Volatility of Cross-Border Financial Flows and Policy Responses

DORINA CLICHICI
Ph.D., Institute for World Economy, Romanian Academy
ROMANIA
dorina.clichici2@gmail.com

VICTORIA IORDACHI
Ph.D., National Institute for Economic Research
Academy of Sciences of Moldova
REPUBLIC OF MOLDOVA
timush_v@yahoo.co.uk

***Abstract**: The last global financial crisis has shown that the volatility of financial flows has adverse impacts on growth prospects and has an important role from a financial stability perspective. The article has the purpose to analyze why Europe was the most affected region by a reversal and a heightened volatility of cross-border flows both during the global financial crisis and in the aftermath of it, and to identify the main policy responses to this issue at the international and European level. For achieving these purposes the authors review the benefits and the costs of financial integration and present the main characteristics of cross-border capital flows with destabilizing effects on financial markets. The analysis finds that significant progress related to managing the volatility of financial flows through regulatory and supervisory reform of the financial market have been made since 2008, both at the international and European level. However, further steps should be taken for enhancing cross-border cooperation at the global level in order to effectively use the limited implementation resources. For preserving the financial stability in Europe further actions should be implemented to address the existing weaknesses related to adverse incentives or moral hazard risks by a deeper financial and fiscal integration.*

***Keywords**: cross-border financial flows, financial integration, volatility, financial crisis, financial stability, policy responses, the U.S., the euro area*

1. Introduction

The global financial crisis of 2008 was more disruptive than other crises in the past and propagated more rapidly. It has revealed that international financial integration in addition to substantial benefits for financial stability also presents various threats and potential risks, and even advanced economies are vulnerable to cross-border underregulated financial flows. A reversal and an increased volatility of financial flows may have adverse impacts on growth prospects and matters from a financial stability perspective (Forster, 2011). This is why enhancing the resilience of the global financial system, while retaining the benefits of integrated and competitive financial markets, is a very actual issue.

One of the main *benefits of cross-border banking* arises from its effects on risk diversification. The assets of cross-border banks are less exposed to a country-specific shock, which reduces their likelihood of failure as well as the likelihood of being constrained in their lending. The presence of foreign banks in a country can be a stabilizing force for the host country. In the case when local banks are affected by a local shock, foreign banks may substitute them in the lending market. Foreign banks may also be more efficient. When they enter developing markets they tend to have more advanced risk-management systems. The spread of best practice may benefit domestic banks as well, further enhancing stability (Allen et al., 2011). Moreover, cross-border diversification of large banks improves the soundness of the banking system by making individual bank failures less possible. Another research suggests that banking integration leads to more synchronised business cycles at the country level, the evidence of which is available for both the U.S. and Europe (Kalemli-Ozcan et al., 2009). Cross-border banking improves overall economic performance by ensuring that productive capital is channeled towards the most efficient firms, thereby reducing the risk of crises stemming from the mispricing of investment risk (Giannetti&Ongena, 2009). Some authors have shown that financial integration assists domestic financial systems in allocating resources across industrial sectors in a way which improves the overall diversification of the economy and lowers its volatility. As a result, an optimally diversified economy is less prone to recessions, and so the real sector responds less to the same shock than an economy which relies on just a few sectors (Manganelli&Popov, 2010).

However, there are several risks generated by cross-border financial flows given their destabilizing potential. Firstly, foreign capital is likely to be more mobile than domestic capital, and in a crisis it could have a distorting effect on financial conditions. Another important destabilising force is the contagion effect: in the same way as cross-border banking insulates the domestic economy from domestic shocks, it also exposes it to foreign shocks. Cross-border banks are more likely to be systemically relevant banks and their failure may impose significantly higher costs on economies than the failure of a domestic bank (Allen et al., 2011). In the pre-crisis period banking integration has lowered the cost of finance and has induced firms to take on excessive leverage, exacerbating the effect of financial crisis on the corporate sector. Both financial integration and cross-border banking accelerated the transmission of the crisis from its origins in U.S. housing markets to wholesale financial markets. According to some authors cross-border banking integration has been associated with the transmission of financial distress from banks' balance sheets to the corporate sector of countries which were not the origins of the shock (Popov&Udell, 2010). Another argument against financial integration is that free flow of capital widens the wealth gap between rich and poor countries and exposes domestic financial systems to the risk of instability (Fecht et al., 2009).

Studies on complex networks of financial institutions argue that a dense interconnection through bilateral exposures, could offer risk-sharing opportunities only in case of small shocks. If exceeded a certain level of interconnection the network contributes to the propagation of shocks (Acemoglu et al., 2015; Elliott et al., 2014). The deep financial link between the U.S. and European banks in the pre-crisis period has spread the crisis through several channels, most of which are closely related to cross-border financial exposures and banking linkages, which have facilitated the transmission of shocks. In the first round, the contagion has materialized through cross-border lending and not through domestic credit granted by foreign subsidiaries, which could explain why new EU member states and other emerging countries have felt the impact of the crisis at a later stage (Brunnermeier, 2009). Subsequently there were affected even banks with no cross-border exposures or linkages, as the liquidity crisis in international markets affected the local markets. In conclusion, there were three channels of contagion during the global financial crisis, firstly, through direct cross-border lending, secondly, through domestic credit granted by subsidiaries of multinational banks and the third channel of crisis propagation was a limited access of local banks to international financing.

Taking into consideration all this pros and cons, to benefit of greater financial integration, while limiting adverse effects, is quite complicated given that banks play a central role in intermediating these flows. Banks operate in an environment where political and regulatory forces are not coordinated and are unpredictable. According to González-Páramo (2010) it is not international financial integration per se that is to blame for financial instability and its impact on the real economy, but lack of transparency, wrong incentives, sub-optimal regulation, and deficient banking business models. Since 2008, important steps have been taken in the process of strengthening the financial stability at the international and European level, by eliminating major deficiencies in the regulatory and supervisory framework.

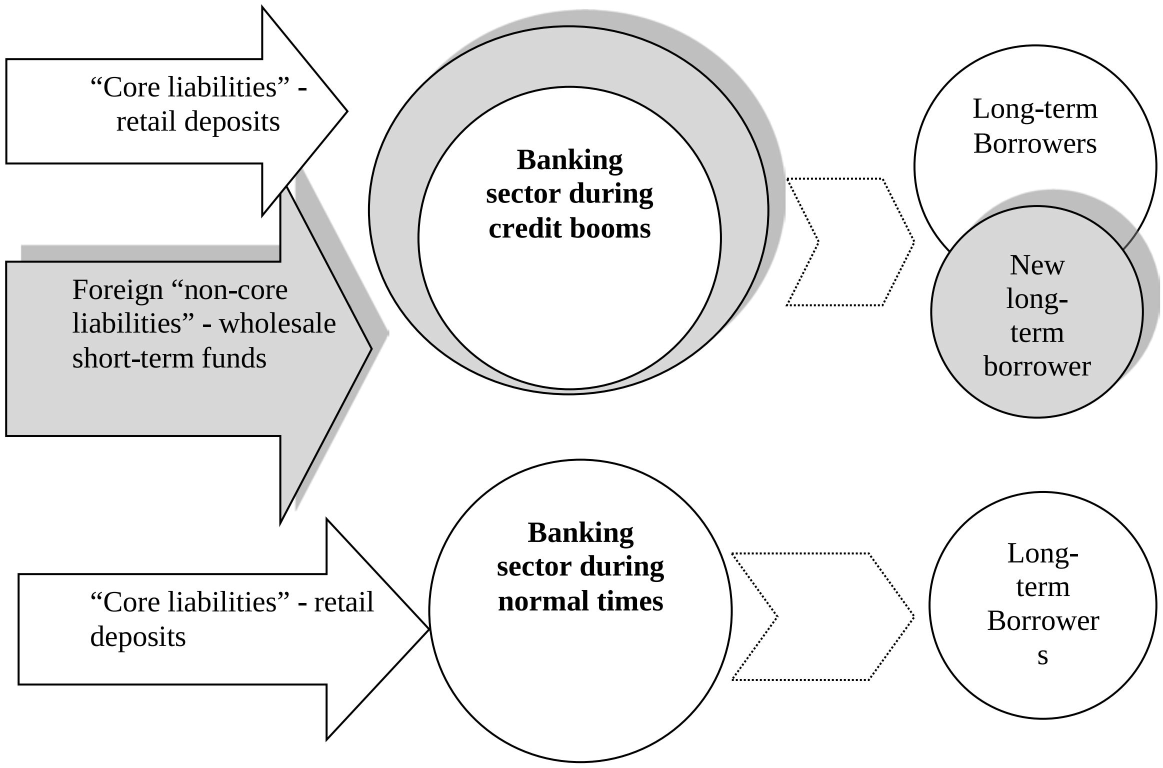
2. Main destabilizing characteristics of cross-border financial flows

The evolution of global capital flow shows that different types of capital have different reaction in a crisis, debt financing having a more destabilizing impact on financial markets. The most procyclical financial flows are credit flows, and, by contrast, foreign direct investments were less volatile since 2008 (IMF, 2010). Milesi-Ferretti and Tile (2011) have empirically confirmed that the sudden stop in capital flows during the crisis was primarily concentrated in bank-related flows.

Thus, the first characteristic of cross-border financial flows that has a destabilizing effect on financial markets is the *procyclicality of bank lending.* It is given by the *excess elasticity* of the financial sector, i.e. the supply of credit to the real economy is much more elastic than would be justified by macroeconomic fundamentals (Borio, 2012). That means that in good times, firms are able to obtain easier access to external financing, credit flows rise, which acts as an economic stimulus, known as the "financial accelerator". And vice versa, when economic conditions worsen, even firms with high creditworthiness have difficulties to make a credit. The underestimation of risk in booms contributes to excessive risk-taking and to amplification of risks when financial cycle reverses. This is why an upward trend of loans is an important predictor of financial crises.

The second characteristic with a destabilizing effect on financial conditions that amplifies the procyclicality of the financial system is the unstable funding pattern of cross-border flows. In a credit boom, when traditional funding sources of banks ("core liabilities" as retail deposits) overcome the credit demand, banks tend to use alternatives as wholesale short-term funds ("non-core liabilities") to cover the rising credit demand (Figure 1).

Figure 1: Banking funding during normal times and credit booms



Source: Author's adaptation based on the studied literature

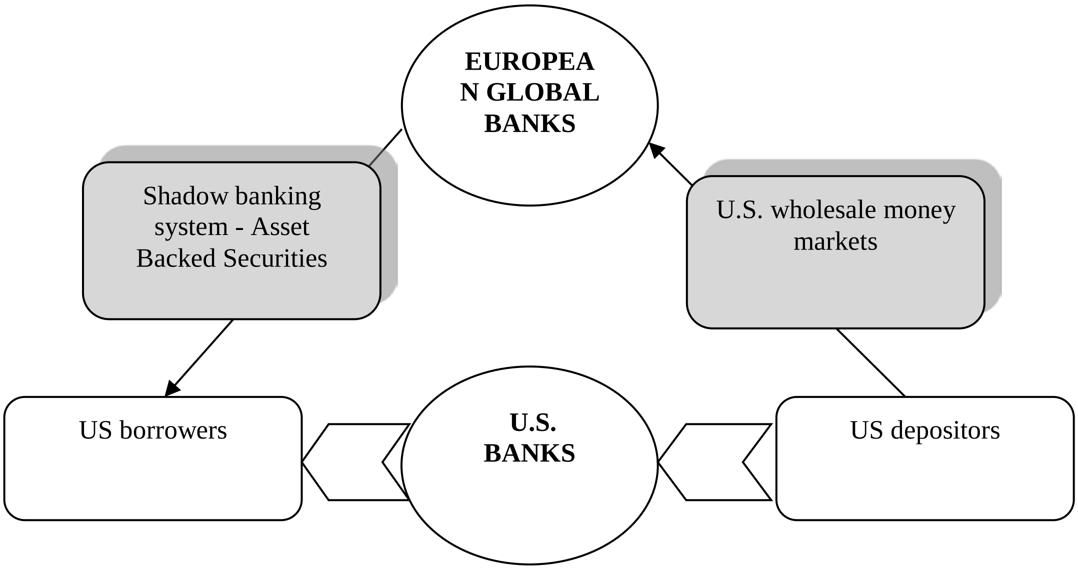
This type of funding is unstable due to the fact that funding of long-term assets with short-term funding in the interbank market by financial intermediaries, has negative systemic consequences when the cycle turns. As well, lending decisions of foreign creditor banks in international interbank markets are highly procyclical. Thus, the amount of non-core bank liabilities, especially to the foreign sector, is the most robust indicator of the vulnerability of a banking sector to the crisis (Hahm, Shin and Shin, 2011).

3. Evidence on the deep financial link between the euro area and the U.S.

Major players in the global financial flows both before the crisis and in the aftermath were European banks. Before the crisis their main strategy consisted in raising funds in dollars and investing them in U.S. assets generated by shadow banking institutions[1]. Most of the funding sources of European banks came from the U.S. wholesale money markets. The background for such a financial strategy has been created by the investment decisions of "saving glut" economies, as China and other Asian emerging economies (Bernanke et al., 2011). By investing in government bonds, these countries have lowered U.S. Treasury yields and have spurred European banks to find higher-yielding investments. One attractive option were Asset Backed Securities and Asset Backed Commercial Papers issued by the U.S. shadow bank institutions (Figure 2).

[1] "Shadow banking" is a blanket term to describe financial activities that take place among nonbank financial institutions outside the scope of regulators. These include investment banks, mortgage lenders, money market funds, insurance companies, hedge funds, private equity funds and payday lenders, all of which are a significant and growing source of credit in the economy. The shadow banking system has escaped regulation primarily because it does not accept traditional bank deposits. As a result, many of the institutions and instruments have been able to employ higher market, credit and liquidity risks, and do not have capital requirements commensurate with those risks. (Source: www.investopedia.com)

Figure 2: The round-trip flows of capital from the U.S. via the European banks



Source: Brunnermeier et al., 2012

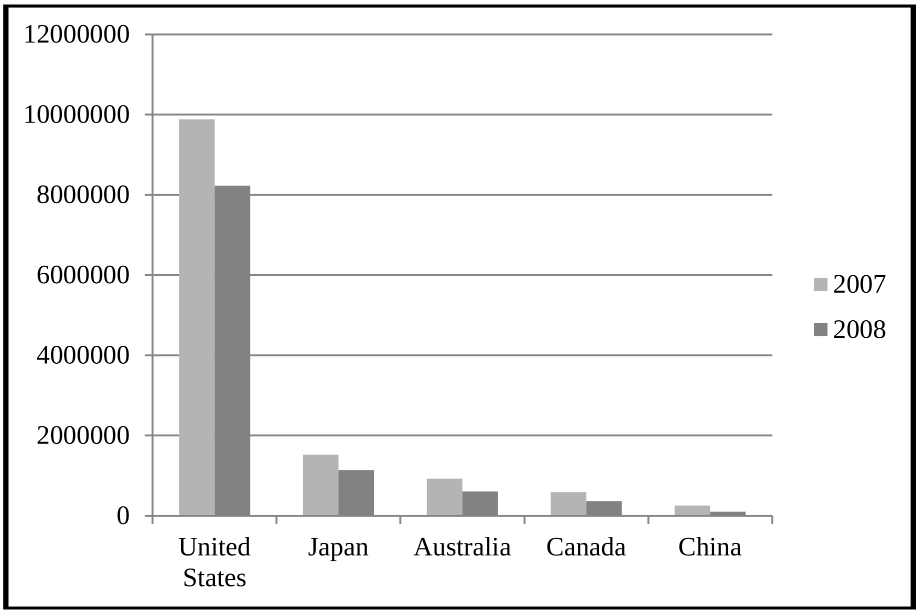
European global banks have an intermediating role between the U.S. savers and borrowers, influencing in this way the credit conditions and sustaining shadow banking in the U.S. They lent to U.S borrowers by investing into asset backed securities. This activity generated a deep financial link between European and the U.S. financial systems and spurred the contagion effect from one system to another during the crisis.

Global European banks that have recorded significant losses related to subprime assets, have transmitted the liquidity crisis by limiting external lending more than other banks. Ongena et al. (2015) and Puri et al. (2011) show that European banks with large exposures to subprime assets of U.S. banks were more vulnerable to liquidity shock and have contracted their lending in the period immediately following the subprime crisis.

The launching of the euro and the features of the regulatory environment have created favorable conditions for growing banking capacity of the euro area by increasing cross-border banking. Moreover, the European banking sector has implemented Basel II framework more rapidly than U.S. banks. By contrast, the U.S. has maintained a cap on leverage for regulated banking sector, limiting banks to expand their balance sheets (Gilbert, 2006). In addition, European banks have expanded their exposures on the U.S. being guided by ratings provided by U.S. rating agencies on mortgage-backed securities. However, the U.S. Financial Crisis Inquiry Commission uncovered that these ratings were overvalued by the U.S. rating agencies, which induced a false safety investment trust to European banks (Financial Crisis Inquiry Commission, 2011).

The Figure 3 shows a huge gap between euro area banking exposure on the U.S. and on other counterparties (Japan, Australia, Canada and China), reflecting its vulnerability to financial risks arising from the U.S. This exposure was the weak point of the banking system of the euro area, reflecting a *low level of investment diversification*, with a strong orientation towards the U.S. in a blind and risky chase after big profits.

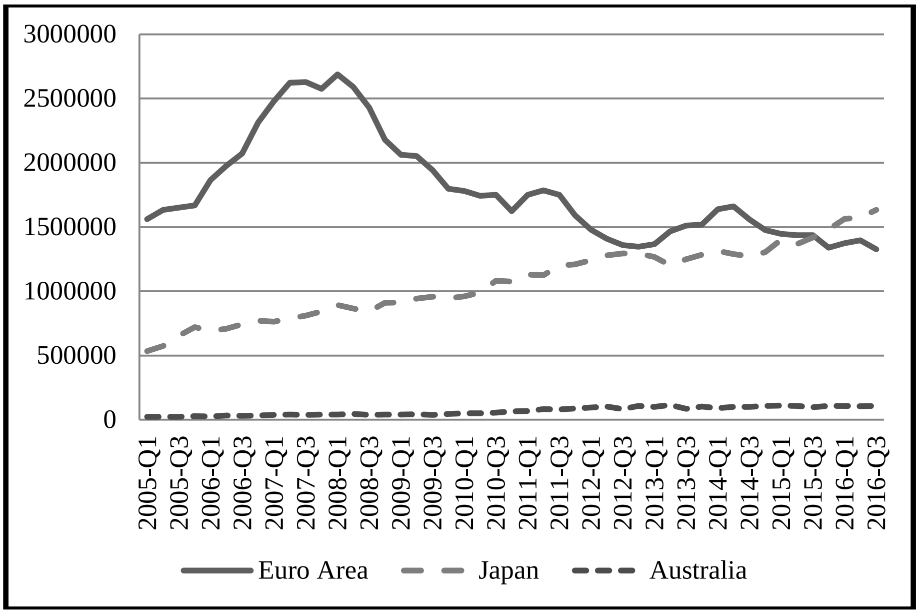
Figure 3: Cross-border claims of euro area banks on counterparties



Source: author's representation based on Bank for International Settlements data (2017)

As a result, the contraction of European banks' balance sheets was one of the most severe during the crisis, enhancing further economic and financial imbalances. By contrast, banks from Japan and Australia were less exposed to U.S. assets, suffering lower balance sheets' contraction in the aftermath of the crisis (Figure 4).

Figure 4: Cross-border claims of the euro area, Japan and Australia on U.S. borrowers



Source: Author's representation based on Bank for International Settlements data (2017)

Since 2008, the euro area has faced significant disruptions of cross-border capital flows, generating a sudden stop of inflows and a sudden start of outflows (Lane, 2013). These disruptions have lead to a severe financial account reversal, which has been compensated by liquidity operations provided by the European Central Bank. By cutting back their lending to the real economy, European banks have affected real economic growth and tax revenues of their countries. As a consequence fiscal debt level of European countries became less sustainable, increasing their sovereign debt risk. Under these conditions, both foreign and domestic investors shrunk their investments to sovereigns and banks. The recapitalization of banks through public funds (so called bail out) enhanced sovereign risk even more. The transmission of financial distress to the real economy evolved at record speed, affecting the confidence in financial system and hitting business investment and household demand. As a result, European countries have faced the deepest recession since the 1930s, with the sharpest contraction of the GDP in the history (European Commission, 2009). The response of European authorities to the downturn has been swift and decisive.

4. Main steps towards reforming the regulatory and supervisory framework

The global financial crisis has revealed that increasing cross-border nature of banking was not accompanied by a regulatory framework at the global level. In order to cover this gap, in 2008, was launched a multilateral process governing reform of financial regulation led by the G20, aiming to increase the resilience of the global financial system while preserving its open and integrated structure. For achieving this purpose was established the Financial Stability Board (FSB), entrusted with the task of overseeing regulatory steps and monitoring the implementation of the reform agenda. Moreover, the establishment of colleges of supervisors for all major cross-border financial institutions was an additional tool for enhancing cooperation among international authorities. The implementation progress on the financial reform agenda has been steady but uneven, further cross-border cooperation being needed to overcome obstacles to effective implementation of reforms, particularly for over-the-counter derivatives and resolution regimes (Financial Stability Board, 2015). All of these reforms require national authorities to have legal powers and efficient processes for sharing information, to have developed firm-specific cooperation agreements with host authorities on crisis management groups for global systemically important banks.

An important response was provided by Basel Committee on Banking Supervision, under the aegis of the G20, regarding the banking system reform. It has developed a package of measures on increasing the resilience, safety and soundness of the banking system consistent with long-term economic growth. The new Basel III framework has set significantly higher requirements for loss absorption and places greater emphasis on higher-quality capital (increasing the quality and level of capital), while better capturing the full scope of risks that banks face (enhancing risk capture). Key new aspects of this framework include a leverage ratio requirement (constraining leverage), capital buffers to mitigate various sources of systemic risk (adding a macro-prudential dimension), and a set of standards limiting liquidity and maturity transformation (mitigating liquidity risk) (Basel Committee on Banking Supervision, 2015).

However, the global coordination and the process of governing the international financial systems were impeded by several *obstacles*:

- Some domestic banking interests overweight the stricter capital requirements of Basel III, making the process of its negotiation and implementation a long-running one.
- Different pace of international banking rules implementation across countries creates tensions and distortions.
- A lack of a global coordination of the monetary policy hinders the general goal of a global financial regulation.

Considering these obstacles in achieving a single global regulatory framework and coordinating the monetary policy across countries, governments should design more resilient frameworks to mitigate the risks related to cross-border financial flows volatility at the national level. The best policies that may sustain the goal of financial stability are macroeconomic and structural policies, along with monetary and macro-prudential policies.

By providing targeted regulations on banks engaged in cross-border activities, governments could manage cross-border movements. In addition to micro-prudential policies focused on loss absorbtion of bank capital, macro-prudential policy framework provides early warning indicators on the procyclicality of the financial system and signals potential vulnerability to financial stability. For capturing these vulnerabilities, macro-prudential policies should have a double perspective; by taking into account both the asset side and the liability side of a bank's balance sheet. Such an approach acts against excessively credit growth in economic boom and reduce the vulnerability of unstable funding to reversals in international liquidity conditions. Two important tools *for the asset side* purpose management are: loan-to-value ratio and debt-service-to-income caps[2]. These tools limit bank lending and prevent the use of non-core liabilities to fund credit activity, and lean against the decline in lending standards that is common for rapid credit growth. *For the liability side* it may be

[2] Loan-to-value ratio regulation restricts the amount of the loan so as not to exceed some percentage of the value of the collateral. Debt-service-to-income caps operate by limiting the debt service costs of the borrower so as not to exceed some fixed percentage of verified income.

applied levies on the non-core liabilities (wholesale funding). The crisis has shown that banks that turned to unstable funding patterns as wholesale funding bear greater risks to financial stability. This is an important reason for paying attention to the organizational and financial structure of global banks, and to cap such unstable funding patterns. That would help moderate capital flows that could exacerbate procyclical behavior and generate risks. In this regard, in addition to macro-prudential policies, a financial stability-oriented monetary policy is also recommended, which implies that monetary policy acts against the early build-up of financial imbalances.

For the euro area, the *main deficiencies* regarding the regulatory framework which have exacerbated the financial instability during the global financial crisis were (Allen, 2011):

- Limited resolution options that have led to inefficient resolution of large European banks.
- The micro-prudential approach of financial regulation that has been unable to maintain financial stability. No specific considerations were given to systemic risk, systemically important institutions or cross-border banks.
- The rules to maintain fiscal discipline within the euro area that have been ineffective because of the lack of proper enforcement mechanisms.

Due to cross-border character of distressed banks, European authorities have faced major difficulties regarding the provision of fiscal support during the crisis. While monetary policy was unified within the euro area at the level of the ECB, no similar institutional arrangement existed on the regulatory level. One major response for restoring the financial stability was the adoption of the ECOFIN roadmap in 2009 on financial supervision, stability and regulation and the proposals for a new supervisory framework in the European Union based on the recommendations of the Larosière Group. In addition, a broad consensus has arisen in favor of a macro-prudential orientation of supervision.

Major steps were taken towards reducing the fragmentation of the regulatory framework, supervisory structures and crisis mechanisms, both at the European Union and at the euro area level. At the European Union level, it was created the European System of Financial Supervision (ESFS) - a system of micro- and macro-prudential authorities aimed to ensure consistent and coherent financial supervision [3]. However, the coordination of financial supervision via ESFS was not sufficient to prevent fragmentation of the European financial market. Even further steps taken by European authorities to establish a single rulebook for all financial actors in the EU countries were not sufficient to uniform the European financial system. The euro area debt crisis has revealed the necessity for a deeper integration of the banking system especially for the euro area countries, which are particularly interdependent. In order to enhance the coordination at the euro area level and to attain a full banking integration Banking Union was created. It complemented the single currency area and the single market. Non-euro area countries can also join it. The main components of banking union are: a Single Supervisory Mechanism (SSM), already in operation, and a Single Resolution Mechanism (SRM) with bail in procedure. These two mechanisms are still not sufficient for attaining the goal of a full banking integration. Only the same level of confidence in the safety of deposits across countries could lead to a genuine banking union. However, different fiscal conditions and macroeconomic policies within member countries have led to differences in the financing costs faced by similar firms in these countries. This may undermine the competitiveness of banks in member states with a less favorable fiscal position in normal times, as well as amplify deposit outflows in times of turmoil, negatively affecting financial stability (ECB, 2016). Thus a further step to a fully-fledged banking union should be a European Deposit Insurance Scheme (EDIS). It is an important milestone in closing the gap in the legislative framework governing the institutional and regulatory framework of the banking union. Moreover, it would reduce the complexity of the present heterogeneous safety nets and eliminate the need for interaction and cooperation between national deposit guarantee schemes (DGSs) in cross-border bank failures (ECB, 2016). In parallel to EDIS the following actions should be pursued:

- ensuring additional risk-reducing measures, i.e. an alignment of national options and discretions in banking prudential rules,
- further work on the convergence of insolvency laws and other prudential measures,
- progress towards further integration of economic and fiscal policies at the European level.

[3] The micro-prudential pillar at European level is formed by the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA) and the European Insurance and Occupational Pensions Authority (EIOPA), which work together in the Joint Committee of the European Supervisory Authorities (ESAs). Macro-prudential oversight is performed by the European Systemic Risk Board (ESRB).

The EDIS and the risk-reduction measures have the potential to strengthen and stabilize the banking union to the benefit of the entire Economic and Monetary Union (EMU). By adopting the legislation on SSM, SRM, the Capital Requirements Directive IV, the Directive on Deposit Guarantee Schemes, the Bank Recovery and Resolution Directive and a single supervisory handbook, European authorities have significantly contributed to creating a genuine banking union and to reducing market fragmentation. Given the strong link between the fiscal position of a member country and the confidence in its national DGS, further progress should be insured towards further economic and fiscal integration, including a capital markets union and a fiscal union. There is a need to continue reforms regarding the supervisory and regulatory institutions, both at the European and international level, in order to take full advantage of financial integration meant to support the economic and social development and to better counteract any external financial shock.

5. Conclusions

It has been shown that increased interconnection among financial markets and the deepening of cross-border banking, when coupled with the underregulation, as well as with significant complexity in the design of financial instruments, could contribute to increase the systemic risk and exacerbate the cross-border transmission of financial shocks. The financial crisis has revealed that, although financial integration improves the access to financial markets and the opportunities for risk diversification, it may also increase the scope for financial contagion across the countries. It is therefore important that the financial stability arrangements keep pace with the degree of financial integration.

At the global level, the main challenges for the G20 financial regulatory reforms are linked to further cross-border cooperation, particularly for over-the-counter derivatives and resolution regimes. As well a stronger coordination of monitoring efforts regarding the implementation of reforms and greater sharing of experiences are needed in order to effectively use the limited implementation resources of national authorities.
Financial stability arrangements should be particularly ambitious in the euro area, which is characterized by a high degree of financial market's fragmentation. The framework for the Economic and Monetary Union needs to be improved addressing existing weaknesses related to adverse incentives or moral hazard risks via the fiscal and economic governance framework. The further measures to reduce risks in the banking union are of considerable importance for financial stability. The best way forward to ensure financial stability and benefit from financial integration is by ensuring a parallel process of establishing an EDIS and progressing on further risk-reduction measures, and integrating economic and fiscal policies at the European level.

References:

[1] Acemoglu, D., Ozdaglar, A., Tahbaz-Salehi, A. (2015). Systemic risk and stability in financial networks, American Economic Review, 105(2).

[2] Allen, F. et al. (2011). Cross-Border Banking in Europe: Implications for Financial Stability and Macroeconomic Policies, Centre for Economic Policy Research (CEPR).

[3] Basel Committee on Banking Supervision (2015). Finalising post-crisis reforms: an update, available at: http://www.bis.org/bcbs/publ/d344.pdf.

[4] Bernanke, B., Bertaut, C., Pounder DeMarco L., Kamin, S. (2011). International Capital Flows and the Returns to Safe Assets in the United States, 2003-2007. Board of Governors of the Federal Reserve System International Finance Discussion Papers Number 1014, February.

[5] BIS (2017). BIS Statistics Warehouse, available at: https://www.bis.org/statistics/.

[6] Borio, C. (2012). The Financial Cycle and Macroeconomics: What Have We Learnt? BIS Working Papers No. 395, December.

[7] Brunnermeier, M. (2009). Deciphering the Liquidity and Credit Crunch 2007-2008, Journal of Economic Perspectives, 23/2009.

[8] Brunnermeier, M. et al. (2012). Banks and Cross-border Capital Flows: Policy Challenges and Regulatory Responses, Committee on International Economic Policy and Reform.

[9] ECB (2016). Financial Integration in Europe, April, available at: https://www.ecb.europa.eu/pub/pdf/other/financialintegrationineurope201604.en.pdf.

[10] Elliott, M., Golub, B., Jackson, M. O. (2014). Financial networks and contagion. American Economic Review, 104(10).

[11] European Commission (2009). Economic Crisis in Europe: Causes, Consequences and Responses. European Economy 7/2009, available at: http://ec.europa.eu/economy_finance /publications/pages/ publication15887_en.pdf.
[12] Fecht, F., Grüner, H. Hartmann, P., Lo Duca M. (2009). Financial globalization and stability, Globalization and Systemic Risk (World Scientific Publishers).
[13] Financial Crisis Inquiry Commission (2011), Report on the Causes of the Financial Crisis, available at: http://fcic-static.law.stanford.edu/cdn_media/fcic-news/2011-0127-fcic-releases-report.pdf.
[14] Financial Stability Board (2015). Implementation and effects of the G20 financial regulatory reforms, available at: http://www.fsb.org/wp-content/uploads/Report-on-implementation-and-effects-of-reforms-final.pdf.
[15] Forster, K., Vasardani, M., Ca'Zorzi, M. (2011). Euro area cross-border financial flows and the global financial crisis. Occasional Paper Series, No 126/July.
[16] Giannetti, M., Ongena S. (2009). Financial integration and firm performance: Evidence from foreign bank entry in emerging markets. Review of Finance 13/2009.
[17] Gilbert R. A. (2006). Keep the leverage ratio for large banks to limit the competitive effects of implementing Basel II capital requirements. Policy Brief, Networks Financial Institute.
[18] González-Páramo, J. M. (2010). Globalisation, international financial integration and the financial crisis: The future of European and international financial market regulation and supervision, Institute of International and European Affairs, 19 February 2010, available at: https://www.ecb.europa.eu/press/key/date/2010/html/sp100219.en.html
[19] Hahm, J-H., Shin, H.S., Shin, K. (2011). Non-core Bank Liabilities and Financial Vulnerability, paper presented at the Federal Reserve Board and JMCB conference on "Regulation of Systemic Risk", Washington, DC, September, https://www.federalreserve.gov/events/conferences /2011/rsr/papers/ HahmShinShin.pdf
[20] IMF (2010). Global Financial Stability Report: Meeting New Challenges to Stability and Building a Safer System, April, available at: https://www.imf.org/external/pubs/cat/longres.aspx?sk=23343.0
[21] Kalemli-Ozcan, S., Papaioannou, E., Peydro J.-L. (2009). Financial integration and business cycle synchronization, NBER Working paper 14887.
[22] Lane, Ph. R. (2013). Capital Flows in the Euro. European Commission Publications.
[23] Manganelli, S., Popov A. (2010). Financial markets, diversification, and allocative efficiency: International evidence, ECB Working paper.
[24] Milesi-Ferretti, G.M., Tile,C. (2011). The Great Retrenchment: International Capital Flows during the Global Financial Crisis, International Monetary Fund and CEPR; Graduate Institute for International and Development Studies and CEPR.
[25] Ongena, S., Tumer-Alkan, G., Von Westernhagen, N. (2015). Do exposures to sagging real estate, subprime or conduits abroad lead to contraction and flight to quality in bank lending at home? Deutsche Bundesbank Discussion Paper No. 09/2015.
[26] Popov, A., Udell G. (2010). Cross-border banking and the international transmission of financial distress during the crisis of 2007-08. ECB working paper.
[27] Puri, M., Rocholl, J., Steen, S. (2011). Global retail lending in the aftermath of the U.S. financial crisis: Distinguishing between supply and demand efects. Journal of Financial Economics, 100(3).