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Banking-System Transformations After the Crisis and Their Impacts on Regulation

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Abstract

The serious financial crisis, which started in 2007 in the heart of capitalism, and became widespread throughout the world in 2008, is still unfolding with important structural repercussion and transformations. Such transformations are already taking place, for example, in financial systems, be it because of the impacts of the crisis itself – which caused a greater concentration of assets in various markets – or because of new regulations in the financial sector that have been put in place multilaterally in many different countries, as well as new strategies being adopted by capitalist agents in this new context. This article aims at plotting and analyzing some of the most important transformations taking place in financial systems since the beginning of the crisis, focusing on the banking systems of the US and the European Union. In addition to a brief introduction, this paper is divided into five sections. In the first section, the main transformations that the US and European banking systems went through before the crisis are analyzed. Section two discusses the crisis' effects on the concentration found in the American and European banking systems. The following section highlights some elements of the crisis that have affected the process of internationalization by banks, again focusing on the US and Europe. Section four analyzes the new regulation and supervision measures that started to surface in the two aforementioned economic regions, as well as their potential impact on the system as a whole. The last section is dedicated to final comments, featuring reflections about where the world financial system is headed after the crisis.

1. Introduction

The financial crisis that has affected the world for almost eight years is unveiling its newest feature. After the subprime collapse of 2007, and the bankruptcy of major banks in 2008 such as Bear Stearns and Lehman Brothers, the crisis worsened and there was need for decisive action by Central Banks and governments around the world after financial markets all but came to a complete halt[1].

In early 2009, uncertainty was decreasing but overall confidence in the system still had not been restored, thus hindering the growth of central economies and keeping the supply of credit from expanding. In 2009, the crisis expanded to the European Union and especially to the Euro Zone. Many countries, such as Portugal, Ireland, Italy, Greece, and Spain, began having trouble financing themselves in the market, since their long-term bonds' interest rates had gone up significantly. This increase in interest rates originated in the general aversion to risk, which affected European financial institutions. In this scenario, markets began asserting more risk to economies within the Euro Zone that featured structural imbalances, but had no problem financing such imbalances up to the beginning of the crisis (Carvalho, 2012).

In the first half of 2012, expectations became less pessimistic, primarily because of vigorous actions taken by the European Central Bank (ECB) under newly-instated president Mario Draghi[2]. However, both the Euro Zone and the United States have yet to show signs of a robust economic recovery.

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[1] Ocampo (2010) provides a timeline to the crisis, which serves as a reference and starting point to the timeline we proposed in this article.

[2] By the end of 2011, the ECB initiated the Longer Term Refinancing Operations (LTRO) programme, which focused on addressing concerns markets had about certain banks' liquidity, by lending almost unlimited sums to almost any European bank on very easy terms, for much longer than ever before. In a speech given in June of 2012, Mario Draghi – who became the President of the European Central Bank in November of 2011 – pointed out that the ECB would continue to provide market liquidity for banks as needed (Draghi, 2012). In July of 2012, the ECB's President (Draghi, 2012b) pointed in the same direction: the continuity of standard and non-standard monetary-policy measures by the ECB, indicating a broad commitment to tackle the crisis.

In the years following the crisis, some very important transformations have taken place, especially in the financial systems, which have faced structural and regulatory shifts. Such transformations are already affecting the way financial institutions do business, both domestically and internationally.

In this article, we will discuss the main transformations that US and European – mainly, the Euro Zone – financial markets went through since the beginning of the crisis[3]. The paper is divided into five sections. In the first section, the main transformations that the US and European banking systems went through before the crisis are analyzed. Section two discusses the crisis' effects on the concentration found in the American and European banking systems. The following section highlights some elements of the crisis that have affected the process of internationalization by banks, again focusing on the US and Europe. Section four analyzes the new regulation and supervision measures that started to surface in the two aforementioned economic regions, as well as their potential impact on the system as a whole. The last section is dedicated to final comments, featuring reflections about where the world financial system is headed after the crisis.

2. Transformations in the financial system prior to the crisis

2.1 United States of America

Traditional literature sorts financial systems according to the role their financial institutions play in the market, and by how the agents finance themselves. Therefore, systems are considered either bank-based or market-based. However, the current financial environment makes it extremely difficult to keep sorting financial systems in that way, especially the US financial system. Banks have played an increased role in the capital markets, especially since the 2000s. Even

[3] This paper was written with information available until the end of 2012.

though the importance of deposits has diminished from the 1990s onwards, banks are still the institutions driving the financial system. They have increased the concession of credit by using capital markets to leverage themselves through derivatives and securitization. Bank funding through money markets has steadily increased, and the services provided are the ones that generate fees.

The current US financial system is better defined as "market-based banking" (Hardie and Howarth, 2011). In such system, risks are amplified and end up staying within the financial institutions since other banks in proprietary trading buy the bank-issued securities. Those securities in turn are used as collateral for funding through the short-term market (Financial Services Authority, 2009).

The break up of the regulatory structure that had defined the US financial system since the 1930s was the paramount factor behind the transformation of the system, especially from the early 1980s onward. This deregulation involved the end of i) *Regulation Q* in 1980, which put a cap on the interest rate that depositary institutions could pay on customers' deposits; ii) the *MacFadden Act* in 1994, a law put in place in 1927 that prevented banks from having operations outside their state and iii) the *Glass Steagal Act* in 1999, enacted in the United States in the 1930s, separating traditional banking activities from investment banking ones in order to avoid contamination between institutions and the consequent contagion. It was repealed in 1999 by the *Gramm-Leach-Bliley Act*, which allowed the formation of large financial conglomerates with various areas of operation. The result was a considerable consolidation of the US financial system, especially during the 1990s. In 1988, there were approximately 13,400 banks in the US. This figure dropped to about 8,000 in the beginning of the 2000s. At the same time, the number of branches went up from 40,000 in 1980 to more than 60,000 in the 2000s, showing the logic of the expansion of US financial system: bigger and fewer banks with more branches (Heintz & Pollin, 2013).

The new environment featured an ever-increasing role for institutional investors, who became the drivers of financial innovations

created by the big financial conglomerates[4]. Such innovations set the tone for the structural and institutional transformations experienced by the US financial system in the last decades.

An important change in the world financial system, particularly in the banking system, was the introduction, in the late 1980s, of new prudential regulation standards outlined in the Basel Agreement. The Agreement instituted a worldwide standard of regulation, aimed at leveling the playing field for banking institutions. Its main objective was not to ban banks from performing operations, but instead, each operation would have an onus proportional to its risk. The idea of capital requirements adjusted according to the risk borne by assets was therefore introduced as the main pillar of prudential regulation.

In fact, regarding prudential regulation, the Basel I Agreement of 1988, which was implemented internationally, can be considered a milestone. It had as its centrepiece setting minimum capital requirements for banks. Basel I was primarily focused on credit risk, and banks' assets were classified and grouped in fixed categories according to that risk, as determined by the regulator.

After a series of changes to the first Agreement, in 2004 Basel II was published. It retained the previous basic proposition, namely, that the key to ensure the soundness of the system would be to maintain adequate capital relatively to assets' size and quality (risk). However, important innovations were put in place regarding the risks faced by the system (not only credit risk, but also market and operational risks) and how to measure them. The Basel II Accord was not fully adopted by regulatory authorities around the world when the financial crisis intensified and spread out internationally.

In order to minimize costs created by the implementation of the Basel Agreements, as well as to enhance credit concession, banks unprecedentedly began concentrating the majority of their risks in institutions outside their balance sheet, creating what has been known

[4] During low interest-rate periods, this demand increases since market participants seek instruments with a higher return than those attached to treasury bonds.

as the shadow banking system. Other institutions used this parallel system to increase their leverage, working with derivatives and being the counterpart in banking operations. The US financial system was structurally changing, featuring an increasing number of non-banking institutions participating in financial intermediation, such as funds and off-balance-sheet entities. Such institutions were widely using short-term monetary markets to fund themselves, elevating the system-wide risk since the instruments in this market are susceptible to bank runs (IMF, 2012). For instance, the asset-backed commercial papers (ABCP) market was one of the first to collapse during the crisis, since it was the instrument used by the shadow-banking institutions for funding.

2.2 European Union

An analysis of the dynamics of the EU's financial system, although part of the shift of global capitalism in the last decades, has to take into account the particularities of integration within the Union. During the Union's lengthy process of growth and integration, started in the 1950s, two crucial moments have to be highlighted regarding financial consolidation: the creation of the Single Financial Market, in 1993, and the introduction of the Euro, in 1999. According to Salgado (2010), the creation of the Single Financial Market in 1993 brought about the legislative and regulatory environment that led to the emergence of a European Banking Industry, featuring a genuinely consolidated banking system within the Union. The goal was to allow banks to operate freely in any member nation, thus increasing competition and benefitting European business and families.

Three principles guided the formation of a single or integrated banking market in the European Union (Murphy, 2000). The first one was that the member nation would keep its regulation and supervision agencies, which entailed fragmentation of power in that task. The second principle, derived from the first, stated that there should be a minimum level of harmonization of regulation, more restrictive

than the individual national levels. That meant nations would have their own rules, supervisory and regulatory entities, as long as a minimum level of standardization among EU nations was assured.

In fact, as stated by Wahl (2010), too much intervention would be considered harmful, since the process was to be market-led. Therefore, the supervisory and regulatory set-up was extremely fragmented. However, the increase in financial consolidation, especially after the introduction of the Euro, and the deepening of the financial crisis, brought to light the inconsistency of the first two principles. The supervision in place proved to be inadequate, since it did not prevent regulatory arbitrage by financial institutions that were created by differences in rules and supervisory procedures among nations (Geus, 2012).

The third principle that guided the implementation of a single banking market, according to Murphy (2000), was that its rules were to be implemented by directives issued by the European Union. Important aspects in the integration model adopted were the concepts of mutual recognition and the single passport. The mutual recognition concept advocates that banks are to be regulated by their country of origin and should follow such regulation when doing business in another member country. According to such concept, the regulating authority in the "host" nation accepts the primacy of the regulating authority from where the institution originally derived (Murphy, 2000, p. 4). The single passport concept means that a bank that is authorized to operate in a nation member of the European Union is automatically authorized to operate in any other member nation, either via a branch, a subsidiary, or via the acquisition of another bank, or any other way. Therefore, the "host" nation cannot impose any barriers affecting the operation of such a bank. This environment allows banks from nations with looser regulation to operate in other nations in any way they find to be more advantageous, even performing activities that native banks are not allowed to perform, taking advantage of the lax regulatory apparatus of the country from where they originate. Therefore, as stated by Murphy (2000, p. 4), the principles of mutual recognition and single passport

were established to create an incentive for the universal bank concept to become the norm within the EU, as well as to stimulate effective capital integration and the consolidation in the banking sector.

However, up to the creation of the Euro in 1999, cross-border operations within the EU were still subject to the risk of currency mismatches, as well as the cost of doing transactions in different currencies. In fact, the introduction of the Euro was another step of paramount importance to the intensification of the financial and banking integration within the European Union. According to Salgado (2010), the creation of a single financial market (1993), as well as the unveiling of the Euro (1999), stimulated the development and/or consolidation of large financial institutions, with operations in the entire EU.

The period ranging from 1990 to 2001 was marked by intense merging and acquisition activities in the financial sector[5], which led to a greater concentration within the area, especially from 1996 on. According to Salgado (2010), throughout those 11 years, approximately 15,500 companies in the financial sector were subject to change in ownership.

One of the characteristics of such movement is the intertwining of banking and insurance companies, with a growing number of banks in the EU combining the two activities – commercial banking and insurance – in their core, with insurance products being offered in their network of commercial banking branches. Such movement has been described by the term bank-insurance. Some of the biggest bank-insurance conglomerates were created during this period, such and Allianz-Dresdner, Fortis, and ING, among others (Salgado, 2010, p. 247).

[5] In fact, such movement did not happen only in the financial sector, in spite of being more profound in this sector – given the intense process of globalization and deregulation, added to the ever-improving communications technology – nor did it restrict itself to the European Union – even though the process in the EU was part of a bigger one of regional integration. More information on the subject can be found at Salgado (2010), and Classens and Horen (2012).

According to Salgado (2010), in addition to the bank-insurance model, two other approaches were adopted by European banks in their quest for expansion and in order to adapt to a new business environment: “pure-play” investment banks, as well as the traditional universal banking.

The so-called investment banks’ pure-players specialized themselves in advisory and in capital-market operations (stocks and treasury notes). Even though they were smaller in size and subject to the intense competition from US investment banks (Goldman Sachs, JP Morgan, Morgan Stanley, and Merrill Lynch) before the crisis, some of the bigger institutions within the EU had consolidated themselves in the market, such as Deutsche Bank[6] (Salgado, 2010).

Universal banks’ activities, on the other hand, are based on personal relationships with clients, especially individuals and small businesses, to whom products and services are offered (various credit options, insurance, asset management, etc.). Therefore, a far-reaching, extensive network is required. This is the predominant model currently in place in the European Union. According to Salgado (2010), British banks were the first to adopt such model, followed by the Dutch, and in a smaller-scale, the French.

However, it should be noted that the consolidation of the banking system in the European Union throughout the 1990s, was mainly a domestic process. Because of mergers and acquisitions, some large national banks were created, such as BSCH and BBVA in Spain; Banca Intesa, UniCredit, and Sao Paolo IMI in Italy; BHV in Germany; and BNP Paribas and Crédit Agricole-Crédit Lyonnais, in France. In its next step, after the introduction of the Euro, the movement marginally shifted towards an increasing number of cross-border operations inside the EU (Salgado, 2010, p.250).

At a national level, according to Salgado (2010), the percentage of the banking sector that was controlled by the five biggest banks, measured in total assets, rose from 37.9% in 1980 to 57.1% in 1999.

[6] In addition, worthy of mentioning are the Swiss-based (European, but not members of the EU) Crédit Suisse First Boston and UBS.

However, one can notice an important difference in the different groups of countries inside the Union. In smaller countries, the five biggest banks had over 50% of all banking assets. In some of those nations, such as Sweden, the Netherlands, Denmark, and Belgium, the five biggest banks held over 75% of the sector's assets.

On the other hand, in a few other countries, such as the UK and Germany, this indicator was less then 30%. In fact, the EU's three biggest economies (Germany, France, and the UK) have banking sectors that feature relatively small concentration, with Germany boosting the least concentration of all EU nations (Salgado, 2010, p. 250, 251).

3. Bank Concentration After the Crisis

3.1 United States of America

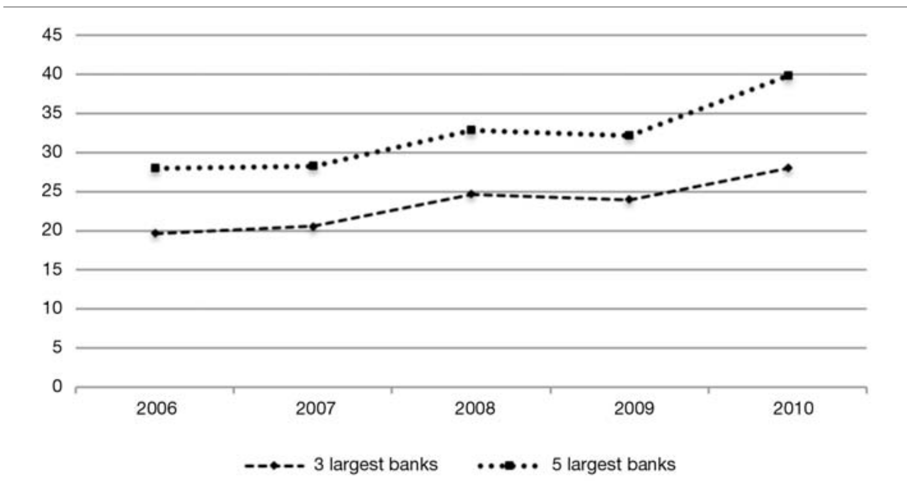
Ever since deregulation of the US financial system started, in the 1980s, mergers and acquisitions became more frequent, thus making the system concentrated around a few large institutions.

Graph 1 shows that the concentration of banking assets in the largest US banks, which was already increasing before the crisis, grew after the crisis, especially from 2009 to 2010, both in the five and in the three biggest bank groups. In 2006, the five biggest banks held 28.01% of total assets, while in 2010 this share had gone up to 39.87% – an increase of almost 43%. This significant growth in the volume of assets held by the largest banks was a result of various movements during that period, such as: 1) mergers and acquisitions, many times encouraged and/or financed by the Federal Reserve (Fed); 2) the authorization for investment banks to turn into bank holdings, therefore becoming part of concentration statistics; 3) the liquidation of small banks. From the beginning of the crisis until December 2012, 483 banking institutions have failed, according to data released by the Federal Deposit Insurance Corporation (FDIC).

Table 1 below displays the main mergers and acquisitions that took place since the beginning of the crisis, in 2007. According to Dymski (2012), banking deregulation in the 1980s and 1990s helped

some medium-sized and some regional banks to become big players in the US financial system, such as Wachovia and Washington Mutual: "[…] these banks' balance sheets were supported not just by deposits, but also by liquid money-market funds. And these banks were as dependent, as were money-center banks, on the judgment of the financial marketplace – and as vulnerable as reversals of opinion therein" (Dymski, 2012, p. 218).

Graph 1
Bank Concentration in the United States - 5[1] and 3[2] biggest banks, from 2006 to 2010, in %



[1] Assets held by the five biggest banks in relation to the total assets held by commercial banks.
[2] Assets held by the three biggest banks in relation to the total assets held by commercial banks.
Source: World Bank, *Global Development Financial Database*.

Table 1
Major bank mergers and acquisitions in the US after 2007

Bank of New York Company	Merged with Mellon Financial Corporation in 2007
National City Corporation	Acquired by PNC Financial in 2008
Wachovia Corporation	Acquired by Wells Fargo in 2008
Countrywide Financial Corporation	Acquired by Bank of America in 2008
Bear Sterns	Acquired by JP Morgan Chase in 2008
Merrill Lynch	Acquired by Bank of America in 2008
Washington Mutual	Acquired by JP Morgan Chase in 2008

Source: table made by authors based on Dymski (2012).

The first major institution that began showing signs of being affected by the crisis was Bear Stearns, which was deeply involved in the negotiation of subprime mortgages. Its investment funds began featuring losses in July 2007. In December 2007, the bank showed its first quarterly loss ever, a US$ 854 million loss in the fourth quarter. In March of 2008, Bear Stearns was acquired by JP Morgan Chase, with a US$ 30 billion aid from the Fed[7]. Before that, in January of 2008, Countrywide Financial had already been bought by Bank of America.

Instability in the financial system continued throughout 2008, with money markets all but drying up. In such context, funds that were financed by money markets and dealt with subprime mortgage-backed security bonds, such as the CDOs (collateralized debt obligations) had to be taken over and their losses absorbed, thus affecting the largest American banks.

September 2008 was the most eventful time in the crisis, with: i) the acquisition of Merrill Lynch by Bank of America, on 14; ii) the bankruptcy of investment bank Lehman Brothers and the subsequent denial of help by the Fed, on 15; iii) a 10-day bank run against Washington Mutual, the biggest Savings & Loans in the US at the time, which went bankrupt and was acquired by JP Morgan Chase, on 15; iv) the green-light for two mega investment banks, Goldman Sachs and Morgan Stanley, to become bank holdings and therefore subject to regulation by the Fed, on 21; v) and the acquisition of Wachovia by Wells Fargo, which was finalized on 3 October, 2008.

Those transformations in the structure of the US financial system made the biggest banks even bigger. With the exception of Citigroup, Goldman Sachs, and Morgan Stanley, the total assets held by the biggest American banks increased significantly. Between 2007 and 2011,

[7] A paper published in 2014 by Homar and Van Wijnbergen points that the type of intervention made by governments and central banks during crises matters. The authors find that banks' recapitalization, instead of just liquidity provision, reduces the duration of the recession. By facilitating assets' restructuring process, recapitalization stop "zombie banks" (those with bad loans on their assets) from dominating the recovery.

JP Morgan's assets increased by approximately 47%; Bank of America's, by 26%; Wells Fargo's, by an astonishing 139%; Metlife's[8], by 52%; Us Bancorp, by 48%; Bank of New York Mellon's, by 72%; and PNC Financial's, by 117%.

On the one hand, the crisis made it clear that some institutions were too-big-to-fail, so much that they are subject to additional capital requirements in the most recent prudential regulation proposals. On the other hand, as one can note above, the crisis sparked a concentration of capital in the banking sector. Therefore, the concern about too-big-to-fail institutions has been taken to new heights, given the size and the importance of some banks, and with new institutions joining the too big to fail category. The Financial Stability board published in 2011 a list of banks considered "systemically relevant" which will be required to have a larger amount of capital relative to assets. Among the 29 institutions on the list, 8 are from the US: i) Bank of America, ii) Bank of New York Mellon, iii) Citigroup, iv) Goldman Sachs, v) JP Morgan Chase, vi) Morgan Stanley, vii) Wells Fargo, and viii) State Street. It is paradoxical that the very crisis and the ensuing bailout of troubled institutions ended up stimulating capital concentration.

In fact, there are other questions concerning too-big-to-fail institutions beyond the effective instability they bring into the sector. One of them is related to the fact that they have too much power (Johnson, 2012), enough to manipulate indexes in their favour as Barclays did with the LIBOR rate[9]. Concentration also allows banks to charge more for services and loans, despite being able to increase their efficiency by scale-and-scope economies (IMF, 2012).

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[8] Even though Metlife is listed by the Federal Reserve as one of America's 10 biggest bank holdings, the company has announced that it will likely sell its bank-deposit sector to General Electric Capital, thus leaving the bank-holding category and going back to focusing on its insurance activities. Thus, the institution seeks to avoid strict regulation by the Fed regarding reserves and capital requirements (Bloomberg, 2012).

[9] In June 2012, an international story broke out about a scandal involving the manipulation of the LIBOR interest rate by Barclays. The LIBOR rate was used as a reference for many loan contracts around the world, including mortgages.

3.2 European Union

Throughout 2008 and 2009, as the crisis unfolded and later deepened, various financial institutions in the European Union reported significant losses and many were subject to restructuring. In that context, some institutions were acquired by competitors; others were nationalized, in a very complex process. As well pointed out by Salgado (2010), such restructuring events were not isolated nor particular: the crisis, originated in the US subprime-mortgage market, generated losses for almost all the major financial institutions in the biggest economies in the European Union.

The nationalization of the British mortgage bank Northern Rock, in February of 2008, kicked off the process. Salgado (2010) reminds us that this event sparked the first bank run in the UK in over 100 years. In July of 2008, the Danish Central Bank announced an intervention on Roskilde Bank. One month later, after having a difficult time finding a buyer, the Danish Central Bank announced the purchase of Roskilde.

According to Salgado (2010), the period of greatest turbulence in European financial markets took place at the end of 2008, from September onwards. In that month, British bank Lloyds TSB was forced to take over Halifax Bank of Scotland (HBOS). By the end of 2008, many other institutions had come down with serious problems, having been subject to some sort of intervention in order to be immediately restructured. Among them were Bradford & Bingley in the UK, Hypo Real Estate in Germany, and Fortis and Dexia in the Low Countries.

A clearer picture of the global financial meltdown emerged in April 2009, when the IMF published in its Global Financial Stability Report that the total losses in the worldwide financial system had been US$ 4.1 Trillion, and that the majority of the losses occurred in Europe (US$1.4 Trillion), and not in the United States of America (US$ 1 Trillion).

Table 2 below shows some of the main interventions that took place in the European Union in 2008.

TABLE 2
EU Institutions that were under intervention in 2008

Country	Institution
Belgium/Netherlands/Luxembourg	Fortis
Belgium/Netherlands/Luxembourg	Dexia
United Kingdom	Northern Rock, RBS, HBOS, Bradford & Bingley
Netherlands	ING
Denmark	Roskilde

Source: made by authors based on Salgado (2010) and IMF (2009).

Schoenmaker (2011) analyzes how the crisis affected the concentration in the European banking system. Between 2006 and 2009, the number of banks in the EU went from 8,507 to 8,358. That figure would be even lower (7,938) – thus indicating more concentration[10] – if we do not take into consideration a reclassification of the credit institutions carried out by Ireland.

On the other hand, the volume of assets held by the 30 largest banks[11] in Europe was 6% lower in 2009 when compared to 2007. However, as the author points out, there are clearly winners and losers in this process. Among the losers – institutions that experienced the greatest decrease in assets – are: RBS (UK), Lloyds (UK), Deutsch (Germany), Commerzbank (Germany), and ABN Amro (Netherlands). Among the winners are BNP Paribas (France), Santander (Spain), Banque Populaire CdE (France), Nordea (Sweden), and Standard Chartered (UK).

Data presented by Schoenmaker (2011) for the years 2006 through 2009 show a general tendency of an increase in banking concentration inside the EU, no matter what parameter is chosen[12]. Ho-

[10] The author presents two methods of measuring concentration in the banking sector: the market share of the five biggest banks (CR5), measured by the volume of assets, and the Herfindahl index, defined by the sum of the square of the market share (asset volume) of all banks in the sector. The data presented is relative to the market share of the five largest banks (CR5).
[11] Selected by using the Tier 1 capital criteria in 2009, as published by The Banker.
[12] The source of the original data presented by Schoenmaker (2010) are European Central Bank's reports (2007 and 2010).

wever, data also shows that there is an important difference in concentration levels among EU nations, both before and after the crisis. That remains true even if we compare the original 15 member nations to the new member nations.

As previously noted, in economies such as Germany, France, and the UK, the banking sector features relatively little concentration. Germany, for instance, has the least-concentrated banking sector of all EU nations. However, a shift towards more concentration is noticeable in Germany after the crisis, from 2006 to 2009. The market share of the five largest German banks went from 22% to 25%[13] in that period.

A similar shift can be observed in data provided by the World Bank[14] encompassing the period from 2006 to 2010 – graph 2. The data shows that there is an increase in asset-concentration levels in the period, both for the three and for the five largest German banks. The two indicators show a slight decrease in concentration in 2009, followed by another increase in 2010.

The United Kingdom, featuring a slightly higher concentration level than Germany, also showed an increased concentration of assets in the largest banks after the crisis: concentration levels went from 36% in 2006 to 41% in 2009 (Schoenmaker, 2011).

Data presented by the World Bank for the years ranging from 2006 to 2010 show that the market in the UK behaved in a manner that was similar to Germany's – graph 3. Concentration increased both for the five and for the three largest banks.

In France, however, an opposite tendency was observed according to data provided by the European Central Bank, presented by Schoenmaker (2011): the concentration of assets in the five largest banks fall from 52% in 2006, to 47% in 2009[15].

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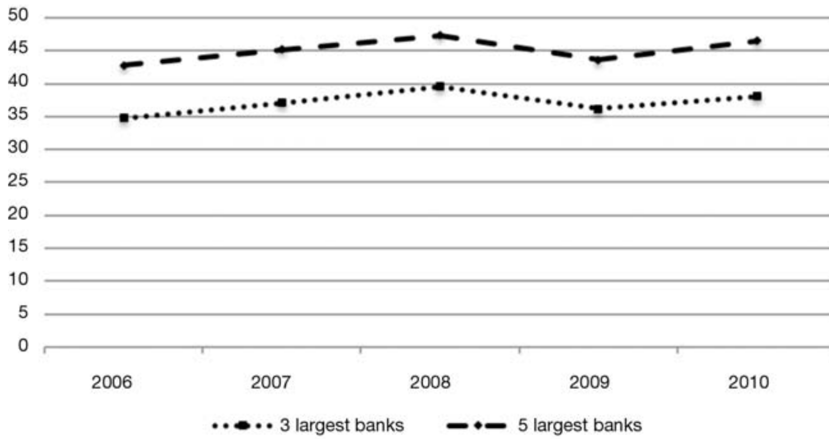
[13] Incidentally, the number of Banks in Germany also decreased in that period, going from 2,050 in 2006 to 1,948 in 2009.

[14] Global Development Financial Database. The same database was used to analyze the US case (Graph 1).

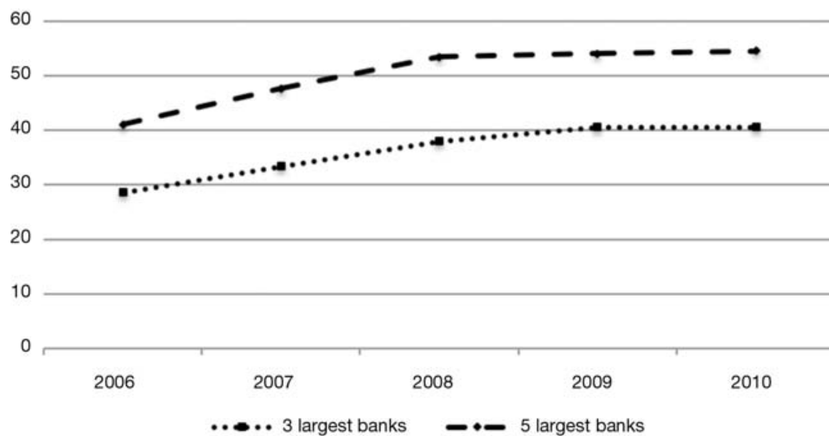
[15] A similar movement is described by the variations in the Herfindahl index, presented in Schoenmaker (2011).

Graph 2
Bank Concentration in Germany - 5[1] and 3[2] largest banks, from 2006 to 2010, in %



[1] Assets held by the 5 largest banks in relation to the total assets held by commercial banks.
[2] Assets held by the 3 largest banks in relation to the total assets held by commercial banks.
Source: World Bank, *Global Development Financial Database*.

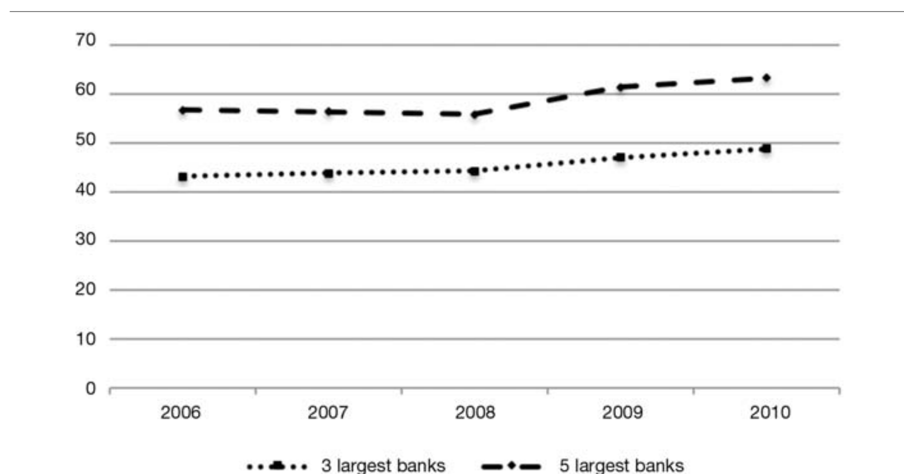
Graph 3
Bank Concentration in the UK - 5[1] and 3[2] largest banks, from 2006 to 2010, in %



[1] Assets held by the 5 largest banks in relation to the total assets held by commercial banks.
[2] Assets held by the 3 largest banks in relation to the total assets held by commercial banks.
Source: World Bank, *Global Development Financial Database*.

Nonetheless, data presented by the World Bank shows a different Picture – graph 4. As one can note in the graph below, after a slight reduction of concentration levels in 2007 and 2008, there was a slight increase in 2009 and 2010[16].

GRAPH 4
Bank Concentration in France - 5[1] and 3[2] largest Banks, from 2006 to 2010, in %



[1] Assets held by the 5 largest banks in relation to the total assets held by commercial banks.
[2] Assets held by the 3 largest banks in relation to the total assets held by commercial banks.
Source: World Bank, *Global Development Financial Database*.

It should be noted that all of the Countries mentioned above have large banking institutions such as the German Deutsche Bank, the British HSBC and RBS, and the French BNP Paribas and Crédit Agricole.

On the other hand, nations such as Belgium, Finland, and the

[16] Differences found in concentration data presented by the European Central Bank (Schoenmaker, 2011) and by the World Bank (Global Development Financial Database) are explained by the methods used to build and harmonize statistics. They can explain the different results obtained for France in the analyzed period. An in-depth investigation of the database methodologies, as well as of the specific events that took place in the French financial system, are needed to better analyze this case.

Netherlands have much more concentrated markets. However, the crisis did not define a single shift for those countries: while the Netherlands and Finland featured data indicating[17] either a relative stability or an ever-so slight increase in concentration, data shows Belgium experienced a lower level of concentration after the crisis.

Schoenmaker (2011) makes some relevant remarks regarding the use of indexes. The author claims that for distinct segments of the banking system, their relevant markets are different geographically. For retail banks, which deal with families and small-to-medium businesses, concentration should in fact be measured at a national level since that is the scope of their business. Wholesale banks, on the other hand, deal with large corporations, making the entire European market relevant to them. Finally, investment banks deal on a worldwide level.

Therefore, considering the European Union, it would not feature relevant bank-concentration according to data presented by Schoenmaker (2011). Among European banks, the French BNP Paribas had the largest regional market share in 2009 (4%). Another French institution came in second, Crédit Agricole (3.6%)[18]. In third place was the British Royal Bank of Scotland (3.4%). The five largest EU Banks had 16% of the market share, which is a relatively low figure, despite the presence of large institutions.

Taking into consideration individual countries, the comparison – made possible by data released by the World Bank – for the United States, Germany, The United Kingdom, and France (Graphs 1 through 4) shows that European Nations feature larger concentration than the United States.

It should also be noted that on the list of the 29 systemically relevant banks released by the Financial Stability Board in 2011 are 15 banks in the European Union[19]. They are: i) Banque Populaire CdE

[17] Numbers presented by Schoenmaker (2011) derived from ECB data.
[18] It should be noted that the Bank of America, the largest banking institution in the US, holds a 10% share of the American market.
[19] The remaining banks are eight American, three Japanese, two Swiss, and one Chinese.

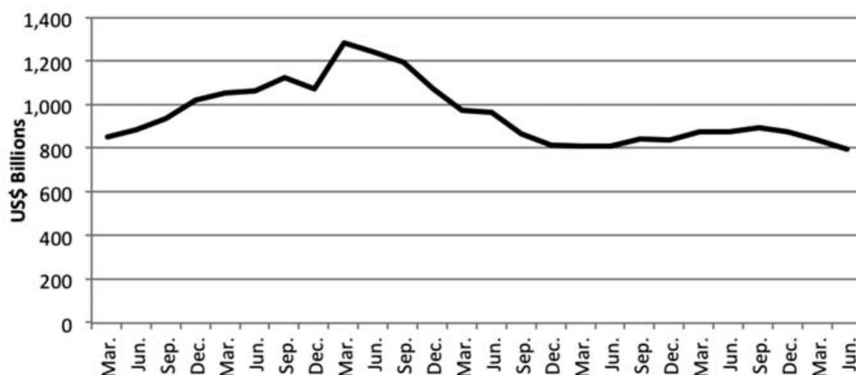
(France); ii) Barclays (United Kingdom); iii) BNP Paribas (France); iv) Commerzbank (Germany); v) Deutsche Bank (Germany); vi) Dexia (Belgium); vii) Group Crédit Agricole (France); viii) HSBC (United Kingdom); ix) ING Bank (Netherlands); x) Lloyds Banking Group (United Kingdom); xi) Nordea (Sweden); xii) Royal Bank of Scotland (United Kingdom); xiii) Santander (Spain); xiv) Société Générale (France); xv) UniCredit Group (Italy).

4. Impact of the crisis on the internationalization of financial institutions

4.1 United States of America

When it comes to the internationalization of American banks and their presence outside of the US, slight changes can be noted since the beginning of the crisis. Data provided by the Bank of International Settlements (BIS) regarding foreign claims, which includes loans, bonds, and stock-market participation in subsidiaries, show that banks' international exposure barely changed. Despite a slight drop in 2008, activities of US Banks outside the country in 2012 remained at the same level they were in 2006 (pre-crisis), as shown in graph 5.

GRAPH 5
Consolidated foreign claims - US Banks - 2006 to 2012



Source: Bank of International Settlements.

Looking at Table 3 containing an UNCTAD ranking of the most trans-nationalized financial institutions, one can note that some large American institutions increased their international presence by buying banks that were more internationalized – as did Bank of America, when it acquired Merrill Lynch. Morgan Stanley and Goldman Sachs increased their international presence, and JP Morgan Chase fell in the ranking. In that sense, the United States has emerged from the crisis with an increasing importance among the major global players.

TABLE 3
The Five most internationalized[20] US banks - 2006 to 2011

Institution	Rank 2006	Rank 2007	Rank 2008	Rank 2009	Rank 2010	Rank 2011
Citigroup Inc.	1	1	1	1	1	2
JP Morgan Chase & Company	21	24	29	35	34	37
Morgan Stanley	32	32	32	15	17	18
Goldman Sachs Group Inc.	33	34	33	38	31	26
Bank of America	n/a	n/a	n/a	27	29	39

Source: The top 50 financial TNCs - unctad.org.

3.2 European Union

The predominantly domestic consolidation that took place in the European Union was in some ways disappointing. The expectations were that, after the creation of a single financial market and a single currency, de facto regional players would shape the sector. Up to the crisis, most of the mergers and acquisitions that took place across borders were limited in terms of both size and geographic reach. In addition, these happened frequently with both parties being from areas with historic and cultural ties.

[20] The Unctad ranking features the 50 most internationalized financial institutions in the world, both banking and non-banking. On Table 3, only the most internationalized banking institutions are displayed, among the group of all financial institutions.

According to Salgado (2010, p. 252), in addition to well-known barriers to operations across borders – such as cultural and legal differences, along with a lack of knowledge about specific local markets – in some cases there was strong opposition to the admittance of foreign capital (even though coming from another EU member) by the host nation. The last major attempt, before 2007, to create an institution that effectively would operate in the entire continent was the acquisition of the Dutch bank ABN by a consortium made up of the British Royal Bank of Scotland, the Belgian Fortis, and the Spanish Santander.

Even though the pace of banking integration within Europe was below expectations, it did increase from 2003 onwards. Schoenmaker (2011) presents a cross-border penetration index for the EU banking sector, made up of the percentage of a European bank's assets that are held by other EU nations. According to such data, the index went from 12% in 1997 (therefore preceding the introduction of the Euro) to approximately 20% in 2007, with the greatest increase being from 2003 on[21]. Salgado (2010) also points out the increase in cross-border banking operations within the EU, particularly in the period from 2004 to 2007. Therefore, analysis of data shows an increase in banking integration within the EU from the end of the 1990s until the crisis of 2007.

This banking integration increased the systemic risk in Europe, contributing to spread and exacerbate the crisis in the EU. In addition, there was a lack of a proper prevention-structure (regulation and supervision) to mitigate and deal with crises[22] (Geus, 2012).

However, banking integration proved to be uneven within the EU, with definite differences between the so-called original members (EU-15)[23] and the new members[24]. According to Schoenmaker (2011),

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[21] In regards to EU banking assets held by "third-parties", levels remained relatively constant throughout the entire period – at around 8%. For an in-depth look, see (2011).
[22] This matter will be further analyzed in upcoming sections.
[23] They are: Germany, Austria, Belgium, Denmark, Spain, Finland, Greece, the Netherlands, Ireland, Italy, Luxembourg, Portugal, the United Kingdom, and Sweden.
[24] They are: Bulgaria, Cyprus, Slovakia, Slovenia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, and the Czech Republic.

new members' banking systems are dominated by EU banks – in 1999, 63% of all assets in the sector were held by EU banks not from the host country. On the other hand, in countries that were part of the original EU (also known as EU-15), that percentage, in 1999, was 19%[25]. That happens because those countries, especially the most important[26] (such as Germany and France) have mature banking systems and experienced a relatively small entry of foreign capital in their systems – despite the fact that both countries feature more capital from EU member nations (19%) than other nations (7%). The author also points out that the wholesale market is a lot more integrated then the retail market, the latter being highly dependent on locally-established relationships and on support from their branch networks.

Data presented by Schoenmaker (2011)[27] shows that the level of cross-border penetration[28] in the European banking system was indeed impacted by the crisis. After showing signs of growth from 1997 (12%) to 2007 (20%), the level of cross-border penetration fell in 2008 (19%), returning to 20% in 2009.

The scenario slightly changes when cross-border penetration of assets from countries outside of the EU is taken into consideration. Such levels were around 8% from 1997 to 2007, dropping in 2008 and 2009 to around 7%.

However, important differences within the EU must be pointed out. New members' banking systems are dominated – 63% in 2009 – by other countries from the EU. As Schoenmaker (2011) notes, when the crisis worsened in 2008, such countries proved to be relatively more vulnerable given how open their banking systems were.

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[25] However, it should be noted that the amount of banking assets held by countries that are not EU members is very low: 4%. On the other hand, that figure for EU-15 Nations jumps up to 24%.

[26] Among the most important countries, the UK is an exception – only 48% of the assets in its banking system were held domestically in 2009. Of the remaining assets, 27% were held by banks from EU countries and 25% by other countries. Such data reinforces London's position as an important international financial centre.

[27] The original data source is the European Central Bank.

[28] In this case, measured by the volume of assets held by other countries' Banks (members of the EU or not), in relation to the countries' volume of assets.

The situation is dramatically different regarding the 15 original EU Nations. Cross-border asset-penetration coming from other original nations is significantly lower: 19% in 2009. Even though the group features some countries with a higher level of capital from other members (such as Luxembourg, Finland, and Belgium), major economies feature much lower cross border penetration rates: 10% in Germany, France, and Spain, and 13% in Italy. The UK shows a different tendency with a 27% rate for the same year (2009). However, it is widely known that London has established itself as an important international financial centre.

Cross-border penetration levels for capital originating outside the Union is even lower for the EU-15 Countries – an average of 7%. Levels for Luxembourg (10%) and the UK (24%) stand out. Regarding the UK, Schoenmaker (2011) points out that the majority of banking activities taking place in London are geared towards large corporations and/or financial institutions (the so-called wholesale market), activities which require higher levels of financial internationalization given the reduced need for a direct relationship with clients and the ensuing lesser need for an extensive branch network.

Schoenmaker (2011) presents a list with the 30 largest European banks[29], sorting them according to their levels of transnationalization. They are divided into: global banks, European Banks, and local banks[30]. Data analysis shows that the number of European banks grew from 7 in 2000 to 9 in 2010, a trend that was also noted in the number of global banks – from 4 to 5.

According to the author, the five biggest banks in the European

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[29] In a spectrum of approximately 8,400 banks in the EU in 2009, with the majority being small banks operating in specific regions and/or countries. The 30 largest, determined by the Tier 1 capital criteria, held half of all banking assets in the EU.

[30] The level of transnationalization of a bank, originally presented in Schoenmaker and Oosterloo (2005, *apud* Schoenmaker, 2011), is measured using the weighted average of three indicators: assets, revenue, and number of employees. Therefore, a global bank is one that does less than 50% of its business in its country of origin, and less than 25% in the remainder of Europe. A European bank's business is done less than 50% in its country of origin, and more than 25% in the remainder of Europe. Finally, a local bank is one that has more than 50% of its business concentrated in its country of origin.

Union in 2009 were: BNP Paribas (France), Santander (Spain), Deutsche Bank (Germany), ING (Netherlands), and Nordea (Sweden). The five most global banks in the EU, according to 2009 data, were: HSBC (UK), Barclays (UK), UniCredit (Italy), BBVA (Spain), and Standard Chartered (UK).

According to the Unctad ranking, the following is where those institutions ranked as the most internationalized banking institutions in the European Union in the period ranging from 2006 to 2011[31]:

TABLE 4
Five most internationalized EU banking institutions - 2006 to 2011

Institution/Country	Rank 2006	Rank 2007	Rank 2008	Rank 2009	Rank 2010	Rank 2011
BNP/Paribas - France	4	2	11	2	2	3
Société Générale - France	8	11	6	5	5	7
Deutsche Bank - Germany	10	14	12	10	8	8
ING - Netherlands	11	13	19	14	15	17
UniCredit - Italy	12	9	9	7	9	9

Source: The top 50 financial TNCs - unctad.org.

When it comes to the largest EU banks, their share remains relatively constant throughout the analyzed period, keeping their positions when compared to banks from other countries. However, there have been some changes regarding the main players in the process of EU's internationalization. Dutch ABN AMRO (seventh place in the Unctad ranking in 2006) was acquired by a joint venture made up of the Europeans RBS, Fortis, and Santander. Belgium's Fortis, eighteenth in the same Unctad ranking, went bankrupt during the crisis and consequently shut down. British RBS, thirty-ninth in the

[31] According to the 2009 Unctad ranking, the five most internationalized institutions in Europe were, in descending order: French BNP Paribas and Société Générale, Italian UniCredit, British HSBC, and French Credit Agricole. Two of them are featured in the ranking created by Schoenmaker (2011): HSBC and UniCredit.

ranking, also had serious issues and was bailed-out by the UK government, which became its majority owner. Since then, its assets were greatly reduced[32], and RBS has not been featured in the Unctad ranking in the years of 2010 and 2011. Spanish Santander, on the other hand, moved up a few spots on the ranking: it went from twenty-second in 2006 to nineteenth in 2011.

5. Transformations in Banking Regulation

5.1 United States of America

The Glass Steagal Act, which had segmented the US banking system, was repealed in 1999 under the argument that universal banks gain economies of scope as they are allowed to operate in a variety of financial activities. However, what was actually ascertained is that large banks present an additional challenge to regulators and policymakers. Excessively large banks also have the lobbying power to try to stop financial-system reforms. The financial crisis brought to light the discussion about the need for new financial-system regulation.

The reform of the US financial system, known as the Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA), signed by President Barack Obama on 21 June of 2010, features more than 400 resolutions to restructure and change the way the financial system works. Among the highlights of the Act, are:

i) Macro-prudential Concern: creation of the Financial Stability Oversight Council (FSOC), responsible for defining the "systemically relevant" financial institutions and with discretionary power to supervise them, be they banks or non-banks.
ii) Volcker Rule: determines that institutions which have access to the Fed's lender-of-last-resort instruments and which have their deposits insured by the Federal Deposit Insurance Corporation (FDIC), cannot engage in proprietary trading, meaning they are

[32] See data presented in Schoenmaker (2011).

not allowed to operate and speculate with their own assets in buying and selling securities in capital markets.

iii) Collins Amendment: makes US Banks subject to the Basel III Agreement, giving regulators the power to adjust capital requirements.

iv) Derivatives Regulation: increases the percentage of derivatives traded in the regulated environment of the stock markets, thus decreasing over-the-counter trades.

v) Rating Agencies: to avoid conflicts of interest, agencies have to be more transparent and become liable for its recommendations.

vi) Risk Retention: bond issuers have to keep at least 5% of the bonds issued in their own balances, in order to avoid moral hazard and to make the securitization process safer.

vii) Executive Compensation: banks have to disclose details about their executives' compensation.

viii) Creation of the Consumer Financial Protection Bureau (CFPB): the main goal of the CFPB is to better inform consumers before they engage in financial contracts.

However, in spite of being approved by Congress in 2010, the bill did not immediately go into effect. In fact, its effective implementation occurs in stages, as it requires the approval of an extensive set of specific laws and the creation of new institutions. The initial indication was that the legislative process would take from 6 to 18 months, starting from June 2009. However, it has been slower than originally planned.

The FSOC is already in operation and since April of 2012 is authorized to determine that non-banking institutions be supervised by the Federal Reserve.

The "Volcker Rule" is one of the most controversial parts of the DFA. On 17 December 2010, the American Bankers Association released a statement[33] aimed at regulating authorities, in which it states that: "it is important that the final rules not impair the availability

[33] http://www.aba.com/Issues/commentletters/Documents/12-3-12%20ABA%20Letter%20to%20Agencies%20on%20Finalizing%20Volcker%20Rule%20Proposal.pdf

of traditional banking services to bank customers, nor impose unnecessary costs on banks, where there is no systemic risk or threat to the U.S. financial system. Our members also will need to have sufficient time and opportunity to modify their affected activities to conform with the requirements of the final rules in a manner that is not disruptive to customers or to the economy".

Therefore, banks used their lobbying power to pressure regulators into delaying the implementation of the Volcker Rule.

As for regulating derivatives, it may raise risks by increasing the systemic importance of clearing houses (IMF, 2012). Regarding executive compensation, according to Cohan (2012), American banks still apply the same rules they were applying before the crisis.

Finally, the Consumer Financial Protection Bureau was created in January 2012, and as of July 2012 the committee had already launched the "Know before you owe" program in order to increase transparency in the mortgage markets.

5.2 European Union

When it comes to new rules for the bank sector, the European Union[34] featured a movement similar to that in the United States. Towards the end of 2008, just after emergency measures were taken to tackle the crisis, the European Commission set up a work group to make a diagnosis of the crisis, and especially to propose new measures aimed at preventing the occurrence of similar events (Deos, 2012).

The report made by the workgroup – the Larosière report – called for regulators and supervisors to work closer together, not only in individual countries, but most importantly, in the context of the European Union, given the high number of domestic regulators and supervisors that worked in the EU, with a low level of coordination between them. Among the report's most important recommenda-

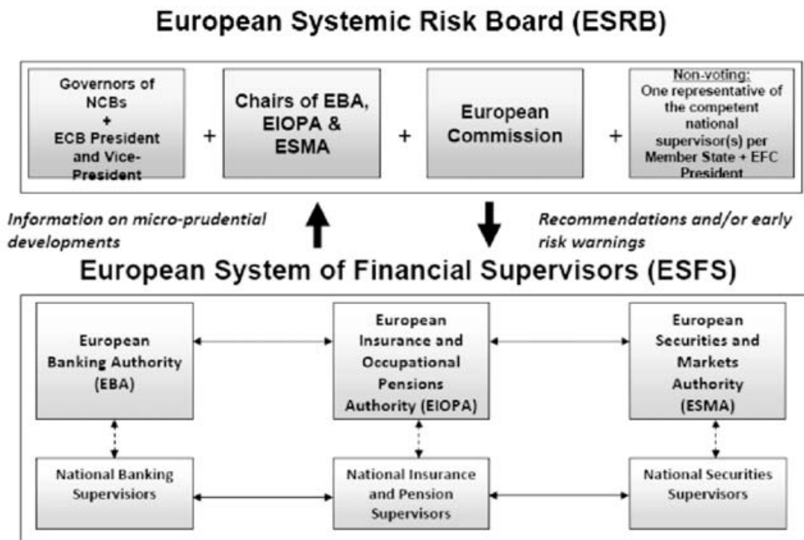
[34] We will not discuss specific regulation and supervision measures taken in the UK, a member of the European Union but not of the Euro Zone.

tions was the creation of a macro-prudential supervision authority for the entire European Union (Deos, 2012).

In March of 2009, the European Commission accepted the recommendations made by the Larosière report and presented its new proposal for the financial system, comprised of four main items: i) improving regulation; ii) enhancing supervision; iii) increasing consumer and investor protection; and iv) developing more effective tools to manage crises (European Commission, 2011).

One of the most important elements of the reforms was the creation of a new architecture for financial supervision in Europe, both in the level of institutions (micro) and in the macro-prudential level. Hence, the European System for Financial Supervision (ESFS) was created with three pillars: the European Supervisory Authorities (ESAs), the National Supervisory Authorities, and the European Systemic Risk Board (ESRB). The new system is outlined below:

PICTURE 1
European System of Financial Supervision Structure



Source: European Commission.

The European Supervisory Authorities (ESAs) should come up with the technical standards (prudential regulation) and promote the cooperation and harmonization of supervision. They are made up of the European Banking Authority (EBA), which focuses on banks; the European Securities and Markets Authority (Esma), responsible bond market; and the European Insurance and Occupational Pensions Authority (Eiopa), which focus on insurance companies and pension funds. They should report their activities to the European Parliament and the European Commission. At the operational level, it was decided at first that the supervision would remain a task for local authorities (Geus, 2012).

Local authorities would be responsible for enacting supervisory activities in their own countries, while the ESAs would be responsible for political coordination and for proposing sectorial rules.

Another element sitting atop of this new setup is the European Systemic Risk Board (ESRB), playing a macro-prudential role. The Board members would be: the president and vice-president of the European Central Bank, the presidents of the National Central Banks, the presidents of the three European supervisory bodies, representatives of the European Commission, and representatives of the national supervisory authorities, limited to one member per nation. The ERSB must monitor any systemic imbalances, such as the formation of asset bubbles, an increased concentration in the financial sector, or even an over-reliance on financial products deemed to carry too much risk (Deos, 2012).

As far as regulation is concerned, the main feature is the introduction of new Basel rules (Basel III). Several items were introduced: i) specific liquidity requirements; ii) redefinition of capital, in order to have "more and better" capital; iii) introduction of a leverage index; iv) capital for counterpart credit risk; v) introduction of anti-cyclical capital; and vi) introduction of additional capital for systemically important institutions.

An important development took place in May 2012, when for the first time the president of the European Counsel introduced the idea of a banking union within the EU Countries. The union's main ele-

ments are: i) a single bank regulation for the entire EU; ii) an European banking supervisor; iii) common rules to prevent bank bankruptcies; and iv) a shared system for deposit insurance (Geus, 2012).

In December of 2012, EU Finance Ministers closed a deal on establishing a new bank supervision model for the entire EU, taking the first effective step in creating an European banking union. The European Central bank (ECB) has the power to supervise European banks[35]. For that to happen, the European Parliament drafted legislation to put in place the new supervisory model – the Single Supervisory Mechanism.

6. Final Comments

The central goal of this article was to present and analyze the main changes that took place after the crisis in the European and the US financial systems with regard to concentration, internationalization, and regulation of financial institutions.

In the United States, our analysis shows that, despite the increase in concentration brought along by the deregulation process of the 1980s, the crisis sped up that process even more – assets held by the largest banks increased significantly during the crisis – and the "too big to fail" banks became even more powerful. It was also noted that US banks remain among the world's most important institutions. On the other hand, the implementation of new rules for the financial sector, known as the Dodd-Frank Act, has been extremely slow. Such movements indicate that the "too big to fail" problem remains and appears to have actually worsened. It is also clear that large institutions remain much interconnected, with some institutions being exposed to risk in financial products issued by others (Huffington Post, 2012).

[35] Those with a volume of assets over 30 billion Euros, representing over 20% of its country's GDP and/or which had already been bailed out by its government, which would mean holding 75% to 85% of the total assets in the European banking system (Véron, 2012).

As far as the European Union is concerned, this paper showed that the crisis brought about an increase in concentration, albeit at lower levels when compared to the United States. The crisis also shortly interrupted a cross-border movement of external capital into the European banking system. After a tendency to grow from 1997 (cross-border penetration of 12%) until 2007 (around 20%), cross-border penetration of assets originating in the EU dropped in 2008 (to 19%), having returned to 20% in 2009. The situation changes when cross-border penetration of assets originating outside of the EU is considered. This level remained at around 8% from 1997 until 2007, having dropped to 7% in 2008 and 2009.

It should be noted that new regulations feature increased levels of capital requirements for systemically relevant institutions. However, in spite of being important, this approach carry its own risk. The critique inspired by Hyman Minsky is very relevant at this point: large crises are endogenously encouraged by increasing financial fragility in the system, and not by unique events. Indeed, an increased level of required capital can contradictorily encourage riskier behaviours. That means that the additional capital demanded by Basel III could lead banks, especially the large and systemically relevant ones, to go back into shadow-banking activities or lower-cost operations. However, since it will take some time for the new rules to go into effect, it is too early to make a decisive analysis of the matter. It is possible that the decrease in leverage and the Basel III requirements could lead banks to reduce their exposure outside the home countries, which would reverse the internationalization process of the financial system at some level (IMF, 2012). On the other hand, new non-banking financial institutions could become more important in the financial system, offering products to compete with banks.

The 2012 Global Financial Stability Report featured some crucial questions, which could be a starting point to discuss the evolution of the banking system: how will banks react to the regulatory changes and to the low-interest rate environment? Will banks restructure themselves and go back to providing more traditional services or

will they search for new products, with greater risk, to increase their profitability?

Given the complexity and the dynamic nature of financial systems, answers to the above questions should be constantly challenged, and should never be considered definitive. However, both recent history and the most adequate literature on the subject, such as the "Minskyan" analysis, suggest there is a high potential for fragility and instability, since there was not a significant restructuring of the financial systems, which warrants permanent vigilance.

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