

Reducing Systemic Risk in Europe: Is the 'Banking Union' a Big Enough Step? ¹

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Abstract

The 2008 crisis started as a financial crisis and evolved into a sovereign debt crisis. Since 2008, central banks, governments and international organizations have been working on the lessons learned as well as designing options for a new financial framework. From the Dodd-Frank Act in the United States to Basel III, the international financial world has seen relevant changes. In Europe, the 'Banking Union' was passed. In itself, it is already an interesting reform. But beyond the primary objective of the Banking Union, which is to ensure financial stability, there is also a second feature: it deepens the European integration providing a response to the critics of the European project. Now equipped with an internal market of goods, services, including financial services, the question is to know whether the EU has fixed its structural issues in terms of governance. If a new crisis were to hit Europe, would the latter be better prepared to respond? Another question is to know whether this new framework would reduce the systemic risk and thus would reduce either the likelihood or the magnitude of a crisis?

Keywords: Banking Union, financial integration, financial fragmentation, euro area

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1. Introduction

This paper proposes an analysis of the newly designed Banking Union and its impact on the likelihood of a future crisis. A set of guidelines and regulations has been put in place by various institutions and organisations since the 2008 financial crisis: from the Financial Stability Board guidelines, the Dodd-Frank Act in the U.S. to the Banking Union in Europe. All of them start with the assumption that the 2008 crisis was the result of a high systemic risk. Hence, the goal of these regulations is to lower this systemic risk.

Now, even if the aim of the Banking Union is to reduce the systemic risk, it has two different dimensions: on one hand, it is a mega insurance plan for banks, and on the other hand, it consists in promoting financial integration in an unprecedented manner for Europe. By definition, the insurance part of the Banking Union does not reduce systemic risk, but it covers banks and countries against it. However, the key question is to know whether financial integration – the other dimension of the Banking Union – helps reduce systemic risk.

Let us put this question in the current context. Indeed, a new government from the far left is elected in Greece, and the euro area is again in the spotlights. But things are different in 2015 than they were in 2008. In October 2013, the rating agency Fitch reassessed the rating of Spain from "negative" to "stable". Also in October 2013, the former president of the European Central Bank (ECB), Jean-Claude Trichet, announced that Spain was "more competitive than France and Italy." Spain has a trade surplus in the first half of 2013, for the first time since 1971. Table 1 shows the ratings of some European countries and their evolution from 2005 to 2012 according to S&P. The countries that are back to their 2005 level are in blue, the countries that improved their rating are in green (only Estonia), and the countries that have a lower rating than in 2005 are in red. Most of the European countries presented in this list have seen a depreciation of their rating.

Table 1. Credit rating of Euro Area countries (Source: S&P ratings, 2013)

	2005	2006	2007	2008	2009	2010	2011	2012
Germany	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Netherlands	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Luxembourg	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
Finland	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
France	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
Austria	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
Belgium	AA+	AA+	AA+	AA+	AA+	AA+	AA	AA
Estonia	A	A	A	A	A-	A	AA-	AA-
Slovak Republic	A	A	A	A+	A+	A+	A+	A
Slovenia	AA-	AA	AA	AA	AA	AA	AA-	A
Malta	A	A	A	A	A	A	A	A-
Ireland	AAA	AAA	AAA	AAA	AA	A	BBB+	BBB+
Italy	AA-	A+	A+	A+	A+	A+	A	BBB+
Spain	AAA	AAA	AAA	AAA	AA+	AA	AA-	BBB-
Portugal	AA-	AA-	AA-	AA-	A+	A-	BBB-	BB
Cyprus	A	A	A	A+	A+	A	BBB	BB
Greece	A	A	A	A	BBB+	BB+	CC	CCC

In short, Europe may be slowly recovering, but the question is to know from which crisis it is recovering? Indeed, Europe is still facing serious economic challenges (eg, refinancing debt remains a problem), as well as resolving the issues with European governance. The latter point is at the heart of the research proposed here.

The first decade of the euro has been positive for the European economy. But the good economic results, in terms of economic convergence for instance, were in fact putting the attention away from the European governance issues. In short, the deepening of European integration should have been done during these relatively good times. The evidence of these governance issues came when Europe was hit by the 2008 financial crisis. Indeed, we believe the crisis has highlighted the structural problems of the European foundations.

In the spirit of Churchill's famous quote ("Never let a good crisis go to waste") (Boyer, Streeck, and Swedberg 2012), the European Union decided to put together new regulations and new institutions to oversee the European financial industry. This step represents a strong push towards financial integration in Europe. It also adds to the Single European Act of 1986 and the 2006 Services Directive.

Europe was hit by the 2008 crisis the same way as the United States (Borio 2013). However, it seems the crisis has had a more dramatic impact in Europe due to its institutional architecture. The institutional framework is complex: there is the European Union (EU), which concentrates decision-making power, and the euro zone, which has no decision-making power away from the institutions of the EU. This dichotomy is fragile and is the result of the history of European integration. The 2008 crisis was exacerbated by this dichotomy.

In this context, we can present our research question and its related sub-questions.

Research question: our main research question is to know whether the new institutional framework to promote financial integration is enough to protect the eurozone from future crises. In response to pressure from financial markets, Europe will be equipped with new solutions that strengthen the eurozone and reduce this dichotomy. In other words, the key question is to know whether financial integration helps reduce systemic risk.

This suggests two sub-questions:

- **Sub-question 1:** it is to know whether the Banking Union promotes financial integration against financial fragmentation.
- **Sub-question 2:** it is to know whether the Banking Union reduces systemic risk or the magnitude of a new crisis.

In order to answer these questions, our approach will be threefold. First, we present the analytical or theoretical rationale for financial integration in a monetary union like the euro area. Second, we present an empirical assessment of the level of fragmentation of the European financial sector, in particular since the 2008 financial crisis. Third, we present the institutional design of the Banking Union, and address the question of whether Europe will be more of an optimum currency area (OCA) and more credible.

Our main contribution is twofold: on one hand, we explain the Banking Union in its current context, and on the other hand, we analyze the Banking Union based on the monetary economics literature framework (OCA and Credibility literatures).

2. The theoretical framework to analyze financial integration in Europe

Related to our research question and in particular to sub-question 1, which is to know whether the Banking Union promotes financial integration against financial fragmentation, this section is about developing a review of the literature to understand the issue of financial fragmentation versus financial integration.

In what follows, we present the theoretical rationale for financial integration in the euro area. We mobilize two key concepts: the optimum currency area concept and the credibility concept, both coming from the monetary economics literature.

The logic behind these two concepts and how they relate is the following: Is the Banking Union well designed to increase the European financial market's credibility? If the answer is positive, it should then augment Europe's credibility for financial activities, helping in return Europe to be closer to the definition of an optimum currency area.

2.1 The OCA (and endogenous OCA) literature

Financial integration is at once a key element of what is an optimum currency area and also a consequence of a large and credible market. The question is not to know whether the euro area is an OCA², but to know the degree of integration.

This is how we mobilize and understand the OCA literature. The response to this question finds its roots into the definition of an economic integration (Mundell 1961; McKinnon 1963; Kenen 1969). According to Frankel and Rose (1998), this literature focuses on four inter-relationships between the members of a potential OCA: (1) the extent of trade; (2) the similarity of shocks and cycles; (3) the degree of labor mobility; and (4) the system of risk-sharing, usually through fiscal transfers.

The Treaty of Maastricht was implemented in 1993 in order to ensure convergence to an OCA prior to adoption of a common currency. Five economic proxies were defined to measure the state of convergence. The proxies were respectively: inflation, exchange rate, national debt, public deficit, and long-term interest rates. Then, the economic literature started to develop an e-OCA theory known as the endogenous optimum currency area theory (e-OCA). According to Frankel and Rose (1998), adopting the same currency is only one part of the path towards an OCA since using a common currency will also force the economies to become an OCA.

This is where financial integration is a sign of success of the convergence of the European economies. We can find this argument in Mundell (1973): if countries adopt a common currency without substantial changes to their purchasing parities, and thereby eliminate uncertainty in the exchange rate, then they gain a better allocation of capital.

Although this is not yet the modern definition of what constitutes an endogenous OCA (since Mundell argues that purchasing parities should demonstrate some steadiness over time), he nevertheless emphasizes that gains in terms of allocation of capital are necessary to help create an OCA. So, financial integration can also serve as a foundation for further convergence.

In the same vein, we can also find the spirit of the e-OCA theory already in the European Commission (1990)'s report stating that the EMU will reduce the incidence of country-specific shocks (Warin, Wunnavu, and Janicki 2009).

The institutional follow-up of these academic lessons from Europe is to both create a single market for goods and a single market for services. The single market for goods started in 1985 when the European Commission published a comprehensive blueprint to merge the fragmented national markets to create a single market by the end of 1992. In 1986, the EU adopts the Single European Act.

About the single market for services, the Lisbon summit of EU leaders in March 2000 asked for a strategy to remove cross-border barriers to services, which led to the publication of a Report on the State of the Internal Market for Services in July 2002 by the European Commission.

This report was thus made public a year after Greece became the twelfth member of the euro area (in 2001) and 3 years after the inception of the euro (in 1999). The world economy and in particular Europe were doing well, maybe slowing the pace of reforms in Europe. Nevertheless, in January 2004 the Commission made a proposal for a Directive on services in the Internal Market, but there was no

² According to Bayoumi and Eichengreen (1993), Europe was not an OCA at the time of the Treaty of Maastricht.

inclusion of financial services, which is of primary interest to us as emphasized by the 2008 crisis.³ This directive just aimed to remove obstacles to trade in services, besides financial services.

The Services Directive does not include financial services. It is the crisis of 2008 that pushed towards a new regulatory framework of the financial industry: the Banking Union (Warin and Prasch 2015). However, to be fair, there were already discussions about new regulations in 1999: the Financial Services Action Plan (FSAP) aimed to create a single market for financial services in the EU. But it is really the crisis that made things move forward (Boyer, Streeck, and Swedberg 2012). Reacting to the situation in 2008, several options were proposed: (1) in November 2008, a group chaired by Jacques de Larosiere was mandated to examine possible improvements to supervision and regulation, (2) the Directive on Deposit Guarantee Schemes⁴ and the Capital Requirements Directive⁵ were revised, (3) a regulation on Credit Rating Agencies⁶ was adopted and 4) the Commission has presented two Recommendations on remuneration principles.⁷

H1. To summarize, the hypothesis is that financial integration is both a consequence and also enhances the optimality of the euro area.

2.2 The credibility literature

The debate about the efficiency of the monetary policy started with Keynes (1936), and was reinforced by the empirical work of Phillips (1958). Then, Lucas (1972) defended the neutrality of money, helping create the “New Classical School”, which defended the idea that discretionary monetary policy cannot produce long-lasting effects on output and employment. The debate was thus between the defenders of the “rule” and the proponents of “discretion” for the monetary policy.

In 2004, Nobel prizes were bestowed upon Kydland and Prescott (1977) who developed the notion of “time inconsistency.” This notion captures the existence of a temptation for a central bank looking to maximize total surplus by not respecting *ex post* its own *ex ante* monetary objectives. In other words, the possibility that monetary authorities will not respect their own commitments reduces the confidence that economic agents have in these individuals. As result, there will be an inflationary bias in the economy. But beyond this notion of inflationary bias, it is the lack of confidence and its consequences that are highlighted by this literature. In particular, a new notion appears, which is “credibility.”

Indeed, the debate shifted course with the introduction of this concept. Barro and Gordon (1983) were the first authors to explain that the degree of confidence in the central bank is relevant for economic agents when they form their expectations about future inflation.

Inspired by the new set of questions raised by the notion of credibility, Rogoff (1985) proposed the appointment of a “conservative central banker who is more risk averse to inflation than the average economic agent. Rogoff’s model has created the momentum for the modern theory of central banks.

³ The Services Directive was finally adopted by the European Parliament and the Council in December 2006 and needed to be transposed by the Member States by the end of 2009 (The Service Directive (Directive 2006/123/EC of 12 December 2006 on services in the internal market) needed to be fully implemented by the Member States by 28 December 2009).

⁴ 1994/19/EC as amended by 2009/14/EC

⁵ Directive 2006/48/EC

⁶ Regulation (EC) No 1060/2009 (OJ L 302, 17.11.2009, p. 1)

⁷ C(2009) 3159 and C(2009) 3177, both of 30.4.2009

Neumann (1991) pushes the literature towards the relevance of an effective institutional design, and in particular on the advantages of having an independent central bank.

The debate moved from the “rule versus discretion” debate into a “credibility versus flexibility” one. However, these debates were taking part in a closed-economy model. What would be the advantage of introducing an open-economy perspective? Well, in an open-economy set-up, for instance, the study of exchange rate mechanisms has closely accompanied the literature on optimal currency areas (Mundell 1961). Consideration of the exchange regime is essential since it may constrain the central bank.

As a consequence of a lack of credibility, a country will face a large risk premium. From there, it is possible to define criteria according to which an exchange rate regime is more credible than another (Herrendorf 1999).

H2. To summarize, the hypothesis is that financial integration is both a consequence and also enhances the credibility of the euro area.

2.3 The notion of systemic risk

The notion of systemic risk is intrinsically linked to the notion of credibility in our theoretical framework. Indeed, credibility is an abstract notion and systemic risk can serve as a proxy to measure or illustrate the lack of credibility.

To begin, let us define the three types of risk. The first two are traditional in the mean-variance framework (Markowitz 1952; Sharpe 1963; Lintner 1965), and the third may be slightly different from standard definitions, but it is necessary to the following analysis (Warin and Prasch 2015):

- (1) Definition of *specific risk*: Specific risk is the risk attached to the asset itself. It is diversifiable.
- (2) Definition of *systematic risk*: Systematic risk is undiversifiable risk, it captures vulnerability to events beyond the financial market itself: natural catastrophes, unexpected macroeconomic “shocks”, etc.
- (3) Definition of *systemic risk*: Systemic risk is endogenous in the sense that it is a positive function of the level of complexity or opacity within the overall market. It captures the risk of collapse of the entire financial system due to its interlinked and interdependent aspects, including short-term credit and counterparty risks.

Systemic risk is a critical notion. When we add the systemic risk perspective to the traditional definitions of risk (specific and systematic), we understand that a fragmented financial system increases systemic risk and thus the overall level of risk.

H3. To summarize, the hypothesis is that the lack of credibility creates financial fragmentation and thus increase systemic risk. In other words, financial integration helps reduce systemic risk.

3. The banking sector in Europe: Fragmented or Integrated?

In this section, we present an empirical assessment of the level of fragmentation of the European financial sector, in particular since the 2008 financial crisis.

The context is drawn from our main research question, which is to know whether the new institutional framework promotes financial integration and whether it is enough to protect the eurozone from future crises, including both sub-questions:

- Sub-question 1: it consists in knowing whether the Banking Union promotes financial integration against financial fragmentation.
- Sub-question 2: it consists in knowing whether the Banking Union reduces systemic risk or the magnitude of a new crisis.

The three hypotheses coming from the review of the literature are:

- H1. The hypothesis is that financial integration is both a consequence and also enhances the optimality of the euro area.
- H2. The hypothesis is that financial integration is both a consequence and both enhances the credibility of the euro area.
- H3. To summarize, the hypothesis is that the lack of credibility creates financial fragmentation and thus increase systemic risk. In other words, financial integration reduces systemic risk.

The 2008 financial crisis is the biggest crisis of modern finance. We have evidence that prior to the crisis, financial integration was happening, but in the aftermath of the 2008 financial crisis, European financial markets are now more fragmented. In particular, according to Mijs (2014): “the share of cross-border Euro Area’s interbank loans fell from 36% at the start of 2008 to the present 25%; the cross-border loans to businesses in the Euro Area account for just 8% of the total; the same share of cross-border border integration for households loans is below 1%; the cross-border bank holdings of debt securities issued by Euro Area corporates and sovereigns decreased from a level above 30% in 2006 to just 16%; the divergence in the interest rate of loans to businesses is twice as much as that observed before the crisis; the cross-border integration of subsidiaries and branches as a share of total banking assets fell from 18.5% in 2009 to 16.4% in 2013” (Mijs 2014).

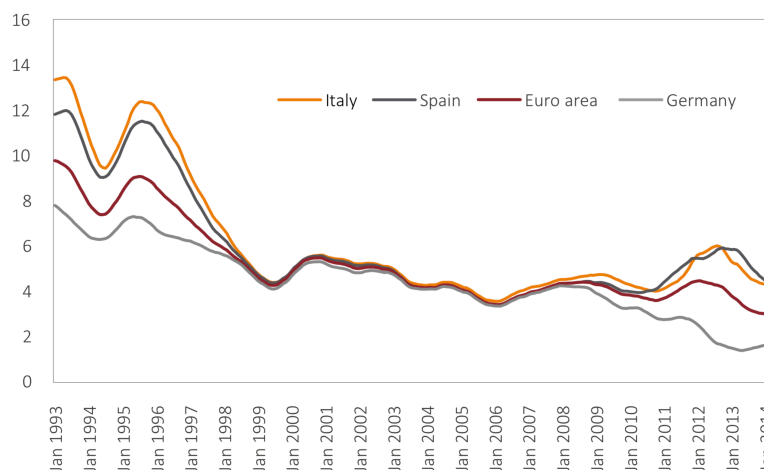
In the words of the European Commission, financial fragmentation is the “differences in the functioning and performance of financial markets of different jurisdictions caused by obstacles to the free movement of capital and/or financial services across borders”. In other words, according to Mijs (2014): “if the aim of the single market is the integration and the convergence of the different national markets, fragmentation is the process of divergence and differentiation of financing conditions along legal and geographical borders” (Mijs 2014).

The proxies to know whether there is financial fragmentation are, among others: (1) spreads in sovereign bonds (Figure 1), (2) a reduction in cross border activities (Figures 2 and 3), and (3) liquidity differences across countries (Figures 4, 5 and 6).

3.1 Spreads in sovereign bonds

As highlighted on Figure 1, the crisis has had a major impact on the process of financial integration in the euro area. Although not as fragmented as before the inception of the euro, the markets are now more dispersed. The convergence seen between 1999 and 2008 is over.

Figure 1. 10-years sovereign bond yields in selected EA countries (Source: Mijs 2014)

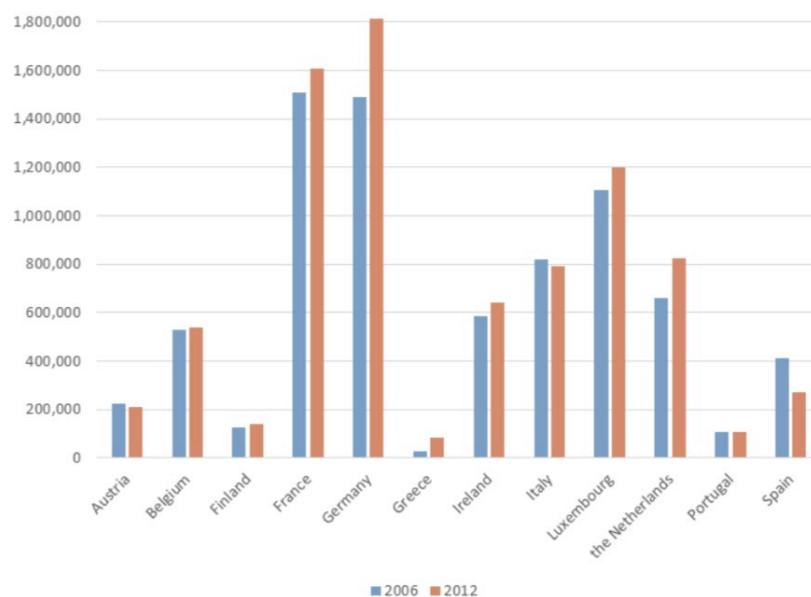


In terms of a reduction in cross-border activities, Figure 2 displays total portfolio investment holding of selected euro area countries. At first, it looks reassuring since the numbers are higher in 2012 compared to 2006.

3.2 A reduction in cross border activities

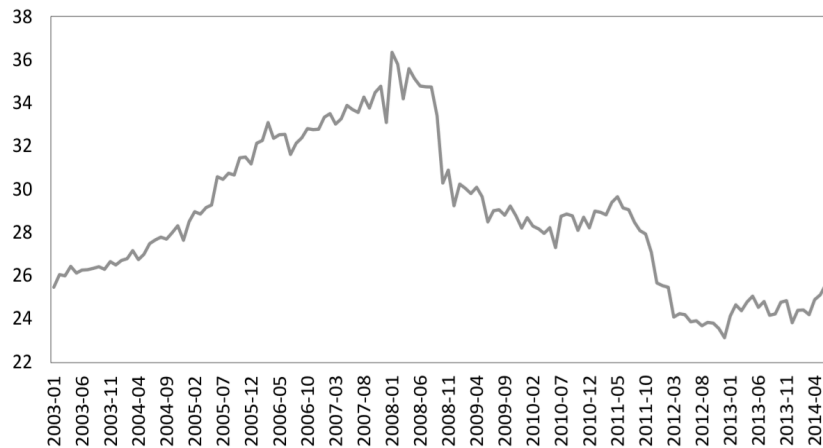
Since 2008, we have observed a reduction in cross-border banking activities.

Figure 2. Total portfolio investment holding of selected Euro Area countries in the EMU (Source: IMF CIPS, Mijs 2014)



However, when we look more precisely at the data, we can observe a fall in the share of cross-border interbank loans in the euro area since 2008 (Figure 3).

Figure 3. Share of cross-border interbank loans to total loans in the Euro Area (% of total loans) (Source: Mijs 2014)

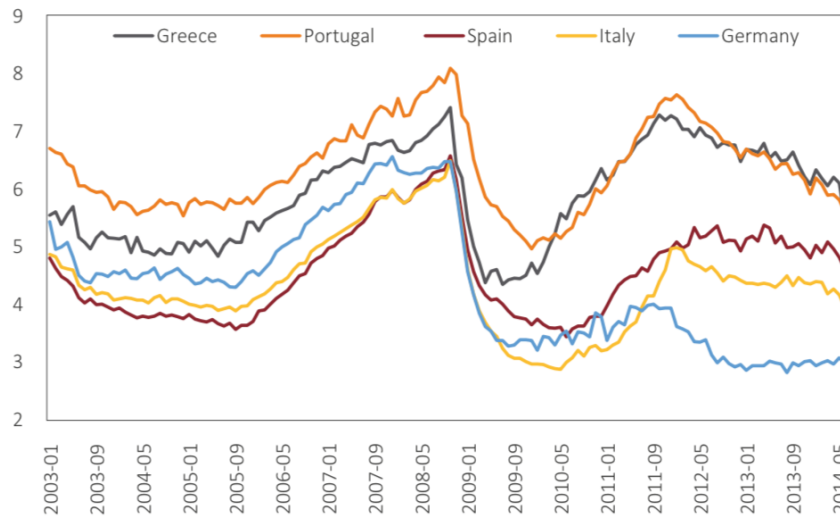


As of April 2014, the cross-border interbank loans are still far away from the 2008 levels.

3.3 Liquidity differences across countries

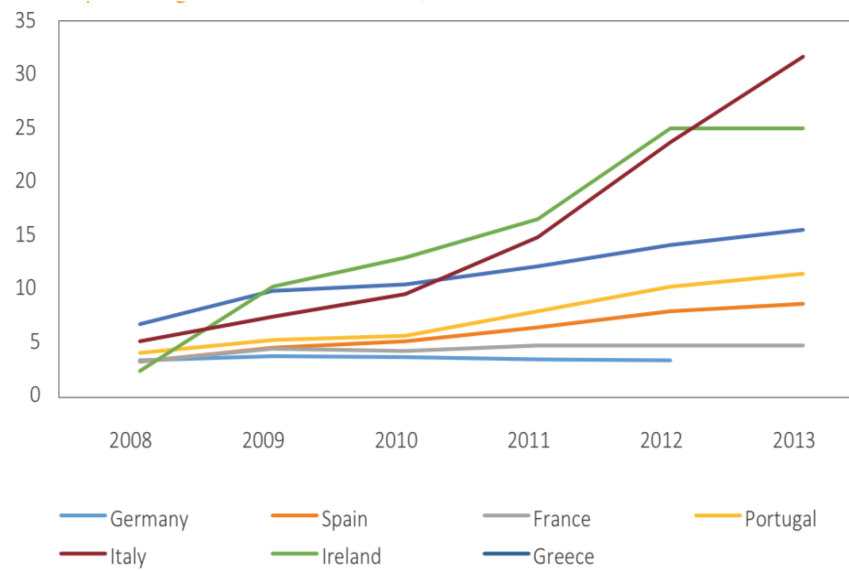
When it comes to measuring the liquidity differences across countries, we observe indeed big variations since the 2008 crisis (Figure 4).

Figure 4. Interest rates on bank loans to SMEs in selected countries (Source: ECB, 2014, Mijs 2014)



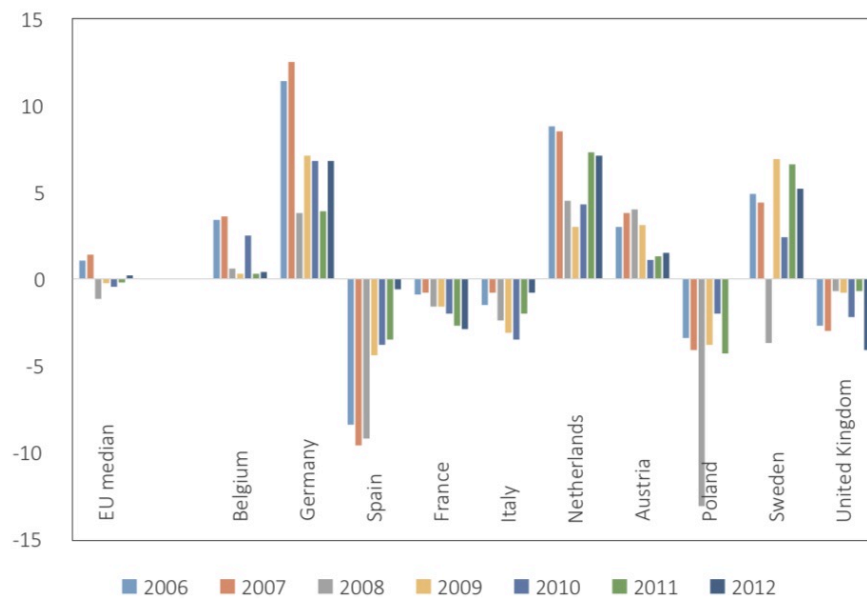
Also, there is a big difference in terms of non-performing loans across euro area countries (Figure 5). This may cause an increase in risk premia since it may affect the credibility of these countries.

Figure 5. Non-performing loans as share of the total, % (Source: World Bank, 2014, Mijs 2014)



In terms of liquidity differences across countries, we can have a look at the private credit flows. We can observe major differences across the European Union (Figure 6).

Figure 6. Private Credit flow in the EU, % of GDP (Source: Ameco, 2013, Mijs 2014)



Two countries are of particular relevance here: Germany and France. They are the biggest economies in the euro area and the overall EU (in 2014). Private credit flows are stable in Germany (no increase) but are decreasing in France, in particular since the crisis, which is not a good sign for financial integration.

4. The Banking Union: Will Europe be more of an OCA and more credible?

In this third section, we present the institutional design of the Banking Union. We address the question of whether the Banking Union will increase Europe's credibility, enhancing financial integration, thus getting closer to an OCA.

Indeed, related to our research question and in particular sub-question 2, this section is about analyzing whether the Banking Union reduces systemic risk or the magnitude of a new crisis.

To address this research question, let's first illustrate what were the early ages and the economic and financial context of the Banking Union, and then we will present the Banking Union's legal framework. Eventually we will draw some conclusions about the likelihood that the Banking Union leads to a reduction in systemic risk.

4.1 The early ages: The Jacques de Larosière Report

In November 2008, the European Commission mandated Jacques de Larosiere to chair a group in order to write a report proposing improvements to supervision and regulation. The group came up with the conclusions that financial markets in Europe were too fragmented, and this fragmentation was the result of the lack of a single market for financial services. They pointed out that there was no single definition of credit institution; no single definition of capital; no single definition of non-performing loans and forbearance; very diverse deposits insurance scheme; no uniformity in the accounting rules; no uniformity in the calculation of risk-weighted assets; etc.

It was obvious since 2008 that the EU needed further reforms. The Single Market for goods and services never extended to financial services. The report served as a trigger to move forward in this direction.

4.2 The Banking Union's legal framework

The goal is to create a safer and more integrated financial sector for the single market. These initiatives, which include stronger prudential requirements for banks, improved depositor protection and rules for managing failing banks, form a single rulebook for all financial actors in the 28 Member States of the European Union. The "single rulebook" is the core of the Banking Union.

However, the difficulty was to propose an institutional framework that would suit the needs of the EU non-euro members, as well as one that would suit the needs of the EU euro members. Indeed, as the financial crisis evolved and turned into the Eurozone debt crisis, it became clear that, for the euro area members, a deeper integration of the banking system was needed. The Banking Union was thus designed as a set of two mandatory packages for the euro area members: (1) the Single Supervisory Mechanism and (2) the Single Resolution Mechanism for banks. Non-euro area members can join on a voluntary basis.

In a nutshell, for the EU members (and the euro area members), the Single Rulebook applies. It consists in two items (as of today):

- Capital Requirements: the original Capital Requirements Directives⁸ have been replaced by a new legislative package known as “CRD IV”.
- Deposit Guarantee Schemes: Deposit Guarantee Schemes⁹ reimburse a limited amount of deposits to depositors whose bank has failed. From a financial stability perspective, this promise prevents bank runs, thereby reducing systemic risk.

Only for the euro area members (and the other EU members who decide to join on a voluntary basis), the Banking Union consists in two items:

- The Single Supervisory Mechanism: The European Central Bank becomes the central prudential supervisor of financial institutions in the euro area (including approximately 6000 banks) and in those non-euro EU countries that choose to join the SSM. The European Central Bank directly supervises the largest banks (140 of them), while the national supervisors continue to monitor the remaining banks.
- The Single Resolution Mechanism: The mechanism will allow failing banks to be managed through a Single Resolution Board and a Single Resolution Fund, financed by the banking sector. Its purpose is to ensure minimal costs for countries’ budgets and to the real economy. It should increase the credibility of the financial system overall.

4.3 The Banking Union: Is it enough?

Is the Banking Union well designed to increase the European financial market’s credibility? If the answer is positive, it should then augment Europe’s credibility for financial activities, helping in return Europe to be closer to the definition of an optimum currency area.

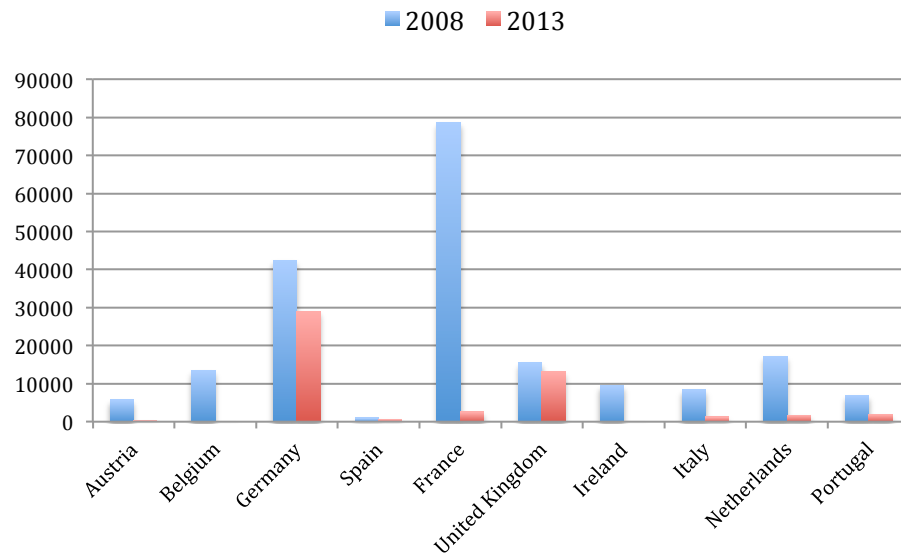
Based on the framework aforementioned and on the institutional design of the Banking Union, we will assess the country differences in terms of credibility (we use the degree of systemic risk as a proxy as well as some indicators from Graph Theory).

In terms of credibility differences, Greece is an interesting example (Figure 7). In particular, it is very interesting to notice the variation between 2008 and 2013 in terms of foreign claims of the banking sector.

⁸ 2006/48 and 2006/49.

⁹ Review of Directive 94/19/EC

Figure 7. Foreign claims of the banking sector in Greece in 2008 and 2013 in million dollars (Source: BIS, 2014, own computations)



Let us now consider the systemic risk notion to analyze the interconnectedness of the banking sector.

What could be a good variable to approximate the systemic risk? The V-Lab at New York University has computed an indicator called SRISK. It measures the need in actual dollars of a bank in case of a bankruptcy.

For the following 18 countries grouped into 4 categories, we compute the SRISK for all their banks (NYU V-Lab, 2014): (1) EU countries: Germany, Belgium, Spain, France, Italy, The Netherlands, (2) USA and Commonwealth countries: USA, Australia, United-Kingdom, Canada, (3) Emerging countries: South Africa, Brazil, India, Russia, Turkey, and (4) Other countries: Israel, Japan, Switzerland.

In the following table (Table 2), we observe a peak of the SRISK in 2008 and a slow decrease. SRISK is anyway still high in 2013, and higher than in 2007, for instance.

Table 2. Measure of the systemic risk (SRISK) of 18 selected countries from 2004 to 2013 in billion US\$ (Source: NYU V-Lab, 2014, own computations)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SRISK	723.89	710.98	684.72	1853.78	3339.69	2485.16	2603.52	3492.74	2964.86	2259.43

In the following table (Table 3), we observe the SRISK as a percentage of total market value of the banks. It is interesting to note that European banks are more exposed than Banks from the UK and the US (data for 2013).

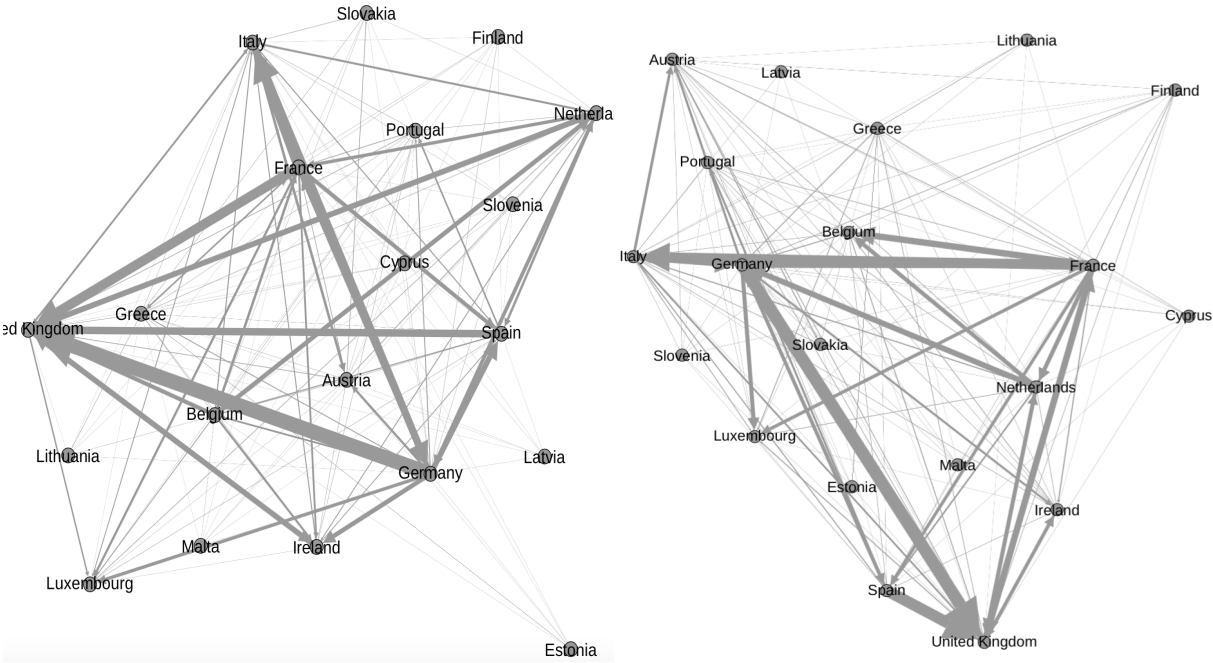
Table 3. Measure of the systemic risk (SRISK) as a percentage of total market value of the 18 selected countries' banks (Source: NYU V-Lab, 2014, own computations)

European Union	USA and Commonwealth	Emerging Countries	Other
62.9%	13.74%	4.153%	19.21%

It would be interesting now to understand the links between the countries and how they evolve. Figure 8 and Table 3 will help capture the dynamics of the financial system towards financial fragmentation.

On the following figure (Figure 8), we illustrate the total foreign claims from the banking sector per country in 2008 and 2013. We observe a concentration of the European financial market around more credible countries, compared to the situation prior the 2008 crisis.

Figure 8. Total foreign claims from the banking sector per country in 2008 and 2013 (Source: BIS, 2014, own computations)



In the following table (Table 3), based on graph theory, we compute the three indicators: (1) eccentricity, (2) closeness centrality, and (3) betweenness centrality.

Eccentricity highlights the countries that are different from the core countries. Closeness measures how close are countries in terms of foreign claims to each other, and betweenness centrality measures whether countries are at the core of the system.

As illustrated in Table 3, the countries at the core of the system are Austria, Belgium, Germany, Spain, France and Italy (the UK is a little behind). This shows the fragmentation between the core countries and the others.

Table 3: Indicators from Graph Theory (Source: BIS, 2014, own computations)

Country	Eccentricity	Closeness Centrality	Betweenness Centrality
Austria	1.0	1.0	2.75
Belgium	1.0	1.0	2.75
Cyprus	0.0	0.0	0.0
Germany	1.0	1.0	2.75
Estonia	0.0	0.0	0.0
Spain	1.0	1.0	2.75
Finland	2.0	1.47	0.0
France	1.0	1.0	2.75
United Kingdom	2.0	1.05	2.38
Greece	1.0	1.0	1.56
Ireland	2.0	1.42	0.22
Italy	1.0	1.0	2.75
Lithuania	0.0	0.0	0.0
Luxembourg	0.0	0.0	0.0
Latvia	0.0	0.0	0.0
Malta	0.0	0.0	0.0
Netherlands	2.0	1.21	1.13
Portugal	2.0	1.05	1.18
Slovenia	0.0	0.0	0.0
Slovakia	0.0	0.0	0.0

To summarize, since 2008, the European financial markets have concentrated to the more credible markets and left some of the weaker, less credible, financial markets.

5. Conclusion

In this paper, we propose a framework to analyze the potential impacts of the Banking Union. This paper aims to address the question to know whether the Banking Union will help reduce the systemic risk and as such prevent Europe from suffering from another crisis.

The logic behind the Banking Union and its institutional design is that European financial markets needed to have a European insurance mechanism like the FDIC in the U.S., as well as a prevention mechanism. Both aim at reducing systemic risk. The insurance mechanism should avoid bank runs, and the prevention mechanism should avoid bank failures.

However, although an improvement compared to the pre-2008 era, the Banking Union lacks some elements that would further financial integration. The Banking Union is only a small step towards the single market for financial services. To become an OCA, Europe needs also a single market for financial services (Mundell 1973). Financial integration is a key element in this regard. So, although the Banking Union enhances European financial markets' credibility, it does not go far enough in creating institutions that would reduce financial fragmentation.

It would be interesting to analyze the Banking Union in a broader international context. Indeed, we could add the new regulations in the US (the Dodd-Frank Act), Basel III, and also the other European directives.

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