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BANKING INTEGRATION IN EUROPEAN CONTEXT

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Abstract

The integration of different states in a already existing union or in a new one represents a long-lasting process involving harmonisations on various fields – political, economic, legislative, social, cultural, technological, informational, etc. Besides the integration of the states and of the different authorities in a common mechanism, the business organizations also have to comply with certain standards and to align to certain procedures. The banking system is not an exception being probably one of the pillars of the economic and financial integration of a state in a union. Banking integration may be considered the process leading to a convergence towards a single market for all products, processes, procedures, standards, transactions from the banking field. All sets of standards, mechanisms and procedures should be observed both by banks, regulation and control bodies, but also by customers. Only in this way one can create the premises for the most favourable banking transactions.

The integration of the banking system in a union is determined, conditioned and influenced by a series of factors. Based on the data published by the Bank for International Settlements, the authors carry out a close and pertinent empirical analysis of the banking assets flows between the Eurozone countries in the period 2000-2014. The paper also deals with the commitments that the recent economic-financial crisis created on the banking assets flows. The authors resort to regression equations in order to demonstrate the connection between the effects of banking integration and various factors involved (the relative dimension of the country, the significance of the banks in the financial system, the Herfindhal index, the degree of concentration or dispersion of the property on banks, the degree of independence, the tradition of law). In order to measure the level of banking integration of the national bank systems, the indices we used are the degree of openness towards the exterior, the degree of internationalization of the national bank systems in the Eurozone.

The results of this research point out a whole series of commitments from a scientific point of view, but also regarding a good practices model which should enhance the synergic integration of the different national banking systems. A part of the outlined conclusions may be oriented towards specific directions and levers in order to modify the national strategy for the adaptation of a candidate state to the Aquis communautaire.

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Key words: banking integration, banking assets flows, degree of openness of the banking systems towards the exterior, degree of internationalisation of the banking systems

JEL Classification: F36, G21, G01

Introduction

The international economic-financial crisis demonstrated that the European project is far from being finalised and that the consolidation of the institutional framework on a community level is a must. The development of the reform and especially the consolidation of the economic and financial system becomes an extremely important desired goal on the level of the European Union, because this is still vulnerable to the signals, changes and effects which can be transmitted from other markets (Nor-American, Japanese, Chinese, etc.). In order to consolidate or improve the whole European mechanism, but also to follow and implement sustainably the fundamental objectives of the Union (the consolidation of the integration of the Member States under a economic, financial, social but especially political ratio), we require to develop a economic governance able to respond rapidly to the negative signals coming from inside but also from outside the union. The existence of an integrated economic system inside such governance would allow and facilitate the EU comeback towards an intelligent and sustainable, durable economic growth which should generate jobs, respectively a community system, with a central role which should be allocated to the settlement and monitoring of the financial system.

The Euro introduction as a single currency was considered an important step towards the economic, integration, formation and consolidation of a single European market. The decisive factors on the level of the member states, but also on the level of the entire European Union expected the single European currency to enhance considerably the economic integration of the European financial markets, especially due to the existence of a common monetary policy and an adequate support for the bank interest rates in the Euro zone. The implementation of this goal will not be carried out easily, the decisive factors being aware of the fact that there will be a whole series of practical challenges, or obstacles in the way of full financial integration in the European space. In fact, the full harmonisation of all the financial aspects will be accomplished only in time, in a long period of time required for the settlement reforms, along with the introduction of the single currency for them to produce the desired effects (Hertig 2000).

Studies and/or researches on the European banking integration are numerous in the international reference literature. The banking activity of the European states is analysed either empirically using data about the main products and financial services offered by the banks for the customers legal or natural persons (Cabral, Dierick and Vesala, 2002), or with an accent on the financial integration in the Eurozone, pointing out the role of the currency, of the governmental and/or corporate titles, deposits and assets (Baele et al., 2004), the intend to offer not only scientific explanations for the phenomenon but also to "guide" somehow the banking system towards a better integration. While some studies analyse the banking integration through the convergence of the interest rates and bank margins (Danthine et al., 2000; Perez et al., 2005; Rughooand Sarantis, 2014) others resort to the clusters technique from the identification of the basic patterns and of the tendencies in the

European banking structures from the perspective of the homogeneity of the investigated countries (Sorensen and Gutierrez, 2006). There are also researched regarding the analysis of the determining factors and foreign bank assets flows among countries (Perez et al., 2005). Recent papers (De Sola Perea and Van Nieuwenhuyze, 2014; Gill et al., 2014) analyse the way in which the financial integration process and implicitly the banking one was affected by the economic and financial crisis from 2007.

The economic-financial integration cannot take place without the existence of a wide adaptation of the banking system. In this context, the present paper is intended to point out under a theoretical and practical aspect, the way in which the European banking integration took place. The authors outline the influential factors, the challenges, the obstacles within this process, demonstrating that there are new ways of maintaining the banking integration and putting an accent on the settlement of independence of each country and on the diversification of the bank property. The originality of this article relies in the fact that it also offers an analysis of the way in which the economic and financial crisis affected this bank integration. The paper is a viable example of good practices in the analysed sphere, being an extremely important aspect under the circumstances where the political factors speech more of the existence and/or the need to consolidate the banking union on a European level.

In this analysis we started from the idea that the Euro adoption created favourable conditions to increase the degree of efficiency of the banking system in the European space. Meanwhile, the banks with the more efficient activity will be able to consolidate their position, the others will disappear and/or will have to reform their activities. This study takes into consideration in the empirical analysis the way in which the growth of the bank assets flows allows the enhancement of the banking system integration (Perez et al., 2005). As the possibility of spatial relocation of the assets is high, it might be considered an element favouring the efficiency of the banking activities.

Based on data published by the Bank of International Settlements regarding the consolidated statistics of international banks, this papers includes an empirical analysis of the banking assets flows from the Euro zone countries in the period 2000-2014. The quantification of the degree of banking integration in the EU Member States was carried out with the help of two specific indicators, that are: the degree of openness towards the exterior of the banking systems (the flow of assets from outside entering a national banking market), the degree of internationalisation of the national banking systems (the flow of bank assets from one given country to the rest of the countries from the Euro zone).

In the first part of the paper we approached the theoretical aspects from the reference literature, as well as the ways to quantify the banking integration used up to the present. In the second part of the article we carried out a presentation of the research methodology, the reasons to choose this and the chosen empirical pattern to analyse the degree of banking integration. The results have the purpose to point out the influences which the analysed factors have on the banking asset flows used to appreciate the banking integration. The paper ends with conclusions, limits and proposals for future research.

1. The analysis of the reference literature regarding the banking integration

The introduction of the Euro currency represented first of all an important step towards the consolidation of the European Union taking into account the monetary integration and the creation of the favourable premises for the full political integration (Pop et al., 2011). The Euro currency also brought the elimination of some specific risks as the one related to the exchange rate, by eliminating the transaction costs for the exchange rate, as well as annulling the risk generated by the uncertainty regarding the future evolution of the exchange rates. The Euro currency favoured the financial integration because by letting the national currencies of the Euro zone go, the exchange rates disappeared. The process of monetary unification also had other favourable consequences as for example the elimination of the controls regarding the capital flows, creating equitable competition conditions of the credit markets and real estate values, defining banking directives and financial services, harmonising the norms which settle the public debt etc.

In the Euro zone, the process of economic and financial integration was more intense than in the rest of the world as a result of the Single Market and implicitly of the single currency of the applied policies and regulations (De Sola Perea and Van Nieuwenhuyze, 2014). Financial integration might be considered a fundamental pillar of the monetary union, essential to enhance the implementation of the monetary policy in the countries of the union and in those adopting the single European currency. The financial integration on the EU level was determined both by the governmental policies and by the financial innovation, both by the internationalization of trade, production and funding (Dermine, 2003). The Euro currency creation corroborated with the elimination of the exchange rate risk between the former currencies of the European states and associated with the intensification of the Euro denomination on the financial markets generated a slight increase of the foreign assets flows between the EU Member States, especially on the credit market (Lane, 2010).

Up to 2007, Europe accounted half of growth of the global capital flows on an international level, meaning that the European financial markets managed to be integrated harmoniously on the international financial market. The financial integration has currently registered a reverse change. The banks in the Euro zone brought back their trans-border loans and other receivables from 3,7 billion \$ in 2007 to 2,8 billion \$ in 2012. This situation indicates the fact that the mobility of the capitals in Europe overcomes the development of the institutions and settlements able to support such flows (McKinsey Global Institute, 2013).

European banks may offer a credit either locally or through subsidiaries or on a regional and/or international level by resorting to trans-border activities. A growth of the capital flows from the Euro zone through one of these channels (BCE, 2014) means a better integration of the national banking markets and a favourable harmonization with the international banking market. This situation is favourable especially for the organisation which applies for credits because the loan costs are lower for households and non-financial societies as a consequence of a high level of competition.

The reference literature does not point out any way to quantify the unanimously accepted financial integration. Most of the analysis are concentrated on the variation of the single price law (Rughoo and Sarantis, 2014; Levy Yeyatiet al, 2008; Lamont and Thaler, 2003; Baltzer et al., 2008; Fernandez de Guevara et al, 2007; Manna, 2004). The banking integration is approached in literature from two perspectives: on one hand it is analysed the integration based on price indices, and on the other hand we take into consideration indices

referring to quantity. Among the indices proposed for the analysis of the financial integration degree of the credit markets (Barros et al., 2005) we can find: the differences between the interest rates, the price differences for the banking services, the cross-border transfers, the transnational banking activity, the penetration of the markets by foreign banks etc.

Markets are considered integrated when the law of the single price works, that is the prices of the products on that market are the same irrespective of the geographical origin of the one selling or buying (Lamont and Thaler, 2003). This single price law represented a starting point in many studies regarding the banking integration (Levy Yeyati et al, 2008, Lamont and Thaler 2003, Baltzer et al, 2008) who analysed banking integration with the help of the interest rate convergence after the Euro adoption, but also measuring the prices through their level but also their reaction to the changes and/or evolutions of economic development. Thus, we found out that the progress of banking integration in Europe is incontestable, but unequal, the most visible results being observed for the reduction of the interest rates on the public debt market and of the standard bank products (time deposits and mortgages), while on the bank retail market the effects were more modest (Fernandes de Guevara et al., 2007). Studying the price based indices, Cabral et al. (2002) analysed the monthly environments of the interest rates and the retail banks margin rates and identified a decline of the rates of deposits and credits starting with 2011, which could be a consequence of the monetary policy convergence.

Angeloni and Ehrmann (2003) and Rughoo and Sarantis (2014) searched for an existence of a growth of integration and competition in the retail banking sector. They identified a progress in integration from the perspective of sending the monetary policy through the banking sectors, the rate of the interest rates in the retail sector being convergent especially after 1999. The empirical results indicate the correlation between the interest rates for deposits and the interest rates for credits in the household sector up to 2007, after the financial crisis there was no correlation leading to the conclusion that the global crisis had a negative effect on the banking integration process (Rughoo and Sarantis, 2014). Other research regarding the integration on the bank market in the Euro zone based on price pointed out the fact that while this market can be considered quite advanced from a legal perspective, the price differences are relatively high, the level of integration being different on the various segments of banking market (Baele et al., 2004). Dermine (2002) takes into consideration the impact of European integration on the bank markets through four ways: the single price law, the level of the cross border activity, the foreign direct investment quantum and market share of the foreign companies. The limited data regarding prices, the intrinsic characteristics of the retail banks, the differences between the bank products and the financial institutions offering such facilities make the application and verification of the single price law difficult. The attempts to analyse the banking integration using price based indices are not conclusive.

The integration of the bank markets of the EU Member Countries might be considered quite advances from the perspective of the legislative regulations, but also the differences between the levels of the transaction costs on this market remain considerable. That is why an alternative to the analysis of the degree of banking integration based on the costs of transactions (price), it the use of quantitative indices for example the evaluation of the measures in which the incomings of the foreign bank assets flows were reduced in time.

Based on the analysis of the quantitative indicators (Hartmand et al., 2003) we noticed a significant growth of the inter-banking credits in the Euro zone, a reduced cross border consolidation and a persistence of the preconceptions regarding lending and crediting the nonfinancial corporations. Manna (2004) researches the degree of integration of the banking system in the Euro zone based on six indices. These are taken from the European banks balances. Based on the data, we notice that the difference between the cross border bank activities on the retail market as opposed to the wholesale market increased, the share of the cross border activity being significantly lower for the largest four markets in EU: Germany, France, Italy and Spain.

Banking integration in the Euro zone did not advance rapidly (Angeloni and Ehrmann, 2003). The Euro introduction seems not to have induced revolutionary changes up to the present. The essential changes were in the field of inter banking securities and to a small extent the mergers and acquisitions on the analysed markets. In order to assess the level of the transnational flows (Papaioannou, 2005) we used to a panel research which pointed out the fact that besides the geographic position and the level of incomes, the public policies and monitoring and settlement institutions represent the representative and determining levers of the banking activity internationalization. Another approach based both on the network analysis and on the concept of geographic neutrality confirmed the significant role of both the geographic distance and of the commercial integration in the analysis of the banking integration (Arribas et al, 2009).

A recent paper (De Sola Pereaandand Van Nieuwenhuyze, 2014) points out the developments in the financial integration and the process of fragmentation in the Euro zone from two perspectives: in terms of volume and prices. The authors try to identify certain structural factors determining the structuring of financial markets. The Euro adoption as a vector favouring the financial integration in Europe is also noticed by Blank and Buch (2007) which identify a positive and important impact of the Euro adoption on the bilateral financial relations among the EU countries. The effect is stronger in the case of foreign bank assets, than in the case of liabilities. In the paper we used data regarding the bank assets and liabilities existing in BIS.

Iluț and Chirleşan (2012) evaluated the process of banking integration in the in the new EU member states by measuring the convergence speed towards a common value of the cost-effectiveness of the bank assets and reached the conclusion that the integration and development process of the banking sectors in the sestates is continuously developing and far from being complete.

The investigation of the progress of integration in the European banking industry with the help of univariated and bivariated GARCH models led to the conclusion that the introduction of the Euro currency and the expansion of the European Union from 2004 contributed to the process of integration of the banking sector in Europe (Alexandrou et al, 2011).

Shin (2011) draws the attention on the importance of the analysis of the cross border bank flows on a gross level (taking into account distinctively the value of the incomings and outgoings) and not net (taking into account the difference between incomings and outgoings), because both the granted credits and the deposits drawn on a cross border level registered a dramatic growth in the past 15 years. Each of these aspects can be determined by various factors with a variable impact on the financial sector, and on the global economy.

Buch (2001) noticed that the changes in the reports between the external assets and liabilities of the banks and GDP are determined by two factors: changes in the degree of openness of the financial systems and in the importance of the bank system as opposed to GDP. In order to isolate these two effects, there were analysed data regarding the importance of the receivables and commitments towards the non-residents as opposed to the total balance of the EU financial institutions in the 90s. Another paper (Buch and Heinrich, 2002) presented complementary proofs regarding the determining factors of internationalization of bank activities, pointing out the connection between deregulation and banking system.

2. Research methodology

Starting from the deficiencies pointed out in the reference literature regarding banking integration based on the single price law, due to the difficulty of applying and checking this law, the authors combine in this research various methods and quantitative indicators for the assessment of banking integration (the bank assets flow among countries, the degree of internationalisation of the bank system in a country), presented by Buch (2001) and Papaioannou (2005) in order to identify the determining factors for the banking integration in the area. In this paper just like Papaioannou (2005) we use the regression with panel data but we also included in the model data regarding EU countries while Papaioannou used data from a larger number of countries outside EU, and its model includes as independent variables the financial, political risk, inflation rate, the exchange rate regime etc.

Unlike Buch (2001) who carries out an analysis of the credit market in Germany in correlation with the markets from the other EU countries, in this study we analyse the degree of integration of the bank markets in general not only of the credit market.

As opposed to the studies and/or previous research on the Euro theme, the conclusions of this research are better outlined and more precise because they analyse a longer period of time (2000-2014). In the same way as Arribas et al (2009) did, we used the foreign claims received and sent in order to analyze the banking integration in UE because there are different models depending on the country in question. However, in our paper, we don't use the nonparametric techniques used by Arribas et al. We considered that the data offered by BIS (2015) regarding the bank assets flows in the developed countries, distributed according to the destination country are available starting with 1999 and up to 2014, will be useful in the empirical analysis used for the assessment of the banking integration in the Euro zone. Because the absolute indicators regarding the bank assets flows might be influenced by the general tendency of the internal or external bank assets, we used in this analysis relative indices by reporting the external assets to the total of bank assets.

Spiegel (2004) uses as an analysis indicator for the impact of monetary union on the financial integration the existing disparities in crediting Portugal by the MEU and non-MEU before and after starting the union. The author resorts in this sense to the methodology which is also known as a "difference in differences. This allows the comparison of the impact generated by the changes in the crediting policy in the experimental group (countries joining MEU) in order to notice the changes in a control group (countries not joining MEU). Starting from this idea the authors resorted to the inclusion in the case of the analysed countries of three other states which are not part of MEU: Denmark, Sweden and Great Britain. Therefore, they wanted to notice the degree of integration in the Euro zone versus EU15.

The choice started from the idea that the introduction of Euro currency would allow the change in the value of the foreign bank assets held by other countries in the Euro zone along with the disappearance of the foreign exchange risk. Therefore, banks could be more willing to have own capitals or debts issued by other countries in the Euro zone. At the same time these banks would be less reticent to lend foreign banks operating in the Euro zone.

A first indicator for the assessment of the cross border activity showing the degree of openness towards the outside in a banking system is I_1 . This is determined starting from the value of the bank assets of a country which are held by foreign banks reported to the total of bank assets of the destination country. The second indicator I_2 of the cross border activity indicating the degree of internationalization of the banking system in a country is determined according to the assets held abroad by the banks of a country, to the total bank assets of the country of origin.

In order to examine the tendencies regarding the incomings and outgoings of bank assets we tested their statistical significance based on time observations. The methodology used was that of simple linear regression, where the dependent variable is represented by the blow of bank assets reported to the total of bank assets each year. In order to isolate the effect of the economic and financial crisis we introduced dummy time variables 2008, 2009, 2010, 2011. The empirical pattern used starts from the one used by Perez (2005). This allows the outline of the assessments for the theoretical predictions:

$$I(i)_{ct} = C + \alpha_1 DIM_{ct} + \alpha_2 BANCARIZ_{ct} + \alpha_3 HERFIN_{ct} + \alpha_4 PROPR_c + \alpha_5 INDEP_c + \alpha_6 LEGAL_c + \beta_{ct}(1)$$

We resorted to the inclusion in the regression equation of the DIM variable in order to take into account the relative dimension of the country. This quantifies the ration between the GDP of the country c in the t years and the amount of all GDPs in the t year for the countries in the sample. The inclusion of the variable is due to the presupposition that the countries with a higher GDP will have relatively higher internal bank markets, the percentage of the foreign bank assets in the country being lower than in the case of the small states. Collecting the data regarding the DIM variable was based on the GDP published by Eurostat (2015) for the period 2000-2014.

The BANCARIZ variable is used in order to measure the relative importance of the banks in the financial system of the country. It quantifies the ration between the total bank assets in the c country from the t years and the GDP of the country c in the year t . The inclusion of the variable is due to the presupposition that the countries with a more intense bank development will have an advantage as compared to the ones regarding the transfer of bank assets abroad as opposed to the ones with a lower development. The data regarding the total of bank assets were taken from the Central European Bank (BCE, 2015).

The HERFIN variable represents the Herfindahl index of concentrating the bank assets of the c country in the t period.

Concentration is important from the perspective of competition more competitive banks may resort to international expansion in order to increase their efficiency. At the same time the low concentration in the country might also help the international expansion. The data regarding the Herfindhal index were taken from the Banking Structure Report, (ECB, 2014), EU banking structures, (ECB, 2008) and Report on EU banking structure, November (ECB, 2004).

PROPR is a variable showing to which extent the right of property on the banks from the C country is concentrated or dispersed, the highest values of this variable involving higher property dispersion. The inclusion of a variable was determined by the fact that the property structure might have an impact on the desire and capacity of the local banks to expand abroad or to conclude partnerships with the foreign banks on the local market. Therefore, state owned banks are less interested to expand abroad, but they might also be interesting for the expansion of the foreign banks in the country. The unlisted banks where the ownership is held by various groups of interests (families, investment funds etc.) may be less interested in the expansion abroad while a bank with small shareholders might be interested in the expansion abroad. A banking system where the banks with a larger number of shareholders are predominant, are under a theoretical aspect more open to the partnerships with the foreign banks, than in the case when the state banks or the banks owned by a small number of shareholders are held by a small number of shareholder are predominant in the banking system. The data regarding the PROPR variable have been taken from Caprio et al. (2004).

The INDEP variable shows the degree of independence of the national monitoring authority towards the government of a state. This was included in the equation because the settlement authorities might be more or less available to allow the foreign banks from a certain country to enter other foreign bank markets or to allow banks in a certain country to enter other foreign bank markets from the market of the state. The tendency would be that the less independent settlement authorities to be interested in the protection of the local banks from the foreign competition. The data regarding the degree of independence of the monitoring activity as opposed to the government we collected based on the information regarding GMT (Grilli Masciandaro Tabellini - Index of Central Bank Independence) according to Grilli, Masciandaro and Tabellini (1991) and Arnone et al. (2007). This indicator is calculated based on 15 criteria of which eight are regarding the political independence and seven the operational independence of the central banks.

Including the in equation the LEGAL variable which evaluates the tradition of law and order in a country, leaves from the fact that the states with high standards regarding the law (according to the accounting standards in force, the legal efficiency, the protection of the shareholders, and ethics in business, etc.) attract more the foreign banks than the countries where the level of applying the legislative regulations is lower. The data regarding the LEGAL variable are taken from the International Country Risk Guide, applying the law and order in the analysed countries (PRS Group, 2015).

The values of the variables I_1 , I_2 , DIM, HERFIN and BANCARIZ will be turned into logarithms and then the names of the of these variables will have as a prefix the letter L. The data processing took place with the help of software package Eviews 8.0. The analysis used being regressions, the method of the least squares, methods which were used in other reference papers analysing banking integration. (Perez et al, 2005; Blank and Buch, 2007).

3. Results and discussions

The pattern explain the dependence of two important indices in assessing banking integration: the banking assets flows entering the country and the banking assets flows going out of the country. Among the significant factors pointed out in this analysis we can mention the relative dimension of the country, the importance of banks in the financial system, the Herfindahl

index, the degree of concentration or dispersion of property on banks, the degree of independence, the tradition of law, both in the analysis carried out on the level of the Euro zone, but also the one on the level of EU 15. The assessment of the coefficients took place with the help of the regression equations and the method of the least squares.

3.1. Assessment of the coefficients for the banking assets flow entering the country

The examination of the tendencies in the evolution of the banking assets flows entering the country is carried out by testing the statistical significance of the trends noticed in time. The results obtained with the help of the econometric software for the banking assets flows entering the country are mentioned in table no.1. After a first test of the pattern (initial situation) we noticed that a part of the independent variables do not influence the evolution of the dependent variable that is why we tested the pattern the second time (the final variant), where these variables were eliminated.

Table no.1. Applying the method of the least squares to determine the influential factors on the banking integration (the banking assets flows entered in the country as a percentage from the total of banking assets- I₁)

Variables	Regression coefficient Euro zone		Regression coefficient EU	
	initial	final	initial	final
LBANCARIZ	-1.04179**	-1.0255**	-0.9720**	-0.9643**
LDIM	0.3100*	-	0.2450*	-
LHERFIN	0.3137*	0.3434**	0.3617**	0.3916**
LEGAL	0.9792**	0.6720**	0.6977**	0.6116**
INDEP	-5.3085 ^{n.s.}	-	-2.0852 ^{n.s.}	-
PROPR	0.9047*	1.2856**	1.2509**	1.5498**
DUM2008	0.2953**	0.2468**	0.2972**	0.2554**
DUM2009	0.2473**	0.1498*	0.2276**	0.1478**
DUM2010	0.1491 ^{n.s.}	-	0.1207 ^{n.s.}	-
DUM2011	0.1672*	-	0.1446**	-
C	5.7273	2.5727	3.6920	2.1181
No. observations	590		767	
Adjusted determination coefficient	0.8704	0.8714	0.8817	0.8812

Note: * for 0.95, **for 0.99, ns- relation is insignificant

Table no.1 shows the fact that by applying the method of the least squares on the level of the Euro zone for the INDEP (0.0745>0.05) and DUM2010 (0.0707>0.05) variables, their contribution to the phenomenon investigates is statistically insignificant meaning that we cannot identify their influence of the banking assets incomings and implicitly on banking integration. For this reasons two variables have to be eliminated from the regression equation, the assessment process needs to reconsider the new given conditions. Identically, by applying the same method on the EU 15 level, the two variables INDEP and DUM2010 do not have any statistical significance (>0.05), they are also eliminated, and the analysis is redone with the rest of the variables. In this analysis we chose the threshold of significance for the p-value of 5% because it is frequently used in such analysis by other authors.

(Papaiannou, 2005; Buch, 2002; Buchand Heinrich, 2002; Simpson, 2006; Casu and Molyneux, 2003).

The equation for the Euro zone is:

$$LI_1 = C(1)*LBANCARIZ + C(2)*LDIM + C(3)*LHERFIN + C(4)*LEGAL + \\ + C(5)*PROPR + C(6)*DUM2008 + C(7)*DUM2009 + C(8)*DUM2011 + \\ + C(9) + [AR(1)=C(10)] \quad (2)$$

And for EU 15:

$$LI_1 = C(1)*LBANCARIZ + C(2)*LDIM + C(3)*LHERFIN + C(4)*LEGAL + \\ + C(5)*PROPR + C(6)*DUM2008 + C(7)*DUM2009 + C(8)*DUM2011 + \\ + C(9) + [AR(1)=C(10)] \quad (3)$$

By applying the method of the least squares for the variables in analysis on the level of the Euro zone, but also for EU 15, outside the variables eliminated (INDEP and DUM2010), the rest are significant from a statistical point of view, their level of significance being above the threshold.

Therefore we can notice that for the variable LBANCARIZ the level of significance is an extremely high one ($0.0000 < 0.05$), its influence in outlining the investigated phenomenon (the incoming bank assets flows) being an important one. The variable in cause can be included in the regression equation. We notice the existence of a negative correlation with the dependent variable (the banking assets flows entered I_1), therefore for a growth with one unit of the relative importance of the banks in the financial system there will be a decrease by 1.0255 units of the external banking assets entering the Euro zone countries and a decrease by 0.9643 units of the banking assets entering the countries in the EU 15 zone. The phenomenon demonstrates the fact that in the countries with a developed banking system there a less external banking assets confirming that they are less attractive for foreign banks.

For the LHERFIN variable, the level of significance is 0.0187, respectively 0.0018 < 0.05 , meaning that this variable can be included in the regression equation and indicates the fact a one unit growth of the level of the HERFINDAHL indicator determines the growth by 0.3434 of the dependent variable (I_1) in the case of the Euro zone countries and of 0.3916 units in the case of the EU 14 countries, supporting the idea that a lower competition in the country encourages foreign investors.

The value of probability of the LEGAL variable is of 0.0002, respectively $0.0001 < 0.05$, meaning that the level of significance of this variable is high from a statistical point of view and the associated coefficient shows that for a one unit growth of the independent variable, we will register a growth by 0.6720 in the Euro zone countries and by 0.6116 for the EU 15 countries.

For the PROPR variable, the level of significance is of 0.0014, respectively $0.0000 < 0.05$ meaning that this variable is very significant and can be included in the regression equation. A modification of this variable with one unit generates a growth by 1.2856 units of the foreign bank assets in the countries from the Euro zone and by 1.5498 units of the bank assets from the EU 15 countries, this being explained by the fact that a higher dispersion of the properties on banks from a country makes this banking system be more open to the foreign banks.

In order to quantify the impact of the economic and financial crisis on the banking assets flows introduced in the regression equation the dummy time variables 2008, 2009, 2011. From table no. 1 we can notice that the variables 2008 and 2009 are statistically significant to a probability of 95%. They are positively correlated with the dependent variable I_1 , the coefficient associated with this variable are 0.2468, 0.2554, 0.1498, respectively 0.1478. In the years when the financial crisis registered the highest amplitude and the strongest implications on the banking systems, the external banking assets continued to grow to a lesser extend as opposed to the years previous to the crisis.

The value of the determination coefficient R^2 in the case of foreign banks assets incomings on the level of the Euro zone is of 0.8724, respectively on the level of EU 15 of 0.8826 shows that 88% of the variation of these foreign bank assets incomings is explained by the evolution of independent variables (LBANCARIZ, LHERFIN, LEGAL, PROPR, DUM2008, DUM2009) included in regression. The adjusted value of R^2 of 0.8714, respectively 0.8812 is almost equal with the initial value of R^2 . Therefore the sample is a representative one, showing more precisely the reality (Stancu, 2011).

3.2. Assessing the coefficients in the case of banking assets flows going out of the country

As for the analysis of the index for banking assets flow going out of the country for the analysed states, the results of the assessment of the coefficients of the variables are present in table no.2.

Table no.2: Applying the method of the least squares to determine the influential factors on the banking integration (the banking assets flows going out of the country as a percentage from the total of banking assets - I_2)

Variables	Regression coefficient Euro zone		Regression coefficient EU	
	initial	final	initial	final
LBANCARIZ	-1.0166**	-1.0138**	-0.9786**	-0.9797**
LDIM	0.9302**	0.8932**	0.3074 ^{n.s.}	-
LHERFIN	0.1371 ^{n.s.}	-	0.1826*	0.1768*
INDEP	-12.2912*	-13.4642**	-0.9696 ^{n.s.}	-
LEGAL	1.0670*	1.1268**	0.4849 ^{n.s.}	-
PROPR	0.4777 ^{n.s.}	-	0.9768 ^{n.s.}	-
DUM2008	0.2185**	0.2246**	0.2704**	0.2773**
DUM2009	0.2602**	0.2614**	0.2517**	0.2573**
DUM2010	0.2093**	0.2154**	0.1854**	0.1913**
DUM2011	0.2119**	0.2184**	0.2022**	0.2054**
C	11.7768	13.58453	5.5541	8.4878
No. observations	590	590	767	767
Adjusted determination coefficient	0.9676	0.9676	0.9676	0.9693

Note: * for 0.95, ** for 0.99, ns- relation is insignificant

We can notice from table no. 2 that by applying the method of the least squares on the level of the Euro zone for the LHERFIN variable (0.2004 > 0.05) and PROPR (0.5877 > 0.05) their

contribution to the explanation of the dependent variable (flows of banking assets going out of the country I_2) is insignificant statistically, that is we cannot identify an influence of these variables on the banking assets outgoings and implicitly on the banking integration. For this reasons the two variables have to be eliminated from the regression equation, the process of assessment needs to be redone under the given circumstances. Identically, by applying the same method on the EU 15 level for the same variable we notice that the variables LDIM, INDEP, LEGAL and PROPR do not have any statistic significance (>0.05), they are also eliminated and the analysis is redone with the rest of the variables.

By applying the method of the least squares on the variables left in analysis on the Euro zone level, but also on the EU 15 level the independent variables which are significant are different in the two cases as we can notice from table no.2.

The resulted equation for the Euro zone is:

$$LI_2 = C(1)*LBANCARIZ + C(2)*LDIM + C(3)*INDEP + C(4)*LEGAL + \\ + C(5)*DUM2008 + C(6)*DUM2009 + C(7)*DUM2010 + C(8)*DUM2011 + \\ + C(9) + [AR(1)=C(10)] \quad (4)$$

And for EU 15:

$$LI_2 = C(1)*LBANCARIZ + C(2)*LHERFIN + C(3)*DUM2008 + C(4)*DUM2009 + \\ + C(5)*DUM2010 + C(6)*DUM2011 + C(7) + [AR(1)=C(8)] \quad (5)$$

For the variable LBANCARIZ the level of significance is extremely high ($0.0000 < 0.05$), its influence in explaining the dependent variable (the flows of banking assets going out of the country I_2) is very important and can be included in the regression equation. We notice a negative correlation of this variable with the dependent variable (I_2), therefore for a growth by one unit of the degree of the relative importance of the banks in the financial system, there will be a decrease by 1.0138 units of the banking assets outgoings from the Euro zone, and a decrease by 0.9797 units of the banking assets outgoings in the case of the EU 15 countries, influence which contradicts the theoretical appreciations.

The level of significance associated with the variable dimension of the country (DIM), in the case of the Euro zone countries ($0.0001 < 0.05$) indicates the fact that this variable is insignificant from a statistical point of view and show us that between the dimension of the country and of the banking assets outgoings there is a positive correlation, a one unit growth of the dimension involves a growth by 0.8932 of the dependent variable. Therefore the larger countries, from the GDP perspective, have more developed banking markets which may be more interested to enter the external markets.

For the LHERFIN variable, the level of significance is ($0.0484 < 0.05$), meaning that this variable is significant and can be included in the regression equation. The level of coefficient associated with the variable LHERFIN indicates a positive correlation with the dependent variable (I_2) and shows the fact that a one unit growth of HERFINDAHL indicator determines the growth by 0.1768 of the dependent variable, supporting thus the idea that a higher concentration makes the banks more competitive and interested in international expansion.

As for the time dummy variables we can notice that all variables are significant from a statistical point of view ($0.0000 < 0.05$) and are positively correlated with the dependent variable. We can notice that in these years when the financial crisis registered the highest

amplitude and commitments on the banking system, the banking assets flows continued to grow but to a lesser extent as compared to the previous years as a consequence of the reduction of the generosity with which the mother banks were feeding with funds the subsidiaries in EU. We also notice that the influence of the economic-financial crisis was felt initially stronger in the Euro zone and then starting with 2009, the effects were stronger in the case of EU 15.

The determination coefficient R-squared is in the case of foreign banking assets outgoings in the Euro zone 0.9681, respectively 0.9696 in the case of EU 15, showing us the fact that 96% of the variation of foreign banking assets outgoings is explained by the evolution of the dependent variable included in regression. The adjusted value of the determination coefficient is 0.9676, respectively 0.9693 almost equal to the one of the determination coefficient and explains the fact that the sample is representative for a more precise reality.

Conclusions

The model presented in this paper regarding banking integration points out the functional relations among the relevant economic, financial, institutional and technical indices, according to the specifications of the existing reference literature in the field of this theme (banking integration, the role of the institutional factors for the financial development of the banking system). The econometric analysis proves the utility of the panel data patters, such studies being substantiated adequately from a scientific point of view in the field of financial integration.

From the analysis of the statistical data regarding the openness and internationalisation of the banking systems taken into account we can notice an increasing evolution in the case of both indicators in the period 2000-2009. It was followed by a sudden decrease, generated by the economic and financial crisis. The most affected were the states with less developed banking systems. Starting with 2013 we notice a slight comeback of the openness and internationalisation of the banking systems, although the values registered before the economic-financial crisis, were not reached.

Starting from the fact that the level of the financial flows among countries (especially the banking assets incomings) react to factors as for example the institutional, competitive and technical factors, we consider that there are new ways to support banking integration with an accent on the settlement of the independence of each country and the diversification of the bank property. As for the degree of concentration of the banking system, the results of the analysis suggest on one hand that a higher concentration involve a lower competition determining the growth of the interest from foreign investors, and on the other hand a higher concentration might represent less interested banks in the expansion abroad. From the analysis of the data regarding the banking assets flows we can notice that there are some asymmetries. In fact, the banking assets outgoings are proportional with the dimension of the states, while the assets incomings register higher levels in the countries with a lower bank activity as opposed to those with a more intense bank activity.

The study shows that the Herfindahl index quantifying the tradition of law and order in a country, along with the concentration of the banking system, respectively the dispersion of property are significant factors for a directive influence on the banking assets incomings in a country. On the other hand, the level of banking is a factor influencing in a reverse way

the banking assets incomings both in the case of the Euro zone countries, and also in the case of EU 15. The influential factors on the banking assets outgoing in the Euro zone are the dimension of the banking system, the independence of the national monitoring authorities and/or banking settlement towards the government of each state, respectively the tradition of law and order of a state. The degree of the relative importance of the banks in the financial system of the country represents an influential factor of reverse influence. In the case of the analysis of the banking assets outgoing on the EU 15 we can notice the direct influence of the Herfindahl index and an indirect influence (reverse) of the degree of the relative importance of the banks in the financial system of the country.

The European banking sector developed quite intensely after the adoption of the single Euro currency, the European banks expanding their banking activities beyond the European borders. During the economic-financial crisis it became more obvious the fact that the problems in the banking system will be followed by this expansions, therefore we can make the assertion that there was an "export" of the negative effects of the banking crisis in the countries where the EU banks worked on these. That is why the need to monitor the banks in the Member States was completed with the levers and the necessary resources in order to intervene in case of bankruptcies and the creation of European Bank Union.

We think that Romania's decision to join this union has to take into account the economic development perspective in Romania, the benefits for the monetary policy and the time needed to adopt the single currency. The results of the research might be helpful for Romania's strategy to join EBU, by pointing out the action of the institutional, competitive and technical factors influencing banking integration.

The main limitation of the research refers to the way of building the considered pattern. The authors were confronted with a lack of data referring to a part of the indices which in their opinion were suitable to use that is the one regarding the new Member States of the European Union. We consider useful the inclusion for future research of the data from those countries which will be useful to obtain more pertinent results, considering the fact that the countries taken into account benefit from important bank flows from the EU 15 states.

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