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Reforming financial supervision and the role of central banks: a review of global trends, causes and effects (1998-2008)

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Today policymakers in all countries, shaken by the financial crisis of 2007-2008, are carefully reconsidering the features of their supervisory architecture. Over the last ten years the financial supervision architecture and the role of the central bank in supervision therein has undergone radical transformation. In the wake of the 2007-08 financial crisis, more countries are considering reforms, while others, who went through a round of reforms, are looking at the architecture once again. This paper reviews the insights gained by the literature on this topic and, based on updated information on 102 countries for the period 1998-2008, addresses three questions. Which are the main features of the supervisory architecture reshaping? What explains the increasing diversity of the institutional settings? What are so far the effects of the changing face of banking and financial supervisory regimes on the quality of regulation and supervision?

1. Introduction

In June 1998 the responsibility for banking supervision in the UK was transferred from the Bank of England to the newly established Financial Services Authority (FSA), which was charged with supervising all segments of the financial system. For the first time a large industrialized country – as well as one of the main international financial centres – had decided to assign the task of supervising the entire financial system to a single authority, other than the central bank. After that symbolic date, the number of unified supervisory agencies has grown rapidly.

In Europe, this trend has seemed rather strong. True, the UK was not the first one to unify its supervisory structure. The Scandinavian countries (Norway (1986), Iceland and Denmark (1988) and Sweden (1991)) had preceded the UK in the aftermath of a domestic financial crisis. But it is no exaggeration to state that the establishment of the FSA really opened the gate to widespread reforms worldwide. In addition to the UK, three 'old' EU member states – Austria (2002), Belgium (2004), and Germany (2002) – have since assigned the task of supervising the entire financial system to a single authority other than the central bank. In Ireland (2003) and the Czech and Slovak Republic (2006) the supervisory responsibilities were concentrated in the hands of the central bank. Five countries involved in the EU enlargement process – Estonia (1999), Latvia (1998), Malta (2002), Hungary (2000) and Poland (2006) – have also reformed their structures, concentrating all powers in a single authority. Outside Europe unified agencies has been established in Kazakhstan, Korea, Japan and Nicaragua.

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In general, the financial supervision architecture remains in a state of flux (Goodhart, 2006). Many countries have profoundly modified the shape of their financial supervision architectures, while other countries refrained from drastic overhauls but nonetheless made some changes to the supervisory landscape (e.g. by merging two or three sectoral supervisors). The upshot of this wave of reforms is a much more diversified supervisory landscape than ever before in history.

Editors' note: Views expressed herein are those of the author and should not be attributed to the IMF, its Executive Board or its Management.

The experience of the past months provides evidence that the move towards even more integrated and complex financial markets has exposed the system to a growing risk of costly financial turmoil. The consequent concern for the health of the banking and financial industry has caused renewed attention to the supervisory settings. Policymakers and supervisors in all the countries, shaken by the financial crisis of the 2007-2008, are wondering if they need to reshape their supervisory regimes (yet again).

In response to the supervisory reform trend, a new line of research on the determinants of the reform process and on the impact of the new architectures of financial supervision, has emerged. This paper surveys and updates the existing literature on the topic.

The paper is organized as follows. In Section Two we describe the current landscape of the financial supervision architecture and the correspondent role of the central bank in a cross-country perspective, drawing upon a database that includes 102 countries for the period 1998-2008. In our paper we distinguish between regulation and supervision, focusing on the second one only.[1] Focusing on supervision is today easier than in the past, given that an important development of the last fifteen years has been the shift towards separation of regulatory and supervisory authority (Monkiewicz 2007). The focus of this paper is on micro-prudential supervision and consumer protection, while macro prudential supervision is usually carried out by the central bank while competition policy is in the hands of a specialized authority (Borio 2003, Kremers, Schoenmaker and Wierts 2003, Cihák and Podpiera 2007, Herrings and Carmassi 2008). The review of the recent body of research performed in Sections Three and Four allows us to shed light, firstly on the factors affecting the choice of a given supervisory architecture and then and on the impact of the supervisory setting in influencing the banking and financial performances. Section Five concludes.

2. Cross country comparisons of financial supervision architectures after a decade of reforms

In the last decade many countries have reformed the structure of their financial supervision. Let us consider a dataset consisting of a heterogeneous sample of 102 countries, belonging to all continents. In the ten years since 1998, 64% of the countries included in our sample – 66 on 102 – chose to reform their financial supervisory structure (Figure 1), by establishing a new supervisory authority and/or changing the powers of one – at least – of the already existing agencies.

The trend of reforms is even more evident when we add a regional and country-income perspective. Figure 2 provides a breakdown by country groups and shows that the European, the EU and OECD countries count for respectively of 82%, 77% and 73% of the countries that have undertaken reforms. Therefore, the shape of the supervisory regime seems to be a relevant issue in particular in the more advanced countries, and particularly in Europe.

There are signs that in the advanced countries the reform wave will continue – whether or not stimulated by the 2007-08 crisis. Switzerland adopted a unified structure at the beginning of 2009, and Italy and Spain are considering changes. However, most eyes are fixated on the US where, in March 2008, US Secretary Henry N. Paulson announced that his Department would undertake a comprehensive examination of the regulatory overlaps in the US financial supervision architecture (Department of the Treasury 2008). Its shortcomings were evident well before the 2007-08 financial crisis (Brown 2005), but the crisis demonstrated the failure and the obsolescence of the argument for regulatory competition, which was most often used as the rationale to justify the US supervisory structure (Coffee 1995, Scott 1997).

Figure 1 Reforms of the supervisory architectures per year (1998-2008)

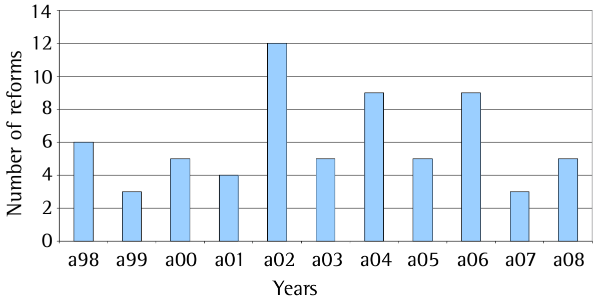


Figure 2 Reforms of the supervisory architectures (1998-2008, %)

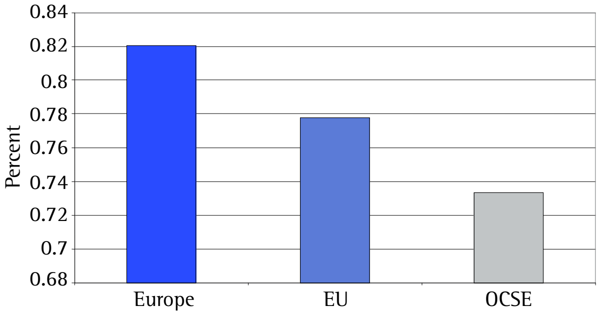


Figure 3 Models of financial supervision architectures (102 countries)

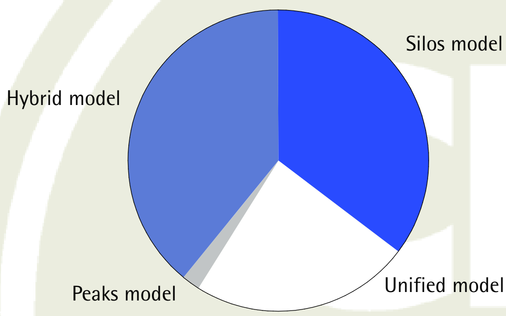


Figure 3 summarizes the state of affairs. We group the current supervisory regimes taking into account the three main models of supervision that theory so far proposed: the vertical (silos) model, which follows the

1 While regulation refers to the rules that govern the conduct of the intermediaries, supervision is the monitoring practice that one or more public authorities implement in order to ensure compliance with the regulatory framework (Barth et al. 2006).

boundaries of the financial system in different sectors of business, and where every sector is supervised by a different agency; the horizontal (peaks) model, which follows the difference among the public goals of regulation, and where every goal is supervised by a different authority (Taylor 1995); and the unified (integrated) model, where a single authority supervises all the financial system in pursuing all the public goals. We do not consider the model by function, which follows the functions performed by banking and financial firms, given its very limited historical use.

In several situations – 36 countries, 35% of our sample – the supervisory regime still follows the vertical model, with separate agencies for banking, securities, and insurance supervision. The classic silos model worked well in a structure of the financial industry where a clear demarcation existed between banking, security markets and insurance companies. In the regimes consistent with this model, supervision is performed per sector of the financial market and is assigned to a distinct authority. In each sector a monopolist agency operates.

In another 24% of our sample (24 countries), a new regime of supervision has been established with the introduction of a single authority, where the supervision covering banking, securities and insurance markets is completely integrated. The single supervisory regime is based on just one control authority, which acts as a monopolistic agency on the overall financial system. In the small 'peaks' group we classify the two countries – Australia and the Netherlands, 2% of our sample – that adopted the so-called vertical model, which groups supervision aimed at preserving systemic stability in one peak, and the conduct of business supervision in another. Both the unified model and the peaks model represent examples of the consolidation process that seems to dominate the reforms of the supervisory architectures.

Finally, other countries adopted hybrid supervisory regimes, with some supervisors monitoring more than one segment of the market and others only one. We bring them all together in a residual class (40 countries, 39% of our sample); The group comprises countries such as France, Italy and the US, where the structure of the supervision can be explained using history – or political economy, as we will see below – rather than economic models.

The evolution in the supervisory regimes becomes clearer if we focus our attention on the 66 countries that implemented reforms in the period 1988-2008 (Figure 4). The weights of the three main regimes (unified, silos and hybrid) become substantially equal – respectively 30%, 33% and 33% – while the peaks regime is the least common one (4%). In other words, 40% of the sample (20 countries) adopted an innovative regime of supervision – unified or peaks regime – while the remaining 60% (31 countries) chose a 'conservative' approach, i.e. maintaining the more traditional regime (silos or hybrid regime).

One more interesting fact can be highlighted (Figure 5): the 'conservative' countries show a common feature, i.e. the central bank is the sole (or the main) banking supervisor in the 80% of the sample (61 on 76). At the same time, the adoption of an innovative model of supervision is centred on the role of the central bank in only very few cases (5 on 26 cases,20%). In other words the conservative approach seems to be more likely to occur when the central bank is deeply involved in supervision, while the innovative approach seems to be more likely to occur if the main supervisor is different from the central bank.

Figure 4 Model of financial supervision regimes after the reforms (66 countries)

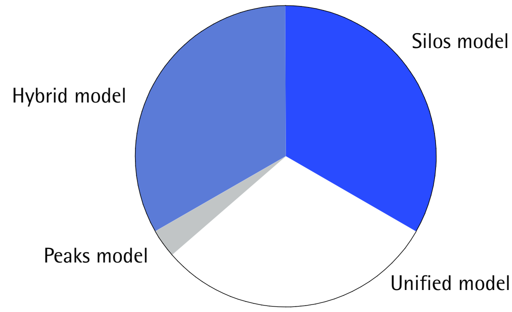
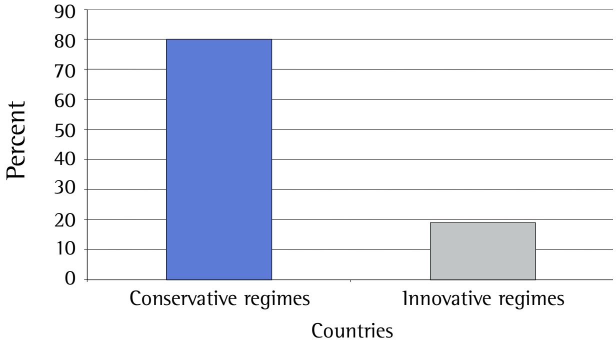


Figure 5 Central bank as main supervisor: conservative vs. innovative regimes (%)



Therefore, it is not surprising that the recent literature on the economics of the financial supervision architectures zooms in on this crucial fact. An increasing number of countries show a trend towards a certain degree of consolidation of powers, which in several cases has resulted in the establishment of unified regulators that are different from the national central banks. Different studies (Barth, Nolle, Phumiwasana and Yago 2002, Arnone and Gambini 2007, Cihák and Podpiera 2007) claim that the key issues for supervision are (i)) whether there should be one or multiple supervisory authorities and (ii) whether and how the central bank should be involved in supervision. More importantly, these two crucial features of a supervisory regime seem to be related. The literature tried to go in depth in the analysis of the supervisory reforms measuring the key institutional variables (Masciandaro 2004, 2006, 2007 and 2008), i.e. the degree of consolidation in the actual supervisory regimes, as well as the central bank involvement.

How can the degree of unification of financial supervision be measured? This is where the financial supervision unification index (FSU Index) comes in (description in Table 1). This index was created through an analysis of which, and how many, authorities in each of the examined countries are empowered to supervise the three traditional sectors of financial activity: banking, securities markets and insurance. The country sample depends on the availability of institutional data.

To transform the qualitative information into quantitative indicators, a numerical value has been assigned to each regime, in order to highlight the number of the agencies involved. The rationale by which the values have been assigned simply considers the concept of unification (consolidation) of supervisory powers: the greater the unification, the higher the index value.

Figure 6 The financial supervision unification index

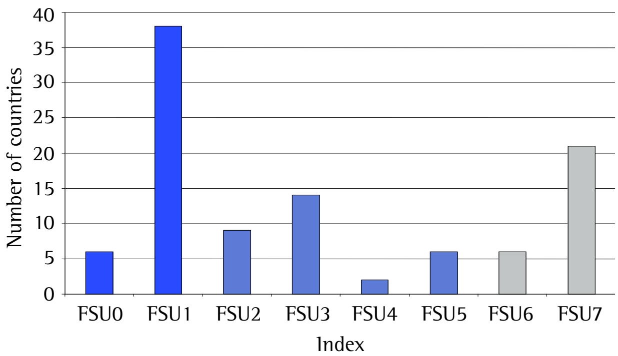


Figure 6 shows the distribution of the FSU Index. On the one hand there are countries (44) with a low consolidation of supervision (the Index is equal to 0 or 1). On the other, there are countries (27) that established a unified supervisor or that adopted the peaks model, with a high level of supervisory consolidation (the index takes the value 6 or 7).

Now we can consider what role the central bank plays in the various national supervisory regimes. We use the index of the central bank's involvement in financial supervision (Masciandaro 2004, 2006, 2007 and 2008): the Central Bank as Financial Authority Index (CBFA) (description in Table 2). Figure 7 shows the distribution of the CBFA Index. In the majority of countries in our sample (46) the central bank is the main bank supervisor (the Index is equal to 2), while in very few countries (8) the central bank is involved in the overall financial supervision (the Index is equal to 4).

Figure 7 The central bank as financial supervisor index

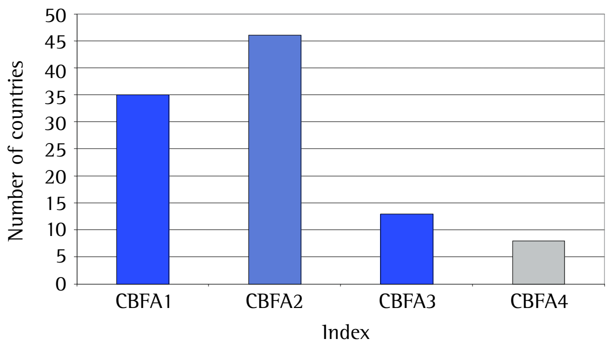
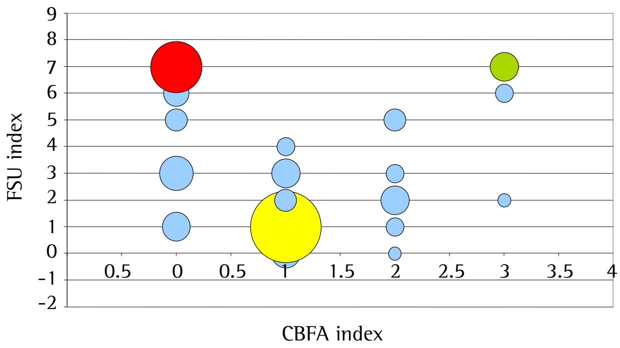


Figure 8 brings both indexes together and shows that the two most frequent regimes are polarised: on the one hand, the Unified Supervisor regime (16 cases, red ball); on the other, Central Bank Dominated Multiple Supervisors regime (31 cases, yellow ball). The figure seems to depict a trade off between supervision unification and central bank involvement, with two outliers (green balls).

Figure 8 Financial supervision regimes



Therefore the descriptive analysis (Masciandaro 2004, World Bank and IMF 2005) signalled an intriguing result. The national choice on how many agencies should be involved in supervision seems to be strictly dependent on the existing institutional position of the central bank. The degree of consolidation seems to be inversely related to the central bank involvement in supervision; this effect was labelled 'central bank fragmentation effect'.

3. Determining the shape of the financial supervision architecture: Economics, political economy and econometrics

How can the supervision consolidation trend outside the central banks be explained? The first natural answer should be to pursue a classic cost-benefit analysis, doing comparisons among the alternative models from a social welfare standpoint, calculating for each of them, on the one side the expected benefits and, on the other side the expected risks.

3.1 Economics

In general, different arguments for consolidation of supervision can be identified and related to effectiveness and efficiency. The key reasons for having a unified supervision can be classified into three categories, regarding respectively the governance, the relationships with the political system, and the relationships with the market participants:

a) Governance

- Economies of scale and scope: a unified supervisor is more likely to achieve economies of scale in the use of the physical infrastructure as well as in employing human capital. At the same time, it is easier for a single agency to monitor banking and financial firms that are increasingly involved in more than one sector and/or line of business (Abrams and Taylor 2002, De Luna Martinez and Rose 2003, Cihák and Podpiera 2007, Llewellyn 2005, Herrings and Carmassi 2008);
- National trade off resolution: the unified supervisor is more effective in dealing with conflicts that may arise between different goals of the

national supervision, internalizing those conflicts (Wall and Eisenbeis 2000);

- International trade off resolution: the more domestic banks become international financial conglomerates, the greater is the need for international cooperation and coordination, which is more easy to achieve if the supervisor is one (Abrams and Taylor 2002)
- Regulatory flexibility: the single supervisor is likely to be more flexible in dealing with supervisory problems (Abrams and Taylor 2002, Cihák and Podpiera 2007);

b) Relationships with the political system

- Accountability and transparency: the unified agencies are by definition the only responsible for supervision and therefore it is easier for politicians, consumers and supervised firms to understand their policies; besides, the single supervisor cannot 'pass the buck' if problems arise, while this is easier to happen with multiple supervisors (Briault 1999, Abrams and Taylor 2002, Cihák and Podpiera 2007);

c) Relationships with the markets

- Regulatory arbitrage: as banking institutions grow bigger and more complex, they may include financial firms that are involved in different business areas; under a multiple supervisor regime financial conglomerates may engage in so-called regulatory arbitrage, while a single agency could avoid gaps that can arise with a model based on several authorities (Cihák and Podpiera 2007, Llewellyn 2005, Herrings and Carmassi 2008);
- Regulatory costs: a unified supervisor is likely to reduce the cost of compliance, given that the supervised firms face one agent rather than many regulators (Briault 1999, Abrams and Taylor 2002, Cihák and Podpiera 2007, Llewellyn 2005, Herrings and Carmassi 2008)

However, there are also several arguments against unification. They can be grouped under the same three headings as above.

a) Governance

- Diseconomies of scale and scope: a bigger supervisor instead of multiple specialized agencies can produce inefficiencies in resource allocation as well as in the monitoring activity (Kahn and Santos 2005) and can loose the possibility to have diversification in approaching supervision, mainly in the financial systems where the businesses are not fully integrated (Abrams and Taylor 2002, Cihák and Podpiera 2007, Llewellyn 2005, Herrings and Carmassi 2008);
- Regulatory rigidity: the single supervisor is likely to be less flexible in dealing with supervisory problems, if there is uncertainty regarding the optimal regulation and how it may change over time (Herrings and Carmassi 2008);

b) Relationship with the political system:

- Bureaucratic overpower: a single supervisor can become a bureaucracy with excessive powers (Kane 1996)

c) Relationship with the markets

- Regulatory rent costs: the single agency represents a monopoly in implementing supervision and consequently risks of rents can arise, for example considering the risks of excessive forbearance (Kahn and Santos 2001, Cihák and Podpiera 2007), while the multiple authorities-setting produces competition in supervision with benefits in terms of policy quality (Kane 1996, Herrings and Carmassi 2008).

Also on the second important issue in the architecture design, concerning the involvement of the central bank in the financial supervision, the literature offers arguments for and against.

A deeper involvement of the central bank in the supervision can be costly for different reasons. First of all, any extension of the central bank powers in the field of supervision can increase the classic moral hazard risks (Goodhart and Schoenmaker 1995, Llewellyn 2005, Herrings and Carmassi 2008) (moral hazard effect).

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Second, the more the central bank is involved in supervision the greater the risks of conflict among different goals (Goodhart and Schoenmaker 1995, Padoa Schioppa 2003); for example, costs can arise in delegating the conduct of business controls to the central bank, which has not traditionally sought to become involved in such matters of transparency (Goodhart 2000, Bini Smaghi 2007) (conflict of interests effect). Thirdly, the risk of reputational loss may be likely to increase if the central bank is deeply involved in supervision, while the reputational benefits are less likely to emerge, given the nature of the supervision policies, where failures are more visible than successes (Goodhart, 2000) (reputation effect). Finally, the society has to take into account the risks of increasing the bureaucratic powers of the central bank (bureaucracy effect) (Padoa Schioppa 2003, Masciandaro 2006).

The main argument in favour of the involvement of the central bank in supervision is linked to the positive effect stemming from information gains. Having supervisory powers may assist the central bank in making monetary policy more effective and/or making crisis management more effective (Goodhart and Schoenmaker 1995, Bernanke 2007, Herrings and Carmassi 2008). An additional argument is related to the central bank capacity in attracting more skilled staff (Abrams and Taylor 2002, Quintyn and Taylor 2007).

In conclusion, different review essays (Abrams and Taylor 2002, Lumpking 2002, Arnone and Gambini, 2007, Cihák and Podpiera 2007, Wymeersch 2006, Holopainen 2007, Monkiewicz 2007) have demonstrated that there are no strong theoretical arguments in favour of any particular architecture of financial supervision and of any specific involvement of the central bank, given that it is possible to list advantages and disadvantages of each theoretical model. Arguments in favour of, or against, the unified model can be taken into account also to consider specific country studies (Gugler 2005).

3.2 Political economy

Thus, if the main driver of the supervisory reform is not the classic social welfare perspective, it is necessary to explore alternative views. Starting from the above findings, and the associated critique, a strand of the literature has addressed the question from a different perspective, focusing on the role of the political actors in the (re)design of supervisory architectures (Masciandaro 2005, 2006 and 2008, Dalla Pellegrina and Masciandaro 2008, Masciandaro and Quintyn 2008).

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This literature assesses that all the policymakers are politicians. Hence, they are held accountable at the elections for how they have pleased the voters. However, there are two types of politicians, with different objective functions, that can produce dissimilar outcomes in defining the financial supervision landscape. The main difference between the two concerns which voters they wish to please in the first place. On the one hand, the politician can be of the helping hand-type (HH), motivated by improving the general welfare. On the other hand, the politician can be of the grabbing hand-type (GH), motivated by the aim of pleasing vested interests.

The political economy approach for studying the determinants of the supervisory architectures is based on three crucial hypotheses. First, gains and losses of a supervisory model are variables calculated by the policymaker in charge, who decides to maintain or reform the supervisory regime. Second, the decisions of policymakers, whatever their own specific goals are, will likely be influenced by structural variables, that may vary from country to country. Among them, central bank involvement in supervision can play a crucial role. Finally, economic agents have no information on the true preferences of the policymaker and the latter's optimal degree of financial supervision concentration is a *hidden variable*.

The crucial element of this approach in considering the policymaker's objective as a factor in the design of the supervisory architecture is the identification of his preferences. The first approach to identifying the policymaker's function is the *narrative approach*, in which official documents and statements are interpreted to gauge the choices of policymakers (Westrup 2007). One drawback of this approach is that there is often substantial room for difference between a policymaker's pronouncements and the actual, revealed preferences.

The second approach, the *factual approach*, is to consider the actual choices of policymakers in determining the level of financial supervision concentration. At each point, we can observe the policymaker's decision to maintain or reform the financial supervision architecture. In other words, we consider that policymakers are faced with discrete choices. Using the factual approach, we can investigate if the features of the financial markets play any role in determining the actual shape of the supervisory architecture. By taking a political-economic view, we can test the hypothesis that politicians may wish to use reform (or status quo) to gain or keep influence through the supervisory process. The relevant players in this theoretical framework are the policymakers, the community and the financial constituency.

In the economic literature, there is just one formal model that considers the policymaker's objective function in determining the degree of unification of the financial supervision regime (Masciandaro 2008), which proposed a specific application of the general model developed by Alesina and Tabellini (2003) to investigate the criteria with which to allocate policy tasks to elected politicians.

Let us summarise the main findings of the model. The design of the financial supervision unification is modelled as a delegation problem, where the policymaker follows a sequential process. Given the institutional position of the central bank, he chooses the supervisory design. If we take into account the existence of two constituencies with different preferences – the citizens and the financial industry – we can analyse the behaviour of two alternative policymakers, the HH type versus the GH type.

If the policymaker acts as an HH type, central bank involvement in supervision can be viewed as an obstacle in the supervision consolidation if at least one of the three theoretical effects – moral hazard effect, conflict of interest effect and bureaucracy effect – holds. The so-called central bank fragmentation effect is likely to occur.

If the policymaker chooses to please the financial community acting as a GH type, the central bank fragmentation effect is less likely to occur, provided that the financial community likes a more consolidated supervision, and central bank involvement is a proxy of the financial constituency power.

If and only if these assumptions hold it is possible to disentangle the effect of different types of policymakers on the relationship between the financial supervision unification and the central bank involvement. Otherwise a signal extraction problem occurs. For example, other things being equal, if the central bank is not a captured one and the policymaker acts as a GH type, the central bank fragmentation effect is likely to occur again.

Therefore, theory predicts the possibility of different degrees of unification in the design of the supervisory structure, depending on the type of the policymaker involved, and on the features of the parameters of the model (i.e. the structural environment in which the policymaker takes his decisions). In the real world, the type of the policymaker – as well as all the structural and institutional channels which influence his behaviour – is a hidden variable. At each point in time, we can only observe the politicians' decision to maintain or reform the supervisory governance structure, in particular its degree of unification.

3.3 Econometrics

The next step in the research (Masciandaro 2007 and 2008, Masciandaro and Quintyn 2008) was to empirically investigate the robustness of the relationship between the degree of financial supervision unification and central bank involvement, using the institutional variables – FSU Index and CBFA Index – described above and applying ordered models. Alternatively, it is possible to focus on the choice in terms of overall supervisory architecture, rather than just on the concentration of the supervisory powers (Dalla Pellegrina and Masciandaro 2008).

The main result that emerges from the empirical work is the confirmation of a significant inverse relationship between supervision unification and central bank involvement. The central bank fragmentation effect – instead of the central bank unification effect – dominates. Given that the type of the policymaker is unknown, the story goes as follows. Each policymaker, in determining the degree of supervisory unification, could be influenced by the involvement of the central bank, but under different conditions. If the policymaker is of an HH type, he should care about the effectiveness of the supervision, in order to please the citizens. If the policymaker sees the supervision consolidation as a welfare improvement, then central bank involvement could be viewed as an obstacle, but only if at least one of the three effects -moral hazard, conflict of interest and bureaucracy -holds. If the policymaker is of a GH type, he wishes to please the financial constituency. In this case the central bank fragmentation effect holds if, and only if, the financial constituency dislikes unified supervision and the central bank is a captured agency. Furthermore, different proxies of the central bank power were used, other than the involvement in supervision: central bank age (Dalla Pellegrina and Masciandaro 2008, Masciandaro 2008), assuming that an old central bank is more influential; and central bank independence (Freytag and Masciandaro 2007, Dalla Pellegrina and Masciandaro 2008). The effects of the alternative indicators of the central bank role was mixed and in general weak.

Other variables were tested as well. The quality of public sector governance and the size of the country seem to matter in the decision making process on the degree of supervisory unification. With respect to the role of political governance in the decision making process, it can indeed be assumed that in countries characterised by good public sector governance, an HH type of policymaker is more likely to occur, which in turn would promote supervision unification if this is welfare-improving. Including population as an exogenous scale factor yielded a significant estimated parameter, highlighting the so-called small country effect (Taylor and Fleming 1999): whatever the policymaker type, with relatively few people the expertise in financial supervision is likely to be in short supply, and concentration is more likely to occur.

Other potential drivers of the consolidation process turned out to be weak or not relevant at all. First of all, almost all the studies devoted to the analysis of the recent evolution in supervision design stressed the importance of the characteristics of the financial markets – with particular attention to the role of financial conglomerates – as determinants in the choice for a total or partial unification of the supervisory regimes. Some evidence (Masciandaro and Quintyn 2008) seems more consistent with the GH view, when considering the degree of banking concentration as a proxy of the capture risk, and presuming the market demonstrates a preference for consolidation of supervisory powers. The results of a survey among financial CEOs in Italy (Masciandaro and Quintyn 2008) confirms a market preference for a more consolidated supervisory regime but reveals only weak consistency between the views of the policymakers and those of market operators.

The main result that emerges from the empirical work is the confirmation of a significant inverse relationship between supervision unification and central bank involvement.

The possible presence of some sort of 'mimic effect' among neighbouring countries has also been tested. Geographical dummies were used to capture the existence of international agreements between countries – such as the EU, or the OECD membership – which may influence their behaviour at home. The geographical testing did not produce any results.

The same fate befell the use of temporal variables. The use of this variable started from the finding that the number of countries that are reviewing their supervisory structures has been increasing year after year (until 2006). So a legitimate question about whether there was a kind of *fashion effect* (or bandwagon effect) at work arose, i.e. if recent reformers were inspired by the type of changes in supervisory arrangements introduced by earlier reformers, producing a trend towards unification (Monkiewicz 2007). The results were not significant.

The possible effect of the legal origin has also been investigated. The law and finance literature claims that legal origin is associated with a variety of aspects of policymakers' performance. Countries of English (market friendly) legal origin perform better than countries with legal systems rooted in French, German, Scandinavian or other (socialist, Muslim) traditions. According to these sources, market friendly law traditions offer better protection against bad public policy (as in expropriation by the State) and greater incentive in providing public goods (as in good regulation). In countries with market friendly law origins, an HH policymaker is more likely to occur. Our results were puzzling. The level of supervision unification is linked with the Civil Law root, in particular with German and Scandinavian law jurisdictions. The testing of the legal origins effect produced mixed results in the empirical works.

Finally, the occurrence of financial crises as a reason for reform of the supervisory institutional setup has also been considered, as has been suggested by Carmichael, Fleming and Llewellyn 2005, and Monkiewicz 2007). We can imagine that the decision making process of both types of policymakers can be affected by such a crisis, although the impact of a crisis experience on the degree of supervision consolidation is far to be clear. The results were not significant.

4. Does the financial supervision architecture matter?

The emerging literature on the financial supervision architecture has also tried to shed some light on the impact of the supervisory structure on the performance of the banking and financial industry. Two main questions have been addressed:

- Is a single supervisor to be preferred to over multiple authorities?
- Should the central bank be involved in supervision?

Unfortunately, despite the debate on the features of the supervisory regimes and their drivers, the empirical evidence is still very limited; probably given the fact the wave of reforms is recent.

The first empirical analysis (Barth, Nolle, Phumiwasana and Yago 2002) provided a cross country comparison of the banking supervision architectures, using a difference of means test to ascertain whether differences in the supervisory architecture correlate in a significant way with key differences in banking industry structure. The study gathered information on national banking supervisors in 133 countries, for the years 1996-1999.

The tendency of the supervision structures to change seems to be characterized by two distinctive features – consolidation and specialization.

The study found no correlation between the number of supervisory authorities and any of the key features of a banking system. On the other hand, central bank involvement in supervision seems to matter. In fact countries where the central bank is the banking supervisor have banking systems with a smaller average size, and have greater government ownership of banks and banking assets. Regarding the entry conditions, a greater number of applications to start a new bank were denied and a lower share of foreign owned banks is present. These countries tend to allow a narrower range of banking powers. Furthermore, regimes with the central bank as supervisor are less likely to allow the use of subordinated debt as a component of capital and are less likely to have explicit deposit insurance systems; the index of moral hazard – calculated by the authors – is lower. The authors concluded that the issue of single versus multiple supervisory authorities was less urgent than the issue of the central bank powers in supervision. At the time however, the wave of consolidation was more an anecdotal phenomenon than a trend.

These results need to be interpreted with care. The authors did not test for causality. It is not clear that central bank involvement in banking supervision per se leads to the dominance of the above features of the banking system. Their findings may simply reflect a strong correlation in developing countries between the features mentioned. Many developing countries' financial systems still exhibited during the period under review the features that the authors list (presence of state-owned banks, barriers to entry and low presence of foreign banks), while supervision was housed in the central bank because of capacity constraints in the country.

A subsequent analysis (Cihák and Podpiera, 2007) suggested that the unified regime is associated with higher quality and consistency of supervision across supervised institutions, where the quality of supervision is measured using the degree of compliance with internationally accepted standards in banking, insurance and security regulation. At the same time the unified regime is not associated with a significant reduction in the supervisory staff. Finally, whether the integrated supervision is located inside or outside the central bank does not have a significant impact on the quality of supervision.

Finally, in a third piece of research (Arnone and Gambini 2007), the degree of compliance with the Basel Core Principles for Effective Banking Supervision (BCP) is used to investigate the possible relationship between the compliance capacity of each country and the way these countries have organized their supervisory architecture, with particular reference to the two fundamental questions; the supervisory model and the role of the central bank. The article provides a description of the current institutional organization of banking supervision for a sample of 116 countries between 1999 and 2004.

The descriptive analysis provides several hints in favour of integration of supervisory powers; When considering the two most diffused models of supervisory architecture, the authors find a stronger (and significant) positive correlation between integrated supervisory regimes outside the CB and compliance with the BCPs, compared to a CB-dominated multiple-agencies supervisory regimes. Furthermore two econometric tests, based on an OLS specification with heteroskedasticity-robust standard errors, show that a higher degree of compliance is achieved by those countries applying a unified model, with some evidence in favour of doing so inside the central bank.

5. Conclusions

The worldwide wave of reforms in supervisory architectures that we have witnessed since the end of the 1990s leaves the interested bystander with a great number of questions regarding the key features of the emerging structure, their true determinants, and their effects on the banking and financial industries. This paper has tried to provide an overview of the answers to these questions by reviewing the recent literature that has been devoted to this topic.

The evolution of the supervisory regimes was described by drawing upon a database on 88 countries for the period 1998-2008. Inspection of this database highlights a supervision consolidation trend outside the central banks, where the outliers are central banks without the monopoly in monetary policy responsibilities.

In other words, the tendency of the supervision structures to change seems to be characterized by two distinctive features – consolidation and specialization.

The reforms were driven by a general tendency to reduce the number of agencies, to reach the unified model – unknown before 1986 – or the vertical model. In both models the supervisors are specialized, having a well-defined mission. The trend towards specialization becomes particularly evident if we observe the route that national central banks are following. Those banks with full responsibility for monetary policy – the FED, the ECB, the Bank of England, and the Bank of Japan – do not have full responsibility of supervisory policy. This does not mean that these banks are not concerned with financial stability – on the contrary, as we have observed over the last few months – but they tend to deal with it from a macroeconomic perspective, in function of their primary mission i.e. monetary policy. Amidst the central banks which do not have full responsibility for monetary policy, such as those of the countries belonging to the European Monetary Union, the most prudent banks chose or are about to choose the route of specialization in vigilance: we can look at the most emblematic cases of Czech Republic, Ireland, Netherlands and the Slovak Republic. In general, it has been noted (Herrings and Carmassi 2008) that the central banks of members of the EMU have become financial stability agencies.

To explain this trend, we turn to a political-economic approach where the decision-making process regarding the shape of the supervisory regime seems to be related to the influence of the institutional setting of the central bank and to the role of political governance. Consolidation is more likely to occur in countries in countries characterised by good public-sector governance *and* where the central bank is only weakly involved in supervision. The consolidation trend seems to be correlated with a strive for better quality of the supervisor, while the effects of the central bank involvement are so far mixed. However the limited number of tests and data do not allow us to make any further comments.

Now, in the face of 2007-08 financial turmoil, which are the lessons from the past that can be useful for the future? The events that shook the world will force the actors to reconsider the architectures of financial supervision. The starting point is to recognize that in these years financial markets have grown bigger and more complex almost everywhere. How can we best supervise the ever-changing markets, which are becoming increasingly complex and intertwined with each other?

The general formula for an effective supervision is always the same; regulators must have exhaustive and up-to-date information. But it is the application of the classical formula that is today tricky. In markets that were fundamentally static and segmented – banks, the stock-exchange, insurance – a simple 'photograph' of the situation every now and then was sufficient. Here the vertical model was the natural and effective answer. Nowadays, to have an exhaustive and up-to-date informative patrimony it is necessary to explore in depth the innovative models of supervision – the unified model and the horizontal model.

The economic rational for modifying the supervisory settings, however, is not always sufficient. Politics matter as well. To stress the role of politics and of politicians it is fundamental to understand where, why and how reforms about supervision can see the light of day. Why do politicians fail to take action? And when are they going to do it? In order to find the answer to these questions more research is still warranted. Government's hand left fingerprints all over the topic; the mission of the researcher is to find them.

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