Central Banks and Supervision
(with an application to financial architecture in EMU)

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1. Introduction

The aim of the present paper is to discuss the optimal financial architecture arrangements between the central bank and other agencies with the aim of preserving the stability and soundedness of the financial and banking system. The ideas developed are applied to assess the financial architecture framework of the European Monetary Union.

We will be concerned thus with the optimal design of the regulatory institutions:

- Is it better to have a single regulator or a plurality of regulators?
- Should monetary policy and supervision be integrated or kept separate?
- Is there a case for an integrated regulator, dealing with banks, insurance companies and markets, separate from the central bank?
- What is the role of competition policy in banking and how should it relate to other regulatory institutions?

Our analysis makes clear that the problem of how to determine the optimal regulatory institutional structure remains open. There is indeed an open debate in major industrialized countries and in the international arena about those issues. Here are some conclusions:

- The strongest argument to keep supervision within the central bank lies in the presence of informational economies of scope between monetary policy, the LOLR facility and supervision.
- The case for separation lies in the optimal provision of incentives for self-interested bureaucrats and the

advantage of having agencies with well-defined missions and with enhanced accountability.

- In case of separation it is very important to delineate clearly the areas of responsibility. For example, systemic stability for the central bank and supervision for the supervisory agency.
- The case for an integrated regulator (of banks, insurance companies and markets) is based on the convergence of financial institutions and markets and the expertise required to deal with global risk.
- Competition policy should be active in banking. An optimal design would involve both the banking regulator and the competition authority on merger control. The acquiescence of the national regulator should not be sufficient to give a green light to a domestic bank merger.
- External commitment may limit too big to fail (TBTF) policies. The EU Competition Commissioner has played this role with respect to national champions.

The paper examines next whether the design of the ESCB (the European System of Central Banks consisting of the national central banks, NCBs, and the European Central Bank, ECB) and supervisory facilities in the Treaty of European Union is consistent with the process of monetary unification. Particular attention is paid to the consequences of the deepening of financial markets and increase in externalities between countries for the level of fragility of the banking and financial system. The assessment of the present EMU financial architecture leads to some policy recommendations.[1]

[1] See Vives (2000) for a more detailed description and analysis of financial regulatory institutions in EMU.

We take as a starting point the fundamentals of financial regulation and supervision (Section 2). Section 3 is concerned with the optimal design of the regulatory institutions. Section 4 surveys briefly LOLR facilities and banking supervision in EMU and Section 5 assesses financial architecture in EMU.

2. Fundamentals of the regulation and supervision of the banking system

In spite of a gradual change in the banking sector from the traditional intermedation business to a fee-generating service industry, it may be expected that the banks will continue to facilitate transactions by contributing to the payment mechanism, converting nonliquid assets (long-term loans) into liquid liabilities (short-term deposits), providing liquidity and insuring against risks, and selecting, as well as supervising, projects that require credit in order to be financed.

The functions of financial intermediaries derive from asymmetric information problems (moral hazard and adverse selection) that the markets cannot solve. Precisely because of problems of asymmetric information and associated externalities, the banking sector has traditionally been regulated. The banking and financial system is subject to the failure of institutions, panics,

and systemic crises that could have major impact on the real sector of the economy[2].

Regulation has tried to provide the banking system with stability to elude the main negative effects of systemic crises. Another aim has been to protect the small investor, who may be at a disadvantage where access to information is concerned. However, regulation has secondary effects (moral hazard) in terms of inducing excessive risk. Finally, the role competition has always been debated in banking. Let us take up these issues in turn.

2.1 Lender of last resort (LOLR), deposit insurance, and TBTF policy

A LOLR provides liquidity in dealing with systemic risks, and the central bank is the natural candidate for the role. Its unique capacity as crisis lender is due to its ability to commit unlimited liquidity resources as well as to act with the required speed. Alternative arrangements to provide liquidity which involve private money (lifeboats, liquidity consortia) or funds raised with taxes (via deposit insurance funds, building "war chests", or direct recourse to the Treasury) are costly and less speedy. At best they can be part of a solution in which the central bank is also involved.

Another important role is that of crisis manager, helping to solve the coordination problem among creditors that a crisis entails. In many instances the LOLR manages the crisis but it does not put up its own funds, which may be private money as in the rescue of LTCM coordinated by the

[2] See Diamond and Dybvig (1983), Jacklin and Bhattacharya (1988), and Postlewaite and Vives (1987).

Federal Reserve Bank of New York, or money from the deposit insurance fund or the taxpayer. Crisis resolution, involving reorganization and eventual closure of troubled institutions, is typically dealt with by specialized institutions like deposit insurance agencies. (See Goodhart and Shoenmaker (1995).)

Bagehot (1873) provided the classical prescription for the LOLR (see also Meltzer (1986)): only solvent banks with liquidity problems should be assisted, and this should be done with loans at a penalty rate and against good collateral, evaluated in "normal" times.[3] The LOLR must announce the solvency and collateral requirements to grant help and its readiness to lend without limit. Goodfriend and King (1988) dispute this "banking policy" view. They argue that in developed financial systems a solvent bank can not be illiquid and in consequence only open-market operations are needed.[4]

Both in Europe and in the US there is a tendency to protect banks and depositors above the levels required by the deposit insurance. In particular, according to the implicit too-big-to-fail (TBTF) policy, a large insolvent bank will be rescued and its uninsured depositors will be protected should failure be likely to affect other banks and the real economy.[5]

2.2 The moral hazard problem and regulation

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[3] A problem is that it is very difficult to distinguish between problems of solvency and those of liquidity. A problem of liquidity may be an early sign of a solvency problem (Goodhart (1995)).

[4] See Rochet and Vives (2000) for a modern justification of Bagehot's view.

[5] See Rochet and Tirole (1996).

LOLR facilities, TBTF policies and deposit insurance may introduce distortions in the decisions of financial intermediaries. They reduce the incentive of the depositors to monitor bank performance, and give rise to excessive risk taking.

Central banks typically adopt a policy of "constructive ambiguity", not making explicit the criteria under which entities with problems will have access emergency assistance.[6] Although this is done to palliate the problem of moral hazard, the TBTF policy seems to prevail and least there is *de facto* insurance of all those entities susceptible of causing systemic problems.

Risk taking is checked with capital requirements and supervision. Risk-based deposit insurance and improved disclosure have been proposed to discipline risk-taking behavior (in both cases risk is priced, in the first case by imposing risk sensitive premia and in the second by the demands of well-informed depositors). However, while it is feasible to introduce disclosure requirements of the market positions of banks, increasing transparency, it is more difficult to assess the riskness of the illiquid loan portfolio of a bank.[7] Furthermore, more disclosure may in fact induce information-based runs of

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[6] See Corrigan (1990), and for formalizations attempts Dietsch and Godbillon (1997) and Freixas (1999). A policy of discretion in dealing with the problem of moral hazard has been proposed in the legal literature (Craswell and Calfee (1986)).

[7] See Matutes and Vives (2000) and Cordella and Yeyati (1998) for an analysis of the effects of disclosure and risk-based insurance.

depositors generating instability. Some runs, however, can be optimal to punish imprudent behavior by banks.[8]

2.3 Regulation and the role of competition

The role of competition has always been debated in the banking sector. Against the benefits of the greater productive and assignative efficiency deriving from higher competitive pressure, greater risk taking incentives must be weighted (particularly in the presence of deposit insurance with flat, risk-independent, premia)[9].

Currently the consensus is that in order to alleviate the problem of moral hazard capital requirements and supervision should be used. However, wherever there is deposit insurance and intense competition, recent research shows that capital requirements may not be sufficient to control the inclination of institutions to take risks (Matutes and Vives (2000), Hellmann et al (2000)).[10]

Some market power seems to be optimal in banking, and therefore in the trade-off between competition and stability it is worth allowing a certain degree of market power. However, it is probably not feasible, and even unwise, to try to limit competition directly and instead one can rely on a more lenient policy towards mergers, particularly those that improve diversification substantially. The status quo before the liberalization

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[8] Other methods to increase market discipline are the introduction of subordinated debt (Calomiris and Khan (1991) and Calomiris (1997)) and the narrow bank.

[9] See Keeley (1990) and Matutes and Vives (1996).

[10] Direct control of interest rates or of the bank's activities may be necessary in poorly capitalized banks and institutions that have developed problems This philosophy is reflected in the reform of 1991 (FDICIA) in the US.

process, essentially with no competition and tight regulation, was far away from the optimal balance of the trade-off between enjoying the benefits of competition at the cost of increased instability. Indeed, central banks were too complacent with collusion agreements among banks, particularly in Europe.

This calls for an application of competition policy in European banking and, in particular, for scrutiny of domestic mergers that may increase substantially local market power. An added reason for this policy is that domestic mergers (so far the dominant form of consolidation in Europe) that create national champions may increase the TBTF concern more than cross-border mergers. This is so because national authorities will be more keen in rescuing their champions.

3. Optimal regulatory design

Once the need for a LOLR facility, appropriate supervision, and a competition policy for banking is established, the question remains about the optimal institutional design.

If the central bank's role as LOLR is accepted, there are then various arguments in favour of its having a supervisory capacity as well. Indeed, such a role will help it to distinguish between problems of liquidity and of solvency in order to minimize the losses associated with loans granted as well as making possible a role as crisis manager. Further, supervisory capacity may make it easier to determine the best kind of intervention (open-market or discount operations, for example). And in general there will be economies of scope in the

acquisition of information between the function of providing liquidity and that of supervising (for example, the first of these functions requires a detailed familiarity with the banks' liquidity requirements).[11] It can be argued also that there are synergies between the conduct of monetary policy and information collected with supervisory purposes. Indeed, banking supervisory information (early warning of problems with non performing loans or changes in the lending pattern of banks) may improve the accuracy of macroeconomic economic forecasts.[12]

The combination of control of monetary policy and the role of LOLR at the central bank gives rise to the fear that this latter function may be abused, with inflationary consequences. However, in principle, technically there is no problem. Indeed, a central bank committed to price stability will sterilize the injections of liquidity necessary for the stability of the system in the event of a crisis (as the Federal Reserve did in 1987) so that there is no undesired increase in the money supply. However, in practice matters may not be so simple and intervention as LOLR may give rise to confusion in the expectations of the private sector regarding the central bank's monetary policy stance

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[11] See Goodhart and Schoenmaker (1995) and Vives (1992).

[12] Peek, Rosengren and Tootell(1998) provide evidence that the Governors and Reserve Banks Presidents of the Federal Reserve System adjust the staff forecasts according to confidential bank supervisory information and that this information requires interpretative keys which are likely to be lost if the supervisory information, instead of being collected in-house, was transferred from another supervisory agency. For example, a large bank may be overrated because of a TBTF concern.

A potential problem in combining the functions of monetary policy, LOLR, and supervision in the central bank is a conflict between the various objectives. Indeed, when a lot of banks have problems, the supervisory authority would like to ease credit (by lowering interest rates, for example) to help the banks, but such an initiative may conflict with the aim of price stability. This potential conflict is more important in a market-oriented system, with predominance of variable-rate loans, since then the increase in rates raises the credit risk of the financial institutions. However, in general whenever banks have trouble this is a sign of weakness in the economy (with a tendency for inflationary pressures to subside and unemployment to increase)[13] and consequently the monetary policy stance should be eased. The stability and the monetary policy concern tend to be aligned.[14]

A more serious potential conflict of interest arises if one takes into account the reputation of the central bank as guarantor of currency stability, as well as guarantor of the stability and solvency of the system. Indeed, the combination of the two functions may entail a credibility cost for the institution. For example, concern for the reputation of the central bank as supervisor may encourage a lax attitude, and to employ excessively the LOLR

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[13] Peek et al (1998) provide evidence that higher values of the confidential index of bank trouble (percentage of banks with a CAMEL rating of 5, indicating the highest probability of failure) are associated with forecasts, which do not use confidential information, that overestimate inflation and underestimate unemployment.

[14] However, with fixed exchange rates easing monetary policy may lead to the collapse of the exchange rate and increased trouble in the banking sector.

facility so that bank crises will not put its supervisory capacity in question.

Some preliminary evidence indicates that central bank involvement in supervision may increase inflation. Bini Smaghi (2000) provides some evidence with data about 21 industrial countries in the period 1974-90 that central banks involved in banking supervision deliver on average a higer rate of inflation, even after controlling for the degree of central bank independence. Di Noia and Di Giorgio (1999) present econometric evidence that the inflation rate is higher and more volatile in countries in which the central bank has the monopoly of supervision.

The potential conflicts of interest lead us to a discussion of incentive problems among regulators related to their career concerns, accountability and monitoring of their tasks, allocation of control, incentives to produce information and potential capture.

3.2 Separation of powers in regulation

Reasons in favour of having supervision in a separate institution or, more in general, separation of regulatory institutions, fall into five types.

Career concerns and reputation of the regulator. Civil servants and bureaucrats have their own objectives, and they should be given incentives so that they perform the task assigned to them. Their reputation as supervisors may affect their chances of promotion or of future employment. Civil servants worried about their professional career may fail to take decisions that, although necessary, call into question the quality of their work. Thus, for example, the authority responsible for the authorization and

supervision of an entity may be reluctant to accept that the entity must be closed since closure would reflect unfavourably on the regulator's capacity. The result may be an excessive passivity in intervention (Gale and Vives (1993), Boot and Thakor (1993)).[15] The separation between the conflicting tasks "supervision" and "intervention" mitigates these problems.

Multitask assignment and monitoring. If an institution is assigned a plurality of tasks, then powerful incentives cannot be provided since, typically, the results of some tasks can be assessed better than others. In a multitask case the provision of incentives distorts the agency's effort against the activities whose results are less measurable (Hölmström and Milgrom (1991)). The performance of an agency with a well-defined mission, such as the control of inflation, may be assessed and controlled much more easily than that of an agency which on top is responsible for the safety and soundness of banking. At the same time with clear and narrowly defined missions bureaucrats have appropriate incentives. A broad mission for an agency will make the market evaluation of the bureaucrats more difficult and therefore provide them with less incentives to exert effort. The problem is compounded

[15] Thus it has been argued that the US regulators adopted a delay strategy in the crisis of the S&L's, allowing insolvent institutions to continue operating in the hope of a recovery led by exogenous factors. (See e.g. Vives (1991).) In the US prompt corrective action was introduced in the 1991 Federal Deposit Insurance Corporation Improvement Act (FDICIA) to avoid regulatory forbearance requiring mandatory intervention for undecapitalized institutions. At the same time the FDICIA limits the discretion of the Federal Reserve to help undercapitalized institutions (and if by doing so the losses of the FDIC are increased the FR has to compensate the FDIC).

if the mission is fuzzy (not clearly defined). (See Dewatripont, Jewitt and Tirole (1999a, b)).

Allocation of control and the "soft budget constraint". It may be optimal to have institutions with distinct objectives, so that the problem of the soft budget constraint can be addressed (Tirole (1994)). The transfer of control over the decision whether to close an entity from the central bank to the deposit insurance agency, when the magnitude of the entity's liquidity problem is large, may approximate the socially optimum decision. This is so because the deposit insurance agency will be more conservative because it is responsible for paying depositors in case of failure.[16]

Competition to generate information. Competition between regulators may generate more information, either because it facilitates the use of yardstick competition between agencies when their information is correlated (Shleifer (1985)) or because competition between agencies with different aims (e.g. lawyers working for different causes) may be an effective mechanism to incentivate the gathering of information (Dewatripont and Tirole (1999)). For example, it may make sense that both the regulator and the antitrust authority are involved in merger control in banking. The regulator has an incentive to examine the merger from the safety and soundness point of view while the competition policy authority to check the effect on bank customers.[17]

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[16] See Repullo (1993).

[17] For example, in Italy the decisions of the Central Bank over banking mergers often run contrary to the (nonbinding) opinion of the competition policy authority (Cafagna and Sciolli (1996)).

Capture and collusion. The separation of regulatory tasks can make it more difficult for the regulated industry to capture the regulator, or to enter into collusion with it. For example, banks may collude with the regulating agency to hide information regarding delinquent loans. Separation reduces the information that (interested and non benevolent) regulators can obtain, and hence it also reduces their capacity to employ the information in wasteful activities.[18]

This discussion makes clear that the question of how to determine the optimal regulatory institutional structure is open. In the US there is a lively debate whether financial supervision should be centralized in the Federal Reserve or in an independent agency. Informational economies of scope, between monetary policy, the LOLR facility and supervision, are probably the strongest argument to keep supervision within the central bank. The case for separation lies probably in the optimal provision of incentives for self-interested bureaucrats and the advantage of having agencies with well-defined missions.[19] The debate is wide open and much more theoretical and empirical research is needed to assess the trade-offs.

3.3 A design with an independent regulator

A possible design is the following. The central bank responsible for the stability of the financial system.

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[18] The profit earned by collusive activities by a single regulator when a unit of information is increased is greater than that earned by two separate regulators, i.e. there are increasing returns owing to the information in the collusive activities (Laffont and Martimort (1999)).

[19] The fact that successful organizations tend to have a clear mission is emphasized by Wilson (1989).

This means that the central bank must have some monitoring capacity, since, being responsible for the stability of the financial system, it commits resources and assumes credit risk. However, this does not necessarily mean that the central bank needs to have a monopoly of supervision. For example, an independent agency may authorize and supervise the financial institutions, as well as be responsible for regulation, for problems of solvency of individual institutions, and for deposit insurance. This agency could initiate the process of assistance, with a request for liquidity from the central bank, to individual entities in danger that it were desired to rescue, using its own resources or assistance from the Treasury, if necessary compensating the assistance of the central bank. This design should ease the conflict of interest between the credibility of the monetary policy and the reputation of the supervisor, since the central bank does not see itself pressured to help entities with problems unless their fall could entail systemic risk. The scheme naturally has its costs, among them the need for coordination among the agencies, the potential duplication of information gathered, and problems connected with moral hazard in teams (when something goes wrong, one institution may blame another).[20]

It should be added that the convergence between the activities of financial institutions and markets points to

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[20] Currently in the EU there are six countries in which the central bank is the main supervisory authority (Greece, Ireland, Italy, the Netherlands, Portugal, and Spain). Supervision is in the hands of independent agencies, although normally in cooperation with the central bank, in Germany, Belgium, Denmark, Finland, Sweden, and, as of recently, the UK and Luxembourg. In France this responsibility is divided between the regulator and the central bank. In Austria it lies with the Department of Finance.

the need for a combined regulation of banking, insurance and securities, such as in the United Kingdom and in Scandinavian countries. At present it is difficult to separate market-derived risk from traditional banking risk. For example, banking crises that involve operations with financial derivatives (such as Barings or LTCM) seem to require specialized knowledge of market regulators. At the same time banking and insurance tend to converge. There is a case therefore for the creation of an overall regulating agency, separated from the central bank.

The scheme recently established in the United Kingdom is not very far from such an idea. The Bank of England Act (1997) sets up the Financial Services Authority (FSA) which absorbs responsibility for the supervision both of markets (securities) and of financial intermediaries (including insurance).[21] Indeed, the FSA will undertake the authorization and prudential supervision of financial entities of every kind, the supervision of financial markets, regulatory policy, and operations in response to problems in institutions and markets that do not enter into conflict with the competence of the Bank of England concerning the stability of the financial system and problems of systemic risk. In any case, and in particular in response to crises, the Bank of England and the FSA must work jointly, but each institution has a leadership role in its field of responsibility. The Bank of England, the FSA and the UK Treasury have signed a Memorandum of Understanding (MoU) that delineates their respective responsibilities, requires information sharing, gives the

[21] Similar agencies have been set up in Denmark, Sweden and Norway (as well as Japan). In Finland, Belgium and Luxembourg there is a regulator for banking and securities and another for insurance. In Ireland the central bank regulates securities also.

Treasury “the option of refusing support action”, and gives the Bank of England free and open access to supervisory records.

Political economy considerations bear also on the case for an independent financial services authority. In a situation in which a central bank (the ECB, for example) is perceived as having already too much power and faces accountability questions the creation of an independent regulatory agency may help lessen both concerns. However, in countries with a weak institutional structure, and lack of tradition of independent agencies, it may well be that the only institution independent from the government is precisely the central bank. Then the case for the integration of functions in the central bank is strong.

3.4 The competition policy authority, the regulator, and mergers

Merger control responsibility in European banking varies from country to country. Although in many countries responsibility lies with the competition authority, sometimes shared with the regulator (UK, Switzerland, Scandinavia, France, Greece), in practice the central bank/regulator carries a lot of weight.[22] Domestic mergers, outside the reach of the EU competition authority, tend to go unchallenged by the national competition authorities. European practice contrasts with the US where banking mergers must receive approval of the regulator (be it the Federal Reserve, the FDIC or the OCC) but the Department of Justice (DOJ) can (and does) challenge mergers that threaten to reduce competition substantially.

[22] In the extreme the central bank approves bank mergers and the competition authority has only a consulting role like in Italy.

Typically the DOJ uses more stringent criteria to let a merger go unchallenged.

An optimal design would involve both the banking regulator and the competition authority to have a say on mergers. The acquiescence of the national regulator should not be sufficient to give a green light to a domestic bank merger. The involvement of both institutions is necessary to generate the appropriate incentives to produce information regarding the effects of a merger.

Domestic mergers augment the TBTF concern because of the national governments' desire to protect national champions. A potential problem then is that both national regulators and national competition authorities align their interests in being too lenient with local market power. An independent European regulator would have incentives better aligned with competition policy concerns (however, jurisdiction for domestic mergers falls in the hands of national competition authorities).[23] The European competition policy authority can intervene however whenever a state aid to a national champion is involved. This intervention may be optimal even in the case that no negative cross-border externalities are involved because of the state aid. The reason is that the European competition policy authority may represent a commitment to screen state aids according to market failure principles away from local lobbying pressures.[24] At the same time the European competition policy authority can play an important role in facilitating cross-border mergers and

[23] A policy of prompt corrective action by national supervisors may help alleviate the forbearance problem with TBTF institutions.

[24] See the analysis of Besley and Seabright (1999) for related points.

acquisitions by removing obstacles to them built by national authorities.

4. LOLR and banking supervision in EMU [25]

4.1 LOLR and supervision in EMU

The Treaty of European Union opts for the separation of monetary authority from supervision of the banking system. Supervision is in the hands of the national governments. The monetary authority under the Treaty is the European System of Central Banks (ESCB). Although the ESCB is not defined explicitly in the Treaty as guarantor of the stability of the financial system, the role of the Euroepan Central Bank (ECB) in questions of supervision can be larger, with the exception of insurance undertakings, if the European Council so decides unanimously. This means that the ECB could be assigned supervisory powers without the need to reform the Maastricht Treaty.

The ESCB thus follows the model of the Bundesbank in not explicitly including the task of preserving the stability of the financial system, in contrast with central banks such as the Federal Reserve or the Bank of England.

4.2 Banking regulation and supervision in EMU

Freedom of capital movements and freedom of establishment are the two essential tools of the programme to integrate the financial sector in Europe.[26] The Second Community

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[25] Sections 4 and 5 are taken from Vives (2000) which offers a more complete description and analysis of regulatory institutions in EMU.

[26] The legal obstacles to the setting up of subsidiary banks have practically disappeared, although there are still restraints on

Directive establishes the control of the home country for the prudential supervision of solvency and of major risks, and a minimum harmonization between countries in minimum capital levels, concentration of risks, and protection of investors. The Directive regarding deposit insurance proposes a minimum coverage that tends to reflect an interest more in protecting the small investor than in protecting the stability of the banking system. The home country principle also applies here, according to which any bank granted a licence in an EU country will be insured by the deposit insurance system of the home country when it operates in another EU country.

The principles of home country control and mutual recognition lay out a regulatory competition frame which may be beneficial to avoid regulatory burden over and above the minimum European harmonization. At the same time the frame may spur information production and limit the potential opportunism of the national regulators.[27]

Country discretion ranges from legal differences in financial contracting, the organization and conduct of banking supervision, and the institutions and procedures to restructure banks. In particular, European countries may centralize supervision in the central bank, have a separate agency or resort to a mixed solution.

Supervision remains decentralized at the national level. The main institutional channel of the ECB to obtain information regarding the banking and financial system is

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the takeover of domestic institutions by foreign banks (need for approval by the supervisory authority and other restrictions in some countries).

[27] See Kane (1989) for an account of the benefits of regulatory competition.

the Banking Supervision Committee of the ECB, where the national regulators of EU countries (the central banks and other agencies) are represented. In principle it is here that the supervision of euro countries must be coordinated via exchange of information and cooperation of supervisors. To this bilateral cooperation between supervisors, who negotiate information exchange and supervisory procedures about cross border activities in a Memorandum of Understanding, should be added.

4.3 LOLR facilities in EMU

The question arises about who must authorize rescue operations and who bears the eventual cost. A possibility (consistent with the principle of home country control for supervision and deposit insurance), and apparently endorsed by the ECB, is for the home country central bank (NCB) to undertake the LOLR function together with its eventual cost. If the bank develops solvency problems and ends up being rescued then the cost will be paid by the national deposit insurance fund or the national budget. If the liquidity assistance has monetary policy consequences then the ECB and the Eurosystem have to be involved. The involvement of the Eurosystem is to be expected, in particular, in a general liquidity crisis such as a gridlock of the payment system.[28]

It must be noted furthermore that the ECB credit operations must be based on adequate collateral. The definition of what constitutes adequate collateral is left to the Governing Council of the ECB.

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[28] According to the Introductory statement delivered by the President of the European Central Bank (Mr. Duisenberg), on the

The following questions arise regarding the failure of a large entity or a systemic problem:

(1) Conflict of interest between the host and home countries. The central bank and/or the national regulator will, in principle, take into account the consequences of failure only in the national market, even though the failure of the institution may have adverse consequences in other countries. In addition, there is the possibility that the failure of a foreign bank will have systemic consequences in the host country. In short, the central banks and/or the national regulators will tend to pay too little attention to the problems of the foreign clients of domestic banks or to systemic problems that may arise outside the country.

(2) Excessive interventionism. The national authorities will be more likely to have to yield to the pressure of domestic interest groups, directed at forcing the rescue entities with problems, which may include national champions which are TBTF. This excessive interventionism would be aggravated if the cost of intervention were to be distributed throughout the euro area.

(3) Problems of regulatory jurisdiction. Mergers and take-overs between entities of different countries of the EU will entail problems of regulatory jurisdiction. For example, as Pan-European banks appear, authorized in several countries, the regulatory authorities in these countries will necessarily have to cooperate.

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occasion of the Presentation of the ECB's Annual Report 1998 to the European Parliament in Strasbourg, 26 October 1999.

(4) Fiscal implications. Who will pay for a failed insolvent institution that has gone bankrupt after being helped and how will the losses be shared among the fiscal authorities?

In the present framework an increase in the information provided by financial intermediaries would contribute to increasing market discipline and reducing information asymmetries among European supervisors.[29] However, increased transparency can not be a substitute for a proper design of financial architecture.

5. EMU financial architecture

The euro propels the process of consolidation of deep and liquid financial markets in the EU, and it is to be expected that the predominance of financial intermediation in continental Europe will give way to a greater weight of the markets.[30] The consequence is that potential problems of contagion and of liquidity crises come to the fore and the externalities between countries, and the potential instability of the system, increase. At the same time EMU may tend to increase the fragility of the banking system in the short term owing to problems of adjustment and to the process of restructuring (in spite of increasing stability in the long term provided opportunities to diversify are seized). The problem may

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[29] This is inspired in the New Zealand experiment. (See Mayes and Vesala (1998).) For example, if the banks that had lent to LTCM had declared their positions capital suppliers and supervisors could have acted upon it.

[30] Schmidt, Hackethal and Tyrell (1999) find that in France (but not in Germany and the UK) a disintermediation trend is appreciable in the period 1982-1995 while a securitization tendency is manifested in the three countries.

be compounded by the wave of domestic consolidation creating national champions TBTF.[31]

The argument that European financial markets remain segmented and, therefore, present regulatory arrangements are satisfactory, should be put into question. Although it is true that the retail business remains segmented, changes may be relatively quick (hand in hand with electronic banking, for example and the capital markets are integrating quickly. Nasty surprises may be in store unless the regulatory institutions are prepared. If the objective is European financial market integration, regulation should anticipate and promote it. In fact, it may argued that an obstacle to financial integration in Europe, both for cross-border mergers and integration of stock markets is precisely regulatory fragmentation.

5.1 The ESCB/ECB should assume the LOLR function

If this analysis is correct the European financial system will need a guarantee of stability that can only be given by the ESCB, and the ECB in particular. Ad hoc coordination in crisis situations will not be sufficient and may endanger the stability of the system. The necessity of quick intervention in a crisis enhances the value of the centralized authority.

The ESCB should explicitly assume the function of guarantor of the system.[32] This probably only would need a broad interpretation of the Treaty. Duisenberg´s October 1999 declaration in the European Parliament is a step in this direction. Similarly, it would appear necessary that

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[31] See Danthine et al (1999).

[32] As urged by Chiappori et al (1991), Vives (1992), as well as by Folkerts-Landau and Garber (1994). See Pratti and Schinasi (1999) for a more recent discussion of the issue.

the ECB determine the policy as regards the ways in which intervention should be carried out and who should do it. For example, a decision should be made as to the cases in which national central banks will intervene, and to those in which initiative will instead be taken by the ECB. This can be done maintaining, if deemed necessary, some degree of ambiguity about the circumstances and the form in which intervention will be carried out.

The LOLR function of the ECB requires the assumption of some monitoring powers as well, in particular access to supervisory records and information gathering. This is possible without amending the Treaty of the EU. Expanded capacities for the ECB would save costs in communication and negotiation, and might well propitiate the exchange of information.

Given the lack of central fiscal European authority it would be useful that a MoU be signed between the ECB, NCBs and/or national supervisors, and national Treasuries to clarify responsibilities, award the ECB access to supervisory records, establish information sharing protocols and elucidate who would pay for failed institutions which have been helped. The Ecofin could have a consultative role when initiating interventions which may end up in losses to be paid by taxpayers' money.

5.2 An European Financial Services Authority (EFSA)?

The case for an EFSA is based on the underlying tendency toward the integration of intermediary and market operations, with the resulting difficulty of separate analyses of risk, and on the value of having an independent agency in any conflict that might arise between monetary policy and supervision of the financial system. In this manner the establishment and consolidation

of the credibility of the monetary policy of the ECB would be facilitated in a context in which the existence of deep financial markets increases the sensitivity of European economies to monetary policy. Furthermore, the increasing integration of European markets makes it necessary to have centralized supervision and regulation that will internalize the external effects between countries and avoid regulatory barriers to market integration.

Considerations of political economy indicate that an independent ESFA, along with the ECB itself, might better resist local pressure to assist particular institutions. The creation of an EFSA furthermore would facilitate accountability and would not increase the power of the ECB (which is perceived sometimes as too little accountable and too powerful). Probably an EFSA is not something for the immediate future, among other things because most likely it would need a change in the Treaty of the EU and because of lack of European political integration, but it would be good to open a debate about its necessity. Meanwhile the FSA in the UK and the experiences in the Scandinavian countries can serve as a laboratory.

More immediate consideration could be given to the establishment of a European Securities and Exchange Commission as a supervisory body for European financial markets. This would constitute a first step which would facilitate the integration of financial markets in Europe.

5.3 What role for competition policy?

Competition policy should be active in the European banking sector. National competition law authorities should scrutinize domestic mergers, dominant so far in Europe, that threaten to raise local market power and increase the TBTF concern. The acquiescence of the

national regulator should not be sufficient to give a green light to bank mergers. The EU competition authorities should continue to serve as external commitment to make sure that state aids to the banking sector do not keep inefficient institutions in the market and check the application of the TBTF policy to national champions. Cross-border mergers and acquisitions can be encouraged by the involvement of the EU authorities.

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