THE SINGLE EUROPEAN BANKING MARKET

A DYNAMIC PANEL ESTIMATION

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Abstract

Europe has made serious steps towards European Banking Integration. The creation of a Banking Union in Europe is crucial for the health of the European Economy and the completion of European Economic Integration. The operation of European Banks under the national regulation places significant limits to the goal that Europe wants to achieve. Previous researches point to the same regulations for all member countries and the adoption of the Euro as a single currency to enhance the progress of Banking Union. Does this argument hold true? In order to find out, 16 OECD countries between 1996 and 2008 are analyzed using System GMM (Arellano-Bover/Blundell-Bond one-step estimator). Bank foreign assets are regressed on the control variables (regulation and European dummies) in order to see their effect on European Banking Integration through the European Banking sector openness. The results indicate that the EMU membership and the implementation of banking regulation are significant determinants of the international banking activities.

Key-words

Banking Union, Banking sector openness, Regulations, Foreign assets, Dynamic Panel Data Estimation, Arellano-Bover/Blundell-Bond, System GMM

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1. INTRODUCTION

The past few decades Europe has been characterized by the integration of European economies. Economic integration is the process of reducing and removing barriers to free trade in goods and services and the free movement of factors of production between countries and regions. Financial integration is a similar process that occurs in banking markets and stock markets. The banking integration is related to free flows of financial services and factors of production, mainly capital across border.

The creation of European single monetary policy and the introduction of the Euro as a single currency are important steps forward towards economic integration and the formation of a single market in Europe. To achieve this important step, the creation of a strong banking union is also needed. For more than 20 years they have been moving towards to achieve a banking union. A lot of regulation and agreements have been established for achieving this goal.

The deregulation of financial services in the European Union together with the establishment of the economic and monetary union, create a path to financial integration of European banking markets. The economic benefits of this creation are very significant. Customers are experiencing lower costs of services as trade barriers are removed. The Political benefits of integration are closely related to European peace and harmony.

Finally, the process of liberalization, deregulation and unprecedented financial sector, which include movements toward the creation of a single market of financial services, was to foster competition in order to improve productivity, efficiency and profitability of the banking systems and increase both national and international competitiveness.

In this thesis, we attempt to investigate why a banking union is so important for a single monetary policy and what determinants affect the European banking sector openness.

2. EUROPEAN BANKING UNION

In this chapter we are going to explain what is the European Banking Union and why is necessary for the European Union. Moreover, we are going to link the concept of banking union with other macroeconomic aspects of the economy.

2.1 Historical Review of European Union

The history of European Union begins at the end of World War II, when it becomes imperative to establish international relationships to guard against any such catastrophe recurring. The first step took place in Paris in 1951, where the Treaty of Paris was signed. The latter established the European Coal and Steel Community, which was joined by France, Germany, Italy, the Netherlands, Luxembourg and Belgium .A few years later, under the Treaty of Rome in 1958, these six countries founded the European Economic Community and European Atomic Energy Community.

In 1967, the communities merged to become collectively known as the European Communities whose main focus was to cooperate on economic and agricultural affairs. In 1986, the Single European Act (SEA) was signed, revising the Treaty of Rome to promote the further integration of European economies.

The Treaty of Maastricht, known as the Treaty on European Union, signed in 1991 and formally established the European Union as the successor to the European Community. The Treaty of Maastricht formed the European Union and paved the way for Euro.

The Euro was officially adopted in 1999 by 11 members of the 15 original EU members, while Denmark, Sweden and the UK have chosen not to join the European Monetary Union. After a transition period, the Euro replaced the former national currencies completely on January 1, 2002. Nowadays 17 members of the European Union have adopted the Euro as their official currency.

2.2 Banking Union

The members of Euro area have agreed to the creation of a "Banking Union". The idea of banking union is analogous to the monetary union and the political union in Europe. The concept of banking union refers to the coordination between members' banking systems. To achieve this, the members need to adopt the following strategies (Elliot 2012):

Supervision & Regulation

A common regulation and supervision of banking system refers to the same rules to banks in different countries and supervising with these rules in a common way. According to IMF discussion note about a Banking union in the Euro area (2013), this would be ideal because it would enforce regulations consistently across the banking union, reduce the barriers between the countries and spread more efficiently the notion of banking union in all country members.

Moreover, there is a need of a single ultimate authority, which oversees the banks of European's members. Although there is a single authority, the role of national supervisors is still significant and especially with small banks, which still remaining subject solely to national authority. It is obvious that a common supervision and regulation is an important step toward the creation of banking union.

Common Resolution Process

In case of unpleasant events (bankruptcy, liquidity problems etc.) , which occurred at banks, the need of a common strategy to resolve these issues is absolutely necessary. When a bank is in danger, the problem may be resolved through different techniques. In case of insolvency, the problem can be resolved through a restructuring process that includes liquidity assistance or capital injections (Elliot 2012). Authorities also deal with the cases of bankruptcy and try to find ways to preserve the functioning of the financial system. In Europe the grade of banking corporation is still small and resolution process remains at the national level. In European Banking Union a single resolution mechanism is necessary for the functional operation of the European financial system since it would deal with failing banks and would be making the European banks more reliable (European commission 2013).

A Common Banking Policy

The adoption of a similar banking policy among the European members will create harmonization. The harmonization was intended to enhance safety by reducing the likelihood of individual failures that could spread the adverse effects across Europe. The Vice-President of the European Central Bank, Vítor Constâncio, argues in 2012 that the harmonization in banking market needs deposit insurance for European depositors.

The existence of explicit or implicit deposit insurance is an important contemporary rationale for prudential regulation of banks. Currently, all countries effectively have some form of deposit insurance (explicit or implicit) and impose regulations for this purpose. Due to the difference between each country's member's regulations, which refer to deposit insurance, the common concept about deposits will guarantee the safety of European depositors. Consequently the adoption of the common banking policy will be enhanced for the Banking Integration in Europe.

2.2.1 The Necessity of Banking Union in Europe

After the adoption of the Euro as a single currency and the creation of a single market in Europe, the European banking sector has grown and has become more and more integrated. The size of banks' cross border activities has also increased. Furthermore, there are a lot of reasons why Europe needs a banking union.

Firstly, since the cooperation between European banks and the markets across the Euro area has increased, a single supervisory mechanism is necessary. If a problem in the banking system of a country occurs, there is a strong possibility to spread to other countries (Constâncio 2012). This will be very dangerous for the financial integration especially in the Euro area.

More specific the banking union with a strength regulation is essentially important for Euro zone members to deal with existing bank weakness that contribute to the Euro crisis. From recent cases, we observe that abnormalities of countries' banking system spread to other Euro-members.

A recent paradigm came from Ireland, Spain, Greece and Cyprus. The first two failing banks added massive liabilities to the balance sheets of the sovereigns, weighing them down. In Greece, the problems of the sovereigns endangered the banks through various mechanisms, but particularly by raising questions about the value of the large bank holdings of government bonds, while Cyprus has a large banking system compared to its economy (total assets of 89,6% of Gross Domestic Product or GDP in 2010),while the average for the EU and the Euro zone (35,7% and 33,4% respectively in 2009), this causes serious problem in Cyprus economy.

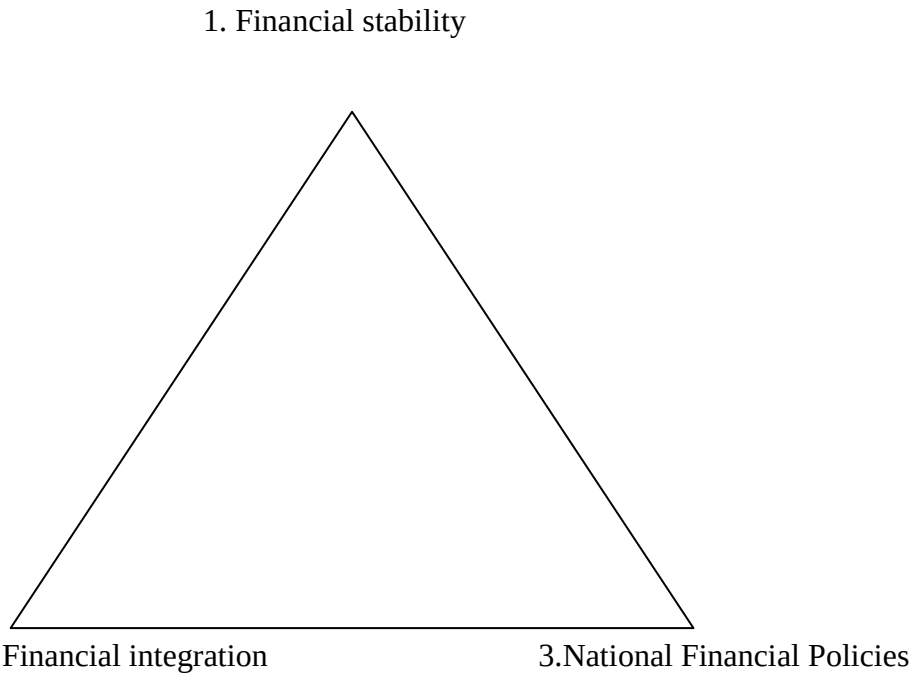
Another problem that occurred in the European banking system after this phenomenon is that a lot of investors and depositors pulled money out of the banks in these countries. Thus, a banking union is necessary to reduce the fears of depositors, investors, and others that new countries would find themselves caught up in the downward spiral of failing banks leading to failing countries and vice versa.

Secondly, the effective monetary union in Europe requires a high degree of financial integration. The financial system in Europe consists of banks, which provide about three quarters of all credit to the private sector. Moreover, the financial institutions diversify their assets and liabilities across the Euro area countries. This is very important for effective transmission of monetary policy. From the above we

conclude that there is a strong relationship between monetary policy and financial sector, so the banking union will help to overcome any obstacles for European economic integration.

Moreover, stability in the European economy is the most important issue for the welfare of the European Union. To maintain the economic stability it is necessary to guarantee the financial stability. As we mentioned before we achieve financial stability through the banking union. The main question is how we can achieve financial stability in the area of cross-border banking such as Europe. To answer this question the Dirk shoemakers (2011) establish the Financial trilemma. The financial trilemma defines that it is impossible to achieve financial stability, financial integration and marinating national financial policies. This happen due to the tendency of national policies to benefit national welfare. Furthermore, as every nation continues to maintain its own policy it is impossible to become truly a financial integration in Europe. Financial trilemma implies common European regulation independent from individual countries' benefits for achieving the financial stability.

Fig. 1. The financial trilemma.



Source: Schoenmaker, Dirk (2011)

Finally, a banking union is beneficial in establishing a new integrated environment for European banks. Howarth & Quaglia (2013) confirm that there is a lot of fragmentation of the EU financial Market such as financial crisis or the Euro zone sovereign debt crisis. More specific in crisis period one of the main problems in Europe is that Banks are often unwilling to lend to other countries. This disintegration in the European banking market causes a lot of problems to the creation of a single financial market. The different interest rates and credit availability make the financial integration impossible. The institution of a banking union is intended to restore confidence in banks all across the Eurozone, allowing funds to flow freely across borders again.

2.2.2Banking Union & Fiscal Union

The Eurozone is making major steps towards coordination of national fiscal policies and fiscal union. The creation of a fiscal union needs to adopt strategies such as mutual debt guarantees for at least a portion of national liabilities and to create a central European authority, which supervises the process at national level. The greater degree of fiscal union will complete the existing monetary union, which intersects in significant ways with banking union.

At the national level, governments try to rescue the troubled banks with the process of resolution for banks and also provide support for deposit guarantee. This phenomenon is considered as another aspect, which fiscal union must take into account. From recent events, it is obvious that governments encounter a lot of fiscal costs in their attempt to guarantee the function of their banking system. A lot of countries, such as Ireland, have found the process of bank resolution very expensive, when done at national level.

Banking crises are risky for all economies. Although the developing countries are more prone to the banking crisis, crises are also dangerous for developed countries. The fiscal cost of a bank resolution is very large in some cases.

The fiscal cost comes from the different ways that the government tries to save the banks, such as direct fiscal outlays due to financial sector rescue package.

The fiscal cost has unpleasant consequences such as:

- Low real GDP
- High real interest rates
- High inflation
- Positive credit growth
- Low foreign reserve cover of broad money
- More sensitive to other potential crises.

In some case the fiscal cost was very large while in other cases was very small.

The following table shows the fiscal cost in percent of GDP in several European countries after banking crises. (Pisani-Ferry & Wolff 2012).

Table.1 *Fiscal cost after banking crises*

Country	Date	Fiscal cost
Austria	2008	4.9
Belgium	2008	6.0
Denmark	2008	3.1
Estonia	1992	1.9
Czech republic	1996	6.8
Finland	1991	12.8
France	2008	1.0
Germany	2008	1.8
Greece	2008	6.0
Hungary	1991	10.0
Hungary	2008	2.7
Ireland	2008	40.8
Luxembourg	2008	7.7
Netherlands	2008	12.7
Norway	1991	2.7
Poland	1992	3.5
Slovenia	1992	14.6
Slovenia	2008	3.6
Spain	1977	5.6
Spain	2008	3.8
Sweden	1991	3.6
Sweden	2008	6.7
Swiss	2008	1.1
U.K	2007	6.8
Italy	2008	0.3

Source: Leaven and Valencia (2012)

The majority of episodes in advanced European economies is lower than 5%, apart from some European economies which are over 5% such as the UK, Sweden and Belgium. The developing European countries have their financial cost more than 5%. The exception from all other countries is Ireland, whose cost is very high 40.8. This large number indicates the harmful consequences that Ireland had after the banking crisis in 2008.

So, the need to transfer this resolution process from national level to the European level is very significant. At European level, a more stable base of support will be achieved and also the cost across all the governments involved will be effectively spread. Furthermore, the creation of Banking Union will support this attempt and will help to avoid the fiscal costs of bank resolution.

Potential Hazard

Given the harmful effects of the banking crisis, the existence of a banking union is necessary. The operation and the role of the banking union must be very specific, in order to avoid moral hazard issues.

These moral hazard issues come from the operation of banks. Elliot (2012) argues that the banks are major holders of the government bonds of their home countries, sometimes in pressure from their governments and partly out of choices. So, in case of a country's dept the banks become riskier, with attendant problems for the sovereigns. If there is not a banking union more complete than fiscal union, then those banks' problems are shifted to a European guarantee fund and will be all the more tempting for national governments to push their debt onto the balance sheets of their banks, to the extent European authorities without a strong fiscal union will let that happen.

The Other Direction

The Banking union also affects fiscal union in another way. As a Banking Union will establish a single regulation for member banks and will eliminate the national regulation for banks. It is important to eliminate the majority of national banking regulation in order to achieve fiscal stability and easing the difficulties of creating more fiscal coordination. Therefore, removing the possibility of major increases in national debt as a result of establishing a Banking Union.

2.2.3 Banking Union and Macroeconomic Effects

A banking union has the power to affect monetary policy, especially in cases of crisis. Monetary policy uses as an instrument the changes of availability and price of credit to achieve its principal effects. Therefore, central banks rely on financial institutions to spread the interest rate policy in the broader economy. The reactions of banks amplify the direct impact of central banks moves.

Under the banking union, the banks become safer and more reliable this fact makes their transactions easier. In this way the monetary transmission channels would be more effective and monetary policy would work in a more predictable way and would be able to achieve monetary goals.

Monetary policy interacts with supervisory and regulatory policies, either they are micro-prudential or macro-prudential in nature. According to Schoenmaker(2013), there is a strong relation between the monetary policy and financial stability policies. New macroprudential policies that operate at the level of the financial system as a whole are being developed, with the intent of reducing the frequency and level of damage to the wider economy from financial crisis.

The creation of a banking union has both negative and positive effects with regard to monetary policy and especially to macroprudential policy. If the monetary policy objective and the supervisory objective are distinctly defined and separate instruments are assigned to each of them, then a single institution could take the interdependencies better into account than separate authorities. A single institution could also avoid conflicts and coordination problems between separate policy authorities. Moreover, it would be easier to deal with credit bubbles or crunches that were broader than in a single country. Monetary policy operations expose the central bank to credit and other risks but adequate collateral or other risk management techniques can control these risks.

The negative effect is that there is a difficulty for national authorities to deal with the home problems if too little flexibility is provided by national responses. In addition, choices about the structure of the banking union would also tend to strengthen or weaken the role of various institutions in setting macroprudential policy, with the E.C.B potentially the biggest winner from this change, simply because its role in overseeing the banks will almost certainly expand greatly. (Elliot 2012)

3. BANKING REGULATION

In this chapter , we are going to present the form of banking regulation and the steps which have been made to make the banking system more openness.
Banks have been traditionally regulated by their domestic or host countries for a wide variety of reasons. In more recent years, as economies and especially the European economies are integrated, the establishment of single banking regulation is absolutely necessary.

Ayadi , Arbak & Groen (2012) argue that there is a need to rebuild the financial system. Moreover, the regulatory and supervisory framework should become stronger to achieve the creation of the Single European Market.

3.1 Why European Banking Regulation?

The necessity of the existence of banking regulation for the creation of banking union is very important. A Banking Union could not exist without regulations. Regulations have the power to maintain the system stable and enhance banking integration.

More specifically the banking regulation helps the system to work more effectively. Monetary policy, fiscal policy and financial integration need a banking union with regulation so as to have the desirable results. As the regulations are common for all country members, it becomes easier to achieve the object of the strong banking union.

As it is known most financial rules in Europe originate from EU Directives and Regulations. A minimum standard has been set in harmonized legislation. Banking supervision in the EU is the prerogative of national authorities. While minimum internationally-agreed standards have been set by EU directives, supervisory handbooks and approaches vary across member states. So the implementation of regulation is necessary.

Another reason is that many EU countries have relied on general corporate insolvency proceedings to deal with bank failures, an approach that has resulted in complex and lengthy wind ups or more commonly nationalization, with significant

costs for the economy. Although the some nations have strengthened their regulation to avoid bank failures, a single regulation program is more effective.

In addition, the banking regulations prevent the damages of potential crisis or other hazard that may investors are exposed. The banking resolution can be achieved with regulations. Investors of European banking system feel safer as they know that their banking system is strong and protects their investments and deposits. Also a stable European banking system becomes more effective and competitive against the other banking markets in the world.

Finally, an effective European banking system enhances the European economy, makes it more competitive and also promotes the harmonization of banking system.

3.2 How are Regulated Banks Supervised Now?

The idea of banking union involves a single supervisory-regulatory framework, a resolution mechanism and a safe net. Regulation means the set of formal laws and rules that govern banks, while supervision refers to the application of those rules by an authority empowered to tell banks what they must, may or may not do.

Many of the most important regulations are already determined at the level of the European Union, as part of the "Single Market" in financial services. Moreover, the national regulators can also add their own rules to reflect the unique characteristics of each country and financial system.

Bank supervision involves a large number of judgment calls and there can be systematic patterns of differences in how national supervisors make those calls. National supervisors differ considerably in how frequently they exercise this authority, how insistently they do so, and how they decide such pressure is warranted.

Progress also is being made to banking union through some European policies. Adjustment programs are being implemented to make the banking integration reality. European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM) have been created and strengthened to smooth adjustment. The European Central Bank (ECB) has provided substantial liquidity to banks, intervened through government bond purchases to address market strains, and announced its framework for Outright Monetary Transactions.

The European Commission gives some key powers to the ECB within the banking union so as the ECB has a crucial role in the form of banking union. The ECB after the European commission's approval authorizes credit institutions to operate, ensure compliance with minimum capital requirements, ensure the adequacy of capital relative to risk according to Pillar 2 procedures, supervise the consolidated activities of the banking group, ensure compliance with leverage and liquidity rules, apply capital buffers, carry out, in coordination with resolution authorities, early measures in case of bank's failure.

3.3 The Role of central banks

How the central banks are involved in national level bank supervision is a determined subject of the function of the banking system. Some EU nations' central banks have the supervisory responsibility such as the non-ECB members the bank of England and Denmark's National Bank. Even in these nations with central banks acting as supervisors, other bodies often played important supervisory roles, including Germany.

There are advantages and disadvantages of central bank involvement in bank supervision. The positive site is related to information efficiencies, especially the close relation between knowledge of their own financial system and their ability to monitor the individual financial institutions, more specifically those that dominate the system. Another advantage of central's bank supervisory power is that it is possible the creation of a stronger and more unified bank supervisor. Finally, there is the ability to force politically difficult actions on banks that operate unsafely.

The disadvantage of the central bank involvement in bank supervision is that the mix of roles of central banks may be causing problems. The reputation and independence of central bank could be threatened by having responsibility for both bank supervision and monetary policy.

The ECB is without any doubt an important organization of the European Union. It is truly unique among central banks. The Maastricht Treaty created the ECB in 1992 . The ECB has adopted two policy guides or "pillars" to monetary policy:

- A monetary target of a 4.5 percent growth rate for the M3 measure of money supply
- An inflation ceiling of 2 percent or less as measured by the harmonized index of consumer prices (HICP) .(Picker 2007)

The ECB's basic tasks as defined by the treaty are:

1. Defining and implementing of euro area monetary policy
2. Conducting foreign exchange operations
3. Holding and management of the official Euro area foreign reserves
4. Promoting the smooth operation of payment systems
5. Authorizing the Euro area banknotes
6. Statistical data collection in cooperation with the NCBs (National Central Banks) necessary for fulfilling the tasks either from national authorities or directly from economic agents.
7. Financial stability and supervision.
8. International and European cooperation with relevant institutions in respect of tasks entrusted to the Euro system.
9. Regulating the banking system
10. Determine how the economy behaves.

3.4 Legislation in Force

In this section of the thesis, we are going to discuss the steps which have been made towards the banking union in legislative approach. The set of the banking regulation constitutes the major factor in the creation of a banking union. Therefore the implementation of regulations in international level as well as in European level will enhance the banking sector openness of European countries and will make the European banking market more effective and competitive.

In what follows we analyze the international and European banking legislation which have been implemented in European countries and what these regulations contain.

3.4.1 International Banking Supervision

The supervision of the banking system is essential for the functional operation of a competitive banking system. The effort of internalization the banking system is followed by the creation of banking supervision, which has as a consequence the adoption of rules and regulations in international level.

The goals of supervision of the banking system are the safety and harmonization of the banking system, the avoidance of banking crises, the deposit security and the consumer protection.

There are many reasons of the need for creation of the international banking supervision. The continuous increase of internalization of banking activities and the spectacular banking activities especially after important banking crises are some of them.

After the troubled 1974 liquidation of the Cologne-based Bank Herstatt and the collapse of an American bank, Franklin national, in the same year the International Banking Supervision was created from Banking International Settlement (BIS).

The International Banking Supervision was the beginning of the Basel Committee. France, Germany, Italy, Japan, the Netherlands, Luxembourg, Sweden, Switzerland, the United Kingdom and the United States agreed in Basel(Switzerland) to form a quarterly committee consisting of each country's central banker and lead bank supervisory authority.

The first agreement of Basel Committee was in 1975 known as concordat. The concordat had as goal to prevent the foreign ownership banks to avoid the supervisory control in a country in which operate.

Basel I

Some years later in July of 1988, the G-10 (plus Spain) came to a final agreement: The *International Convergence of Capital Measurements and Capital Standards*, known informally as "Basel I."

The rules of capital adequacy of Basel Committee have as a goal:

1. To succeed the function and stability of the banking system
2. To enforce competitive regulations
3. To discourage the banking system to withdrawal the huge credit risk.

The main points of Basel I was that the Basel I was created to promote the harmonization of regulatory and capital adequacy standards only within the member states of the Basel Committee.

Moreover, Basel I was written only to provide adequate capital to guard against risk in the credit worthiness of a bank's loan book. And finally Basel I overtly states that it only proposes *minimum* capital requirements for internationally active banks, and invites central banks and sovereign authorities alike to be more conservative in their banking regulations.

The accord of Basel I

The accord of *Basel I* involves four pillars. The first, which is known as *The Constituents of Capital,* divides capital reserves into two tiers. In the first tier Capital, known as "Tier 1 Capital," there are only two types of funds—disclosed cash reserves and other capital paid for by the sale of bank equity. The tier 2 capital includes reserves created to cover potential loan losses, holdings and potential gains from the sale of assets purchased through the sale of bank stock. Therefore, according to the Basel Accord, banks must hold the same quantity (in dollar terms) of Tier 1 and Tier 2 capital.

The second "pillar" of the Basel I Accord, known as *Risk Weighting*, creates a comprehensive system to risk weighted a bank's assets, or in other words, its

loanbook. All assets on a bank's balance sheet have been encompassed by five risk categories. The first category weights assets at 0%, effectively characterizing these assets as "riskless." The second risk category weights assets at 20%, in this category are assets of low risk. The third category includes assets which are weighted at 50%, known as residential mortgages. The fourth, "high risk" category is weighted at 100% of an asset's value, and includes a bank's claim on the dollar-denominated debt or Eurobonds, bank's equity assets, and all other assets. The fifth, "variable" category encompasses claims on domestic public sector entities, which can be valued at 0, 10, 20, or 50% depending on the central bank's discretion.

The third "pillar," *A Target Standard Ratio,* includes setting a universal standard whereby 8% of a bank's risk-weighted assets must be covered by Tier 1 and Tier 2 capital reserves. Moreover, Tier 1 capital must cover 4% of a bank's risk-weighted assets.

The fourth "pillar," *Transitional and Implementing Agreements,* is a basic step for the implementation of the Basel Accords.(BIS 2001)

Basel II

The Basel committee decided to replace the accord of Basel *I* with a new more comprehensive capital adequacy accord. In June of 1999, the Committee introduces the accord of Basel II also known as A Revised Framework on International Convergence of Capital Measurement and Capital Standards. This accord includes the same pillars with Basel I but more expanded, so as to cover new approaches to credit risk, to supervise the capital adequacy better and to enhance the discipline of the market with the purpose to secure the operation of banks.

The accord of Basel II

The accord of Basel II includes 3 pillars which are essential for the higher security and the harmonization of economic system and is also important for the right operation of the banking system. The new accord reflects the advance of the banking system.

Pillar I

The first "pillar", which is known again as *Minimum Capital Requirements*, creates a more sensitive measurement of a bank's risk-weighted assets and allows banks to take on additional risk. Its first goal is to broaden the scope of regulation to include the assets of the holding company of an internationally active bank. The reason that this is done is to avoid the risk that a bank will "hide" risk-taking by transferring its assets to other subsidiaries and also to incorporate the financial health of the entire firm in the calculation of capital requirements for its subsidiary bank.

The following equation reflects the first pillar:

Capital adequacy rate (s.t: Tier 1 > 4, Tier 1 + Tier 2 >8) = supervision capital (Tier 1 + Tier 2) / credit risk + market risk + operational risk.

Credit risk

In this first pillar two new approaches to calculating the credit risk are included. The first approach, which is known as the *Standardized Approach*, is an extension of Basel's I approach to capital weights with the purpose to include market-based rating agencies. The main changes which have been made relative to the initial *Standardized Approach* are examined following. The first component of this approach is related to the differential of risk. Sovereign claims are now discounted according to the credit rating assigned to a sovereign's debt by an "authorized" rating institution—if debt is rated from AAA to AAA-, it is assigned a 0% weight. If it is rated from A+ to A-, it is assigned a 20% weight; if it is rated from BBB+ to BBB-, it receives a 50% weight. If it is rated from BB+ to BB-, it receives a 100% weight and if it is rated below B-, it receives a 150% weight. Unrated debt is weighted at 100%. If the debt is denominated and funded in local currency, regulators have also the ability to assign a lower weight to its relative riskiness.

For bank debt, authorities can choose between two risk weighting options. In the first option, authorities can risk-weight this type of debt at one step less favorable than the debt of the bank's sovereign government. The other option for the risk-weighting of bank debt follows a similar external credit assessment as sovereign bonds, where AAA to AAA- debt is weighted at 20%, A+ to BBB- debt is weighted at 50%, BB+ to BB- debt is weighted at 100%, and debt rated below B- is risk-weighted at 150%. Unrated debt is weighted at 50%. Short-term bank claims with maturities of less than three months are weighted at one step lower than a sovereign bond, where BB+ debt is given a 50% weight instead of a 100% value.

In the "standard" approach, corporate debt is weighted in the same manner as bank debt, except the 100% category is extended to include all debt that is rated between BBB+ and BB-. All debt rated below BB-is weighted at 150%; unrated debt is risk-weighted at 100%. Home mortgages are, in addition, risk-weighted at 35%, while corporate mortgages are weighted at 100%.

The second approach is the *Internal Ratings Based Approach*, or IRB. In this approach banks can create their own internal systems to rate risk with the help of regulators. The accord of IRB for taking risk from enterprises, banking institutions and public authorization depends on the measurement a control of credit risk.

The internal measures of banks for the measurement of credit risk are related to evaluations of the borrowers and the risk of transactions. The banks can calculate the Probability of Default and also important is to calculate the Loss Given Default of borrower (LGD). Due to the fact that it is more difficult to evaluate the LGD, the committee proposed two other approaches the Foundation Approach IRB and the Advanced Approach for the estimation of LGD of taking risks of from enterprises, banking institutions and public authorization.

In the Foundation Approach IRB, banks, with the approval of regulators, have the ability to create the probability of default models that provide in-house risk weightings for their loanbooks and also the rates of LGD are imposed by the supervision regulations. In the Advanced Approach IRB, the banks have the opportunity to evaluate the LGD of taking risk, but only if cover the additional, strictly minimum requirements of the evaluation of LGD. Therefore, only the largest banks with the more complex models can use this standard.

Operational risk

The Committee also proposed to include in the first pillar the operational risk. A serial of approaches, which include three methods the Basic Indicator Approach, the Standardized Approach and the Advanced Measurement Approach, have been proposed for the protection against the operational risk. The first method, the *Basic Indicator Approach*, links the capital requirement for the operational risk to a constant rate (a) which indicates the general exposure at risk of banking institute and also to another rate which indicates the gross income which come from the bank's activities. We can write the *Basic Indicator Approach* as follows:

Capital Requirements = Gross Income * a

recommends that banks hold capital equal to fifteen percent of the average gross income earned by a bank in the past three years. Regulators are allowed to adjust the 15% number according to their risk assessment of each bank.

The other method the *Standardized Approach* divides a bank by its business lines, for example Corporate Finance, Retail Banking, Commercial Banking and Sales & Trading, to determine the amount of cash it must have on hand to protect itself against operational risk. Each line is weighted by its relative size within the company to create the percentage of assets the bank must hold.

The last method is the *Advanced Measurement Approach,* which allows banks to develop their own internal reserve calculations for operational risks. Regulators, of course, must approve the final results of these models. To achieve this, they have been created three other approaches a) Internal Measurement Approach b) Loss Distribution Approach and c) Scorecard Approach. If the banks follow these techniques, they can achieve self-surveillance and bring market discipline.

Market risk

The last risk which evaluated in Pillar I attempts to quantify the reserves needed to be held by banks due to market risk. Basel II makes a clear distinction between fixed income and other products such as commodity, equity and foreign exchange vehicles and also separates the two principal risks that contribute to overall market risk: interest rate and volatility risk. For fixed income assets, a proprietary risk measurement called "value at risk" (VAR) is first proposed alongside the lines of the IRB approaches and the *Advanced Measurement Approach*; banks can develop their own calculations to determine the reserves needed to protect against interest rate and volatility risk for fixed income assets on a position-by-position basis. Again banks can develop their own calculations to determine the reserves needed to protect against interest rate and volatility risk for fixed income assets on a position-by-position basis. Again, regulators must give their permission of such an action.

Basel II also recommends two different separate risk protection methodologies. The first group of methodologies is called *The Simplified Approach*. This group looks to divide assets by type, maturity, volatility, and origin, and assign a risk weight along a spectrum of values, from 2.25% for the least risky assets to 100% for the riskiest assets. The second group of methodologies, for assigning the reserves needed to avoid market risk inherent in stock, commodities, currency, and other holdings, is called *Scenario Analysis.* The final methodological group outlined in Basel II calculates the reserves needed to guard against market risk and is known as the *Internal Model Approach*, or IMA. The IMA encourages banks to develop their own internal models so as to be more capable to calculate a currency, stock, or commodity's market risk for every case.

Total Capital Adequacy

Finally, rules for Total Capital Adequacy are included in pillar I. Once a bank has calculated the reserves it needs on hand to guard against operational and market risk and has adjusted its asset base according to credit risk, is able also to calculate the on-hand capital reserves that it needs to achieve "capital adequacy" as defined by Basel II. A bank's needed reserves for "capital adequacy" is calculated as follows:

Reserves = 0.08 * Risk Weighted Assets + Operational Risk Reserves + Market Risk Reserves

Pillar II

According to the second pillar, the Committee shows off that the surveillance of capital adequacy from surveillance authorization is basic supplementary for the minimum requirements and the discipline of the market. Therefore the second pillar is known as surveillance of banking adequacy. This pillar has as goal to secure that every bank will have healthy internal activities for the evaluation the capital adequacy and create a close relationship with the surveillance authorizations.

Pillar III

In last pillar of Basel II Accord are included regulations for the market discipline within a country's banking sector. The main purpose of Basel's Committee is to promote the safety and health of financial organization and the banking system.

Moreover, the Committee proposed the single publish polish from all banks. This policy includes the publication of the bank's financial information. In sum, disclosures of a bank's capital and risk-taking positions that were once only available to regulators are recommended to be released to the general public in the Basel II Accord. This is done to enforce discipline to shareholders as far as concern the risk that they are willing to take and also to banks so as to hold more reserves. (BIS 2006)

Implementation

The following table presents the implementation of the regulations of Basel II from some European countries .The majority of European countries following the international banking regulation in the same way with each other. There are some exceptions such as U.K because has a special banking system different from the other European countries and also the banking system of Ireland presents some difference to the implementation of banking regulations.

Table 2. *Basel II implementation*

	AT	BE	CY	DK	EE	FI	FR	DE	GR	HU	IE	IT	LU	MT	NL	NO	PL	PT	SK	SI	ES	SE	UK
CAPITAL																							
1.1 Which regulatory capital adequacy regimes did you use as of end of 2010?																							
Basel I	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES*	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Basel II	YES[1]	YES	YES[2]	YES[2]	YES	YES	YES[2]	YES	YES	YES	YES[4]	YES[2]	YES	YES	YES	YES[5]	YES[2]	YES[2]	YES	YES[6]	YES[7]	YES[2]	YES[8]
1.2 Which risks are covered by the current regulatory minimum capital requirements?																							
a. Credit risk	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
b. Market risk	YES	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
c. Operational risk	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
d. Other risks	YES	NO	YES	NO	NO	NO	YES	NO	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
Basel II regime																							
2. What variants are offered to banks in calculating capital requirements for credit risk ?																							
a. Simplified standardized approach (SSA)	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO	NO	NO	YES

b. Standardized approach (SA)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
c. Foundation internal ratings-based approach (F-IRB)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
d. Advanced l ratings-based approach (A-IRB)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Notes: **Capital floors imposed at IRBA model approval stage are currently based on Basel I ,1:all credit institutions ,2:all banks , 3:full use as a capital , 4*: Basel II used for all *purposes ,5: Regulation is Basel II compliant ,6: As part of EU, Slovenia is using CRD directive from its initial implementation ,7: All Spanish banks shall apply Basel II as endorsed by the EU and transposed in legislation in Spain ,8: regime applies to all banks incorporated in the UK and building societies. The countries are Austria , Belgium ,Cyprus ,Denmark , Estonia ,Finland ,France ,Germany ,Greece ,Hungary ,Ireland ,Italy , Luxembourg , Malta ,Netherlands , Norway ,Poland , Portugal ,Slovakia ,Slovenia , Spain ,Sweden ,united kingdom.*

Source: World Bank

The new steps

Basel 2.5

The Basel 2.5 package was developed in 2009 to better align trading and banking book's capital treatments. The accord of Basel 2.5 is more extended than the Basel 2. It introduces four new components of the old methodology to create and secure bank's minimum requirements for market risk. Moreover, proposed the internal models approach as better than the standardized approach. The stressed VAR, the Incremental Risk Charge (IRC), the Comprehensive Risk Measure (CRM) and a Standalone Charge for Securitizations constitute the new adds.

The first add is sVaR which is a parallel VaR that is calculated over a particularly stressful (volatile, loss-making) one-year historical period. The main purpose of this technique is to yield more realistic risk estimates. Antithetic data can be used as appropriate. The second, the Incremental Risk Charge (IRC), is related to default risk and migration risks in credit position held in trade book. It also deals with linear products (cds ,bonds). It replaces the interest rate specific risk charge for those assets. It measures losses at 99,9% confidence level over one-year capital horizon either under the assumption of a constant level of risk or under the assumption of constant positions. Also, it assigns liquidity horizon of the lower of three months or position contractual maturity. The third one is the Comprehensive Risk Measure (CRM) which is similar to the previous but this deal with default and migration risk in correlation portfolios instead of linear products. It also replaces the specific risk charge for those. It can deal with securitizations if the model is approved. The last add is the standalone charge for securitizations which receives a charge equal to the banking book equivalent for those positions not covered by the CRM. The purpose of this is to reduce the incentives for regulatory arbitrage.

The Basel 2,5 package (bcbs 2009) entered into force in 2012 in Europe and Japan and one year later in the U.S.(Pepe 2013)

Basel III

The third accord of the Basel committee known as Basel III was agreed in 2010-11 , and scheduled to be introduced from 2013 until 2015.a change from April 2013 extended implementation until march 31,2013. Basel III is supposed to strengthen bank capital requirements by increasing bank liquidity and decreasing bank leverage (BIS, 2012).

The key elements of Basel III are the following:

• Higher levels of capital for banks, with minimum common equity holdings in banks increasing from 2% to 7% of risk weighted assets.

• Capital forms which have Higher-quality, with common equity at the core of the requirements, and standards to ensure other types of capital instruments are genuinely loss-absorbing.

• There are new rules for the risk coverage, particularly for complex, illiquid trading activities and off-balance sheet exposures.

• Introduction of a capital conservation buffer, designed to enforce corrective action when a bank's capital ratio deteriorates, and a countercyclical buffer to require banks to hold more capital for secure

• A leverage ratio as a backstop for the risk-based capital approach, to ensure banks do not become unduly leveraged on a non-risk-weighted basis.

• Lastly, international standards for bank liquidity and funding have been introduced by Basel committee, so as to promote the resilience of a bank's liquidity risk profile to both short and long-term disruptions.

Apart from these changes, additional capital requirements for those banks deemed systemically important at the global or domestic level have been agreed. These changes are able to prevent negative externalities. (Byres, 2012)

3.4.2 European Directives

Apart from the international banking regulations, which come from the Basel Committee and European countries have adopted these, there are also the European banking directives. The European Council agreed to publish directives for the banking sector and all Member States must bring into force the laws, regulations of banking directives.

The banking sector has the following directives as the key directives:

- Directive 2006/48/EC : Relating to the taking up and pursuit of the business of credit institutions.
- Directive 2006/49/EC: on the capital adequacy of investments firms and credit institutions
- Directive 2002/87/EC: on the supplementary supervision of credit institutions, insurance undertakings and investment firms in a financial conglomerate.

Directive 2002/87/EC

The directive of 2002 lays down rules for supplementary supervision of regulated entities which have obtained an authorization pursuant to Article 6 of Directive 73/239/EEC, Article 6 of Directive 79/267/EEC, Article 3(1) of Directive 93/22/EEC or Article 4 of Directive 2000/12/EC, and which are part of a financial conglomerate. It also amends the relevant sectoral rules which apply to entities regulated by the Directives referred to above.

This directive is divided into four sections. The first section is about the supplementary supervision. Member States shall provide for the supplementary supervision of the regulated entities referred to in Article 1of directive, to the extent and in the manner prescribed in this Directive. In the second section is described the financial position. The financial position includes the four components the capital adequacy, the risk concentration, intra group transactions and internal control mechanisms and risk management processes.

- Capital adequacy: The Member States shall require regulated entities in a financial conglomerate to ensure that own funds are available at the level of

the financial conglomerate which are always at least equal to the capital adequacy requirements.

- Risk concentration: The Member States shall require regulated entities or mixed financial holding companies to report on a regular basis and at least annually to the coordinator any significant risk concentration at the level of the financial conglomerate.
- Intra group transactions: The Member States shall require regulated entities or mixed financial holding companies to report, on a regular basis and at least annually, to the coordinator all significant intra-group transactions of regulated entities within a financial conglomerate.
- Risk management processes and internal control mechanisms risk management processes: The Member States shall require regulated entities to have, in place at the level of the financial conglomerate, adequate risk management processes and internal control mechanisms, including sound administrative and accounting procedures.

In section 3 measures to facilitate supplementary supervision. In order to ensure proper supplementary supervision of the regulated entities in a financial conglomerate there is a need of single coordinator and the responsibilities will be the coordination and exercise of supplementary supervision, should be appointed from among the competent authorities of the Member States concerned, including those of the Member State in which the mixed financial holding company has its head office. This section includes rules and regulations for the tasks of coordination, the cooperation and exchange of information between competent authorities, the management body of mixed financial holding companies, access to information, verification, enforcement measures and additional powers of the competent authorities.

The last section is referred to the third countries which includes rules about the Parent undertakings outside the Community. The competent authorities should verify whether the regulated entities, the parent undertaking of which has its head office outside the Community, a third-country competent authority are supervise, which is equal to that provided for by the provisions of this Directive on the supplementary supervision of regulated Entities. Member States shall allow their competent authorities to apply other methods which ensure appropriate supplementary

supervision of the regulated entities in a financial conglomerate. The coordinator must agree for these methods, after consultation with the other relevant competent authorities. It is possible that the competent authorities in particular require the establishment of a mixed financial holding company which has its head office in the Community, and apply this Directive to the regulated entities in the financial conglomerate headed by that holding company. The objectives of the supplementary supervision as defined in this Directive must be achieved by the methods and must be notified to the other competent authorities involved and the Commission. (European Commission 2002)

DIRECTIVE 2006/48/EC

The *directive 2006/48/EC of the European Parliament and of the council* lays down rules concerning the taking up and pursuit of the business of credit institutions, and their prudential supervision. This directive includes six contents. The first content includes rules about the *requirements for access to the taking up and pursuit of the business of credit institutions*. The second content is about the provisions concerning the *freedom of establishment and the freedom to provide services* and is divided into five sections:

1. Credit institutions.
2. Financial institutions.
3. Exercise of the right of establishment.
4. Exercise of the freedom to provide services.
5. The Powers of the competent authorities of the host Member State.

The third is about the relation with third countries and involves regulations for two sections:

1. Notification in relation to third countries' undertakings and conditions of access to the markets of these countries.
2. Cooperation with third countries' competent authorities regarding supervision on a consolidated basis.

The next content is about the principles of prudential supervision which includes regulations which are divided in 5 chapters:

In the first chapter there are rules about the following sections:

1. Competence of home and the host member state.
2. Exchange of information and professional secrecy.
3. Duty of persons responsible for the legal control of annual and consolidated accounts.
4. Power of sanction and right to apply to the courts.

While the second chapter is about *Technical instruments of prudential supervision* which included 6 sections*:*

1) Own funds

2) Provision against risks:

I. Level of application

II. Calculation of requirements

III. Minimum Level of Own Funds

3) Minimum own funds requirements for credit risk:

I. Standardised Approach

II. Internal Ratings based Approach

III. Credit risk mitigation

IV. Securitisation

4) Minimum own funds requirements for operational risk.

5) Large exposures.

6) Qualifying holdings outside the financial sector.

The third chapter is about the credit institutions' assessment process. Credit institutions shall have complete and effective strategies and processes to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that they consider adequate to cover the nature and level of the risks to which they are or might be exposed.

Subject to regular internal review should be these strategies so as to ensure that they remain comprehensible and proportionate to the nature, scale and complexity of the activities of the credit institution concerned.

The Fourth chapter is about Supervision and disclosure by competent authorities and includes 2 sections:

1. Supervision.
2. Disclosure by competent authorities.

The last chapter includes regulations about the *Disclosure by credit institutions.* Finally, the last two components of this accord are about the *powers of execution and transitional and final provisions. (*European commission 2006 a)

DIRECTIVE 2006/49/EC

The directive 2006/49/EC of the European Parliament and of the Council lays down the capital adequacy requirements applying to investment firms and credit institutions, the rules for their calculation and the rules for their prudential supervision. In this directive the initial capital for the all member states is defined. There are several cases which are defined for the initial capital, such as special cases of Local firms, investment firm. Moreover, the directive defines the context of trading book. The trading book of an institution shall consist of all positions in financial instruments and commodities held either with trading intent or in order to hedge other elements of the trading book and which are either free of any restrictive covenants on their tradability or able to be hedged.

One of the most important chapters is the chapter for the own funds. In this chapter is declared the amount of them. Provision against risks is a content of the next chapter, which refers that the Institutions shall have own funds which are always more than or equal to the sum of the following:

(a) The capital requirements, calculated in accordance with the methods and options laid down in Articles 28 to 32 and trading-book business; and 30.6.2006 EN Official Journal of the European Union L 177/209

(b) The capital requirements, calculated in accordance with the methods and options laid down in Annexes III and IV and, as appropriate, Annex V, for all of their business activities.

The other contents of this chapter are the following:

- The application of requirements on a consolidated basis.
- The calculation of consolidated requirements.
- The monitoring and control of large exposures.

- The risk management and capital assessment.
- The evaluation of position for reporting purposes.
- The reporting requirements.

The next chapter is consisted of two sections:

- **Competent authorities :**

1. Member States shall designate the authorities which are competent to carry out the duties provided for in this Directive. The Commission should be informed thereof, indicating any division of duties.

2. The competent authorities shall be public authorities or bodies officially recognized by national law or by public authorities as part of the supervisory system in operation in the Member State concerned.

3. All the powers necessary for the performance of their tasks should be granted by the competent authorities shall be granted, mainly that of overseeing the constitution of trading books.

- **Supervision**

The last chapter includes regulation for two other sections which are disclosure and powers of execution.

- Disclosure: For the purposes of the calculation of minimum capital requirements for counterparty risk under this Directive, and for the calculation of minimum capital requirements for credit risk under Directive 2006/48/EC, and without prejudice to the provisions of Part 2, point 6 of Annex III to that Directive, exposures to recognized third-country investment firms and exposures to recognized clearing houses and exchanges shall be treated as exposures to institutions.
- Powers of execution: The Commission shall decide on any technical adaptations in the previous areas. (European Commission 2006 b)

4. EMPIRICAL APPROACH

This chapter examines the European Banking sector openness under the EMU program and banking regulations. The chapter will start by presenting the main previous empirical studies. Thereafter the dynamic panel estimation will be presented and explained. In addition, it presents the econometric model and the data from which it is derived. Finally the last section of this chapter presents the technique of how the econometric method was chosen and the regression results and its implications are discussed.

4.1 Previous Research

Buch & Heinrich (2002) examine the effect of deregulation on cross-border banking. Their analysis is conducted using a pooled regression analysis with fixed effects for 21 OECD countries to measure the impact of various factors such as EMU program, Basel accord 1, on banking sector openness. Regressions were run using annual data from the period 1979-1999.

Their results show that the control variables such as population, GDP and trade openness are highly significant. Especially the positive and highly significance of trade variable shows that financial and trade openness are closely linked. The GDP has also a positive impact on financial openness while the variable of the population has the opposite effects meaning that in larger countries, financial and economic interaction with the rest of the world tends to be less important quantitatively than in smaller countries. Moreover, the effect of the Basel I accord is marginally significant, and its sign is positive. They also investigate non-contemporaneous effects of changes in the regulatory environment, be it EU membership, the Second Banking Directive, or the Basle Capital Accord. For the EU sample, the Basel I-dummy and the dummy for the implementation of the Second Banking Directive (*bank*) do not have significant contemporaneous effects. They conclude that the deregulation it has not a strong impact on the overall degree of openness of the EU banking systems.

Papaioannou (2005) studies empirically what drives international bank flows. For this reason the author uses a "gravity" model. He augments the "gravity" equation with composite institutional quality proxies, specific institutional indicators, along with

geographical and cultural variables. The dataset consists of quarterly observations, starting from the first quarter of 1984 until the end of 2002. Papaioannou also uses panel estimations such as polled OLS, fixed effects, random effects and quasi-fixed effects. He also includes two dummies for European Union (EU) membership: the first takes the value of one when one of the two counterparts is an EU member (EU one); the second equals one when both countries are EU members (EU_both). The results suggest that EU membership has led to a substantial expansion of banking activities across member countries. Although the EU_one dummy's coefficient is statistically indistinguishable from zero, joint EU membership has a large effect.

Banking integration in Europe is also investigated in Pérez, Salas-Fumás and Saurina (2005). In contrast to Papaioannou who studies the determinants of international bank flows using BIS* locational international banking statistics, this study uses data on cross country flows of banking assets published by BIS consolidated international banking statistics. They present empirical evidence of cross country flows of banking assets in Europe in the period of 1999-2003. They also measure the effect of the Euro in the integration process.

The model which is estimated includes control variables such as the size of the countries, some banking index and the dummy Euro that takes the value of 1 if the country belongs to the Euro zone and zero otherwise. The empirical methodology is again panel estimation with time period dummies to evaluate the trend of integration within the period under study taking into account the other explanatory variables of the model. The depended variable is divided into inflows of banking assets and in outflows of banking assets.

The authors conclude that, in the case of inflows, the size of the country is negatively correlated with the proportion of foreign banking assets in the country, and evidence that may be parallel to the observed fact that smaller countries are more open to foreign trade and investment. They also noticed that countries more bank-oriented receive less foreign banking assets confirming that more efficient national banking systems attract less foreign competitors. Moreover, countries with more concentrated banking systems are less attractive for foreign banks, than countries otherwise. The EURO dummy shows coefficients positive and statistically significant. This means that countries in the Euro zone receive more bank assets on average than non Euro

area countries. This clearly indicates that Euro countries are in a positive trend of integration.

In the case of outflows, the results are little different. The signs of the coefficients of the rest of economic and institutional variables are just the opposite as those of inflows which shows the determinants of receiving banking assets. The bank outflows are positively affected by the Euro since the coefficient of the variable EURO is now positive.

In addition, other studies try to investigate the European Banking Integration from different aspects. Cabral's, Dierick's and Vesala's (2002) focus on the degree of European Banking Sector Integration. They try to investigate this integration using quantity- based indicators of integration. They divide the banking activities in three main areas: wholesale, capital market-related, and retail, studying at different services and products within each category.

The first category of wholesale examines the movements of overnight rates, repos market, cross-border flows such as interbank activity, share of cross-border payment, interbank assets and liabilities within the European countries. The majority of the data is between the periods from 1997 to 2002. They conclude that there is a strong integrated market in wholesale but integration is clearly less complete in the repo segment, mainly because of clearing and settlement obstacles in cross-border collateral transactions.

The second area of banking activities is the capital market which involves the examination of the data which refer to the value and transactions of bonds, equities and syndicated loans of Euro area firms in the period from 1995 to 2001. The results of this area are that the formerly segmented national currency-based markets for underwriting corporate bond issues have already largely transformed into an integrated area-wide market.

The last area refers to the retail banking services which observes data of lending and deposit interest rates and interest rate margin. Firstly, they average the monthly retail interest rate data on household lending, corporate lending and deposit accounts over one-year periods from 1998 to 1999 and from 2001 to 2002 and then calculate banks' respective margins vis-à-vis market interest rates, corresponding to the average maturities behind the retail interest rate aggregates. Furthermore, they observe the cross-border flows in retail loans and deposits of Euro area banks in the period from

1997 to 2002 and bank mergers and acquisitions of Euro area banks from 1990 to 2001. From the evidence which came from the data, the integration process has been slower in the retail area. One possible explanation is the traditionally strong local nature of these activities. There is also evidence that the common monetary policy has led to a convergence in the levels of retail loan and deposit interest rates, but there are still significant differences across countries in banks' margins, meaning that market segmentation is still an obstacle. They conclude that in the Euro area has been detected an emerging convergence in the margins of household loans and the increasing foreign entry in local markets that has been observed, indicates a progress towards greater integration.

Gropp and kashyap (2009) propose a new approach for assessing banking integration in Europe. They use as a measure of bank integration the return on assets (ROA) defining it as the ratio of post-tax profits divided by total assets. Their sample consists of the banks in France, Germany, Italy, Spain and the U.K and includes U.S. banks as a benchmark. The period of examination is from 1994 to 2006. They also divide banking institutions in listed (publicly traded banks) and unlisted.

They establish a theory for the European integration, the *weak definition of integration*: the EU banking market is integrated if there is a common ROA on which all banks converge. Their methodology is based on the convergence in the return on assets (ROA) of banks estimating variants of the classic partial adjustment equation. It is also used the U.S banking market as a benchmark because it is considered to be integrated and efficient, so as to interpret the EU integration.

The results show that for the Europe only the listed banks appear to be governed by a common ROA while the unlisted banks have differences across European countries in the mean of profitability. Moreover, it is indicated that unlisted commercial banks do not converge to a common equilibrium value. The main conclusion of their paper is that the large market share of unlisted, savings and cooperative banks may be an important obstacle to banking integration in Europe.

An alternative method of investigating the European Banking Integration is proposed by Simpson (2006). The author examines the financial integration in European Banking markets and how U.K banking market is a powerful influence in Europe. The banking price index is the indicator for the integration. The sample is daily time series banking price index data which were collected for each of the

segments of the European Banking Markets such as UK banking market, EMU banking market, from 31/12/1999 to 20/9/2004.

The model that is used is a basic banking market model which is specified to initially analyze unlagged price and first difference price index data. After the tests of informational efficiency, cointegration and causality in segmented European markets interacting firstly, with the UK banking market and then with the EMU banking market, the author conclude that that Europe is achieving a strong degree of financial integration.

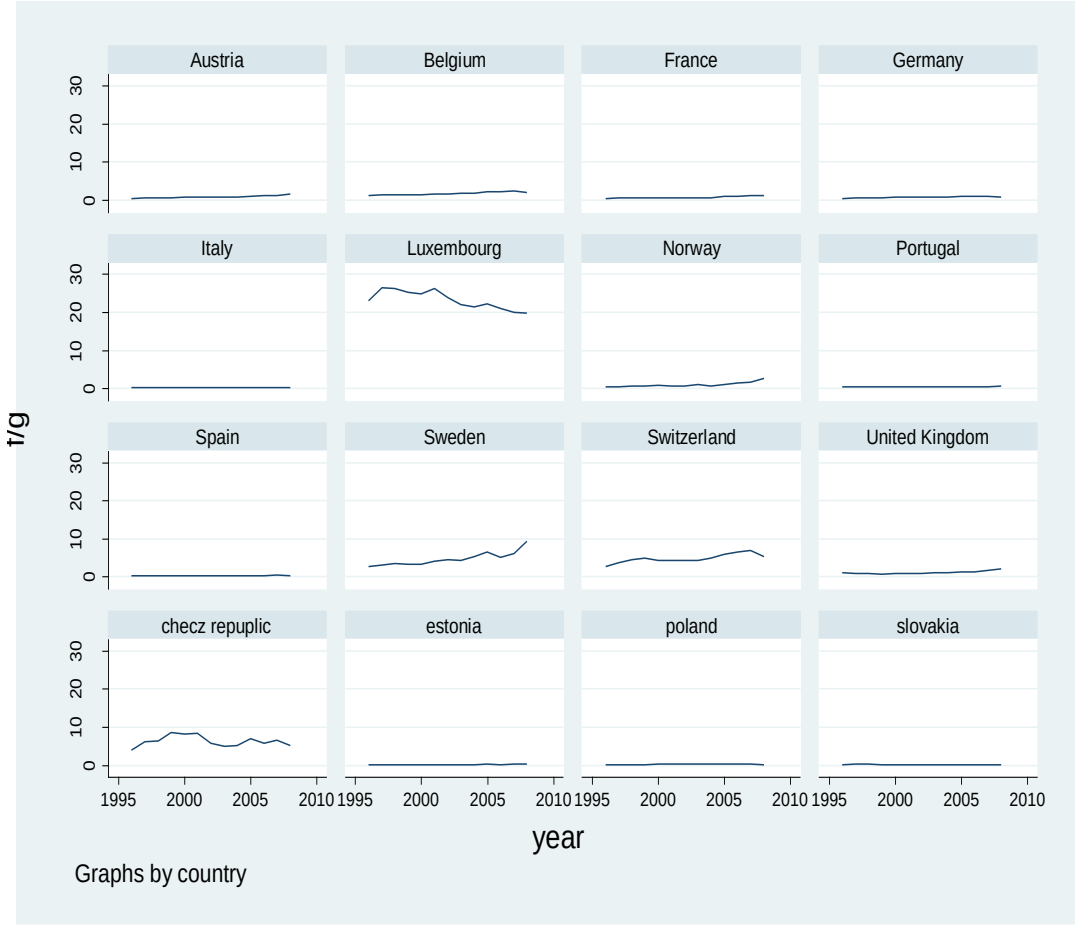
4.2.The Empirical Model

In this section the econometric analysis starts with the specification of the model, followed by the description of the data. We are going to estimate the model with dynamic panel method. In what follows, we are going to present the method of estimation and the results.

4.2.1 Banking Sector Openness

The aim of this thesis is to examine how the EMU program and banking deregulation have influenced the banking sector openness of European countries. We are going to measure the banking sector openness with the foreign assets, which every country's bank obtains. So, we take the foreign assets as an indicator of international banking activities, which implies the openness of banks. Moreover, we try to specify the relation between the banking sector openness, deregulation and EMU program. In the following graphs we present how the foreign assets of every country's banking sector move between 1996 and 2008. From figure 2, we can conclude that some European countries such as Luxembourg and Switzerland are more prone to foreign activity. Moreover, the international activities of the countries that joined the European Union in 2004 are smaller according to their foreign assets. Finally, most of the rest of the countries, as Spain and the United Kingdom, follow a stable pattern in the same period.

Fig.2-Foreign assets of commercial Banks (% of GDP), 1996-2008



4.2.2 Market Share of Foreign Assets

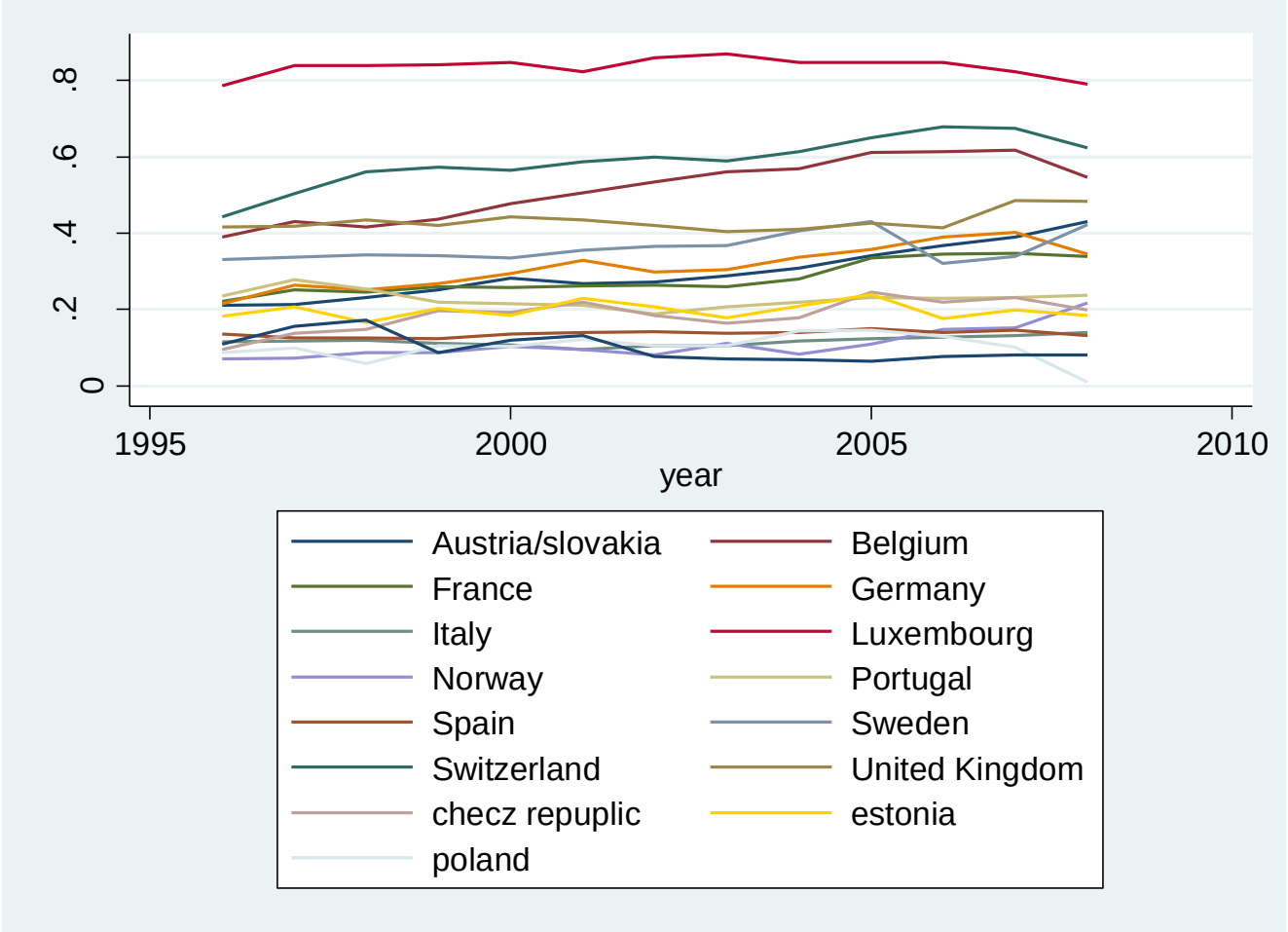
Although there is a tendency of increasing the foreign assets of commercial Banks, EU countries have still small international banking activities. Luxembourg, the United Kingdom and Belgium constitute exceptions.

As we can see from graph 2, the country with the more foreign assets is a Luxembourg followed by Switzerland. Switzerland is a non-EU country, so operates in its own financial system. This is very efficient since it can afford to have big international banking activities.

The third country is the United Kingdom. Although the UK is an EU member, it follows its own financial system and this makes it more open to foreign activities.

Finally, it is clear from graph 2 that there is a big difference among the developing EU countries and developed EU countries. The former have smaller international banking activities than the latter.

Fig.3-Market share of foreign banking assets (share of total assets), 1996-2008



4.3 Data

Most of our data are retrieved from OECD and include annual observation of foreign banking assets between 1996 and 2008. To avoid double-counting, we use data from consolidated accounts. The sample comprises banks operating in 16 countries. The countries in our sample are Italy, Luxembourg, Portugal, Spain, Austria, Belgium, France, Germany, Estonia, Slovakia, Norway, Sweden, Switzerland, United Kingdom, Checz Republic and Poland. The time period of examination is from 1996 to 2008. Due to the lack of data availability, we cannot add more years. Although this time period allows us to include the countries which joined in the so called fourth enlargement, such as Austria and Sweden in 1995 and also the fifth enlargement in 2004(Checz Republic, Poland Estonia, Slovakia).

In the following table we give the definition of the variables we use in our analysis (Table 3):

Table.3 Data Definitions and Sources

Variable	Definition	Source
Foreign assets	Foreign assets of country c in year t,relative to Total assets of banks	OECD
Size	Is used to account for relative size of the country and it is measured by the GDP of country c in year t over the sum of all GDP in year t for the countries in the sample.	
Bancar	Is equal to the ratio between total banking assets of the country c in year t divided by each country GDP. It measures the relative importance of banks in the financial system of the country.	OECD - IMF
WIDE	Express the concentration of the bank assets of country c in year t. Assets of three largest commercial banks as a share of total commercial banking assets.	World bank
Foreign banks	Percentage of the number of foreign owned banks to the number of the total banks in an economy	World bank
Dummies	1) EMU: is referred to euro-zone countries and takes the value of one for the euro-zone countries otherwise takes the value 0. 2) EU membership: takes the value of one for the EU- countries otherwise takes the value 0.	

	3)Regulation dummies: 1. Basel II: takes the value 1 after the implementation in 2004 of Basel accord.(BIS dummy) 2. Directive 2006/48/EC & Directive 2006/49/EC: takes the value of one after the implementation of directive for the EU member countries, otherwise the value is 0. 3. Directive 2002/87/EC: takes the value of one after the implementation of directive for the EU member countries, otherwise the value is 0.	

In our sample the Euro-zone countries are Italy, Luxembourg, Portugal, Spain, Austria, Belgium, France and Germany. The dummy for EU membership refers to the countries that joined the European Union. More specifically, in this sample for the countries Checz Republic, Poland, Esthonia, Slovakia the dummy takes the value 1 after 2004, the year they joined the European Union. All the other countries are European members since the sample starts from 1996 apart from Norway and Switzerland which are not EU members.

As far as the regulation dummies are concerned, all countries adopted the Basel regulation in 2004 hence the dummy takes the value 1 after 2004. Finally, the European directives are adopted only from the EU members and take the value 1 after 2002 or the year that EU countries joined in European Union.

4.4 Dynamic Panel Estimation

The most common method of estimated models with panel data is PLS (Pooled least squared), static (fixed and random) and dynamic (system GMM) model specification. Several econometric problems may arise from estimating PLS. Time invariant characteristics (fixed effects), as geographical and demographical ones, may be correlated with the explanatory variables. The fixed effects are contained in the error term of equation (1), which consists of the unobserved country-specific effects v_i and the observation specific errors e_{it}

$$y_{it} = a + X'_{it}\beta + u_{it} \quad i= 1 ,….,N \quad t=1,…..,T \qquad (1)$$

where i denoting individuals ,countries, firms, etc. and *t* denoting time. The i subscript, therefore, denotes the cross-section dimension whereas t denotes the time-series dimension. The α is a scalar, β is $K \times 1$ and *Xit* is the *i*th observation on *K* explanatory variables.

$$u_{it} = v_i + e_{it} \qquad (2)$$

where v_i denotes the unobservable individual-specific effect and e_{it} denotes the remainder disturbance. y_{it} is the independent variable , whereas X'_{it} may contain a set of dependent variables (Baltagi, 2008).

The fixed effects explore the relationship between predictor and outcome variables within an entity (country, person, company, etc.). Each entity has its own individual characteristics that may or may not influence the predictor variables (for example being a male or female could influence the opinion toward a certain issue or the political system of a particular country could have some effect on trade or GDP or the business practices of a company may influence its stock price).

Random effects assume that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables. The random effects model is an appropriate specification if we are drawing N individuals randomly from a large population (Baltagi, 2008)

Moreover, a dynamic approach in model estimation with fixed effects is more efficient than the other two methods. The two widely used estimators for dynamic panels with fixed effects in the literature are the GMM estimator (Arellano & Bond, 1991), the difference GMM estimator and the system GMM estimator (Arellano & Bover, 1995), (Blundell & Bond, 1998). Arellano & Bond (1991) suggest an estimation procedure that uses data in first differences, since an estimation with the within estimator (fixed effect method) is biased of O (1/T) according to Nickel (1981). The method of Arellano-Bond was improved by Arellano - Bover and Blundell-Bond. These two general estimations are appropriate when there is a short time period and larger country dimensions, a linear function relationship, fixed effects, heteroskedasticity and autocorrelation.

The Arrelano-Bover and Blundell-Bond makes an additional assumption that the first difference of instruments should be uncorrelated with the fixed effects. This allows more instruments to be introduced so as to improve efficiency. So, the system GMM method involves the estimation of a system composed of equations in first differences and equations in levels where the additional internal instruments are both lagged levels and differences of the series. The model that Blundell & Bond (1998) established is the following:

$$y_{it} = \delta y_{i,t-1} + X'_{it}\beta + u_{it} \quad (3)$$

$$u_{it} = v_{it} + e_{it} \quad (4)$$

$$E(v_i)=E(e_{it})=E(v_i\, e_{it})=0 \qquad i= 1 ,….,N \quad t=1,…..,T \quad (5)$$

The equation 5 is the disturbance term which has two orthogonal components: the fixed effects v_i and the idiosyncratic shocks e_{it}.

Equation 3 can be written as follows:

$$\Delta y_{it} = (\delta - 1) y_{i,t-1} + X'_{it}\beta + u_{it} \quad (6)$$

The system GMM is preferred over Difference GMM because it gives more precise estimates, reduces the finite sample bias, allows for dummy variable and is more relevant when the dependent variable is close to a random walk. Then past changes may have the ability to predict better the current levels than past levels are of current changes (Roodman, 2006)

Finally, to be valid the model should satisfy the following set of restrictions: no serial correlation in the first order errors, no second-order GMM residual serial correlation and a significant Sargan/Hansen test for the validity of the additional moment restrictions required by the system-GMM in relation to the difference GMM.

4.5 The Model

For our panel estimation we are going to use the system GMM method, as it seems the most appropriate method in our case.

The regression will determine whether the EMU, EU membership variable and deregulation variables can be used to explain the independent variable.

This approach to panel data models includes the use of a dynamic effect, adding a lagged dependent variable in the explanatory variables.

$$FA_{it} = \delta FA_{i,t-1} + X'_{it}\beta + \gamma \mathrm{DUM} + \delta_{\iota} + \mathrm{u}_{\mathrm{it}} \qquad (7)$$

Where ,

$$u_{it} = v_{it} + e_{it} \qquad (8)$$

$$E(v_i)=E(e_{it})=E(v_i\, e_{it})=0 \qquad (9)$$

where FA is the foreign assets of the country i in year t as percentage of total assets, X is the vector of independent variables size, wide, bancar and the percentage of foreign banks, DUM is the vector of deregulation (directive 2002, directive 2006 , BIS) and Europe dummies (EMU , EU membership) as mentioned in table 3.

Apart from the EMU, EU-membership and deregulation dummies, time dummies (δit in the model) are introduced because estimating dynamic panel data the autocorrelation test and the robust estimates of the coefficient standard errors assume no correlation across individuals in the idiosyncratic disturbances.

Time dummies make this assumption more likely to hold. However, due to the fact that performing panel data estimations, the estimator has the power to control country differences, we do not introduce country dummy.

The dependent variable

There is one dependent variable that will be estimated. This variable represents a channel through which the Europe and deregulation dummies can display their effects.

The dependent variable in equation 7 is the foreign assets of country c in year t, relative to total assets of banks. The variable is an indicator of European Banking Integration because it is a measure of the banking sector openness across the European banks. If the price of this variable increases, there is higher grade of banking sector openness.

The lagged dependent variable is introduced to account for dynamic effects. It also addresses the serial correlation of the time series. The lagged dependent variables should display a positive sign which shows the dynamics of the model.

We expect that the first lag of the dependent variable will be significant, since there is a relation between the past and the current rates of foreign assets, when the past rates are high is positive for the future rates.

The independent variables

Our model consists of nine explanatory variables. *Size* is used to account for relative size of the country. It is expected that the sign of this variable is negative, since large countries are less open to foreign competition and cross-border flows than small ones. The next variable is *bancar* which is equal to the ratio between total banking assets of the country c in year t divided by each country's GDP. It represents the relative importance of banks in the financial system of the country and its expected sign is positive since enhance the foreign banking activities.

The variable *wide* which expresses the concentration of the bank assets of country c in year t should be negatively associated with flows of foreign assets since countries with more concentrated banking system are less attractive than foreign banks.

The *Percentage of the number of foreign owned banks to the number of the total banks* in an economy indicates how open is the banking system of a country to other countries, so it is expected to be positive.

As far as the EMU and the EU dummies is concerned, we expect a positive sign since the common currency eliminates the transaction costs and makes the transaction

easier and EU membership enhances the transactions since it offers safety to investors and eliminates also the legislative barriers among the countries.

Finally, for the regulation dummies the sign we are most unaware of and the results will be an important conclusion of the thesis. Some of the regulations enhance the foreign transaction which makes the European Banking Union more integrated but there are some regulations that put barriers to banks and they can not trade as freely as they want or make them less attractive to foreign investors.

4.6 The Empirical Results

The OLS estimation of dynamic panels with the fixed effects error term leads to inconsistent coefficient estimates since the lagged dependent variable correlated with the fixed effect in the error term. So, we are going to estimate our model with system GMM estimation. It involves a system of moment restrictions exploited in the transformed equation plus those in the original level one.

The system GMM method is also appropriate for our panel estimation because we run first the Hausman test. Hausman (1978) provides a test for discriminating between the fixed and the random effects estimators. The test compares the difference between the two estimators of the coefficient vectors to show which of the both estimators is appropriate. The following table shows the results of Hausman test.

Table.4 Hausman test results

Hausman fixed random				
	coefficients			
	(b) fixed	(B) random	(b-B) difference	Sqrt (diag(v_b-v_B) S.E
Foreign banks	0.024451	0.0436271	-0.019182	0.0075577
Size	-1.458417	-0.8604153	-0.5980018	0.247794
Bancar	0.000577	0.0012237	-0.0006467	
Wide	-0.0364779	-0.0411534	0.0046755	
EMU	0.0199456	0.0251548	-0.0052093	
Basel II	0.0423964	0.0412097	0.0011867	
Directive 2006	-0.0002969	-0.0020186	0.00172117	
Directive 2002	-0.002076	-0.0028014	0.0007254	
EU member	-0.0324817	-0.030177	-0.0023048	
Test: Ho: difference in coefficients not systematic **(**Random Effects)				
chi2(1) = (b-B)'[(V_b-V_B)^(-1)](b-B)=33.49				
Prob>chi2 =0.0001*				

Note: * use fixed effects.

The test indicates that the fixed effects model is more suitable than the random effects model since the probability is less than 0.05 and we can reject the null hypothesis. We conclude that something within each entity may impact or bias the predictor or the outcome variables.

Then, we run a test for heteroskedasticity and autocorrelation. The test shows the presence of heteroskedasticity and autocorrelation in the data. The following two tables present the results of tests.

Table.5 *Modified Wald test for group wise heteroskedasticity in fixed effect regression model*

H0: sigma(i)^2 = sigma^2 for all i
chi2 (16) = 528.52
Prob>chi2 = 0.0000*

Note: *Presence of heteroskedasticity
The null hypothesis is homoskedasticity (or constant variance). Above we reject the null and conclude the presence of heteroskedasticity.

Table.6 *Wooldridge test for autocorrelation in panel data*

H0: no first-order autocorrelation
F(1, 15) = 27.970
Prob > F = 0.0001*

Note: *serial correlation

Above we reject the null and conclude the data does have first-order autocorrelation.

These problems can be eliminated by the system GMM method. We are going to run system GMM with time variables because after the test of time fixed effects we infer that there is time effect in our model. To see if time fixed effects are needed when running a fixed effect model. The following table shows the results of time fixed effects.

Table.7 *Time fixed effects test*

H0: all years coefficients are jointly equal to zero
F(11, 172) = 3.43
Prob > F = 0.0003*

Note: *present of time fixed effects

As we can see from the above table we reject the null that all years coefficients are jointly equal to zero therefore time fixed effects are needed.

The following table shows the results of the system GMM estimation.

Table8

Dynamic panel-data estimation, one step system GMM

Sample 1996-2008 annual data (balanced) 16 countries

Number of instrument=32

Number of observations=192

Dependent Variable: Foreign assets Eq.7	
FOREIGN ASSETS(-1)	O.8850555*** (0.0411685)
Foreign banks	0.0280463* (0.0159001)
Size	0.0334812 (0.0328811)
Bancar	0.0009175*** (0.0002891)
Wide	-0.0064196 (0.0147503)
EMU	0.0155042** (0.0064243)
Basel II	0.0207557** (0.0083386)
Directive 2006	-0.0522471** (0.0152057)
Directive 2002	0.0045338 (0.0099532)
EU member	0.0040059 (0.0082846)
Year dummies	Yes
Arellano Bond test	0.461
Sargan test	0.106

Notes: ***, **, * asterisks denote significance at the 1, 5 and 10% level respectively. Standard errors are listed below the coefficients. Regression includes time effect dummies whose coefficients are omitted. The Sargan/Hansen test has a null hypothesis of "the instruments as a group is exogenous". The Arellano-Bond test for second order autocorrelation in first difference has the null hypothesis that the errors in the first difference regression exhibit no second order autocorrelation. The results have been "collapsed" in order to limit the amounts of instruments used in the regression. This is crucial for data with small T.

According to the table8 the coefficient of the lagged dependent variable shows significant results and with the expected sign.

The coefficient of number of foreign banks is significant and positive as it is expected which implies that it has an effect on foreign assets. The meaning of this significant coefficient maybe is that the number of foreign banks is the positive factor that enhances the international activities of banks. Moreover, the coefficient of the variable Bancar, which measures the relative importance of banks in the financial system of the country, has a significant effect with the correct sign. This variable affects the dependent variable meaning that as the financial system is important for a country the foreign banking activities will increase. Furthermore, the EMU-dummy displays a significant positive value which indicates that it has a statistical meaning and contributes to the model's explanatory power. In other words, the results show that a country's possible membership in EMU has a significant effect on a country's foreign banking activity. The BIS –dummy was found significant for 5% and it displays a positive relationship with the dependent variable. In contrast to the BIS-dummy the directive 2006-dummy was found also significant but negative. One possible explanation for it's negative sign is that the European legislations make the banks more redundant in banking openness since legislation put barriers to their activities. The other explanatory variables (directive 2002, size, wide, EU member) were found to be insignificant meaning that there is no relation with the dependent variable. To conclude, the EMU program has positive relations with the foreign banking activities. This is the most important factor in our analysis because that reduces the barriers, such as transaction costs or the different legislative environment that existed before the EMU program, among the countries with the same currency and makes the financial activities easier for them.

4.7 Comparison of Results and Policy Discussion

In this survey the method of estimation is different from the previous studies. We use dynamic panel estimation instead of a simple pooled ols or fixed effects as this method gives more efficiency estimations. Some of the results we get are similar to the other studies. We use data until 2008 so we can have more years with the single currency and we can investigate better the effect of the Euro as a single currency in the process of European Banking Integration. The previous studies have evidence with data until 2003 so we expect some differences in our results because the time period is different.

With this panel approach we take estimation for the lagged dependent variable , which is statistically significant something that in previous research we have not seen. The variable Bancar which measures the relative importance of banks in the financial system of the country, in contrast to the study of Daniel Pérez, Vicente Salas-Fumás and Jesús Saurina (2005) who found that the variable Bancar affects negatively in case that countries received banking assets and positive when countries sent to other countries banking assets, affects the dependent variable positive but in a small rate.

Moreover, the Euro dummy is statistically significant in this survey and in the study of Pérez ,Salas-Fumás and Saurina (2005), while the studies of Buch & Heinrich (2002) and Papaioannou (2005) found that the EU-membership is an important factor in International Banking Activities. The common point in all studies is that the single program such a single currency or the EU-membership improves the Banking sector openness.

The last subject that has been investigated in relation to the process of the creation of the single European Banking Market is the regulations. The survey of Buch & Heinrich (2002) focuses on the impact of changes in the regulatory environment on financial openness. They found some evidence that Basel capital adequacy and the implementation of the second banking directive affect the financial openness. In our survey we conclude also that the implementation of Basel II accord has a positive impact on financial openness but the directive of 2006 has a negative effect.

The results of the studies have a lot common, especially in cases of single programs such as the EMU program and the implementation of rules. The differences of

estimations are results of changes in regulatory and economic environment which has the tendency to change when something new arise in Banking Sector.

From the above results comparison we conclude that the banking system is a complex system. The operation of Banking System is linked to the other economic policies; this makes necessary the adoption of economic policies so as to improve the financial openness.

The first important policy is the macroeconomic policy. As we see from the previous theoretical analysis and also the empirical results the monetary policy plays an important role in European Banking Integration. The implementation of monetary policy will enhance the banking sector openness of the Euro countries. As a result of this we need to have a stable and effective monetary policy.

The other policy that is linked with the banking system is the regulation policy. The need of liberalization of financial markets in Europe is essential for the creation of a Single European Banking market. There are a lot of barriers to integration such as the governments' involvement in the financial sector or the national financial regulations which restrict the foreign banking activities. So we conclude that a single regulation program which will eliminate the barriers of international banking activities among the European countries is needed and also will make the single European banking market more effective.

The last policy is about the supervision. As we said before we need an effective monetary policy and regulations according to the empirical results. To achieve this we need definitely a single supervision authority. A strong supervision will make the Banking System operate more effectively and will give the system the security that is needed. The single supervisory authority must be superior to the national supervisory authorities of banks of EU-members. The single banking supervision has to decide how to supervise the financial institutions and also the degree to which foreign banks should be allowed to enter national financial markets.

5. CONCLUSION

The thesis examines the determinants of European banking sector openness with particular attention to the impact that the Euro and regulations such as Basel II accord and European banking directives might have had on banking sector openness. Moreover the study analyses the notion of Banking Union and the meaning that it has in an integrated economy such as Europe.

The notion of the Banking Union includes three components: the supervision and regulation, common resolution process and a common banking policy. The existence of banking union is important for the economic development of Europe. This happens because the operation of the banking sector is related to the financial stability, the fiscal policy and other macroeconomic policies that affect the economic integration of Europe. It is obvious that the right operation of a single banking program in Europe will enhance the other aspects of the economy.

Steps towards to the creation of the single European Banking Market have been made. Some of the steps are the implementation of banking regulations. The European countries have adopted international banking regulations, such as the accords of Basel committee and also European directives, as members of the European Community. Other Steps have been made also with the creation of the Central Bank, the EMU program, European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM).

In the empirical part of our study we investigate the determinants of European Banking Sector Openness. The results of the analysis indicate that the number of foreign bank that operates in a country, the concentration of the banking assets in banking system of a country effect on the banking sector openness of European countries. The most important results are that the EMU program and banking regulation have an important affect in international banking activities of European banks. This is a common result with other studies.

Finally, according to the empirical results we confirm the necessity of the implementation of some policies and the relation of the banking system with the macroeconomic policies. More specifically a common monetary policy, regulation programs and supervision policy are all important for the banking union and some important steps have been made but more are needed to complete the notion of a single European banking market.

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