3. Defining the Degree of Unification in Financial Supervision

If we wish to consider financial supervision unification as a dependent variable, the first problem is to construct this variable. How to measure the degree of unification of financial supervision? To this end we use the financial authorities consolidation index (FAC Index) (Table 1).

The creation of the index is based on an analysis of which and how many authorities in 89 countries are empowered to supervise the three traditional sectors of financial activity: banking, securities markets, insurance (Table 1)[16]. The country sample depends on the availability of institutional data[17]

To transform the qualitative information into quantitative indicators, we assigned a numerical value to each type of regime, in order to highlight the number of the agencies involved. The rationale with which we assigned the values considers simply the concept of unification of supervisory powers: the greater the unification, the higher the index value.

The index is built on the following scale: 7 = Single authority for all three sectors (total number of supervisors=1); 5 = Single authority for the banking sector and securities markets (total number of supervisors=2); 3 = Single authority for the insurance sector and the securities markets, or for the insurance sector and the banking sector (total number of supervisors=2); 1 = Specialized authority for each sector (total number of supervisors=3).

We assign a value of 3 to the single supervisor for the banking sector and securities markets because of the predominant importance of banking intermediation and securities markets over insurance in every national financial industry. It also interesting to note that, in the group of

[16]Sources: for all the countries, official documents and web sites of the central banks and the other financial authorities. The information are updated to the 2004. Tables are available on request.

[17]We do not include the eight very small countries and territories (Bahrain, Bermuda, Cayman Islands, Gibraltar, Maldives, Netherlands Antilles, Singapore and United Arab Emirates) that introduce the single financial authorities to avoid an evident bias in the empirical analysis.

integrated supervisory agencies countries, it seems to be a higher degree of integration between banking and securities supervision than between banking and insurance supervision[18]; therefore, the degree of concentration of powers is, *ceteris paribus*, greater.

These observations do not, however, weigh another qualitative characteristic that emerges from Table 1: There are countries in which one sector is supervised by more than one authority. It is likely that the degree of concentration rises when two authorities exist in a given sector, and one of which has other powers in a second sector. On the other hand, the degree of concentration falls when there are two authorities in a given sector, neither of which has other powers in a second sector.

It would therefore seem advisable to include these aspects in evaluating the various national supervisory structures by modifying the index as follows: adding 1 if in the country there is at least one sector with two authorities, and one of these authorities is also responsible for at least one other sector; subtracting 1 if in the country there is at least one sector with two authorities assigned to supervision, but none of these authorities has responsibility for another sector; 0 elsewhere.

Finally, there are three qualitative characteristics of supervision regimes that we decided not to consider in constructing this index. Firstly, we do not consider the legal nature – public or private – of the supervisory agencies, nor their relationships with the political system (degree of independence, level of accountability[19]). Secondly, at least in each industrial country, there is an authority to protect competition and the market, with duties that impinge on the financial sectors. But, since it is a factor common to all the structures, we decided not to take the antitrust powers

[18]De Luna Martinez and Rose (2003). Furthermore, Abrams and Taylor (2002) claimed that the case for consolidating the supervision of banking and securities firms may be stronger that for including insurance firms, given that for bank and securities firms risks tend to arise on the assets side of the balance sheet, whereas for insurance firms the main risks occurs on the liabilities side.

[19]On these issues see Quintyn and Taylor (2002).

into account in constructing the index[20]. Finally, the financial authorities can perform different functions in the regulatory as well as in the supervisory area[21].

However, at this first stage of the institutional analysis, we prefer to consider just the number of the agencies involved in the supervisory activities.

But we should also consider the nature of the institutions involved in supervisory responsibilities. In particular, any supervisory regime will have to provide a link between supervision and the central bank, given the potential relationships between monetary stability and financial stability[22]. It has been correctly pointed out[23] that, irrespective of the role, the central bank is the ultimate authority for the systemic stability of the payment system. Thus among the authorities that can have supervisory responsibility, the central bank has a special nature, as the institution responsible for monetary policy. Furthermore, the special characteristics of the role played by the central bank have placed it in a central position with respect to the political system, the intermediaries, and the other control authorities[24].

The debate on the characteristics of this link is particularly important in the European Union, where monetary policy is separated from financial supervision[25]. Therefore we must ask what role the central bank plays in the various national supervisory regimes[26]. We propose the index of the central bank's involvement in financial supervision: the Central Bank as Financial Authority Index

---

[20]The relationship between competition policies and stability are examined in Carletti and Hartmann (2002).

[21]Llewellyn (2001) noted that the basic functions performed by regulatory and supervisory agencies cover ten main areas. For our purposes, in order to separate supervision – i.e. monitoring rules compliance – from regulation – i.e. rules setting with managerial discretion - it is possible to distinguish five supervision functions (prudential supervision of financial institutions; conduct of business supervision; administration of deposit insurance; market integrity; financial institutions crisis procedures) from four regulation functions: management of the payment system; prudential regulation, conduct of business regulation, liquidity management. However, in different cases it’s non easy to do a clear cut between supervision and regulation; on this point of view it is paradigmatic the overlapping between liquidity management and crisis procedures.

[22]See Garcia Herrero and Del Rio (2003). On the role of central bank in banking supervision see Masciandaro (1993), Tuya and Zamalloa (1994), Goodhart and Schoenmaker (1992) and (1995), Haubrich (1996), Di Giorgio and Di Noia (1999), Peek, Rosengren and Tootle (1999), Abrams and Taylor (2002), Bruni (2001).

23 Llewellyn (2001).

24 On the evolution of the central bank role see, among others, Toniolo (1988).

25See Lannoo (2000). Schoenmaker (2003), Padoa Schioppa (2003), Goodhart and Schoenmaker (1995), Eijffinger (2001), Vives (2001), Goodhart, Schoenmaker and Dasgupta (2002), Schueler (2003).

26 See Oosterloo and de Haan (2003).

(CBFA) (Table 1)[27]. For each country, and given the three traditional financial sectors (banking, securities and insurance) the CBFA index is equal to: 1 = the central bank has not the main responsibility in banking supervision; 2 = the central bank has the responsibility in banking supervision; 3 = the central bank has responsibility in two sectors; 4 = the central bank has responsibility in all three sectors (Table 1).

In evaluating the role of the central bank in banking supervision, we consider the fact that, whatever the supervision regime is, the monetary authority has responsibility in pursuing the macro financial stability[28]. Therefore we choose a rule of thumb the relative role of the central bank: we assign a greater value – 2 instead of 1 – if the central bank is the unique or the main responsible for banking supervision.

The analysis of the degree of financial supervision unification and the level of central bank involvement provide us with a general picture of the supervisory regimes around the world. In fact, each national supervisory regime can be identified with at least two characteristics: the degree of concentration of powers (FAC Index) and the degree of involvement of the central bank in that distribution of powers (CBFA Index). From a theoretical point of view, we can expect a higher or lower degree of supervision concentration, irrespective of the role of the central bank. The comparative picture is quite different[29]. The two most frequent models are polarized: on the one hand, countries with a high unification of powers with low central bank involvement (*Single Financial Authority Regime*); on the other, countries with a low concentration of powers with high central bank involvement (*Central Bank Dominated Multiple Supervisors Regime*). The polarization

[27] Barth, Nolle, Phumiwasana and Yago (2002) claim that the key issues for banking supervision are 1) whether there should be one or multiple supervisory authorities and 2) whether the central bank should be involved in bank supervision. Here we use the same intuition to build up the two indices of financial authorities' consolidation.

[28] The central bank can be involved in banking supervision tasks in Single Authority regimes too. For example in Germany the Deutsche Bundesbank participates in banking supervision, in subordination to the Bundesanstalt fur Finanzdienstleistungaufsicht (BaFin)'s issues. In Austria, the Oesterreichische Nationalbank co-operates with the Financial Market Authority continuing to conduct on-site inspection. Also in Japan the central bank remains deeply involved in pursuing the overall financial stability. These features were considered in weighting the FAC indexes.

[29] Masciandaro (2004) and (2005) used the indexes to propose a descriptive analysis of the different institutional regimes in the world and its determinants, with a sample of 68 countries.

phenomenon seems more evident in the European Union and in the sample of industrialized countries[30].

4. The Degree of Unification in Financial Supervision and the Role of Central Bank

The descriptive analysis pointed out that the unification of supervision seems more evident in the case of Single Financial Authorities Regimes, while in the case of Central Bank-Dominated Multiple Supervisors Regimes the institutional setting seems more consistent with a "leader-followers" framework. It's a matter of fact that in a multi – authority model the central bank tends to assume the position of "first among peers", at least for historical reasons. Therefore the degree of supervision unification seems to be inversely correlated with central bank involvement in supervision itself (central bank fragmentation effect).

The central bank fragmentation effect can be explained as a special case of *rule-driven path dependence*. Rule-driven path dependence[31] exists when, other conditions being equal, the choice of a given design of rules depends on characteristics already existing or already determined by the rules themselves.

In this case, a given policymaker's choice of supervision unification level will depend on the role the central bank plays in the supervision, or that the policymaker has decided to have the central bank play. In other words, the policymaker's choice can be viewed as a sequential process in which the institutional *status quo* counts: the supervision unification level is decided based on the position of the central bank. We had already noted that, for theoretical and historical reasons, the central bank is the *primus inter pares* among the financial authorities; therefore let us proceed straightforwardly that the policymaker takes decision on the supervision unification, given the

[30] See Masciandaro (2004) and Masciandaro and Porta (2004).
[31] The concept of rules driven path dependence has been recently used in the corporate governance literature: see among others, Bebchuk and Roe (1999), Clark and Wojcik (2003).