Global Financial Crisis: Economic and Social Impact

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Abstract

It has been observed in recent decades that there is a higher frequency of crises and that they spread faster from financial markets to the real economy. These observations have brought a growing interest in the academic environment, being at the same time a topical issue for the fiscal-budgetary and monetary policy makers. Thus, in this paper we will address the issue of financial contagion for countries in Central and Eastern Europe, including Romania, while also pursuing the perspective of European and international financial market surveillance, with emphasis on changes in the European banking system, as due to the need to reform it. I will also highlight other important elements in the analysis of the relationship between financial integration and the spread of crises.

Key words: crisis, evolution, financial markets, banking system
J.E.L. classification: G00, G01, G30 și G31

1. Introduction

Integrated financial systems play an important role in allocating resources, being a stimulus for entrepreneurship and innovation. At the same time, they help increase financial market discipline and help maintain financial stability. On the other hand, there are opinions that the free flow of capital leads to an increase in social disparities and may expose the internal financial system to a higher risk of instability.

The economic and financial crisis of 2007-2008 has shown that an increase in the interconnection between financial markets, especially in the case of Europe, leads to an increase in the degree of contagion. At the same time, this risk is exacerbated by weaker regulation of financial markets and the use of derivatives, aspects that have been sought to be achieved since this crisis by various regulations targeting financial markets such as Mifid II or Basel III.

In this paper, we will aim to analyze, through a Pearson correlation coefficient, how the correlation between different stock markets evolved during and after the crisis. We expect that during the crisis there will be an increase in the level of contagion and correlation between markets, so that later, these correlations will decrease. At the same time, it is possible that these correlations have increased with the integration of the analyzed financial markets.

In response to the crisis of 2007-2008, there was a strong debate in academia and decision-makers for better regulation and supervision of financial markets. Financial market integration has also increased this risk, but this integration deserves more attention, through the analysis of risks and benefits. The literature has shown that greater openness improves living standards and economic activity, but makes markets more vulnerable to shocks. This statement is valid both in markets such as Europe and in financial markets such as the United States.

2. Theoretical background

Financial integration helps, in most cases, financial systems to allocate resources more efficiently to the economy and to the financial sectors where they are needed (González-Páramo (2010)). An economy in which a number of optimizations have been made is much less prone to recession and crisis than an economy that relies only on certain sectors.

On the other hand, the economic and financial crisis of 2007-2008 also highlighted the negative effects of financial integration, with the risk that as the level of integration in the financial markets increases, so does the risk of contagion (Ionescu and Popa (2010)). Thus, the imbalances in the economy can be highlighted much more easily and easily, and the crisis of 2007-2008 in the United States highlighted this, namely the imbalances in the subprime lending sector and in the US real estate market.

A second example of assessing the potential for destabilization that may arise as integration levels increase is that of banking system integration. In most cases it is associated with high efficiency, there are many cases in which the banking system participates in achieving imbalances, and some of them occur through over-indebtedness. Thus, easy access to money and relaxation of the rules lead to an increase in indebtedness, which can have a significant impact on the imbalance of the financial system.

The history of economic literature distinguishes between different definitions of financial contagion. However, the most widely used definition is that of Eichengreen et al. (1996) who consider that the effect of contagion is a significant increase in the probability of a crisis in one economy, conditioned by the occurrence of one crisis in another. Forbes and Rigobon (2001) developed their own definition that states that the term contagion is a significant increase in links between markets, after a shock in a country or in a number of countries. Significantly increasing the links between financial markets involve generating or intensifying new transmission channels during the crisis period, regardless of the fundamental principles and response to a crisis in a given country. In general, contagion refers to the spread of financial market disruptions at the regional, or even global, level.

There are several theoretical and practical studies that have focused on the analysis of the contagion phenomenon. Bekaert et. al (2014) analyzes the transmission of the financial crisis from 2007 to 2009 to capital portfolios, using a factor model to anticipate the return to the crisis, defining unexplained increases in factor loads and residual correlations, as an indication of contagion. Research on contagion during the European Sovereign Debt crisis, using correlation analyzes, indicates mixed results. Some studies, including the study by Claeys and Vasicek (2014), show a significant increase in the correlation coefficients between different financial market returns during the Eurozone Sovereign Debt crisis.

In other words, financial integration at the level of the European Union has been an important topic and has been constantly debated in recent years in the literature. At the same time, such a topic has been the starting point for much research by ECB economists, balancing both the costs and the benefits of the highest possible financial integration. Such work could have as its starting point the research of Baele et al. (2004) introducing in addition to the concepts of quantity and qualitative measures to capture the level of integration and convergence such as: price-base measures, quantity-based measures or news-based measures. An extremely important paper for the present research is also the one published by Babecky et. al (2013) which addresses the issue of financial integration at the level of Central and Eastern European countries. This idea is approached considering the two types of convergences in the literature: beta-convergent and sigma-convergent, and the analysis is very useful, being detailed and extended to the economic sectors represented on the stock exchanges in the region. Babecky et al. al (2013) also made a more recent analysis on the level of integration based on sigma convergence and beta convergence, but this time they extended it, along with the capital market and to other financial markets: the market forex, money market and bond market. In view of all these elements, they were able to raise an important issue and were able to draw a number of conclusions relevant to the level of financial integration in the countries of Central and Eastern Europe.

3. Research methodology

The methodology underlying the results and the analysis performed is the one related to the analysis of the correlation that manifested itself in the crisis period from 2008-2010, but also in the post-crisis period. We considered the analysis of this type of relationship for Romania, Hungary, Poland and the Czech Republic, compared to the Eurozone.

We performed the analysis for the stock market, using the main stock market indices in each country:

Poland - WIG 20 Index
Czech Republic - PX Index
Romania - BET Index
Hungary - BUX Index
Euro Zone - Euro Stoxx 50

The period for which the analysis was performed is 01/01/2000 - 28/02/2019, being used daily observations for these indices.

The formula for the Pearson coefficient is as follows:

$$\rho_{i,j} = \frac{Cov(r_i, r_j)}{\sigma_i \sigma_{\sigma j}}$$

This coefficient was calculated for a 6-month horizon and then a floating window was used to dynamically analyze the evolution of the correlation coefficient.

It will be seen whether these correlations were higher during the economic crisis of 2008-2009, or whether these correlations have changed as financial integration has been achieved for the countries analyzed.

We also took into account a qualitative part of the analysis, in which we will specify which were the main directions that were taken into account from a legislative point of view and from the point of view of the issues promoted by the ECB.

Moreover, we will analyze qualitatively what were the effects on the banking system and what were the changes that occurred in the structure of the banking market. We will take into account the trends in macro-prudential oversight, but also the elements that have been taken into account for the new legislation (Mifid II and Basel III) that were introduced in the years following the economic and financial crisis. from 2008-2009.

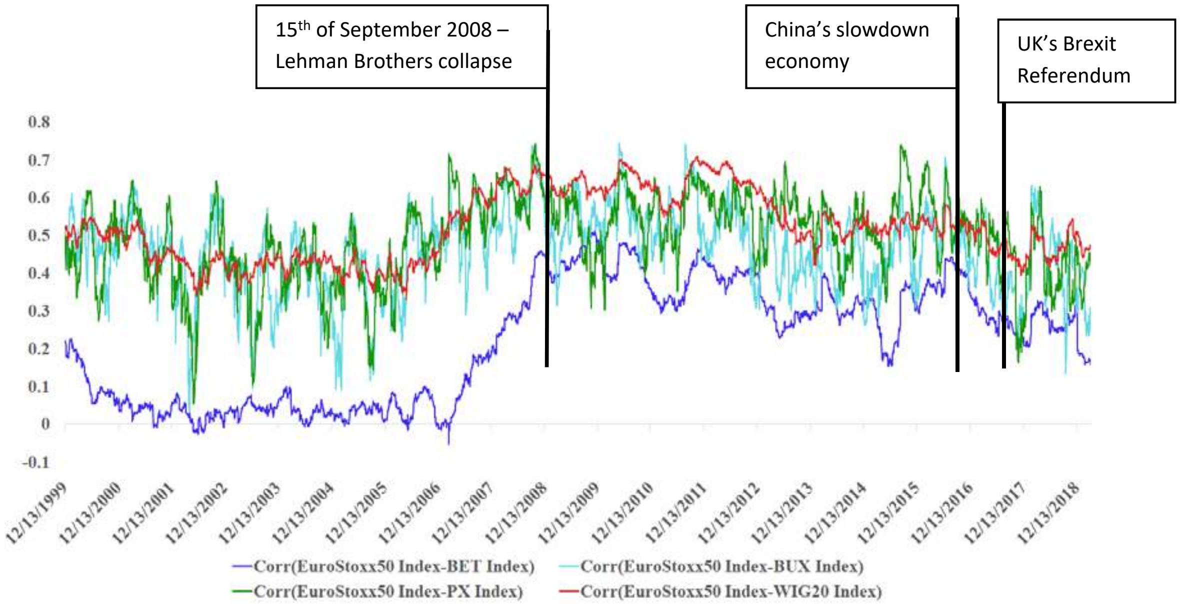
4. Findings

The effects of the economic and financial crisis have been significant, influencing economic growth, financial stability and banking performance. At the level of the financial markets, a number of challenges have emerged, such as: technological changes, increasing regulation and higher competition in the non-banking area. At the same time, the authorities responded to this crisis by strengthening supervision and promoting projects to reform the financial-banking system. The objectives that were taken into account by these measures were: to increase the resilience of the banking system by increasing capital and higher protection of customers in the financial markets.

In view of these ideas, I would first like to point out the level of contagion in the financial markets for the countries that have recently joined the European Union, compared to the Eurozone. Thus, the aim was to show that during the crisis the contagion, measured by correlation, increases significantly. At the same time, expectations are for an increase in the level of correlation between these markets and the Eurozone as integration has taken place more and more.

The results of the calculation for the Pearson correlation coefficient, in dynamics, are presented below, in the form of a graph.

Figure no. 1. Evolution of the Pearson correlation coefficient



Sursa: authors' own calculations

First of all, we can refer to the correlation between the capital market in Romania and the one in the Eurozone, where two interesting elements are observed: i) the level of correlation / integration of the two considered stock markets (Romania and the Eurozone) increases during of economic stress (the global economic crisis of 2008-2009, the fall of Lehman Brothers), ii) also, with Romania's accession to the European Union, the correlation between these markets increased, even in periods without economic turmoil. Thus, we can say that there are both positive and negative effects of a stronger integration, and for the case of Romania this was very easy to highlight. With the accession to the U.E. The capital market in Romania has gradually become more and more correlated with what is happening in the Eurozone, and the risk of a contagion in this direction has increased.

In the following, we will focus on the analysis of the correlation between the Eurozone capital market index (Euro Stoxx 50) and the indices from the other three countries: Hungary, Poland and the Czech Republic. These will be analyzed together, because their evolution was similar, Romania being the one that made the strongest discordant note.

The first thing that can be seen in the case of Hungary, Poland and the Czech Republic is that the capital markets in these areas have been more closely linked to the Eurozone since the beginning of the analysis period, as they were already integrated into the European Union in 2003- 2004, when for the case of Romania low correlation levels were observed. Thus, these markets reacted faster and stronger in the same direction as the Eurozone capital market, and it can be said that a contagion would have had a stronger impact between these countries than in the case of Romania before accession.

In view of these observations, it can be argued that as market integration increases, so does the risk of contagion in a tense market context, all of which can lead to a diminished benefit of diversification in the context of a portfolio. Thus, measuring the level of correlation can also have an important impact on a portfolio manager.

Also, important moments in which the contagion manifested for the capital market are represented by: August 2015 (strong decline in global capital markets due to fears about the slowdown in the Chinese economy) or June 2016 (unexpected result of the Brexit referendum). All these events have generated tension in the financial markets and led to sharp price declines, and panic has spread rapidly from one market to another, highlighting the contagion effect that was captured on the previous chart by increasing the level of correlation between capital markets. analyzed.

These stock market dynamics have been reflected in increasing instability in certain periods and there is an increase in contagion in times of crisis. Thus, these tensions and adverse effects were reflected in the financial system and led to the implementation of decisions and regulations that seek to make the system healthier and more protective of market participants.

The same events occurred at the level of the banking system, all leading to high non-performing loans and possible bankruptcies, especially for the banking system in Southern Europe (Italy, Spain, Portugal) and especially for Greece. Thus, the crisis and the contagion effect were also strong in the banking area, and the subsequent measures and changes were among the strongest.

In order to adapt to the new landscape, most banks have adopted new strategies and business models, re-evaluating the structure of balance sheets, reconsidering costs and scope of activity, as well as the scale of activities. Many of the changes were major, but even so, some of the banks remained in the area of low profits, which can take them out of the industry in the medium and long term.

The evolution of the banking sector during the crisis was marked by the following aspects:

- Changes in the structure and capacity of the banking market. During the period of economic and financial crisis, the cessation of assets in the banking sector for most economies ended, and the indicators showed a decrease in the importance of the banking system compared to the real economy.
- Changes in the business model of banks. Many of the banks participating in the European system have shifted to traditional activities such as lending, giving up their involvement in more complex processes that require derivatives and involve active trading on the financial market.
- Changes in banking performance. Bank performance measured by ROE has declined in most banking systems, and the trend has continued as interest rates have fallen.

The financial crisis of 2008-2009 led to the implementation of some political decisions, and these took into account three important directions:

 The intermediation services offered to the real economy were resumed, but a series of changes appeared:

♦ Credit dynamics have decreased significantly, with banks making changes in risk patterns to reduce exposures.

♦ Many of the banks have left the capital markets area or restricted their trading activity.

 Banks and investors have had to adapt to new conditions and new legal requirements, all of which have resulted in lower profitability of the banking sector, but also in a higher price of products and services.

 Consolidation of earnings and use of data. Thus, it is a matter of better supervision of the financial sector and increasing the management of systemic risks. Data availability has increased in recent years, but an increase in the quality of data use is also needed.

The financial crisis of 2007-2008 was a benchmark for the banking sector, both at European and global level. Banks re-evaluated their business models, helped their balance sheets and changed their organizational structures. At the same time, they have improved their risk models and the practices they have applied to business administration.

5. Conclusions

In the decade leading up to the financial crisis, the banking sector has become increasingly global as it has grown faster than economic activity and world trade. The post-crisis adjustments of many advanced economy banks have led to a substantial decrease in the number of jurisdictions in which operations are located. Banks tended to withdraw when local operations were declining, thus helping to reduce the share of foreign banks active in domestic banking systems. As European banks withdrew, foreign debt from other banking systems gradually increased. As the crisis highlighted the structural weaknesses of banking systems, researchers' analysis led to a major shift in the global banking sector. The adjustments made were more pronounced in Europe and the United States, which were hardest hit by the crisis.

The size of banking assets and the number of lending units have gradually declined in Europe and the United States, although the adjustment of the banking sector has been less pronounced. Bank managers aimed to focus on raising and developing capital and liquidity in order to overcome the crisis. Emphasis has been placed on increasing mortgage lending in most banking systems, and major European and American banks have focused on international banking.

The quantitative analysis we performed to observe the contagion effect that manifested itself on the financial markets, but also the evolution over time depending on the level of integration. Thus, it was observed that during the turbulent periods the correlation between the markets of Central and Eastern Europe (Romania, Poland, Hungary and the Czech Republic) and the Eurozone market increased, showing the presence of the contagion effect. Also, as the level of integration increased, the level of correlation between the financial markets in these countries increased, being best highlighted for the case of Romania.

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