after a bank is economically insolvent.

One consequence of the CS being able to exercise forbearance is that a prudent host country prudential supervisor (PS) of a subsidiary bank would increase monitoring if the parent organization is undercapitalized, even if the subsidiary is in good financial condition. If the parent is sufficiently distressed, the host country PS of the subsidiary may even want to limit the subsidiary's transactions with other subsidiaries and the parent to reduce the risk that the parent bank would seek to drain resources from the subsidiary to assist itself. Yet such prudent measures by the host country PS of the subsidiary could exacerbate the parent's problems by reducing the efficiency of the group, especially to the extent the group functions as an integrated entity.

Another consequence of the situation described is that the host country supervisor would not have the incentives to delegate the prudential supervision of the subsidiary bank to the CS. The host country of the subsidiary would bear full responsibility for the deposit insurance losses of the subsidiary bank as well as any adverse impacts on the operation of its financial system without having any enforcement authority over the parent bank to protect its interests. The CS would have the enforcement authority, but it would have only reputational incentives to protect the interests of the host country of the subsidiary. These reputational incentives may prove wholly inadequate if, as it is likely, the banking group in question has significant political power in its home country and thereby influence over the CS.

[40] We assume here that forbearance is undertaken under the genuine belief that giving time will enable the bank to recover and meet its obligations. Unfortunately there are examples (Mishkin, 2005) where forbearance has been the result of political and other direct pressure and is known not to be the loss minimizing strategy.

1.B With PCA and coordination arrangements

With PCA and a college of supervisors, the CS's ability to forbear would be severely limited. The mandatory provisions of PCA would require certain action be taken based on the bank's capital adequacy status. PCA would permit forbearance only in the sense that the supervisors could use their discretionary authority in the most lenient manner possible, such as approving a capital restoration plan that appeared inadequate. However, the existence of a college means that the CS would have to persuade at least a majority of the college to forgo the discretionary disciplinary measures and to exercise leniency in implementing the mandatory actions. Moreover, further actions will be mandated as the bank's capital adequacy ratios fall, so the CS's and college's opportunities for forbearance are limited unlike in the existing situation.[41]

The limited possibilities for forbearance under PCA would make more viable the possibility of a host country supervisor's delegating its responsibilities for subsidiaries to the CS. A host country supervisor that delegated its responsibility could do so in the knowledge that the CS's ability to forbear at the expense of the subsidiary's host country is greatly diminished. Host countries' supervisors responsible for large subsidiaries relative to the local market may remain reluctant to delegate authority to the CS, but supervisors responsible for smaller subsidiaries may decide to delegate their authority having the certainty that supervisory action will be prompt and in the framework of the PCA mandatory and discretionary provisions.

2. Home country CS wants to take aggressive corrective measures without adequately taking account of their impact on the host country of the subsidiary bank

For example, the subsidiary may be completely dependent on its parent for management of its operations, managing its risks, or providing information technology services (including the customer databases). If the home country CS were to force the parent bank into the bankruptcy court, the viability of even a highly capitalized subsidiary in another Member State may be questionable.

This scenario is unlikely if the banking group had a large share of the banking market in the CS's home country. However, it would be possible if the group was a small part of the CS's home country and the problem would be magnified if the subsidiary were an important part of its host country's banking system

[41] Opportunities for forbearance would be more limited under PCA even if a college were not formed, or the CS would have veto power (as might be the case if most of the consolidated banking group's deposits were in the home country and the bank were systemically important in its home country). The mandatory provisions of PCA would impose greater limitations on the CS than currently exist. Further, if the bank's capital ratio were to continue to decline, PCA would force additional supervisory measures.

2.A Current situation

The CS has a duty to inform the supervisors of the banking group's subsidiaries of its intended action. Whether the CS has any sort of obligation to take account of the impact of its action on the group's subsidiaries and their respective banking markets would depend on the situation.

If the subsidiary's PS has delegated responsibility for supervising the subsidiary to the home country CS, the agreement providing for the delegation most likely requires the CS to take account of the impact of its decisions on the subsidiary. However, the decision as to what sort of corrective action should be taken is ultimately a judgment call on the part of the CS. Hence, the agreement that the host country PS of the subsidiary has with the CS is unlikely to contain legally enforceable obligations on the part of the CS to consider the impact of its actions on the subsidiaries, banking markets, and domestic economies.[42]

If the subsidiary's PS has not delegated responsibility for supervision to the home country CS, the CS would not have any legal obligation to consider the impact of its actions on the subsidiary and its domestic banking market. The CS could, and likely would, consider the impact of its actions on the subsidiary, even absent a legally enforceable agreement to do so. However, the CS is ultimately accountable to the government and taxpayers of its home country and not to those of the group's subsidiary (host country). Thus, it seems reasonable to expect that the costs imposed on the subsidiary and the host country will receive substantially less weight than they would if the subsidiary were located in the same country as the CS.

2.B With PCA and coordination arrangements

PCA by itself would require certain disciplinary actions. However, with the corrective actions clearly established *ex ante*, the PS of the subsidiary would be put on early notice of the need to prepare to handle those actions required and authorized under PCA.

The college of supervisors provides a mechanism that could limit the discretionary corrective measures that could be taken by the CS to the extent that it has effective powers over the national PS that would enforce the agreements at national level. Moreover, the college would require the home country CS to consider the impact of its actions on the subsidiaries before taking discretionary action.

[42] Where the bank is operating through branches in host countries the obligation of the lead supervisor is even less likely to have a formal requirement to consider the differential impact on the host.

3. **The PS of a subsidiary wants to forbear in taking corrective measures.**

3.A Current situation

The host country PS of a subsidiary has the same freedom to exercise forbearance as the home country CS of the parent bank. The principal difference is that the CS supervises the parent bank and it is also responsible for the consolidated group. Thus, the CS is in a position to pressure the parent bank of the banking group to take corrective action at the subsidiary even if the PS of the subsidiary would rather avoid or delay taking corrective action.

3.B With PCA and coordination arrangements

The host country PS of a subsidiary would be required to take the mandatory actions provided under PCA based on the subsidiary's capital adequacy. Moreover, the college of supervisors where the CS would be also represented could act to limit forbearance based solely on the subsidiary's regulatory capital. The college would also take into consideration the importance of the subsidiary activities on the banking group.

4. The host country PS of a subsidiary bank wants to take aggressive corrective measures without adequately considering their impact on the rest of the group.

This scenario is most likely to arise when the subsidiary bank is a small part of the financial system of the host country but it supplies critical services to the rest of the banking group. A possible example would be a group's London subsidiary that exists primarily to facilitate the group's access to the London wholesale financial markets.

In most respects, the current situation and the impact of PCA mirror the situation where the parent's CS wants to take aggressive corrective measures without considering the impact on the subsidiary's host country. The principal difference is that if the consolidated group is in good financial condition, it should be able to assist the subsidiary and eliminate the basis for the subsidiary's PS having to take corrective action.

4.A Current situation

The host country PS of the subsidiary has a duty to inform the home country CS and the PS of a group's other bank subsidiaries of its intended action. Like the CS in scenario 2, the PS of the subsidiary is likely to consider the impact of its actions on the rest of the group. However, the PS of the subsidiary would not have any legal obligation to weigh the impact of its disciplinary action on the group as it would have had if the group would have its entire operations in the PS's home market.

4.B With PCA and coordination arrangements

As in scenario 2 with the CS, PCA would mandate certain actions by the host country PS. However, with the rules of supervisory action clearly established "ex ante", the home country CS and the host country PS of the subsidiaries in other countries would be put on early notice of the need to prepare for the corrective measures that may be taken against a subsidiary.

In deciding which discretionary actions to take, the college of supervisors could secure that their actions would not have a negative impact on the rest of the banking group, always subject to the requirements of the PCA rules. The college could also be helpful in getting the CS and other subsidiaries PS to pressure the group into helping its undercapitalized subsidiary.

5. The banking group, which has a presence in several EU countries, incurs a series of losses which initially drop its capital below minimum regulatory requirements and will eventually make the bank insolvent if not addressed.

If the bank becomes insolvent, the home country supervisor will recognize the need for recapitalization. Although the exact amount of the losses is uncertain "ex ante". National prudential supervisors, central banks, deposit insurers and ministries of finance are called to agree on the resolution of the crisis and the recapitalization process.

The home country supervisor puts the bank under special administration expecting that the national ministries of finance would agree on an "ex post" recapitalization that would allow a market friendly solution of the banking crisis.

5.A Current situation

The bank supervisors (CS and/or subsidiaries´ PS) will demand that the bank restores its capital to levels above regulatory minima. The bank may raise its capital in response, or it may not do so for a variety of reasons (e.g. the shareholders have lost confidence in the management). If the recapitalization of the bank does not succeed and the bank's failure appears likely, the supervisor may want to organize a recapitalization agreement among the national ministries of finance of the countries where the group has operations. However, persuading the national governments to put up taxpayers funds to support a bank, which has a (small) chance of surviving on its own, will be very difficult. A major problem is likely to be reaching an agreement on the burden sharing criteria for many possible reasons, including: (a) bank's losses occurred in other country(ies) and/or, (b) the banking group is not considered systematically important in the host country(ies).

Against this background, national ministries of finance may or may not reach an agreement. If they cannot reach an agreement and the bank continues to take losses, at some point market participants will lose confidence in the bank and a bank run is likely. After the bank run has begun, the ministries of finance will have one last opportunity to reach an agreement on burden sharing. At this point, the costs of recapitalization are likely to be high and the period of time in which to reach agreement is likely to be very short.[43] If they can reach agreement on providing the funds, the supervisors and the ministries of finance will still need to agree on who will administer the bank and what priorities will be followed in restoring the bank's assets to the private sector.

If the national ministries of finance still cannot reach an agreement, the home country supervisor (CS) will be forced to proceed to bank resolution. Deposit insurers will pay the insured depositors and they will be under enormous political pressure to pay also the uninsured depositors.

5.B Situation with PCA (assuming closure rule at 2% of tangible equity)

The existence of capital/assets thresholds ratios in PCA would have mandated supervisors´ action before the bank group's net worth would have been largely depleted. Such supervisory action would have ranged between asset growth and inter affiliate restrictions to the requirement of capital restoration by the shareholders. Prudential supervisors would require a recapitalization plan involving the bank's shareholders by issuing capital or selling assets. The bank managers and owners are also more likely to put the bank up for sale to avoid having its charter withdrawn when its tangible equity ratio reaches 2 percent.

If the bank's tangible capital ratio drops below 2 percent of tangible equity, its supervisors must put the bank into receivership.[44] If assets are being marked to market, the value of the bank is expected to exceed its liabilities (possibly

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[43] Market participants will not run on a bank unless they believe that they are at risk of loss, which they would be only if they believed that the losses were so large that the relevant Treasuries might not reach an agreement to recapitalize the bank.

[44] Although it is beyond the scope of this paper, an important issue is the definition of the closure rule. That is, the definition and level of the capital ratio that would trigger resolution and the amount of time the supervisors have to put the bank into resolution. PCA in the US requires that a bank be classified as "critically undercapitalized" if its tangible equity capital to asset ratio falls below 2 percent and PCA generally requires that a bank put into resolution within 90 days of its being classified as critically undercapitalized. An EU version of PCA could impose different requirements; for example, require intervention as soon as the 2% level is breached in order to increase the chance that losses can indeed be covered.

excluding its Tier 2 liabilities).[45] The overall burden should be nil or very small. However, even in the extreme case, where support is required from the national ministries of finance to create a bridge bank, agreement is likely to be easier to reach because the losses may be sufficiently small that they could be covered by the national deposit insurers**. Assuming** the ministries of finance can reach agreement on any funding that is necessary, our proposal provides a structure for managing the bridge bank and returning its assets to the private sector.

[45] Suppliers of Tier 2 capital should expect that their investment is at risk if their bank fails. Otherwise, their investment should not be included in Tier 2.

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Table 1: Supervision, Deposit Insurance and Resolution Authorities´ Jurisdiction in the EU

	Prudential Supervisor[1]	**Deposit Insurance Regulators**[2]	**Reorganization and Winding-Up Authority**[3]
Banks locally incorporated			
Parent banks authorized in home country	Home country authorizing parent bank (consolidated supervision - solvency)	Home country	Home country
Subsidiaries of parent banks headquartered and authorized in another EU country	Home country authorizing parent bank (consolidated supervision - solvency) Host country authorizing the subsidiary ("solo" basis)[4]	Host country	Host country
Branches			
Branches of banks headquartered and authorized in other EU country	Home country of head office (consolidated supervision - solvency) Host country[5] (liquidity)	Home country (possibility of supplementing the guarantee by host country)[6]	Home country

Source: Garcia and Nieto (2005)

[1] Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast)
Official Journal of the European Communities 30 June 2006. L 177

[2] Directive 94/19/EC of the European Parliament and of the Council of 30 May, 1994 on deposit-guarantee schemes. Official Journal of the European Communities 31 May, 1994, No. L135/5 and Directive 97/9/EC of the European Parliament and the Council of 3 March 1997 on investor-compensation schemes. Official Journal of the European Communities 3 May 1997 No. L 84/22.

[3] Directive 2001/24/EC of the European Parliament and of the Council of 4 April on the reorganisation and winding up of credit institutions. Official Journal of the European Communities 5 May, 2001. L125

[4] Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast) Art. 44 " [It] shall not prevent the competent authorities of the various Member States from exchanging information in accordance with this Directive and with other Directives applicable to credit institutions. That information shall be subject to the conditions of professional secrecy."

[5] Directive 2006/48/EC of the European Parliament and of the Council of 14 June 2006 relating to the taking up and pursuit of the business of credit institutions (recast) (art. 43.1): "[It] shall not affect the right of the competent authorities of the host Member State to carry out, in the discharge of their responsibilities under this Directive, on the-spot verifications of branches established within their territory"

[6] Directive 94/19/EC of the European Parliament and of the Council of 30 May, 1994 on deposit-guarantee schemes. Official Journal of the European Communities 31 May, 1994. L 135. (art. 4). "…Admission shall be conditional on fulfillment of the relevant obligations of membership, including in particular payment of any contributions and other charges."

Table 2: Nordea; Market share in Nordic countries (%)

	Denmark	**Finland**	**Norway**	**Sweden**
Mortgage lending	17	32	12	16
Consumer lending	15	31	11	9
Personal deposits	22	33	8	18
Corporate lending	19	35	16	14
Corporate deposits	22	37	16	21
Investment funds	20	26	8	14
Life & pension	15	28	7	3
Brokerage	17	5	3	3

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Table 3
Mandatory and Discretionary Provisions Prompt Corrective Action

			Capital Ratios		
			Risk-Based Capital		Leverage
Category	Mandatory Provisions	Discretionary Provisions	Total	Tier 1	Ratio
Well Capitalized	No capital distribution or payment of management fees that would cause the bank to become undercapitalized		>10%	>6%	>5%
Adequately capitalized	1. Same as well capitalized		>8%	>4%	>4%
Undercapitalized	1. Capital distributions and management fees suspended	1. Require recapitalization by issuing capital or selling to another firm	<8%	<4%	<4%
	2. Capital restoration plan	2. Restricting transactions with affiliates			
	3. Asset growth restricted	3. Restricting rates on new deposits			
	4. Prior approval for branching, acquisitions, and new lines of business	4. Restricting asset growth			
	5. No brokered deposits	5. Restricting Activities			
		6. Improving management by replacing directors or managers			
		7. Prohibit deposits from Correspondent banks			
		8. Requiring prior approval for capital distribution by bank holding company			
		9. Requiring Divestiture			
Significantly Undercapitalized	1. Same as Undercapitalized		<6%	<3%	<3%
	2. At least one of the 9 discretionary provisions under Undercapitalized. Presumption in favor of (1) (required capital issuance only), (2), and (3).				
	3. Senior officer compensation restricted				
Critically Undercapitalized	1. Any action authorized for significantly undercapitalized banks				<2%**
	2. Payments on subordinated debt prohibited*				
	3. Conservatorship or receivership within 90 days*				

* Not required if certain conditions are met

** Tangible equity only

Note, this is a general summary of PCA only. Other parts of the U.S. Code may also impose limits based on a bank's capital category.