
Towards a new Architecture for Financial Stability: What Systemic Risk Supervisor?

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First Draft: June 15 2009.

Second Draft: August 31, 2009

Abstract

Multiple countries are reacting to the recent crisis with the creation of systemic risk supervisors. In this paper we use insights from organizational economics to study the optimal design of such institutions. We argue that supervision should be further consolidated within each country. Second we argue that the relation between macro and micro supervisors should be articulated through a management by exception system involving direct authority of the macro supervisor over enforcement and allocation of tasks. Third, we argue that, given the difficulty of measuring output on supervisory tasks, the systemic risk supervisor must necessarily be more accountable and less independent than Central Banks are on their monetary task. Fourth, we discuss the internal incentive structure of the supervisor and how to ensure fluid communication between this and other agency. Finally, we argue that the international system should substitute the current loose, networked structure for a more centralized and hierarchical one.

1. Introduction: Financial Crisis and the Organization of Supervision

Policy-makers have concluded that the recent financial crisis resulted in part from an insufficient focus on systemic risks. To deal with such problem, the G20 decided to push for the creation of systemic risk supervisors. In this paper, we discuss the optimal organization of such authority under the light of the organizational economics literature. We then use our analysis to discuss current reform proposals. These include, in Europe, the De Larosière Report which proposes a European System of Financial Supervision with three authorities (revamped Lamfalussy Level 3 committees¹) and the creation of a European Systemic Risk Council or ESRC under the aegis of the ECB. In the UK, the Turner Review,² which suggests the establishment of one supervisory body instead of three; the [UK] Government's proposal of establishing one independent rule-making body³ and the UK Treasury White Paper on Reforming Financial Markets.⁴ And in the US the reform proposals which recommend an overhaul of the supervisory and regulatory structure, and are likely to lead to the creation of a systemic risk authority (probably the Fed), as well as to the streamlining of supervisory responsibilities, some consolidation of supervisory agencies and greater consistency between the provision of government protection and the degree of supervision and regulation.⁵ We focus on the architecture of the system and not on the content of the specific regulations concerning liquidity, risk taking, capital requirements and the actual rules concerning 'too big to fail' financial institutions that have been addressed by several recent reports into the crisis.⁶

In studying the structure of the systemic risk supervisor, we will seek to answer the following questions, posed by Davies and Green (2008).

¹ For a summary of the tasks of these Committees see Appendix 9 of report of the House of Lords' European Union Committee on 'The Future of EU financial regulation and supervision' published on June 17, 2009 available at <<http://www.publications.parliament.uk/pa/ld200809/ldselect/ldecom/106/106i.pdf>> "Besides advising the Commission, these committees contribute to the consistent implementation of Community Directives, to the convergence of Member States' supervisory practices and to the enhancement of supervisory co-operation" (CEIOPS press release, June 3 2004).

² <http://www.fsa.gov.uk/pages/Library/Corporate/turner/index.shtml>

³ See Letter of the Chancellor to his Czech counterpart of 9 March 2009, available at http://www.hm-treasury.gov.uk/d/chxletter_ecofin030309.pdf

⁴ UK Treasury, 'Reforming Financial Markets', July 2009, <http://www.hm-treasury.gov.uk/d/reforming_financial_markets080709.pdf>

⁵ US Treasury, 'Financial Regulatory Reform, a New Foundation', June 2009, <http://www.financialstability.gov/docs/regs/FinalReport_web.pdf>

⁶ These issues are the focus of Brunnemaer's et al. "Geneva report" (2009), Paul Volcker's et al. G30 Report and, to some extent, the de Larosière (2008) report. The latter also covers architectural issues extensively.

1. What is the optimal number of regulators? Should there be a series of specialist regulators (potentially responsible for more than one sector of the financial system) or a single agency responsible for all aspects of financial regulation?
2. What should be the role of the central bank in the regulatory and supervisory process?
3. If there is more than one regulator, how should each agency be internally structured?⁷
4. How much coordination is required between agencies? What mechanisms are needed to ensure effective coordination and information sharing?
5. How much independence and accountability should regulatory agencies have?
6. What role should be given to self-regulation?
7. What mechanisms are most effective in facilitating international cooperation between different national regulation agencies?

2. Description: The Current System of Supervision

2.1. Architecture in UK, US, and EU/Euro area

Different countries have different institutional designs with regard to supervision and regulation. In this section we focus on the US, the UK and the EU/euro-area.

In the United States, the failure to provide adequate supervision of large sectors of the financial market, such as the mortgage market and securitized assets and the credit derivatives market, and to identify large frauds, such as the Madoff scandal, has led to calls for reform, with the US Treasury publishing a White Paper on regulatory reform on 17 June 2009, which – if approved by Congress – will lead to an overhaul of the US system of financial regulation and supervision. The White Paper proposes granting new powers to the Federal Reserve System (with regard to the supervision of systemically significant financial institutions), new powers to FDIC (with regard to failing systemically significant financial institutions), the creation of a Consumer Financial Protection Agency and a Financial Services Oversight Council and some modest consolidation (the Office of Thrift Supervision, OTS, is expected to disappear, and the responsibilities of OTS and OCC – the Office of the Comptroller of the Currency - will be rolled into a new National Bank Super-

⁷ We take this question to mean (unlike in its initial formulation) the internal incentives, monitoring systems and decision rights in these agencies, rather than the allocation of concrete rights.

visor) and more coordination between and SEC (Securities and Exchange Commission) and CFTC (Commodities and Futures Trading Commission).⁸ Some academics – such as Howell Jackson – have also advocated the need for consolidation of the regulatory agencies, and the establishment of a systemic risk authority.⁹ In the words of Jackson, ‘the Obama administration is apparently choosing to retain our existing highly fragmented system of sectoral regulation but simultaneously to super-impose a “twin-peak” approach with the Federal Reserve Board gaining a systemic risk oversight function (some times called macro-prudential oversight) and the new Consumer Financial Products Commission’.¹⁰ To us the US is moving in the direction of a fragmented and multi-peaked system.

The US currently provides an interesting example of a single monetary area with a single currency, combined with an extremely fragmented supervisory landscape and a complex regulatory system based upon federal law (financial laws enacted by Congress), state law (laws enacted by state legislatures, particularly relevant in terms of insurance companies), regulation by agencies (the Fed and the SEC have rule-making powers) and self-regulation (in the field of securities, the rules of the SROs).

The US model of financial regulation and supervision is currently characterised by its decentralization both through the important role of the states and through the allocation of authority to narrowly focused agencies; multiple regulators, with sometimes overlapping roles coexist, often allowing firms to choose their regulator. Banking in the USA is subject both to federal law and to state law. There are several supervisory authorities at the federal level:¹¹ the Federal Reserve System, the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation (in addition to the federal regulators for thrifts, such as the OTS, Office of Thrift Supervision). There are also supervisory authorities at the state level. The securities industry is subject to a combination of federal law and self-regulation (with some elements of state law).). The Securities and Exchange Commission is a federal agency which oversees the exchanges and

⁸ US Treasury, ‘Financial Regulatory Reform, A New Foundation’, 17 June 2009, <http://www.financialstability.gov/docs/regs/FinalReport_web.pdf>

⁹ See Howell Jackson, A Pragmatic Approach to the Phased Consolidation of Financial Regulation in the United States, Howell E. Jackson, Harvard Law School, November 12, 2008, Harvard Public Law Working Paper No. 09-19, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1300431

¹⁰ See Howell Jackson, ‘Regulatory Reform in the New World’, remarks at the Hart Seminar in London on 16 June 2009.

¹¹ The Gramm-Leach-Bliley Act of 1999 represented the breakdown of the Glass-Steagall wall between commercial and investment banking. This 1999 Act expanded the activities permissible for affiliates of banks and created a new category of bank holding company, the ‘financial holding company.’ However, despite the blurring of the distinctions among financial institutions, the regulatory systems for different types of institutions remain separate. See eg Jonathan R Macey, Geoffrey P Miller and Richard S Carnell, *Banking Law and Regulation*, (New York: Aspen Law & Business, 2001) 33-36 & 443-449.

administers the federal system for the registration of new issues of securities.¹² The exchanges are self-regulatory organizations with powers to promulgate rules for its member firms and listed companies. The Financial Industry Regulatory Authority (FINRA) was created in July 2007 through the consolidation of the National Association of Securities Dealers (NASD) and the member regulation, enforcement and arbitration functions of the New York Stock Exchange. It also performs market regulation under contract for the NASDAQ Stock Market, the American Stock Exchange, the International Securities Exchange and the Chicago Climate Exchange.¹³

The Sarbanes-Oxley Act of 2002 - which introduces sweeping reforms with regard to corporate governance - does not change much the regulatory structure of US securities markets. Investment companies (including mutual funds) are regulated almost exclusively at the federal level by the SEC since the enactment of the 1940 Investment Company Act and the 1940 Investment Advisers Act.¹⁴ Insurance in the USA remains a matter of state law since the McCarran-Ferguson Act of 1945, though pension funds are subject to federal law since the enactment of ERISA (Employee Retirement Income Security Act) in 1974. The US financial regulatory landscape also comprises other regulators, such as the Commodities Future Trading Commission for financial derivatives (commodity futures and options). The crisis has also focused the attention of the authorities on the separation between commercial and investment banking with some voices calling for a new divorce between ‘utility banking’ and ‘casino banking’, a kind of return to some Glass-Steagall type of legislation. Another feature of the US system refers to the role of the FDIC, which has ‘three hats’ as supervisor, insurer and receiver of failed banks. The role of FDIC is likely to be expanded as part of the current reform proposals,¹⁵ with the proposed extension of the special insolvency proceedings now applied only to depository institutions to systemically impor-

¹² The Securities Act of 1933 established a federal system for the registration of new issues of securities, and the Securities Exchange Act of 1934, created a new federal agency, the Securities and Exchange Commission. Following the stock market crash of 1929, these pieces of legislation were enacted to promote stability and confidence in capital markets and to protect investors in view of the shortcomings and inadequacies of the state ‘blue sky’ laws. The reason why state securities statutes were known as ‘blue sky’ laws is because some lawmakers believed that ‘if securities legislation was not passed, *financial pirates would sell citizens everything in the state but the blue sky*’. See Howell E Jackson and Edward L Symons, *Regulation of Financial Institutions*, (St. Paul, Minn.: West Group, 1999), 655-662 and 751-755.

¹³ FINRA is involved in registering industry participants, examining securities firms, regulating markets and writing rules. A summary of its activities can be found at <http://www.finra.org/AboutFINRA/index.htm>

¹⁴ Hedge funds are not required to register with the SEC as investment companies under the Investment Company Act of 1940. In the past, hedge fund advisers were not required to register under the Investment Advisers Act of 1940. However, in December of 2004, the SEC issued a final rule and rule amendments requiring certain hedge fund managers to register as investment advisers under the Act. See <http://www.sec.gov/rules/final/ia-2333.htm>

¹⁵ See US Treasury Framework For Regulatory Reform, <http://www.treas.gov/press/releases/tg72.htm>

tant financial institutions, in the light of the collapse of Lehman Brothers and the handling of AIG.

The United Kingdom presents since 1997 a unified picture in terms of supervision, with the transfer of supervision away from the Bank of England and the establishment of a single supervisory agency, the Financial Services Authority (FSA), which is governed by the Financial Services and Markets Act 2000. The relationships between the Bank of England (which provides lender of last resort assistance), the FSA (the supervisor) and the Treasury (responsible for the fiscal costs of bail-outs) were spelt out in a Memorandum of Understanding in 1997, which was subsequently revised and which remains an important part of the UK system after the new Banking Act 2009. This tripartite arrangement has been the subject of much criticism following the Northern Rock episode. The inadequacy of the UK system to confront financial crisis led to the new Banking Act and to the establishment of a special resolution regime (SRR) to deal with troubled and failing banks. The Bank of England, not the FSA, has the major responsibility in the new SRR. The Bank has now powers with regard to SRR, with regard to LOLR and with regard to financial stability. This dissociation between supervision (where the FSA is the main agency) and crisis management (Bank of England) remains the subject of much controversy. In the United Kingdom the UK Treasury published a White Paper on 'Reforming Financial Markets' on 7 July 2009.¹⁶

The 'architecture' of financial supervision in the EU is currently characterized by three principles: decentralization, co-operation and segmentation (with a multiplicity of committees for banking, securities, insurance and financial conglomerates, the so-called Level 2 and Level 3 Lamfalussy Committees) as shown in the chart below (see Figure 1). Prudential supervision is decentralized at the level of the Member States, based upon the principle of home country control, combined with mutual recognition on the basis of prior regulatory harmonization. The abandonment of the coincidence between the area of jurisdiction of monetary policy and the area of jurisdiction of supervision is a major novelty brought about by the advent of European monetary union.¹⁷ Since the launch of the euro in January 1999, the European Central Bank is in charge of the monetary policy of the countries which have adopted the single currency, while responsibility for supervision remains decentralized, which means that each EU country (eurozone

¹⁶ UK Treasury, 'Reforming Financial Markets', July 2009, <http://www.hm-treasury.gov.uk/d/reforming_financial_markets080709.pdf>

¹⁷ Tommaso Padoa-Schioppa, 'EMU and Banking Supervision', Lecture at the London School of Economics (24 February 1999), <<http://fmq.lse.ac.uk/events/index.html>>, also published in Charles Goodhart (ed.), *Which Lender of Last Resort For Europe?* Ch 1 (Central Banking Publications: London, 2000).

or non-eurozone) organizes supervision as it wishes. Some rely on the Central Bank to do everything (like the Czech Republic), some others have a single supervisory authority different from the central bank (like Sweden), others have separate authorities for banking, securities and insurance (like Spain) and there are other ‘permutations’, like the Dutch twin peaks approach of having the central bank (De Nederlandsche Bank, DNB) as the institution responsible for prudential supervision in the pursuit of financial stability and a separate Authority for Financial Markets (AFM) as the authority responsible for conduct of business supervision. (Both supervisory authorities cover the full cross-sector width of financial markets, i.e. all institutions in banking, securities, insurance and pensions).

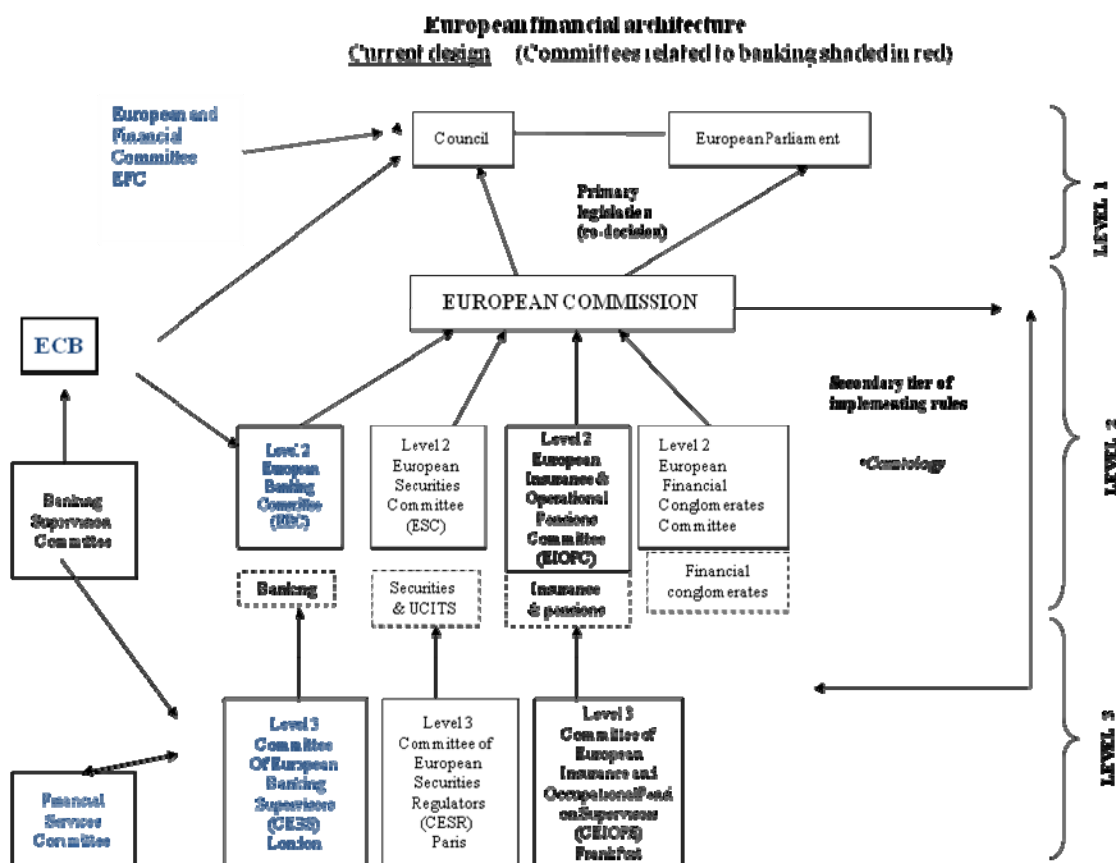


Figure 1: Current Financial Architecture in Europe

2.2. The key tasks: Financial Supervision, Regulation, Monetary Policy, and Crisis Management, and the goal of financial stability.

The terms supervision and regulation are conceptually different, even though many commentators use them interchangeably. Supervision has to do with monitoring and enforcement,

and regulation with rule-making. Crisis management refers to the instruments available to the authorities to confront crisis, in particular lender of last resort assistance, deposit insurance and insolvency proceedings.

Financial stability is the ultimate goal of supervision, regulation and crisis management. Yet, supervision is designed to meet also other goals, such as consumer protection, market integrity and prevention of fraud (depending on the type of financial institution subject to oversight). Regulation is also driven by these ‘supervisory objectives’ and other considerations such as fair competition or the needs of a single market. And crisis management has also objectives of its own, which tend to vary from country to country (e.g. minimization of costs to the FDIC/taxpayers is a goal in the USA) and across institutions (with differential treatment of debtors and creditors in the case of bankruptcy).

Acknowledging the lack of a clearly established analytical and operational framework for the understanding of financial stability, Tommaso Padoa-Schioppa has referred to it as a ‘land in between’ monetary policy and supervision.¹⁸ While in the past monetary policy, prudential supervision and financial stability formed a single composite, those three functions have been unbundled, due to the advent of EMU on the one hand and to the transfer of supervision away from the central bank to a separate agency on the other hand.

The involvement of central banks in financial stability originates in their role as monopolist suppliers of fiat money and in their role as bankers’ bank. Only the ultimate supplier of money can provide the necessary stabilizing function in a nationwide scramble for liquidity, as the financial crisis has amply evidenced, with conventional and non-conventional monetary policy operations (quantitative easing and others).

Monetary policy, the quintessential central banking function, has been increasingly focused in recent years on the pursuit of one goal: monetary stability, understood as price stability. The consistency between one instrument (monetary policy) and one goal (price stability) that is present in the pursuit of monetary stability contrasts with the multiplicity of instruments and goals that exist with regard to the pursuit of financial stability. This makes the pursuit of financial stability a difficult endeavor, and this difficulty is further compounded by the problems of jurisdictional domain, since financial stability is a goal that transcends national boundaries. Like a tsunami that does not respect national boundaries, episodes of financial instability have a trans-

¹⁸ See Tommaso Padoa-Schioppa, ‘Central Banks and Financial Stability. Exploring a Land in Between’, (Speech delivered in the European Central Bank’s Second Central Banking Conference ‘The Transformation of the European Financial System’, 24-25 October 2002), available at <http://www.ecb.int/home/conf/cbc2/tps.pdf>. This speech has been published as Chapter 8 in his book, *Regulating Finance* (Oxford: Oxford University Press, 2004).

national dimension, thus requiring a trans-national solution. Financial stability is also a goal that transcends institutional mandates; hence the proposals to establish ‘councils for financial stability’ in the US, the UK and the EU.¹⁹

A distinction is now made between macro-prudential supervision and micro-prudential supervision. According to the House of Lords Report on the Future of EU Supervision and Regulation,²⁰ macro-prudential supervision is the analysis of trends and imbalances in the financial system and the detection of systemic risks that these trends may pose to financial institutions and the economy. The focus of macro-prudential supervision is the safety of the financial and economic system as a whole, the prevention of systemic risk. Micro-prudential supervision is the day-to-day supervision of individual financial institutions. The focus of micro-prudential supervision is the safety and soundness of individual institutions as well as consumer protection. The same or a separate supervisor can carry out these two functions. If different supervisors carry out these functions they must work together to provide mechanisms to counteract macro-prudential risks at a micro-prudential level’.

2.3 Macro-Prudential Supervision: The role of the Central Bank and the goal of financial stability

The role of the central bank is a major issue at stake in this organizational structure, in particular, whether supervision should be inside or outside the central bank. With or without direct supervisory responsibilities, a central bank has a responsibility for financial stability, because of its lender of last resort role.

The debate about the supervisory responsibilities of central banks is linked to the discussion of the goals and history of central banks. The Federal Reserve System was set up in 1913 ‘to establish a more effective supervision of banking’,²¹ following the banking crises of the XIXth and XXth century (attributable to the inability of banks to convert their demand deposits into cash). The Fed conceives of its monetary policy as having been largely grafted onto its supervisory functions, and regards its supervisory and regulatory functions as a prerequisite and com-

¹⁹ See UK Treasury White Paper, US Treasury White Paper and the Commission Recommendation of 27 May 2009 endorsing the De Larosière Report, http://ec.europa.eu/internal_market/consultations/2009/fin_supervision_may_en.htm. The EU leaders meeting in Brussels on 18-19 June 2009 endorsed this Commission Communication. See Conclusions of the Presidency of the EU Council at http://europa.eu/european-council/index_en.htm

²⁰ See <<http://www.publications.parliament.uk/pa/ld200809/ldselect/ldcom/106/106i.pdf>>. One of us [Lastra] acted as Specialist Adviser to the House of Lords during the inquiry and contributed to the writing of the Report.

²¹ See Introduction to the Federal Reserve Act of 23 December 1913.

plement to its monetary policy responsibilities. These origins, as well as the experience of the Great Depression, help explain the decisiveness and extensiveness with which the Fed has reacted to the financial crisis from the summer of 2007 to date. From the point of view of jurisdictional domain, there is a clear demarcation between the monetary policy operations of the Fed on the one hand and the fiscal policy operations of the US Treasury (authorized by Congress) on the other hand.

The European Central Bank has a clear mandate with regard to monetary policy and monetary stability but no corresponding mandate with regard to financial supervision (which remains decentralized at the national level) and financial stability. This is an issue which remains the subject of much controversy in Europe. From the point of view of jurisdictional domain, there is also inconsistency between a centralized monetary policy and decentralized fiscal policies; in the absence of fiscal union, the fiscal costs of bank recapitalization have to be borne at the national level.

The Bank of England has a clear mandate with regard to monetary policy, and since the Banking Act 2009 it also has a mandate for financial stability as well as responsibilities for the Special Resolution Regime to confront troubled banks (akin to the regime that the FDIC administers in the United States). There is also consistency in terms of jurisdictional domain between the Bank of England and the Treasury.

A common trend in response to the crisis is to give the central bank responsibility for macro-prudential supervision²², which explains the legislative change in the UK, the proposals to establish the Fed as a systemic risk authority and the current debate about which macro-prudential tasks the ECB should assume, given the different jurisdictional domain between the EU (27 Member States) and the eurozone (16 Member States), and the inconsistencies between centralized monetary policy and decentralized supervision and fiscal policies for the eurozone Member States), which we further discuss below.

After describing the system as it exists, we now move on to analyzing how the system should, ideally, be structured though our answers to the 7 key questions posed by Davies and Green (2008).

²² We provided a definition in the preceding section. As the vice-chairman of the Hong Kong monetary authority put it, macro-prudential supervision aims to limit the distress to entire financial systems rather than distress to individual institutions and is based on the assumption that risks faced by the banking system collectively differ from those faced by individual banks. (“Macro Prudential Policy: A new name for some old ways of thinking?”, William A. Ryback, 7 Nov 2006).

3. A single integrated supervisor for insurance, banking and securities is desirable

We start our analysis by discussing the trade-offs that determine the optimal number of supervisory and regulatory authorities. While there is a strong a priori case for some multiplicity, we think that the case for integration is substantially stronger

The key argument in favor of separate supervisors for several problems is one of specialization and division of labor. The main source of the gains from specialization is that knowledge costs are fixed costs, and thus the average cost decreases with utilization. Single focused agencies are likely to utilize their knowledge more intensively and thus will be able to acquire deeper expertise in their domain.²³ However, coordination costs increase with the proliferation of specialized agencies. Specifically, in the context of financial supervision and regulation there are two main issues to consider. First, the proliferation of specialized agencies may increase the likelihood of a particular firm having multiple supervisors. This may leave unregulated gaps [Llewellyn (1999), Goodhart (2002)]. Moreover, as financial institutions continue to diversify into a broader range of activities, a single regulator will be more efficient at monitoring these activities (e.g. by operating a single database for licensing firms) [Briault (1999), Llewellyn (1999)].

This type of coordination costs are non trivial as exemplified by the AIG supervision system. In the words of Fed Chairman Bernanke “AIG built up its concentrated exposure to the subprime mortgage market largely out of the sight of its functional regulators.”²⁴ The AIG-Financial Products exposure was mainly handled from London, hidden from its insurance regulators and the Fed, and essentially only supervised by the Office of Thrift Supervision. Thus the OTS, a small regulator in charge of the Savings and Loan industry was tasked with supervising what was a key cog in the global financial system.²⁵ The ability of AIG to conduct a large scale scam makes most clear the risks of multiple competing regulators with overlapping responsibilities: a sophisticated

²³ The existing literature [Briault (1999), Llewellyn (1999), Abrams and Taylor (2001)] tends to emphasize the economies of scale advantage from the perspective of IT, support etc. of a single supervisory agency. While there are undoubtedly some utilization gains of that kind, those are likely to be small compared to the knowledge gains of having a set of subject specialists dealing repeatedly within their domain.

²⁴ “Second, the AIG situation highlights the need for strong, effective consolidated supervision of all systemically important financial firms. AIG built up its concentrated exposure to the subprime mortgage market largely out of the sight of its functional regulators. More-effective supervision might have identified and blocked the extraordinarily reckless risk-taking at AIG-FP.” Ben Bernanke’s testimony to Committee on Financial Services, US House of Representatives, March 24, 2009.

²⁵ AIG had bought a savings and loan- this was the reason the OTS was the regulator.

financial institution may engage in a particularly insidious type of regulatory arbitrage, whereby it ‘chooses’ its own regulator, one that is unlikely to have the relevant knowledge and expertise.²⁶²⁷

Thus the coordination costs derived from having multiple authorities are likely to be large. How large are the gains from specialization? These gains are unlikely to be large in the financial knowledge domain, as the substantive valuation, risk analysis, liquidity and solvency issues are the same in insurance, securities and banking. Thus on grounds of division of labor, the balance is strongly in favor of an integrated authority.

A second possible argument for diversity is to encourage innovation. Having multiple regulators is like having several independent screens, where behaviors are accepted as long as they are accepted by at least one screen. In contrast, a centralized structure is like one with successive (not alternative screens) where only projects or ideas accepted by those successive screens are accepted (Sah and Stiglitz (1986)) ‘On the other hand, too many behaviors will end up being accepted. On the one hand, the decentralized structure accepts behaviors that may prove risky; on the other hand, if innovation matters, this structure will be the right one as it generates lots of behaviors that may eventually be found to be useful but that would have been killed by a more centralized system (Kane (1984), Romano (1997, 2001), Kupiec and White (1996)].) Conversely, the centralized system generates too little innovation, and leads to fossilization.²⁸ In our view, the argument has been invalidated by recent events. The supervisory framework in the US and in Europe, with many competing agencies, has resulted in too much arbitrage

Third, a single authority may lead to an excessive, degree of consensus among key decision makers. For example, the recent consensus on the conduct of monetary policy was that its role was not to puncture bubbles, and that those were hard to recognize. In hindsight, this seems hard to understand- virtually every indicator, from leverage to house prices pointed to a large misalignment of asset prices. A large literature in economics, under the rubric of “herding” (see Benarjee, 1992 and Welch, 1992) has studied the process by which excessive consensus is gener-

²⁶ According to the former counsel of the Senate Banking Committee , after the 1999 Gramm Leach Biley Act which allowed insurance, banking and securities firms into each others territory "There was a stampede by commercial and financial firms to get a thrift charter so that OTS could be their consolidated supervisor." (Bart Dzivi, a former counsel to the Senate Banking Committee and now a financial-institutions lawyer in Northern California),

²⁷The literature argues that a single, large supervisory authority is better able to attract, develop, and maintain professional staff expertise. [Briault (1999), Llewellyn (1999), Abrams and Taylor (2001)]. This has not been found to be the case in other domains, where specialized agencies can offer a congenial environment to the experts in that field irrespective of size (consider the CIA and NSA in intelligence, with clearly differentiated domains and different structures), and we do not expect it to be the case here.

²⁸ A variant of this argument would consider learning -- multiple supervisory authorities may adopt different approaches to supervision which can yield valuable information that would not be generated by a single supervisor. [Llewellyn (1999)].

ated rationality.²⁹ The key issue is that herding takes place when an individual's information is contaminated by observing the 'coarse' behavior (rather than the information) of others. Avoiding herding may mean that multiple regulators, each with different cultures and information sources may be preferred.

A final argument for multiple agencies is adaptation to change. As Arrow (1974) first pointed out, a design that is optimal for information processing in a given situation is unlikely to be optimal when things change, and yet agents in the organization are unlikely to be willing (in fact, it will often not be optimal) to change it. The reason is that once a code and a set of information channels are created, a sunk investment has been made and will constrain how the organization reacts to a new environment. For instance, Henderson and Clark (1990), in their analysis of the photolithographic equipment industry, find that firms that are successful in one generation often had adopted an architecture that made it difficult for them to recognize changes in demand and technology that would dominate the market in the next generation. However, it is not clear that multiple agencies would better adapt to change.. If there are multiple regulators some of them may prove better adapted to a change in the environment. Thus while a single regulator has the advantage of facilitating communication, multiple regulators may have the dynamic advantage in facilitating the system's adaptation to change. On the other hand, if there is systemic change, separate agencies may each adapt in their own way. If a coordinated radical change through the system is needed, a single regulator will be better able to implement it.^{30 31}

²⁹ Consider a set of individuals (e.g. fund managers) who can observe each other and must decide whether to make a certain decision (e.g. holding subprime debt in their portfolio). They are a priori indifferent on average, although all individuals have some independent observation. Suppose the first fund manager chooses to hold this debt; the second now has two pieces of information, his own and the fact that 1 is holding the debt. He may choose to hold the debt as well. Now manager 3 has three pieces of information—the action of 1 and 2 and his own opinion. If both 1 and 2 hold the debt, 3 may well decide to do so as well because there is now quite a bit of evidence suggesting that it is a good idea, regardless of his own information. The herd, or information cascade, follows. It follows optimally, because each individual is doing the best he can given his information. The consequences of such herding are twofold. First, it is possible for everyone to be wrong. Second, opinion is fragile. It is easy for everyone to change his mind—an overwhelming consensus may be less robust than the sheer number of adherents to the consensus suggests.

³⁰ Existing literature has not made the distinction between adaptation to incremental changes and radical change; it has argued that in general a single regulator may have more flexibility to respond to changes in the financial landscape than would be the case for separate agencies, each of which has its own bureaucratic, political, and legal hurdles to overcome. [Abrams and Taylor (2001)].

³¹ The existing literature has also argued a single regulator may be preferred in other grounds such as conflict resolution (a single regulator is better able to resolve conflicts that emerge between different regulatory goals because of lower "frictions" in deciding and implementing resolutions. [Briault (1999), Llewellyn (1999), Wall and Eisenbeis (2000)]), accountability (a single regulator will be more transparent and accountable than multiple regulators, and may find it more difficult to "pass the buck" if it makes a mistake. [Briault (1999), Llewellyn (1999), Abrams and Taylor (2001)]) and transparency (a system with a single regulator is simpler for financial institutions and consumers to understand. [Llewellyn (1999)].); while wor-

The empirical evidence on the question is small. Barth, Dopico, Nolle and Wilcox (2002b) test whether a significant relationship exist between the extent of banking supervision and key aspects of banking system structure and performance across a wide range of countries. They find that countries with multiple supervisors tend to have lower capital adequacy ratios and hence higher insolvency risk (they take this as evidence of the “competition in laxity”).

Our discussion here suggests that there are some limited pluses to a system with multiple agencies, in terms of specialization, innovation, less herding, and more flexibility and adaptation to change. However, these pluses are in this case clearly overwhelmed by the costs we have identified. Both the US and the EU area have a large multiplicity of actors already, particularly given the ‘federal’ structure of both areas. Given that many supervised financial institutions operate in all three of those areas, the argument suggests that insurance, securities and banking supervisors should be further integrated. We favor a move towards a ‘twin peaks’ approach, in which there is one supervisory in charge of stability and other macro issues and one in charge of conduct of business. Such approach will avoid much coordination cost and the multiplicity and decentralization of the system will sill avoid rigidity.

4. Systemic supervision must be under the purview of the central bank

Historically, the twin mandate of central banks has been stable money and sound banking, as Vera Lutz Smith (a student of Hayek) explained in her excellent 1936 book, ‘The Rationale of Central Banking’. In fact, central banking in the United States emerged in response to a banking crisis (as acknowledged, the Federal Reserve System was created in 1913 following the famous 1907 meltdown in the US that made Morgan’s reputation³²). The emphasis on stable money as the primary objective of monetary policy - the driving force of central bank independence in many countries around the World in the 1980s and 1990s - was often accompanied by a move away from the supervisory tasks that are an integral instrument to achieve sound banking and finance. Indeed, some countries (such as the UK and Australia) have moved prudential supervision outside of the central bank. But a crucial aspect of current reform proposals involves having the monetary authorities be more closely involved in financial supervision, a return to the financial stability mandate. For example, in the US, the Treasury has proposed the establishment

ying that a single regulator may have excessive power (Taylor (1995), Kane (1996), Briault (1999), Llewellyn (1999)).

³²See Strouse (2000).

of a 'single independent regulator with responsibility over systemically important firms and critical payment and settlement systems'.³³ As recently reported, "Treasury officials want the Federal Reserve to become a financial-market 'supercop' with powers to oversee broader risks to the economy. Some top lawmakers have suggested that this would be a tough sell politically, because it would centralize too much power in the Fed."³⁴ Why the back and forth? What are the pros and cons of separation and combination?

There are solid grounds for combining supervision and monetary policy, as there are important synergies between them. The first, and most important lesson of the crisis is that monetary policy not only affects inflation rates, but the price (and thus the amount) of risk taking. An excessively accommodating Federal Reserve convinced actors that they would be saved from their folly (the famous 'Greenspan put') and lead to excessive risk taking. Thus those in charge of monetary policy need to know the amount of risk and instability in the system. Moreover, the central bank needs to have accurate and timely information about conditions amongst banks to conduct effective monetary policy, as well as information about the solvency and liquidity of banks in order to exercise its function of lender of last resort. Having such timely information is particularly crucial during financial crises and the best way to ensure access is to have daily supervision by the central bank, as the literature has noted (Goodhart and Schoenmaker (1993), Goodhart (1995), Haubrich (1996), Briault (1999), Peek, Rosengren, and Tootle (1999), Abrams and Taylor (2001). There are also direct spillovers between monetary policy and financial stability that must be taken into account, as the absence of stable prices harms the stability of the financial system; financial fragility in turn, negatively affects monetary stability.

Moreover, the banks are uniquely suited to the systemic supervisory job: the prestige and independence of central banks enhances their ability to enforce actions (Giddy (1994), Lastra, (1992), Abrams and Taylor (2001)), as well as to recruit and retain the best staff, due to their ability to provide superior compensation and professional development. (Abrams and Taylor (2001)). This is particularly the case in emerging economies, where the scarcity of qualified staff and the position and reputation of the central bank provide a case for it having a supervisory role. Frequently, the research department of the central bank is the only serious economic research group in the country (Lastra 2006).

Of course, extracting synergies never comes without organizational costs. For example, mergers between companies involve efficiency losses as precisely trying to capture these syner-

³³ See <http://www.treas.gov/press/releases/tg72.htm>

³⁴ "Financial Overhaul Raises Questions". WSJ, May 29, 2009

gies makes performance worse on other tasks. One key problem with combining tasks has to do with the difficulty in providing adequate incentives and measurement on the stability task. The measurement of the success of a bank on its central banking functions is pretty straightforward. There is one goal, price stability, one instrument, monetary policy. There are also a relatively small number of people (the governor/chairman and the members of the executive board/monetary policy committee)³⁵ in charge of that task. In contrast, regulation and supervision try to achieve multiple goals (financial stability, investor/consumer protection, conduct of business and others), with a wide range of instruments: licensing requirements, macro and micro prudential supervision, financial stability reviews, lender of last resort operations and other crisis management procedures, and there are multiple agencies involved the central bank, the ministry of finance or treasury, the supervisory agency or agencies. Moreover, supervision typically relies on a large number of staff to perform examinations and other tasks.

The clarity of the metrics used to measure success by central banks on their inflation fighting mission makes it hard to combine these tasks with the supervisory task. As Holmstrom and Milgrom (1991, 1994) have pointed out, in an environment with multiple tasks that are observable with different difficulty, the setting of clear performance criteria in the tasks that are easily measurable deflects agents' efforts away from the tasks that may be valuable but are more difficult to measure. That is, we can expect a central bank with a clear inflation target objective to subordinate success on its financial supervision mission to its inflation targeting performance. We analyze empirically this hypothesis on the next subsection. Conversely, a financial system without a target but with political pressure on stability may pursue monetary policy that is too expansionary in order to minimize the adverse effects on bank earnings and credit quality (Goodhart and Schoenmaker (1993, 1995), Haubrich (1996), Briault (1999), Abrams and Taylor (2001)). A final negative spillover between both tasks is reputational. If the central bank is responsible for bank supervision and bank failures occur, public perception of its credibility in conducting monetary policy could be adversely affected (Haubrich (1996), Briault (1999), Abrams and Taylor (2001)). A related reputational risk concerns its independence, the wider is the role of the central bank, the more subject it could become to political pressures, thus threatening its independence [Briault (1999)].³⁶

³⁵ Though the central bank also needs a team of economists to do the forecasting, to study the transmission mechanisms of monetary policy, etcetera.

³⁶ Indeed one of us (Lastra (1996)) has argued that the Bundesbank was not given direct responsibility for prudential banking supervision in order to remove any possible threat to the credibility of its price stability target.

Balance could be restored if a metric highly correlated with successful supervision could be developed, but this is difficult. First, financial crises are few and far between and probably would be even if the financial supervisor were poor, so the fact that a financial crisis has not erupted cannot be assumed to be an output of proper supervision. Second and related, effective supervision depends on the performance of many agents and organizations, rather than on an individual or a small team, as would be the case with monetary policy (essentially, within the hands of those setting interest rates).

The decision is quite close: the organizational costs of combining the tasks are high, but the synergies are also high. What is the evidence either way?

Early empirical research into these questions generally supported the argument that the central bank should take a narrow focus and not undertake bank supervision (understood as micro-prudential supervision). For instance, Goodhart and Schoenmaker (1995) and Di Noia and Di Giorgio (1999) use cross-country data to find a positive correlation between the rate of inflation and the central bank having responsibility for both monetary policy and supervision. Goodhart and Schoenmaker (1995) note that independent central banks, which are generally better at fighting inflation, are also more likely to not have responsibility for banking supervision. Ioannidou (2005) focuses solely on the US, where the central bank is one of three federal-level bank supervisors. Using data on formal actions taken by federal bank supervisors against banks, this paper suggests that the Federal Reserve's monetary policy responsibilities affect its supervisory behaviour. In particular, when the federal funds rate increases, it relaxes its supervisory posture as a form of compensation to the banks. Feldman, Kim, Miller and Schmidt (2002) use data for the US banking system to test the hypothesis that a central bank with direct access to confidential supervisory data can enhance its macroeconomic forecasting ability, and thereby bolster its monetary policy efforts. However, they find little empirical support for the "access to information" argument.

The recent crisis, however, decisively shifts the argument against the previous consensus. It is clear (for example in the Northern Rock debacle which caught the Bank of England completely unprepared) that the Central banks absence from supervision has had enormous costs. Decisions directly affect financial stability, and such externalities must be considered.

The recent consensus points to an intermediate solution, which bundles macro-prudential supervision with monetary policy and segregates micro-prudential supervision. In our view, this solution allows to capture some of the synergies while avoiding most of the organizational

costs.³⁷ The multitasking, informational economies of scope and reputational issues that we discussed above apply typically to micro-prudential supervision.³⁸ On the other hand, the arguments against separation, namely the central bank's lender of last resort role (especially in the case of systemic failure), its oversight function concerning the payment system and the need for consistency between monetary policy and prudential supervision, are more related to macro-prudential supervision. As Goodhart has pointed out, the safeguard of systemic stability might be adversely affected if supervision is transferred from the central bank to a specialized agency, since the ethos, culture and priorities of the separate supervisory agency, may come to focus on conduct of business and consumer protection issues, leaving aside systemic considerations.³⁹ Thus combining only the macro-prudential supervision tasks with Central Banking seems to provide important benefits while avoiding the main costs identified above.⁴⁰

There are two initial difficulties with such combination. First, the critical question is the extent to which this 'macro' role would be sufficient to avoid the next financial crisis. This crisis is a micro-crisis, after all—knowing how AIG and some of the monoline insurers were operating required an intimate knowledge of their behavior that could only come from being their (micro-prudential) supervisor. On the other hand, there may be some tools (such as extended monetary type aggregates, the volume of Repurchase agreements outstanding, the amount of short term commercial paper, that could give advanced warning of 'frothy' conditions.

Second there is a specific problem in Europe: that of jurisdictional domain. Not all the countries in the EU belong to EMU.⁴¹ The purview of the financial supervisor must be Europe

³⁷ The distinction between macro-prudential supervision (the supervision of the financial system at large) and micro-prudential supervision (the supervision of individual financial institutions) has been adopted inter alia by the Report of the High Level Group on Financial Supervision in the EU, chaired by Jacques de Larosière, published on 25 February 2009 (the De Larosière Report) and by the Report on 'The Fundamental Principles of Financial Regulation', Geneva Reports on the World Economy (2009) by Markus Brunnermeier, Andrew Crocket, Charles Goodhart, Avinaush Persaud and Hyun Shin.

³⁸ See Charles Goodhart and Dirk Schoenmaker, 'Should the Functions of Monetary Policy and Banking Supervision be Separated?' 47 Oxford University Papers 539 (1995).

³⁹ See Charles Goodhart, 'The Organisational Structure of Banking Supervision', Financial Stability Institute (FSI) Occasional Papers No. 1, 2000, <http://www.bis.org/fsi/fsipapers01.pdf> Charles Goodhart and Dirk Schoenmaker further elaborated on the issue of skills and macro or micro perspectives of supervisors and central bankers in a paper entitled 'The Skill Profile of Central Bankers and Supervisors', LSE Financial Markets Group Discussion Paper No. 377, April 2001, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=275971

⁴⁰ A common trend in response to the crisis is to give the central bank responsibility for macro-prudential supervision, which explains the legislative change in the UK, the proposals to establish the Fed as a systemic risk authority and the current debate about which macro-prudential tasks the ECB should assume, given the different jurisdictional domain between the EU (27 Member States) and the eurozone (16 Member States), and the inconsistencies between centralized monetary policy and decentralized supervision and fiscal policies for the eurozone Member States).

⁴¹ See De Larosière report (2009) and House of Lords Report (2009).

wide, but the European Central bank only includes some of the countries in Europe. This is particularly important in the case of the UK, which is Europe's key financial center. The De Larosière Report suggests that all EU central banks (the composition of the General Council of the ECB, the one organ that includes the membership of all EU central banks, not just those of the euro-area) should be part of the European System Risk Council. An alternative solution could involve including ex-officio as a member of the European Systemic Risk Council the governor of the UK central bank as well as, in a rotating manner, a governor from one of the other non-EMU countries.

If the solution is adopted, how should the relation between micro and macro supervision and regulation be articulated? At the end of the day, each bank has a supervisor in his own country, and that supervisor sets the standards- how can that supervisor be forced to raise standards on a particular institution posing some kind of systemic risk? We discuss this next.

5. Task allocation and communication between micro and macro supervision must be ensured.

1. Task Allocation: There must be an ex-ante allocation of institutions to the macro-supervisor, who must also have control over the supervision of possible 'exceptions'

The problem with the 'vertical specialization' between macro and micro prudential supervision is articulating this relation. This involves two problems: making sure that the right type of problems go to the right authority, so that for example whatever appears initially as micro but becomes a macro issue can be dealt with. (This is the case for instance with the supervision of systemically significant financial institutions, such as AIG). And making sure that the decisions of the macro authority are in fact executed- giving teeth to these proposals.⁴²

On the first issue, the standard solution in the business world (analyzed in Garicano, 2000) is Management by Exception (MBE). Essentially, the idea is that every problem (for example, a bank decision, or a bank portfolio) arrives initially to the micro authority and is dealt with by it unless it is classed as exceptional. If it is an exception, then the problem (a risk or the bearer of the risk) must be passed up to the next authority (the Macro-Prudential supervisor). Of course, the problem, both in firms and in this context, is ensuring that the 'lower level' agent (or agency,

⁴² Both of these issues are avoided in the De Larosière (2009) report

here) is willing to pass ‘upwards’ the problems that are not truly in his domain. Financial incentives may be used for this purpose in firms or even in markets,⁴³ but not in this context.

Authority is also needed in the case of the enforcement of the actions of these supervisors. If the Macro-prudential supervisory authority finds that some particular institution is putting the system in danger (say, like AIG-Financial Products did) it must be able to have its actions with respect to that institution enforced.

In the particular context of the European Architecture, we conclude that it is necessary that the European Financial Supervisory authority or authorities be endowed with authority to overrule and direct the National Supervisors, as well as to determine the allocation of problems to each level. This is how the Antitrust system currently works, with (1) independent agencies in each country as well as (2) a central agency for cases that reach across borders, the DG Competition, and a (3) clear hierarchical system of allocation of cases as well as a clear (4) direct enforcement authority of the EU institution that directly applies in each member state.

2. Ensuring coordination and communication

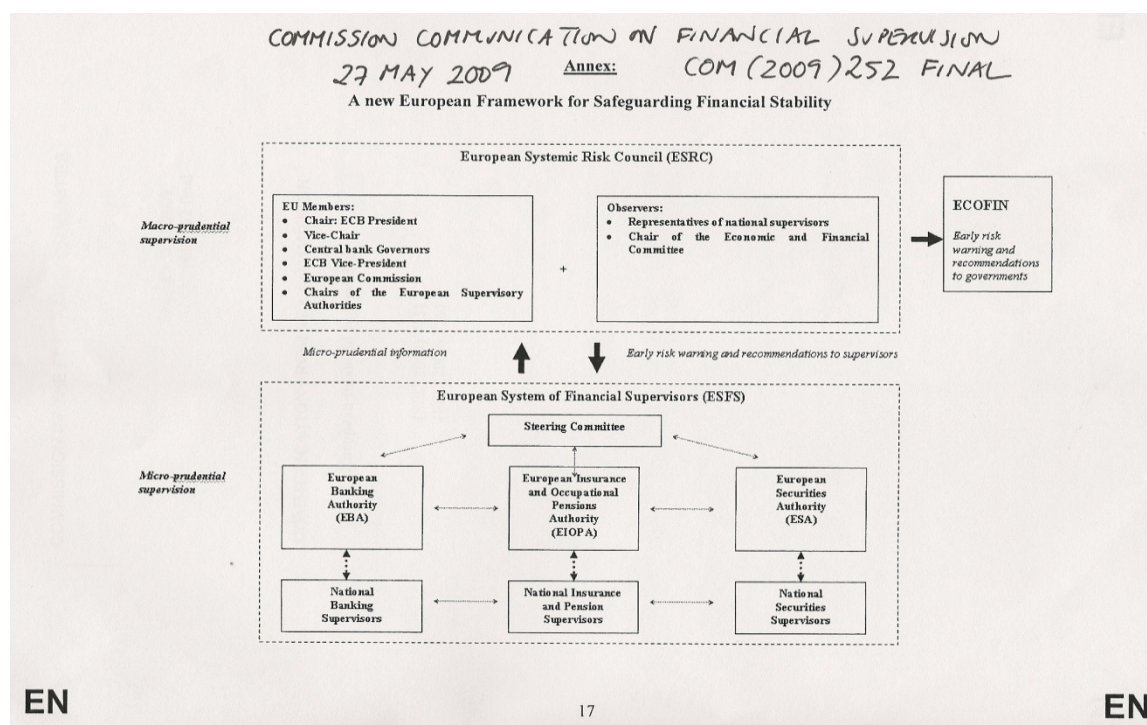


Figure 2: European Architecture proposal

⁴³ Referrals are used in the law with this purpose, see Garicano and Santos (2002)

There are two main obstacles to information sharing among agencies - bounded rationality, resulting in misunderstandings due to the use of different languages or ‘codes’ by the different agencies, and conflicting incentives.⁴⁴ First, organizations choose (evolve) different languages or codes as a result of the specific issues they deal with—evolving specialized codes allows them to improve communication within the organization but tends to isolate it from other organizations, while a less specialized code facilitates coordination among organizations but impedes communication within the organization. Consider the AIG fiasco. As Ben Bernanke has put it “There was no regulatory oversight because there was a gap in the system.” To some extent, the gap is a code gap. Insurance activities were subject to regulation from state insurance regulators, and the way such activities are ‘coded’ is as insurance. As a result, the form of the earnings and financial statements reported by AIG was just inadequate for non-insurance regulators to understand its exposure; since the provision of financial products was one of its main activities, this miscommunication proved extremely important.

However, as Crémer, Garicano and Prat, (2006) argue the advantages of specialized, independent codes inside organizations have been decreasing over time, due to the advent of computer systems that make common databases cheap. As they argue, communication across organizations can be facilitated through the use of shared central data bases that house data in the same formats, using the same accounting codes. In particular, such common databases make it possible to have horizontal communication between members of two different organizations, without having to go through their hierarchical superiors for ‘translation.’

Second, there are usually strong disincentives to information sharing across organizations. A turf war is an extreme instance of this. In a turf war, agencies shift resources from productive activities to influence activities. This may enable the less productive agency to obtain more resources in the future (Skaperdas, 1992). Besides wasting resources, turf wars in the intelligence community retard the sharing of information because sharing benefits the rival agency. Clearly, these turf wars are right now playing a critical role in the regulatory aftermath of the crisis.⁴⁵

Designing incentives to reward information sharing isn’t simple, however. In for profit organizations, information sharing and coordination across firms relies on profit sharing – to en-

⁴⁴ Information flows also present the challenge of the jurisdictional domain, since supervisors must exchange information across national boundaries. They failed to do this with regard to the size and riskiness of the securitized market and the credit derivatives market, to cite two glaring examples.

⁴⁵ Current turf wars in congress and between agencies are at the center of the current debate of how many agencies to have and who is to blame for the crisis, with the OTS playing the central role. “Financial Overhaul raises questions”, WSJ, May 29 2009.

sure that division a and division b cooperate (or firm a and firm b in a joint venture) their managers are given a stake in the overall company's profits (see Dessein, Garicano and Gertner, 2008). This type of solution is not feasible in the supervisory context we are studying. However, a similar type of solution may be achieved by creating umbrella organizations (like the college of supervisors idea in the EU) where the reputational value and cost of decisions can be shared by all of those involved.⁴⁶ Also, agents may be rewarded for sharing information and for the use of the reports that they originate. However, the rewards must be linked to quality of information. What is needed is to find methods to measure 'impact' similarly to the use of number of "hits" on a website to determine its prominence or the use of citations in academia.

An organization can also nudge its members toward sharing more information by lowering the costs of doing so. For example, agents from different divisions (or agencies) with related responsibilities could be housed in close proximity. Sharing a sense of ultimate identification with the mission will also help.

Clearly, having a single agency rather than many will simplify matters. A single agency will tend to have a common code (including compatible data networks), uniform access criteria, and other common practices that facilitate the exchange of information; fewer turf wars because of centralized control over the potential warriors; and weaker incentives to hoard information because the benefits that members of a single agency generate by sharing will tend to benefit their own careers. However, as we argued above, a single agency may lose its focus.

We thus propose three ways to facilitate information sharing. First, the communication advantages of single organizations can be obtained through the use of centralized and common databases together with the adoption (rather than hierarchical) communication. Second, organizations, even if separate, should be housed in close proximity to facilitate the creation of bonds that facilitate informal sharing. This should be complemented with fomenting a 'sprit de corps' and identification with the ultimate aim. Third, while explicit monetary incentives are unlikely to be used, agents should be rewarded as a function of the 'impact' that their recommendations have on final decisions.

⁴⁶In a recent speech, a member of the ECB Executive Board, Lorenzo Bini, argued the disincentives to collaborate remained as strong in the Colleges: "Colleges of supervisors have been created recently, but whether they can overcome these disincentives to cooperate is a moot point. Although the recent amendments to the Capital Requirements Directive (CRD) strengthen the legal underpinning of the colleges, they do not reduce or eliminate the disincentives to exchange information. In addition, all these colleges create level-playing-field and coordination problems. Moreover, the CRD does not introduce clear rules as regards decision-making, which may make it very difficult for colleges to come to a joint decision, especially in a crisis situation." ECON meeting, Brussels, Feb 12 2009, <http://www.ecb.int/press/key/date/2009/html/sp090212.en.html>

6. Internal Structure of the Agency

How should jobs, decision rights, incentives and accountabilities be established for employees in a supervisory agency? The answer follows from our discussion above. The key issue is that performance in these tasks is hard to measure. Moreover, these tasks have a lot of downside, and little upside- so that little credit is received if things go well, and a great deal of scrutiny and criticism received if things go bad.⁴⁷ That means the biases of employees are to take actions that look good and that can be easily explained. The job is made particularly difficult by the procyclical nature of some of the rules supervisors must enforce. In a falling market, capital rules and market value accounting rules may bring to their knees institutions that would otherwise be considered sound, and may force the supervisor – by strictly applying the rules – to take unnecessarily tough decisions, that can further exacerbate the credit crunch, for instance by preventing such institution to extend new loans, with negative externalities for those that need access to credit.

Thus using explicit performance objectives is hard, and likely to distort that performance towards easy to measure but meaningless tasks. Instead, jobs of this nature must be rewarded through low powered incentives and little or no ‘objective’ performance measurement. Instead, Employees should be rewarded through their career, which provides for longer term incentives and their performance evaluated through subjectively, by their hierarchical superiors.

This of course also creates distortions, since distinguishing the part of the performance that is due to random errors or noise from the part that is due to good or bad decisions by the agent may be difficult (e.g. Holmstrom, 1982), and this in turn results in a wedge between self-interest and agency interest. First, career concerns can provide another spur to herding behavior. Sharfstein and Stein (1990) studied a setting in which “good” agents have receive a signal that is correlated with the actual state of the world. In contrast, “bad agents” receive a noisy signal that is uncorrelated with the state of the world. An agent who discovers that his opinion does not coincide with that of his colleagues may infer that he is “bad,” that is, that he does not have accurate information. As a result, he may prefer to copy what other managers say rather than offer his own view. Thus herding may occur not, as in our earlier discussion of herding, as a result of agents’ optimally processing information, but rather as the result of their doubts about the accuracy of

⁴⁷ That supervision is a thankless task is a point made by Charles Goodhart, ‘The Organizational Structure of Banking Supervision’, (London: LSE Financial Markets Group Special Paper 127, 2000) 30-31, *supra* note 39.

their own information in the face of an opposed consensus.⁴⁸ Consistent with this analysis, Chevalier and Ellison (1997) find that boldness does not pay for portfolio managers—those who deviate from the average portfolio are more likely to be terminated—and that managers respond to this prospect by choosing portfolio weights that are close to the mean; in other words, they herd. Relatedly, public employees typically compete against each other for pay and promotion (that is, there is a fixed number of slots at the different career levels), and while such tournaments can have good incentive effects (Lazear and Rosen, 1981), they can also have bad ones. Agents may try to sabotage each other (Lazear, 1989) by concealing information or providing false information. Or they may squander resources on “influence activities” that seek to manipulate the perception of their performance by superiors or otherwise gain the favor of those superiors (Milgrom and Roberts, 1988, 1990).

Avoiding this kind of careerist behavior is important to have a well functioning supervisory agency. Creating a sense of identification in employees with the agency can help to align individual and organizational incentives and thus reduce this type of principal-agent conflict (Akerlof and Kranton, 2005). Military organizations for example endeavor to create an esprit de corps that substitutes for financial incentives to good performance.

7. Independence and Accountability: The macro supervisor should be less independent than central banks are now in their monetary policy responsibilities

7.1. Theory: Independence and accountability

Over the last two decades, the establishment around the world of independent regulatory agencies has ignited a debate on how to reconcile technocratic independent institutions with the demands of democratic legitimacy. How can giving freedom (i.e., independence) to unelected officials be reconciled with a society remaining democratic? The answer is: through accountability. To begin, it is important to point out that authority is not given away, but ‘delegated’. A clearly specified mandate is given by parliament, and the agency to whom the mandate is given, be it the central bank or another agency, is then left to get on with carrying it out.

⁴⁸ A related point is made by Prendergast (1992) in a hierarchical context. An agent who knows what his manager thinks may be inclined to bias his report toward agreement with the manager’s views, since he may think the manager has more information and also will have a higher opinion of him if his report coincides with the manager’s own evaluation. In other words, they may become “yes men” (Prendergast, 1992), who, knowing that their supervisors determine their careers, try first to infer what a supervisor thinks the action in response to a particular problem should be and then make recommendations that are biased toward what their supervisor hopes to hear.

The problem is analogous to the classic agency problem, where an agent must undertake the tasks in order to achieve the objectives required by the principal. Essentially, the principal (society through its elected representatives) may choose to retain the decision rights and delegate only the execution, in which case there needs to be communication back from the principal to the agent. Alternatively, the principal may choose to delegate all the decision rights. The advantage of delegation is that the agent (the regulatory agency, here) has better local knowledge and information; the disadvantage is that the agent may have different objectives, and thus a loss of control ensues. Thus the question of ‘how much independence’ comes down to a tradeoff between incentives and loss of control (Jensen and Meckling (1995)). The extent to which communication is possible also affects the attractiveness of delegation (Dessein, 2002). If the local knowledge can be communicated credibly (for example, through hard information in the form of reports) then delegation is less attractive; if instead information is soft, delegation may be preferred, as the alternative is to take decisions at the center without information. To the extent that the agent can be made *accountable* for his actions, the incentive alignment may increase and delegation may be easier.

The notion of accountability is often an elusive one. There is process accountability (we could call it accountability about the ‘inputs’ to the process). What is critical here is placing of the independent institution within the constitutional system of checks and balances. There is also ‘output’ accountability or ‘output monitoring’⁴⁹ which emphasizes performance, transparency and disclosure. Performance accountability requires that there are objectives or standards (criteria of assessment) according to which an action or decision might be assessed. The extent to which one or another may be preferred can be a function of the type of supervision that is at stake (see Pendergast (2002)) In the case of supervision, input or process monitoring should be preferred. First, because as we discussed in Section 4, performance or outputs on the supervisory activity are hard to measure. Second, because the supervisory task is not unpredictable and unstable, but rather required consistency and long horizons, which could be distorted by output based monitoring.

The fact that inputs, rather than output monitoring should be chosen also suggests that providing a monetary authority (with a clear performance objective) with independence is not the same as providing independence to a supervisor: the design of a proper legal framework for supervisory independence needs to take into account the multi-faceted nature of supervision.⁵⁰ In

⁴⁹Lawyers often focus on the process or ‘inputs’ while economists often emphasize performance or the ‘outputs.’

⁵⁰See Lastra and Shams (2001) and Lastra (2006). See also Marc Quintyn and Michael W Taylor, ‘Regulatory and Supervisory Independence and Financial Stability’, 49 CESifo Economic Studies 259 (2003).

particular, if delegation and output measurement cannot be used, then independence must be more restricted with regard to financial supervision than with regard to monetary policy.

Transparency is a complement of accountability- information needs to be observed for the agent to be made accountable. The provision of information in the context of accountability, whether in an *ex ante* investigation or an *ex post* requirement of disclosure, facilitates transparency. On the other hand, a transparent economic and political environment enhances the effectiveness of accountability. The two concepts are therefore mutually enforcing, and they both share the provision of information as a common requirement.⁵¹

However, the provision of information is hardly ever a neutral account of what happened or of what is happening, as the agent is likely to provide it in a self-serving way. As Prat (2004) argues, when experts (supervisors in this case) care about their own careers (have ‘career concerns’) transparency on the inputs or actions of agents is negative, while transparency on the outputs or consequence of these actions is positive. Essentially, the risk is that if the action is transparently observable, the risk is that agents will behave in a conformist way by doing what is expected of them. This conformism may lead to the wrong decision being taken. If instead, the agent’s actions were confidential and only its output were observable, the agent would aim to achieve the right outcome, even if this involved taking unexpected actions. This may be true for both supervision and monetary policy tasks. Consider for example the vote with regard to monetary policy decisions taken by the European Central Bank. If minutes of the meetings were published, then board members would be more likely to take the actions that are expected of them, such as acting in their national interest rather than euro interest. A related theoretical argument has been made by Amato, Morris, and Shin (2003) who argue that too much transparency can actually reduce policy effectiveness. If the central bank signal is noisy relative to private signals, they show, attaching too much weight to the noisier signal may distort the quality of the market’s treatment of information. While this argument is of unclear validity for monetary policy where most relevant information is public (Blinder and Wyplosz, 2005), it may be very relevant to supervision, where private information is important.

A second downside of transparency concerns panics. There is a large degree of consensus within the macroeconomics literature (Blinder, 2002, 2004) that transparency in the decision making of central banks is useful. However, certain supervisory decisions require a degree of

Quintyn and Taylor argue that regulatory and supervisory independence is important for financial stability for the same reasons that central bank independence is important for monetary stability.

⁵¹ As an empirical matter, Blinder (2004) finds a U-shaped relationship between transparency and what he calls the degree of “democracy”. More transparent banks are the ones with least and the most democratic procedures. For a robust defense of transparency see Davies and ??? (forthcoming), Chapter 7

confidentiality, given the psychological connotations of bank panic and contagion. For instance the need for covert assistance in the case of lender of last resort operations (which is recognized in the new Banking Act 2009 in the UK) is of particular importance to contain a crisis, since the belief in a panic is self-fulfilling and the fact that an institution is known to require official assistance may trigger the very run the authorities are keen to prevent, and thus ‘stigmatize’ the provision of such assistance. These considerations put transparency for supervisory decisions in a different category from transparency for monetary policy decisions, where the arguments are overwhelmingly in favor of disclosure.

Thus our review of the organizational economics and macro literature in independence and accountability leads us to three conclusions. First, that the difficulty in making supervisory performance measurable means independence of supervisors should be limited with regard to certain supervisory decisions. Second, that inputs (or process) monitoring rather than output monitoring should be preferred. In other words accountability cannot just rely on whether crisis are or not taking place; instead, mechanisms must be put in place that ensure that supervisors have to explain the actual decisions and the process leading to them. Third, transparency, itself a complement of accountability, must be minimized with regard to certain crisis-sensitive decisions in a supervisory agency to avoid career based decisions of experts, informational distortions by the market and bank panics.

8. The macro supervisor must limit self-regulation to ensure managers act in the interest of stakeholders

8.1. Self regulation: theory and evidence

Market supervision and regulation, i.e., self-regulation, exercised by market institutions, has played a role in the financial system.⁵² The idea is that financial firms are subject to continuous monitoring by their competitors, institutional investors, customers, counter-parties, rating agencies and other private agents. In fact, there is some evidence to support this view: Barth, Caprio and Levine (2004) find evidence (pre-crisis!) that countries with government policies that promote the private monitoring of banks tend to have better bank performance and more stability. Supervisory policies that are less restrictive and that allow banks to undertake a wider range of banking activities (in terms of income/loan portfolio diversification) tend to be correlated with better performance. Also Ferguson (2000) suggests that market information (contained in either

⁵² Lastra (2006), chapter 3.

bond ratings or equity performance) tends to be a better predictor of future banking performance than supervisory information, indicating that there is an important role for market self-regulation.

However, the dangers of regulatory capture cannot be ignored. In some instances, there is a fine line between being ‘market friendly’ and being ‘market captive’.⁵³ In his congressional testimony in October 2008, Alan Greenspan stated⁵⁴ “Those of us who have looked to the self-interest of lending institutions to protect shareholders’ equity, myself included, are in a state of shocked disbelief... Yes, I’ve found a flaw. I don’t know how significant or permanent it is. But I’ve been very distressed by that fact”

What was the problem? Why would self-interested agents not self regulate adequately? The problem is, of course, that the banks are not the ones determining these self-regulatory decisions, it is their agents, the human being who work at the banks. It is by now transparently clear that the bonus system combining short run horizons for executives at the banks (bonuses decisions are awarded annually) together with the enormous sums at stake mean that executives do not have an incentive to self-regulate, but rather to take on excessive risk . Maybe the most illuminating quote of the crisis in this respect was provided by the Citibank CEO Chuck Prince in July 2007 in an interview with the FT:

“When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance. We’re still dancing.”⁵⁵

It is an asymmetric system in which heads I win, tails you lose. This system puts the managers’ own interests ahead of the long term interests of the institution (including its very survival as a viable entity). There are also misaligned incentives as well as conflicts of interest if the agents in charge of collecting the information – in particular we are thinking here of rating agencies and auditors – have an interest in ‘keeping things going’ for fear that blowing the whistle too early may lead to a loss of business.

8.2. Implications: how much self-regulation?

We conclude that the role of self interest must be carefully rethought, as Alan Greenspan’s congressional testimony suggests, to recognize that banks, ratings agencies, insurance agencies etc. are not self interested ‘per se’, as it is not these institutions, but their managers who make the decisions . The way self-regulation works thus depends crucially on how the corporate

⁵³ The economic literature on ‘regulatory capture’ is well known: any given industry would try to influence the outcome of the regulatory process for its own benefit, rather than the public interest. Industry lobbies can exert undue influence, as shown by the Enron debacle. See Tommaso Padoa-Schioppa, *Regulating Finance* (Oxford: Oxford University Press, 2004) 48-51.

⁵⁴ “Greenspan Concedes Error on Regulation”, *The New York Times*, October 23, 2008.

⁵⁵ Interview with Citigroup CEO in the Financial Times: “Citigroup chief stays bullish on buy-outs” by Michiyo Nakamoto and David Wighton, July 9 2007.

governance environment works, on managerial incentives etc. A priori, there is no reason to expect self-interested managers to have any incentive to worry about the consequences of their actions for the financial system as a whole or even for the long term stability of their own institution.

9. Ultimately, the international Supervisor must move from a loose network to a hierarchical structure

The international dimension of supervision adds another layer of complexity to the reform of the supervisory structures, which require a new ‘international architecture’. This suggests that the issues of jurisdictional domain are likely to dominate the debate of the future of the architecture of financial stability. Calls for the creation of an international financial authority (whose powers, relationships with national authorities, legitimacy, and accountability would need to be debated carefully *ex ante*) have been made in response to the current plethora of informal bodies, standard –setters (of soft-law) and inadequate institutional structure. Colleges of supervisors address some problems of co-ordination and co-operation, but they are not enough to respond to the challenges of global institutions and markets governed by national regulation and supervision.

The current actors in the international financial architecture are organized as a loose network of ‘formal’ international financial institutions (IMF, BIS, WTO to the extent that it is engaged in trade in financial services), regional financial institutions (notably the ECB) , international *fora* meeting under the auspices of a formal international organisation (such as the Financial Stability Forum – renamed Financial Stability Board following the G-20 meeting in London in April 2009 - and the Basel Committee on Banking Supervision), other international *fora* (such as the International Organisation of Securities Commissions), ‘informal’ international groupings where international financial issues are discussed (such as the Group of Seven, G-7 Group of Ten, G-10 countries, Group of 20, G-20 countries), national central banks and ministries of finance or treasuries (which can play a role individually or collectively meeting in an international forum of a formal or informal character), and private financial institutions acting on a global scale. This multiplicity of actors and the mushrooming of international *fora* create a very complex network structure.

In our view, given the rise in systemic risks noted by all the reports on the current system and the interconnectedness of the global financial system the way forward must involve the substitution of this loose network for a hierarchical structure more akin to the one used in the WTO. That is, in the same way as the governance of trade has required a new multilateral organism with a clear, hierarchical structure that has substituted the previous morass of bilateral relationships, the evolution of the financial system requires the creation of a new multilateral financial body with authority to settle disputes and to impose its decision.

A move from a loose network to a hierarchical structure is not without costs. Networks structures are generally based on informal relationships, enforced by reciprocity, by relational contracts where each agent takes his actions in the knowledge that the relation will continue.⁵⁶ These networks tend to support very thick exchanges of information, as agents develop trust; the absence of hierarchical relationships limits the downside of honesty and truthful reporting and the scope for ‘yes-men’ type behavior. On the other hand, networks have limited ability to enforce decisions. Precisely this absence of hierarchical authority limits the extent to which individuals are able to force or compel each other to comply with decisions not strictly in their own interest. True, relational contracting (the expectation of future cooperation) can do a lot; but the more agents involved in the relational contract, and the more complex the structure, the less likely such a structure will compel this behavior.

A hierarchy is preferable in this financial context for precisely this reason. n. Loose coordination works only in imposing decisions that are win-win, but will never succeed at imposing decisions that are better for all but leave one party worse off. A hierarchical authority, one that, like the WTO, is perceived as representative, may be able to do this.

10. Conclusions and application to the European Architecture

As we will discuss next, our analysis broadly supports the suggestions of the main proposal put forward until now on the reform of the architecture of supervision in the Euro Area, the De Larosière report (we refer to Chapter III, which covers essentially the terrain of the architecture of supervision). We do have some concerns and some disagreements, which we will address specifically as well.

⁵⁶ On this comparison between networks and hierarchies, see Powell (1991).

We are mindful that any reform proposal for the EU must contend with what is an inevitable tension in the current EU structure: a national mandate in prudential supervision, combined with a single European currency (which affects all eurozone Member States) and a European mandate in the completion of the single market in financial services, which affects all EU Member States. Moreover, reformers have to contend with the different jurisdictional areas of the EU (27 Member States) and the euro-zone on the other hand (16 Member States). None of those issues fall within the purview of our analysis.

The system until now is quite clear: only monetary policy has been centralized (and only for those Member States that have adopted the euro); supervision and crisis management have remained for the most part a national competence (the ECB does provide market emergency liquidity assistance, but assistance to individual institutions whether via collateralized lines of credit, recapitalization or other forms of support is a national competence). Regulation is both national and European, with a large amount of Directives and Regulations providing a unifying picture with regard to banking and financial regulation in the EU (although some rules notably with regard to insolvency proceedings are yet to be harmonized). Padoa-Schioppa has referred to the current approach as one based on ‘European regulation with national supervision’.⁵⁷

Such a system gets close to the optimum in terms of specialization, creativity and innovation, but the lack of synergies and coordination may prove costly, specially in a crisis. This has been evidenced by the current financial crisis, where countries have resorted to all sorts of actions and state aid measures in response to unfolding events. The lack of coherence in the governments’ strategies and the inadequacies of the home-host country divide (as evidenced by the Icelandic banks and the difficult situation in the banking system in Eastern and Central European countries, as well as the Baltic states) have led to calls for centralization of the supervisory functions, notably those related to macro-prudential supervision as well as those related to mediation (some sort of dispute settlement) in case of conflicts amongst supervisory authorities should a cross-border bank operating in different EU jurisdictions run into serious problems.

We discuss next the implications of our analysis for the various aspects of the European architecture and the De Larosiere proposals.

1. What is the optimal number of regulators? Should there be a series of specialist regulators (potentially responsible for more than one sector of the financial system) or a single agency responsible for all aspects of financial regulation?

⁵⁷ See Tommaso Padoa-Schioppa, *Regulating Finance* (Oxford: Oxford University Press, 2004), Ch. 8 on ‘Central Banks and Financial Stability’, 121.

As we have discussed in section 3, there is little evidence that a single authority performs better. On the other hand, multiple authorities, in spite of the potential for holes in supervision, have some advantages: specialization, innovation, less herding, and more flexibility and adaptation to change. However, in the Europe area diversity is ensured by the presence of multiple countries, often competing with each other. Thus we think there is a need to go further than the suggestion of the De Larosière report, which proposes that day-to-day [micro] prudential supervision in the sense of actual supervision of financial institutions would continue to be a national competence, achieving the gains of local knowledge and specialization we have emphasized in section 3. We believe that all supervisory structures at country level must be merged into a single authority, under the control of national central banks.

2. What should be the role of the central bank in the regulatory and supervisory process?

Our analysis argues that most of the arguments for keeping monetary policy and supervision apart (multitasking, informational economies of scope and reputational issues) apply mainly to micro-prudential supervision; while the arguments against separation, namely the central bank's lender of last resort role (especially in the case of systemic failure), its oversight function concerning the payment system and the need for consistency between monetary policy and prudential supervision, are more related to macro-prudential supervision. Thus most of the benefits of centralization may be obtained by centralizing, within the monetary authority (the ECB) the macro-supervision (monitoring systemic risks) and some crisis management procedures, while leaving the micro-prudential supervision (monitoring individual banks practices) within the national authorities.

This is precisely the view of the De Larosière report, which proposes the establishment of a European Systemic Risk Council (ESRC) for macro-prudential supervision and of a European System of Financial Supervision (ESFS) entrusted with a variety of supervisory regulatory and crisis management tasks.⁵⁸ The Report suggests that the ESCB/ECB should play a key role in the ESRC.

3. How much coordination is required between agencies? What mechanisms are needed to ensure effective coordination and information sharing?

We believe that the current way to articulated micro and macro supervision in Europe is inadequate and will lead to conflict and to suggestions that are not enforced. We believe that, in-

⁵⁸http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf, Recommendations 16-17 re ESRC, Recommendations 18 - 20 re first stage of ESFS, Recommendation 21 re second stage of ESFS.

stead, the system must more closely approach a management by exception similar to the one used in Antitrust: those matters and institutions that are large enough or multinational enough must fall under the direct supervision of the new systemic risk authority. In terms of facilitating communication, we make three suggestions. First, the advantages of single organizations can be obtained through the use of centralized and common databases together with the replacement of hierarchical communication by horizontal communication. Second, organizations, even if separate, should be housed in close geographic proximity to facilitate the creation of bonds that facilitate informal sharing. This should be complemented with fomenting a ‘sprit de corps’ and identification with the ultimate aim of the organization. Third, while explicit monetary incentives are unlikely to be used, agents should be rewarded as a function of the ‘impact’ that their recommendations have on final decisions.

One recommendation of the De Larosière report here directly contradicts our views. The report suggests that the authorities will be established as transformations of the existing committees, banking in London, insurance in Frankfurt, and securities in Paris. This poses the potential for very serious communication problems, and should be rethought. Minimizing communication costs requires all three authorities to be housed in a single location, either Frankfurt or London.

The other recommendations are not in the report, and we’d suggest that serious attention be paid to them. First, technology should be used to facilitate horizontal communication: each member country’s supervisor should have the exact same database system, with the same exact categories; second, a system to reward agents by ‘impact’ of their recommendations and studies should be devised to facilitate the dissemination of ideas.

4. How should the agency be internally structured?

We disagree with the De Larosière conclusion leaving the report suggests keeping three separate agencies, for banking, insurance and securities, and staffing them independently. Once three agencies exist, what is the best way to structure them internally? As we discussed in Section 5, agents must be rewarded using low powered incentives and careers must be de-emphasized, to preserve the ability of agents to give unbiased recommendation. The emphasis must be on selection and on the identification of employees with the agency.

5. How much independence and accountability should regulatory agencies have?

The difficulty in making supervisory performance measurable means independence of supervisors should be carefully articulated; inputs (or process) monitoring rather than output monitoring should be preferred; while in the monetary policy task, execution can be fully dele-

gated and society (through parliament) only need to be concerned with setting the right objectives, independence of a regulatory and supervisory entity must be more restricted than the independence of a monetary entity; transparency, in itself a complement of accountability, must be minimized with regard to certain crisis-sensitive decisions in a supervisory agency to avoid career based decisions of experts, informational distortions by the market and bank panics.

Our analysis departs most from the De Larosière report in these issues. The report emphasizes multiple times, following also the G-30 report, the importance of a transparent system (starting in the introduction to the report (page 4) and going throughout). A system that ensures accountability of the new institution is certainly desirable, but full transparency may lead to excessive caution and to herding. A system of accountability to a confidential organ in the European Parliament without disclosing the details of the decisions may be preferred.

As for independence, the fact that supervisory performance is hard to measure means that a contract that gives them an objective and delegates the entire task is unlikely to succeed. Since monetary or career inducements are unlikely to align incentives of supervisors under these circumstances, there need to be constraints on the independence of the supervisor on economic grounds to ensure that the incentives are well aligned and that supervisors will indeed have the incentives of the system at heart rather than being captured by the industry.

6. What role should be given to self-regulation?

The way self-regulation works depends on how the corporate governance environment works, on managerial incentives etc. A priori, there is no reason to expect self-interested managers have any incentive to worry about the consequences of their actions for the financial system as a whole or even for the long term stability of their own institution. The De Larosière report acknowledges this problem and suggests a set of governance practices that actually do have teeth: the report recommends that supervisors raise capital requirements for institutions whose payment structure or governance systems lead to too much risk taking. We have no qualms with this approach.

7. How should international cooperation be structured?

We argue that we should move from a loose network structure to a hierarchical one, where the center has the ability to sanction and solve disputes between the different regulatory and supervisory agencies.

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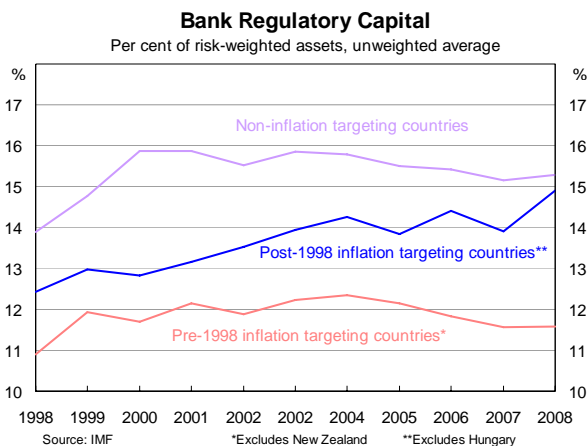
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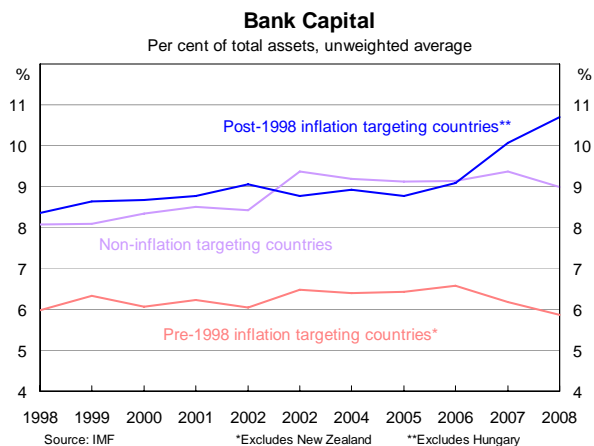
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IMF Financial Soundness Indicators – Inflation-Targeting versus Non-Inflation Targeting Countries, 1998 to 2008

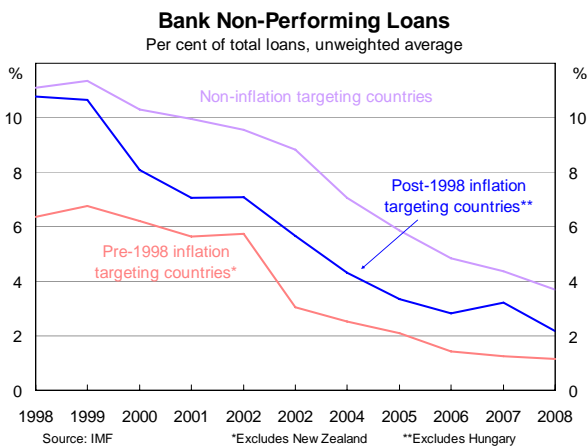
Graph 1



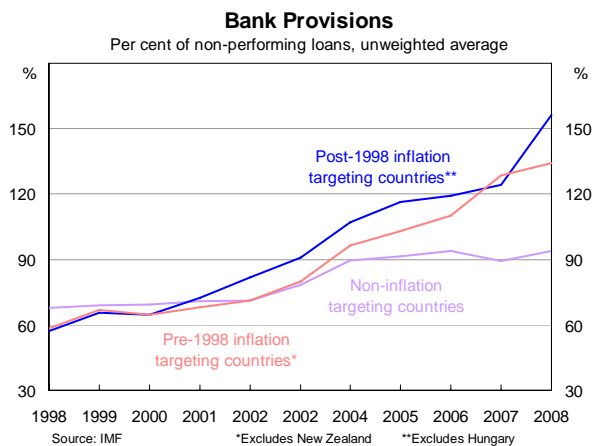
Graph 2



Graph 3



Graph 4



Graph 5

Graph 6

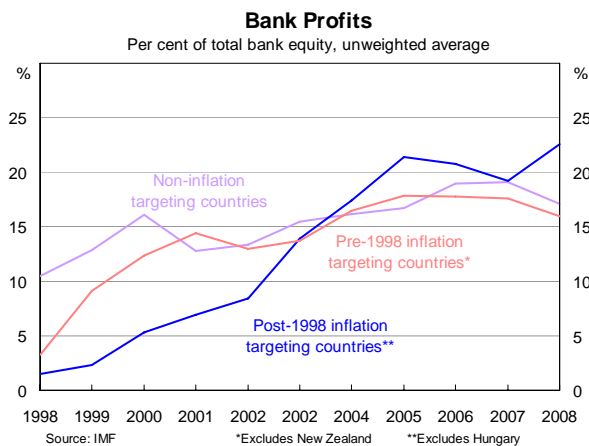
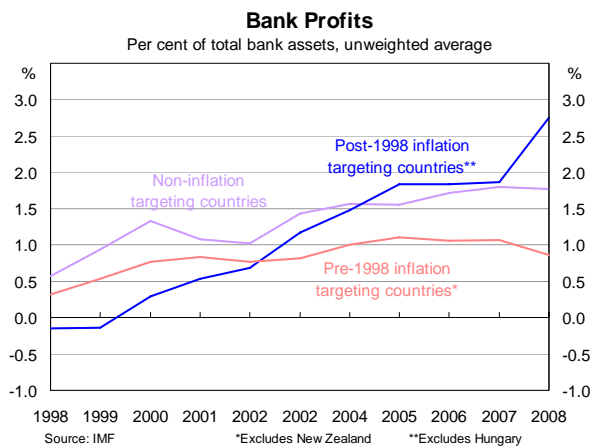


Table 1: Inflation-Targeting Countries	
Pre-1998*	Post-1998**
Australia	Brazil
Canada	Columbia
Chile	Iceland
Czech Republic	Mexico
Israel	Norway
Poland	Peru
South Korea	Philippines
Sweden	South Africa
UK	Switzerland
	Thailand
Notes: * Excludes New Zealand, for which IMF data do not exist	
** Excludes Hungary, for which IMF data do not exist	

Table 2: IMF Financial Soundness Indicators (Unweighted averages)				
	Inflation targeting coun- tries	Inflation targeting coun- tries	Inflation targeting coun- tries	Non- inflation tar- geting coun- tries
	Pre- targeting	Post- targeting	Always targeting	
Bank regulatory capital (per cent of risk-weighted as- sets) (%)	12.9	13.9	11.8	15.4
Bank capital (per cent of total bank assets) (%)	9.3	9.2	6.2	8.8
Bank non-performing loans (per cent of total loans) (%)	10.7	5.3	3.8	7.9

Bank provisions (per cent of non-performing loans) (%)	62.4	102.5	89.2	80.4
Bank return on assets (%)	0.2	1.2	0.8	1.3
Bank return on equity (%)	4.5	13.3	13.8	15.4