Financial Supervision and Banking Competition in European Union

Ovidiu Stoica[1], **Roxana Scântee**[2]

Abstract*:* An increasing number of countries are reviewing their financial supervisory structures and show a trend of consolidation in financial supervision. Using a sample of 27 countries from European Union, we find that the dependent variables taken into consideration (Herfindahl-Hirschman index and share of the five largest credit institutions in total assets) have no significant effects on different types of supervisory integration. In addition, there aren't any differences in the impact of distinct types of financial supervision even if the country is already an EU member or a candidate.

Keywords: financial supervision; banking competition; logit model; European Union

JEL Classification: G28

1. Introduction

Nowadays the financial system and the financial supervision of the EU's countries are much different from several decades ago. Many countries made important changes in the overall architecture, and even if the trend is of an integrated surveillance, different countries involve different financial supervision models, so there is no single optimal model. The increasing size and role of the financial sector has generated some advantages such as broader, cheaper and more accessible range of financial services in terms of efficiency, resource allocation and distribution channels (Arnone, Gambini, 2007).

The main purpose of the central bankers, supervisors and government ministries is to deal with the threats of the stability of the financial system. Factors that influence financial reform are mainly technology, industry competition, increasing role of the capital market, financial innovations, increasing complexity of financial activity, globalization progress and financial crises. Considering all the factors

[1] "Alexandru Ioan Cuza" University of Iasi, Faculty of Economics and Business Administration, Address: Bd. Carol I, 11, Iasi, Iasi, 700506, Tel.: +40232201433, Corresponding author: ostoica@uaic.ro.

[2] "Alexandru Ioan Cuza" University of Iasi, Faculty of Economics and Business Administration, Address: Bd. Carol I, 11, Iasi, Iasi, 700506, Tel.: +40232201433, e-mail: scanteeroxana@yahoo.ro.

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mentioned and not only, many states developed financial reforms in order to make the financial system more stable, competitive and transparent.

The financial supervision is different from one European country to another due especially to financial system structure, history evolution, specific opportunities, political structure and traditions, country and financial sector size. The recent turmoil that shacked the global financial system, EU states were considering to re-evaluate the architecture of the financial sector supervision. At this moment, many EU states (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Latvia, Malta, Netherlands, Poland, Slovakia, Sweden, United Kingdom) have adopted the centralized model, the single supervisor being responsible for supervising and regulating all the segments of the financial sector (banking, securities market and insurance). Bulgaria and Luxembourg are characterized by a partial functional integration. In Bulgaria the banking system is supervised and regulated by Bulgarian National Bank and the securities and insurance market by Financial Supervision Commission; in Luxembourg, a single authority supervise both the banking sector and the securities market, while the insurance sector that has been left to the Commisariat aux Assurances. Sectoral approach is still in force in the rest of the countries (Cyprus, Greece, Italy, Lithuania, Portugal, Romania, Slovenia and Spain), in which the banking sector supervision is assigned to the central bank, securities market to the securities and exchange institution and insurance sector is regulated and supervised by a separate authority.

In the literature (e.g. Cihak and Podpiera, 2008) distinguish different types of supervisory arrangements: some integrated supervisory agencies cover all the three main sectors – banking, insurance and securities - "full sectoral integration"; others cover only two of these sectors - "partial sectoral integration" and no sectoral integration. Each of them is classified as follows: full sectoral integration can be found in three forms – full sectoral and functional integration, twin peaks and full sectoral, partial functional integration; partial sectoral integration can be integrated supervision of banks and insurance companies, integrated supervision of banks and securities market, integrated supervision of insurance companies and securities market.

On this financial field, in a continuously change of the structure and nature of banking, the degree of independence of banking competition becomes a debated subject. Especially during the last ten years, many empirical models have attempted to measure the existing level of competition in different European national banking markets, or in the European banking system as a whole. Considering the importance of the financial system in the economy, and in the same time the importance of banking competition (competition is a fundamental condition of the market economy and also is considered one of the most important factors for the economic progress), we directed our research to analyze the impact

of financial supervision on banking competition in EU countries with different financial supervision arrangements. Another reason for developed this article was that EU members are dealing with increasing integration of financial markets over the last and also with a change in the structure of their banking systems.

The main contribution of this paper is that provides evidence about connection between financial supervision and banking competition in countries with different supervisory models. The results can be linked to banking markets development and also to the integration of banking business in EU.

Our findings suggest that there aren't significant differences on the main indicators of banking concentration in countries with different types of financial supervision. Also, there aren't any differences in the impact of distinct types of financial supervision, even if the country is a new EU member or is an older one.

This paper is structured as follows. Section 2 consists of literature review. Section 3 describes briefly the history, types and changes in the financial supervision arrangements in the European Union. Section 4 explains the data and the methodology used. Section 5 discusses the empirical results, while Section 6 concludes.

2. Literature Review

In the literature there are numerous studies analysing the financial supervisory arrangements at national level, focusing on the model adopted in certain countries or realising comparisons between them, in order to highlight the differences and the consequences. Cihak and Podpiera (2008) found, on a sample of 84 countries, that supervisory integration is associated with higher quality of insurance and securities supervision and greater consistency of supervision across sectors, supporting in this sense the "twin peaks" model. They also found that whether supervision is located inside or outside the central bank has no significant relation to supervisory quality. Barth et al. (2002) using both country-specific data for 55 countries in all parts of the world and data for over 2,300 individual banks in those countries, found a weak influence for the structure of supervision on bank performance, and in particular found some evidence that a single supervisor system enhances bank performance. Masciandaro (2004) emphasizes through a comparative analysis of 69 countries that an increase in the degree of concentration of supervisory powers is evident in the developed countries, and particularly in the European Union. In addition, he confirms a trade-off that emerges between the degree of financial sector unification and the role of the central bank. Masciandaro shows in another article (2007), on a dataset of 89 countries, that if the central bank involvement in supervision and its reputation are high, the unification level is likely to be low, and vice versa, confirming also the robustness of the central bank fragmentation effect. Pellegrina and Masciandaro (2008) showed that lower levels

of corruption, better institutional governance, and more efficient judicial systems, are associated with the choice of a single supervisor of financial markets. Masciandaro (2009) using a simple application of a general common agency game, sheds light on which conditions the politicians prefer when implementing unified sector supervision outside the central bank and on the other hand tests the model, confirming the robustness of the institutional position of the central bank in explaining the recent trend in supervision consolidation, with an empirical analysis. Monkiewicz (2007) argues that there are no ideal supervisory models and each jurisdiction has to find its own way. In doing so, it should always care for the preservation of the most critical properties of the supervisory system: its independence, accountability, transparency, integrity and market responsiveness. He concludes that in the present circumstances, the net benefits of adopting an integrated approach probably exceed the net benefits stemming from the adoption of a specialized approach for most of the countries in the region of Latin America and the Caribbean.

Athanassiou (2006) states that in Cyprus is required to reform the financial system supervision and an integrated approach should be taken into account in future. In the same regard, Wymeersch (2007) makes a comparative analysis of the features of supervision models, giving indications about the drivers for choosing one of them and the pros and cons that have been advanced, describing the actual situation in each of the EU states.

3. A Brief Review of European Union Financial Supervision

At EU level there are many studies that approach the integrated supervision. Quaglia (2008) compare three states in terms of financial supervision, highlighting that United Kingdom and Germany have a high number of financial conglomerates, they have a large number of international financial operators, and they host the two main financial centers in Europe and for these reasons it was higher the incentive in favor of a single supervisor. On the other side, in Italy, the financial system remains relatively segmented, with a limited number of international operators, the incentive in favor of a single supervisor being smaller. Herring and Carmassi (2008) analyzing the changes in supervision architecture, emphasis on the integrated approach, and shows that crisis management by committee may not be an adequate substitute for the traditional model, in which prudential supervision is combined within the central bank.

Alexander (2011), examines some of the institutional issues concerning the creation of the three EU Supervisory Authorities (ESAs), including the ESAs' authority to develop an EU code of financial regulation and to oversee its implementation by member States and resolve related disputes. He suggest that the ultimate effectiveness of the supervisory reforms will depend on whether they

achieve a balance between crisis prevention supervisory measures and crisis management involving the rescue or resolution of financial firms and a better balance needs to be struck to achieve financial stability objectives.

Cervellati and Fioriti (2007) describe the three main theoretical supervisory models proposed in the literature: vertical, horizontal, centralized and considering the actual supervisory systems are the result of the different legal frameworks of the member States and of the way in which their financial systems developed, they conclude and underline that differences that still exist among the EU systems make more difficult to achieve a real European integration in financial supervision. Also, Herring and Carmassi (2008) affirms that the most influential reorganization in financial supervision during the last decade took place in the United Kingdom, due to its role as a major international financial center. Damaestri and Guerrero (2005) concludes that in the case of the Scandinavian countries, the decisions to fully integrate financial regulation in a single institution were part of an evolutionary process, while in the recent cases the reform was implemented after holding a debate on the main advantages and costs of integration. Quaglia (2007) considers that intergovernmental dynamics largely account for the decision-making stage in which the national governments, especially the finance ministers of UK and Germany, were in the driving seat and had a major bearing on the outcome. He also underlines that different theories considered assign different influence to factors and actors at the global, EU and national levels, a combination of various approaches, helps to explain the multilevel governance of the financial services sector in the EU.

Begg (2009) underlines that a supranational supervisory system is needed for some intermediaries, but that proximity to market actors at national level remains important and also analyzes the financial supervision in EU and underlines the fact that from a total of 27 countries, 14 have adopted a single financial regulator, as follows: the unified supervisor is separated from the central bank in 10 countries (Austria, Belgium, Denmark, Germany, Hungary, Latvia, Malta, Poland, Sweden, United Kingdom), while in the remain countries either the central bank is the single regulator (Czech Republic, Slovakia), the single regulator is an agency of the central bank (Ireland), or an independent agency affiliated with the central bank (Estonia). The rest of the 13 states adopted the following financial supervision schemes: six adopted the sectoral approach (Cyprus, Greece, Lithuania, Romania, Slovenia, Spain), three introduced an integrated, sectoral model (Bulgaria, Finland and Luxembourg), and three have combined regulation by sector with regulation by objectives (France, Italy and Portugal). Finally, the Netherlands follows the twin peaks model, with the central bank responsible for macro and micro prudential supervision.

In EU countries, at this moment, the agencies responsible for supervising the three sectors - banking, insurance and securities market - are presented in Table 1.

Table 1. Supervisory institutions in European Union

Country	Banks	Securities	Insurance
Austria	Austrian Financial Market Authority		
Belgium	Financial Services and Markets Authority		
Bulgaria	Bulgarian National Bank	Financial Supervision Commission	
Cyprus	Central Bank of Cyprus	Cyprus Securities and Exchange Commission	Cyprus Insurance Companies Control Service
Czech Rep.	Czech National Bank		
Denmark	Denmark Financial Supervisory Authority		
Estonia	Finantsinspektsioon		
Finland	Financial Supervisory Authority (FIN-FSA)		
France	Autorité des marches financiers		
Germany	Federal Financial Supervisory Authority (BaFin)		
Greece	Bank of Greece	Capital Markets Commission	Directorate of Insurance undertakings and actuarial studies
Hungary	Hungarian Financial Supervisory Authority		
Ireland	Central Bank of Ireland		
Italy	Bank of Italy	Companies and Stock Exchange Commission (CONSOB)	Insurance Industry Regulatory Authority (ISVAP)
Latvia	Financial and Capital Markets Commission		
Lithuania	Bank of Lithuania	Lithuanian Securities Commission	Insurance Supervisory Commission of the Republic of Lithuania
Luxembourg	Commission de Surveilance du Secteur Financier		Commisariat aux Assurances
Malta	Malta Financial Services Authority		
Netherlands	Netherlands Authority for the Financial Markets		
Poland	Polish Financial Supervision Authority		
Portugal	Banco de Portugal	Portuguese Securities Market Commission	Instituto de Seguros de Portugal

Romania	National Bank of Romania	National Securities Commission	Insurance Supervisory Commission
Slovakia	National Bank of Slovakia		
Slovenia	Bank of Slovenia	Securities Market Agency	Insurance Supervisory Agency
Spain	Bank of Spain	Spanish Securities Market Commission	Insurance sector regulator
Sweden	Swedish Financial Supervisory Authority		
United Kingdom	FSA Financial Services Authority		

Source: own elaboration from Wymeersch (2007), websites of respective national bodies and http://www.cbfa.be/eng/links/li.asp

European Union countries have adopted a variety of supervisory structures, but they followed that by integrating the different types of supervision, the quality and effectiveness of supervisory activity to be improved. The reasons for supporting integrated supervision are related to efficiency (unified standard setting and unified procedures, cost of supervision would be lowered, facilitate contacts by supervised entities), effectiveness, and the creation and rapid growth of financial conglomerates. On the other hand, in the literature (Wymeersch, 2007) were formulated different forms of criticism against the integrated supervisor model. Firstly, the integrated model serves the interest of the multi-service financial groups, but is of little interest to those financial firms that are not active in several segments of the financial market, especially the smaller ones. Secondly, the remark is made that by integrating all financial supervision in the hand of one single body, the latter becomes too big, too unmanageable and too powerful. Thirdly, an integrated supervisor has led some to fear moral hazard. Fourthly, there may even be some diseconomies of scale. Finally, if the objectives of the integrated supervisory agency are not clearly specified, it may be less effective than sectorial supervisory agencies.

4. Data and Methodology

Financial stability requires a good financial supervision, but the issue is whether integrated supervision is closely linked with higher quality of supervision, the theoretical literature being unclear on this point. Therefore, we formulate our research hypothesis as follows: countries with full integrated supervision have a higher and more even quality of supervision across sectors in European Union and

this impacts on banking competition. In the following, we provide an empirical examination of the hypothesis using data on a cross-section of the EU 27 countries.

4.1. Data

We have data on supervisory structures from the 27 economies from European Union. In our model, the vector of explanatory variables consists of the two factors from banking market concentration degree – share of the five largest credit institutions in total assets and Herfindahl-Hirschman Index for 2010.

We chose to apply this model on European Union in order to underline the differences between EU's member states from the point of financial supervisory regime and its consequences for the banking competition, if exists. Other reasons for selecting these countries are the common characteristics i.e. the same European directives that regulate the financial sector in order to develop the Single Market, and also the geographical proximity.

Our contribution to the literature consists in selected several new indicators than the previous studies used, namely: share of the five largest credit institutions in total assets and Herfindahl-Hirschman Index. We took this form of indicators because they are relevant in underlining the impact of increase or decrease of the financial supervision's impact in banking competition.

4.2 Methodology

We consider financial supervision unification our dependent variable. The first step is to construct this binary variable (1=fully integrated financial supervision and 0 =all others) and the second one to define the logit model. Two popular versions are the probit and the logit model, and since in practice the predicted probabilities differ only slightly and the second one it is easier to use computationally than the first one, we opt for the logit model. The logit model is specified as:

$$P = F(Z) = \frac{1}{1+e^{-Z}} = \frac{1}{1+e^{-(\alpha+\beta X)}} \tag{1}$$

where P is the probability that Z takes the value 1 and F is the cumulative logistic probability function, X is the set of regressors and α and β and are parameters. It can be shown that the regression equation is equal to:

$$\ln\left(\frac{P}{1-P}\right) = Z = \alpha + \beta X \tag{2}$$

We estimate a binomial logit model using a set of determinants of degree of banking concentration, in order to answer the question of what probability different supervisory regimes have an impact on the banking competition in European Union.

5. Empirical Results

There are four qualitative characteristics of supervisory regimes that we decided not to consider in constructing the model: 1. the legal nature, public or private, of the supervisory institution nor their relationship to the political system, 2. degree of independence, 3. level of accountability, 4. the implication of the central bank in supervising the financial sector, because the financial literature proved the strong connection between the last mentioned. Moreover, we did not consider who is involved in the management of the deposit insurance schemes. In general, we consider only the three traditional sectors (banking, securities and insurance markets) that have been the subject of supervision. Finally, the financial authorities may perform different functions in the regulatory as well as in the supervisory area. However, at this stage of the institutional analysis, we consider only the number of the agencies involved in the supervisory activities. We consider that the dependent variable i.e. financial supervision unification is representative, in this case, considering only the supervisory activities without regulatory ones. The increase of public policy debates about institutional structure of regulation and supervision indicates that a certain unease about prevailing structures. International experience indicates a wide variety of institutional regulatory formats which suggests there is no universal ideal model, considers Llewellyn (2005). In the same direction, our results presented in Table 2 allow a number of conclusions.

Table 2. Estimation results of the binomial logit model

Variable	Coefficient	Std. Error	z-Statistic	Prob.
Herfindahl – Hirschman Index	0.000950	0.001243	0.763719	0.4450
Share of the five largest credit institutions in total assets	-0.008272	0.023182	-0.356838	0.7212
Mean dependent var.	0.629630	S.D. dependent var		0.492103
S.E. of regression	0.494913	Akaike info criterion		1.423754
Sum squared resid.	6.123463	Schwarz criterion		1.519742
Log likelihood	-17.22068	Hannan-Quinn criterion		1.452296
Deviance	34.44136	Restr. deviance		35.59424
Avg. log likelihood	-0.637803			
Obs. with Dep=0	10	Total obs.		27
Ob.s with Dep=1	17			

Source: author's calculations

We classified the supervisory regimes trying to underline the differences between them by number of the institutions involved: full integrated (single supervisor), partial integrated (at least one authority monitor for more than one sector) and sectoral (separate authorities foe each sector, at least one per sector). After this classification, we analyzed if the impact of different supervisory is significant for the two representative variables that we selected in the model, and we highlighted that none of the dependent variables influences the independent one. So, the null hypothesis isn't rejected since, no variable isn't statistically significant, meaning that the supervision arrangements have no significant effect on degree concentration of the banking system and also on the banking competition.

The rejection of the hypothesis comes somewhat in contradiction with the general impression on the link between the type of supervision and the development level of the financial system from a country. This result supports previous studies, such as that of Cihak and Podpiera (2008), who emphasized that relation between the level of economic development and the integrated supervision is not statistically significant, the study of Masciandaro (2009), who outlined that wealth features of each country are insignificant, traditional market-based versus bank-based index shows no relationship with the choice of the supervisory model, and that the development of the financial markets, measured by the level of market capitalization, and the size of the banking system, measured by the asset dimension is also insignificant.

6. Conclusions

The objective of this paper has been to analyze how the type of financial supervision regime influences important indicators of the concentration degree in banking industry (Share of the 5 largest credit institutions in total assets and Herfindahl-Hirschman index), in order to underline the influences in banking competition. The results are included in the trend of literature that analyzed this type of connection: the supervisory function is being performed by a variety of institutions, but indifferently who is supervising the financial sector (one, two, three institutions), there is no significant influence on banking sector and on banking competition. From our point of view, this underlines the fact that changing the structure of the financial system does not guarantee better supervision or better indicators at the end of the year. Better supervision comes from stronger regulations and non-political implications. It is more important to accept that the institutional structure is not perfect and try to improve the regulations, than only to try to change the structure of the supervisory institutions.

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