UDC 336.71:005

Анали Економског факултета у Суботици, Vol. 53, број 38/2017, стр. 187-204
Датум пријема рада: 30.04.2017.
Датум прихватања рада: 25.10.2017.

Shadow banking and its role in financial markets

„Банкарство у сенци“ и његова улога на финансијским тржиштима

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Сажетак: У овом раду анализира се „банкарство у сенци“, његови главни учесници, активности и пратећи ризици. „Банкарство у сенци“ представља активности претежно небанкарских финансијских институција у процесу трансфера кредитног ризика и рочној и ликвидносној трансформацији финансијских средстава. Већина ових активности и/или институција нису предмет званичне регулативе и надзора на финансијским тржиштима. Услед тога, често су праћене значајним трансфером ризика, који може постати системски и утицати на цео финансијски систем. Системска улога „банкарства у сенци“ у САД и Европи, додатно, последицаје његовог брзог раста током последњих година, али и значајне међуповезаности традиционалних и банака „у сенци“. Активни напори регулатора да боље разумеју, регулишу и надзиру „банкарство у сенци“ након последње финансијске кризе, имају за циљ смањивање системског ризика који оно може да креира, као и превенцију значајних губитака у националним и глобалном финансијском систему.
Кључне речи: „банкарство у сенци“, финансијска тржишта, традиционалне банке, ликвидносна и рочна трансформација, трансфер кредитног ризика, системски ризик, регулација.

Abstract: The paper analyses the shadow banking system, its main participants, activities and associated risks. Shadow banking represents predominantly non-bank financial institutions' activities in credit risk transfer and liquidity and maturity transformation of financial resources. Most of these activities and/or institutions are not subject of the official regulation and supervision in financial markets. Thus, they are often followed by significant risk transfer that may become systemic and affect the whole financial system. The systemic role of the shadow banking in US and Europe is, in addition, the consequence of its fast growth in latest years but also significant interconnectedness of traditional and shadow banks. The ongoing efforts of regulators in better understanding of the shadow banking system, its regulation and supervision, after the latest financial crisis, have as a goal mitigation of the systemic risk it may create and prevention of significant losses in financial systems, both national and global.

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Keywords: shadow banking, financial markets, traditional banks, liquidity and maturity transformation, credit risk transfer, systemic risk, regulation.

Introduction

Shadow banking represents nonbank financial institutions activities in financial resources' credit, maturity and liquidity transformation processes. It encompass institutions and markets that provide services similar to commercial banks but outside the regulation of the official banking system. According to Bernanke (2013), this system includes securitization vehicles, asset-backed commercial paper conduits, money market funds, markets for repurchase agreements, investment banks, hedge funds and mortgage companies. The term "shadow bank" was first mentioned by Paul McCulley in 2007, and essentially it is assumed to be the one of the main causes of the global financial crises. The system is basically based on highly leveraged nonbank financial intermediaries whose liabilities are perceived as of similar rating and liquidity as commercial banks' deposits.

1. Shadow banking definition and main participants

Classical banks provide maturity transformation when they use short term deposits to fund long term loans. Shadow banks borrow short term funds in the money markets and then buy long-term assets. While doing so, they are not subject of traditional bank regulation, deposit insurance schemes; neither can borrow funds from the Central bank in times of distress.

The Financial Stability Board (FSB)[1] provides broad definition of shadow banking. According to FSB (2011), shadow banking is "credit intermediation that involves entities and activities (fully or partly) outside the regular banking system" (p. 1). In more narrow terms, shadow banking encompasses institutions that may raise systemic risk (through maturity and liquidity transformation, poor credit risk transfer and leverage) and regulatory arbitrage.

Financial intermediation is the process of funds transfer from savers to borrowers. Its main elements are:

1. maturity transformation
2. liquidity transformation
3. leverage
4. credit risk transfer

As stated, maturity transformation assumes short-term funding for longer-term investments. Liquidity transformation uses liquid liabilities for buying less liquid

[1] Organization of financial and supervisory authorities from major economies and international financial institutions.

assets. Leverage includes borrowing in the process of fixed assets investing. Finally, transfer of credit risk means that borrower's default risk is transferred from the loan originator to the third party.

Shadow banking includes both unregulated activities undertaken by regulated financial intermediaries and financial intermediation undertaken by unregulated financial institutions.

Institutions in the shadow banking system basically avoid regulation since they are not deposit takers, thus they accumulate high liquidity, credit and market risk while avoiding capital requirements imposed to traditional banks.

Shadow banking activities take place between non-bank financial institutions and beyond official regulation. This system mainly includes investment banks, mortgage lenders, money market funds, hedge funds, insurance companies, private equity funds and other lenders. All of them offer additional financial resources to traditional bank credit in one economy.

According to the FSB definition participants in the shadow banking activities are also brokers and dealers and finance companies. If brokers and dealers use, for example, REPO agreement to buy assets, that would be the shadow banking activity. In a repurchase agreement (REPO) the party that needs short term liquidity sells a security and promises to buy it back at a higher price on a specified date. Money market fund as a special form of investment fund that should invest investors' money in liquid short term securities is included in shadow banking if it uses investors' funds for buying commercial papers or mortgage-backed securities. Shadow banks are also finance companies that sell commercial papers as short-term instruments and use those proceeds to provide longer-term loans to households (Kodres, 2013, p. 42). Thus, main participants in the shadow banking system are various nonbank financial intermediaries. However, it has to be stressed out that they are not shadow banks by default. They become shadow banks if they are participating in the shadow banking activities.

There is nothing wrong with alternative financing schemes as long as investors understand them and accept the accompanying risks. The problems occurred in the latest financial crisis due to very complex and often completely blurred financing vehicles that imposed significant information asymmetry between investors and borrowers leading to underestimation of investment risks.

1.1. Shadow banks' role in securitization processes

The securitization process represents the transformation of illiquid assets into liquid securities.

Shadow banks were 'brought to light' for the first time after their significant role in home mortgage loans transformation to mortgage backed securities and collateralized debt obligations. Loans were sold from banks' balance sheets to one or more financial intermediaries that repacked them and formed a basis for the issuance of the new securities that promised interest and principal to investors. As mortgage loan payments were collected each month, the cash flows were used to repay the obligations to investors in mortgage backed securities. The value of the derived security depended on the value of the underlying mortgage loans and the mortgages. The whole securitization process happened beyond the traditional financial regulation. There was no problem in the phase in which the house prices were rising. The problem occurred once the house prices started to plummet. That happened after significant number of loan takers defaulted on their loans, and their houses were sold in the market, raising the supply. When the houses lost their value, the whole structure of derived securities was losing value too. The buyers of mortgage backed securities and collateralized debt obligations started to withdraw their funds by selling the securities. Shadow banks had to sell their assets in order to meet investors' liquidity requests. The falling value of these securities in both banks and non banks balance sheets decreased their assets' value that raised not just liquidity but also solvency issues. Many financial institutions, traditional and shadow ones, faced defaults. The generated risks through shadow banking activities became systemic. Many of the traditional banks were caught in the shadows too (Kodres, 2013, p. 42). Beyond holding the derived securities in their balance sheets, they were often controlling the securitization vehicles. The interconnectedness between traditional and shadow banks was lacking transparency. Shadow bank entities increased information asymmetry in financial markets, were poorly or completely unregulated, without capital or cash buffers and access to liquidity salvation.

1.2. Risks of shadow banking for the financial system

US and EU attempts to measure the size of the shadow banking sector remains difficult since many of these institutions are still mostly not obliged to report to official regulators. Risks that are emerging with shadow banking are important from the systemic point of view. They include several dimensions – maturity and liquidity transformation, poor credit risk transfer and financial leverage (European Systemic Risk Board, 2016, p. 3). The systemic issues can emerge due to interconnectedness of the traditional and shadow banking systems.

Credit intermediation of shadow banks can be direct (loans, leasing, market based financing conduits, etc.) or indirect, through support to bank credit intermediation (credit risk transfer and securitization through financial vehicle corporations). Credit intermediation also includes holdings of debt securities. Money market funds and bond funds have more than 80% of their assets in loans and bonds. They are followed by mixed and hedge funds (European Systemic Risk Board, 2016, p. 4).

Maturity transformation done by investment funds is not of the same nature as maturity transformation of traditional banks' deposits. While depositors can redeem their resources at a given value, the same protection is not provided to investors in investment funds. Maturity transformation measured by the ratio of long-term to total assets varied between 20% for mixed and hedge funds to 75% for different bond funds in 2015. EU bond funds had ratio of 74%. The funds that invest in liquid sovereign or corporate bonds provide higher level of maturity transformation.

Liquidity transformation is even more important activity, in which shadow banks may increase resulting risks. The absence of deposits in shadow banking means that there is a different form of liquidity transformation provided in comparison to banks. Securitization process, as mentioned above, transforms illiquid loans into liquid debt securities. Liquidity transformation offers to investors higher level of liquidity access than is consistent with the ease the underlying assets can be converted to cash. Shadow banks activities can often lead to investors believe that their investments are more liquid than they really are. Real estate and bond funds are highly involved in liquidity transformation when they use short term funding for provision of long-term loans. The ratio of the non-liquid to total assets was 35-38% for hedge and bond funds, while it reached over 70% for real estate funds at the end of 2015 (European Systemic Risk Board, 2016, p. 5).

The important obstacle for possible risk mitigation is the fact that the measurement of leverage used by shadow banks is still not completely transparent across the sector. The leverage includes financial (direct borrowing) and synthetic leverage (contingent exposures through derivatives). Financial vehicle corporations are highly leveraged since their borrowing in the form of loans and debt securities issuance reached 84% of their total liabilities in 2015. This means that securitization losses, if they happen, are transferred to investors and not the capital of the institution. Hedge funds have significant leverage too, mostly synthetic one.

Finally, traditional banks and other credit institutions are highly connected to shadow banks. Almost 10% of Eurozone credit institutions' assets are loans to investment funds and other financial institutions, their debt securities, shares and investment units. On the liability side, 7% are deposits of investment funds and other financial institutions. Money market funds buy debt securities issued by banks, but also do bond and hedge funds, making the system of traditional banking and shadow banking highly interconnected.

The sizable level of credit risk transfer, liquidity and maturity transformation and leverage in shadow banking sector in circumstances of significant connectedness between traditional and shadow banking, has already led to tremendous losses in times of distress followed by liquidity shortages and bank runs. In order to prevent similar scenarios in the future regulatory and supervisory bodies in US and EU derive 'systemic risk map' where they combine traditional reporting and supervision with market data about new trends, instruments and linkages between traditional and shadow banks. The goal is early detection of entities and activities that may pose systemic risk.

Official regulators collect each year more information and try to detect hidden vulnerabilities of the total financial sector. Banking regulators take into account interconnectedness between traditional and shadow banks and correct capital and liquidity requirements for banks. In parallel, new regulations are introduced in the market of shadow banking in order to prevent their involvement in activities that may lead to systemic disruptions. The relevant information and data collection covering the shadow banking entities and activities is still a challenging job.

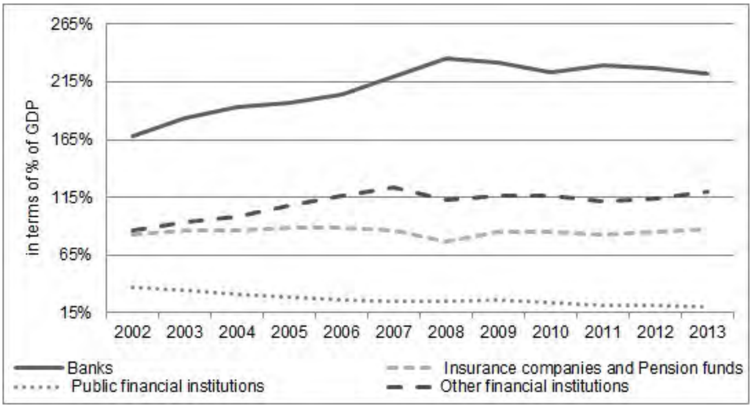
2. The size of shadow banking system and its composition

The shadow banking phenomenon has been attracting a growing attention due to impact discussed in the section above. In this section we consider its general size and give a snapshot of its building blocks.

European central bank's (ECB) vice-president VítorConstâncio noted in his speech on 13 February 2015 that shadow banking was an elusive concept that was hard to quantify with available statistics. Although the substantial data limitations continued to prevail, it is yet possible to compile data that conveys information on core institutions in the shadow banking realm and set out global trends. FSB has been gathering data on shadow banking starting from 2011 and the release of its first Global Shadow Banking Monitoring Report.

At the broadest level, we might be interested in the relative importance of traditional banking versus alternative channels of non-banking financial intermediation with respect to GDP. If we further separate non-banking intermediation into insurance companies and pension funds, public financial institutions and other financial institutions (OFI), we end up with Figure 1 which displays their size relative to GDP. The sample covers 20 developed and emerging countries and euro area as a composite jurisdiction in 2002-2013 time span.

Figure 1: The size of the shadow banking vs. the rest of financial institutions



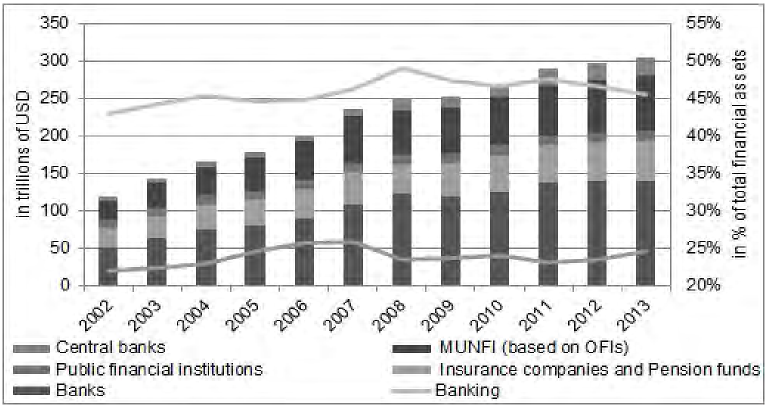
Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

OFI category is also perceived as a core part of Monitoring Universe of Non-Bank Financial Intermediation (MUNFI) and represents a broad measure of shadow banking. It exhibited a steady rise in the pre-crisis period, recorded one off sharp drop in 2008 and milder fall in 2011, but nevertheless succeeded in catching up pre-crisis level at the end of the period. In a similar vein, traditional banking gained a momentum in the beginning of sample period which was abruptly stopped by financial crisis, but opposite to shadow banking measure it has not been able to approach its peak from 2008.

Figure 2 provides additional insight in terms of the relative size of different sectors with respect to the overall financial intermediation sector and its growth in absolute terms. In the period preceding crisis the share of banking assets in total financial system assets stagnated mostly in the favor of MUNFI. However, since crisis hit MUNFI in advance to the banking sector, in 2008 banking increased its share at the expense of MUNFI. While MUNFI has regained its relative standing in the financial sector in the post crisis period, banking continued to lose its share with the exception in 2011 when it recorded a temporary rise.

Additionally, the left hand scale in Figure 2 displays the evolution of total assets of financial system which has been continually rising, despite shocks experienced by some of its subsectors. At the end of 2013 it surpassed the volume of 300 trillion USD for the first time. Comparing its size at the start of the period to that at the end, it merely tripled, witnessing overall vitality of the system.

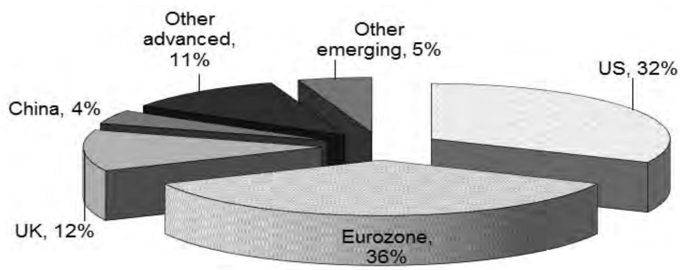
Figure 2: Evolution of the global financial system structure



Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

According to FSB, the assets of global, so called, other financial intermediaries – OFIs increased by 20% from 2007 onwards reaching the level of USD 80 trillion. Eurozone OFI sector surpassed the growth of the US sector reaching 36% of the total OFI assets in 2014 in comparison to 32% of the US sector.

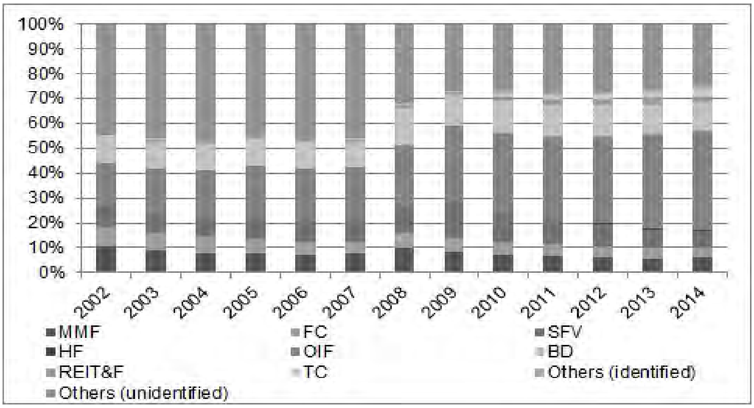
Figure 3: Global other financial institutions' assets by relative size and region



Source: Authors' presentation based on the FSB data in Doyle et al. 2016, p. 8.

OFI consists primarily of 8 subsectors: money market funds (MMF), finance companies (FC), structured finance vehicles (SFV), hedge funds (HF), other investment funds (OIF), broker-dealers (BD), real estate investment trusts and funds (REIT&F) and trust companies (TC), while inclusion of additional subsectors on a voluntary basis is promoted. A decomposition of OFI on its building blocks reveals that three of them stand out in terms of their size: other investment funds, broker-dealers and structured finance vehicles. Figure 4 confirms this.

Figure 4: Composition of shadow banking in terms of classes of institutions



Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

Category other investment funds dominates in the composition of OFI with close to 40% in 2014. It captures all investment funds (equity, fixed income and other) except money market funds and hedge funds. Equity funds account for half of this category on average, while fixed income funds and other funds capture approximately 1/3 and 1/5 of OIF assets, respectively. An exceptionally strong growth in relative size was observed for this category having in mind their relative share of 17% at the outset of the sample period. The data also reveals that a large part of OFI comprises category others (unidentified), but its share diminished along with sample period, from stunningly high 45% to still prominent 25%. FSB employs in parallel another set of data that covers 20 developed and emerging countries and Germany, France, Italy, the Netherlands, Spain and Ireland which has more granular data. Yet, the share of others, both identified and unidentified, is in a same order of magnitude.

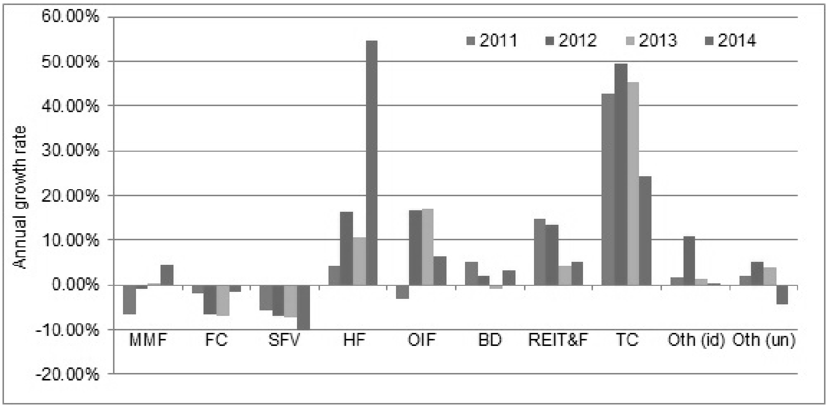
Category of broker-dealers is the second largest among OFI. Its assets amounted to USD 9.4 trillion in 2014, which is a new peak for this category. On the down side, its share in OFI assets of 11.8% is well below peak in 2008 of 15.2%.

The third largest, structured finance vehicles have been on the downward trend since 2009, both in absolute and relative terms. While total assets contracted from USD 8.8 to USD 5.4 trillion, the relative share fell from 13.7% to 6.8%.

Hedge funds data forms the biggest puzzle in OFI. Generally, its size is underestimated because majority of them are domiciled in off-shore financial centers which are beyond the scope of sample's geographical coverage. In some countries data is not granular enough to distinguish them from other investment funds, which further depresses their portion. All in all, size of the hedge funds' assets of low USD 500 billion is far from realistic one.

Special attention should be paid to trust companies. They grew from a minor subsector to a serious player in OFI. From assets that amounted to USD 700 billion in 2010 to USD 2.7 trillion in 2014, they faced a remarkable growth that is especially interesting because all growth was accounted for by China. It further translates to an average annually growth rate of 40%. Elliot, Kroeber and Qiao (2015) give a good overview of shadow banking features in China.

Figure 5: Recent growth patterns in the shadow banking



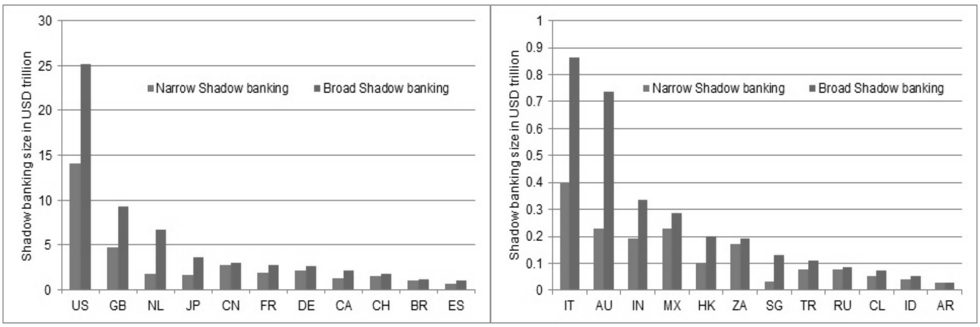
Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

Figure 5 completes assessment of composition of OFI with recent trends observed. It shows annual growth rate in assets for all OFI subsectors in last four years. Besides other investment funds, trust companies and hedge funds, real estate investment trusts and funds (REIT&F) exhibited a resilient growth in size in recent years. REIT&F encompasses institutions that invest in physical real estate projects, mortgage-backed securities, mortgage derivatives and liens. It has two subgroups, equity REIT&F and mortgage REIT&F. E-REIT&F invest in and operate physical properties and their principal type of income is property rent. M-REIT&F do not operate physical properties but rather support investments in them through the purchase of debt instruments such as MBS and property mortgages. Trends in the two groups are not identical. E-REIT&F report upward trend, while M-REIT&F rather show negative developments (FSB, 2014, p. 17).

A refinement in methodology pursued by FSB gave rise to inaugurating a parallel concept of shadow banking – narrow shadow banking. This narrower definition at first focused on the non-bank credit intermediation that can potentially serve as a source of systemic risk. In effect, it removes from the shadow banking broad definition those entities that are not part of a credit intermediation chain and those that are prudentially consolidated into a banking group. On a practical level, it excludes from total assets of OFI those linked to self-securitization, non-bank financial entities not involved in credit intermediation (equity investment funds and E-REIT&F) and those non-bank financial activities that are prudentially consolidated into a banking group (finance companies and broker-dealers).

The impact of narrowing down definition of shadow banking on its size might be exposed through the effect on individual countries. Figure 6 compares broad (OFI) and narrow shadow banking measure (excluding entities listed above) in absolute terms in 2013 for following countries: United States, United Kingdom, Netherlands, Japan, China, France, Germany, Canada, Switzerland, Brazil and Spain.

Figure 6 and 7: Broad and narrow shadow banking - cross country comparison

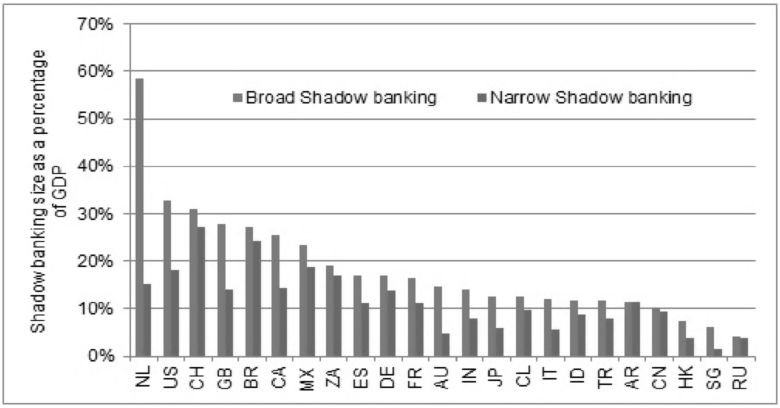


Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

In addition, to be able to compare the magnitude, Figure 7 shows two measures of shadow banking for the remaining countries: Italy, Australia, India, Mexico, Hong Kong, South Africa, Singapore, Turkey, Russia, Chile, Indonesia and Argentina.

In order to assess the size of shadow banking across individual countries with respect to the financial system as a whole, Figure 8 is given relying on data for 2013.

Figure 8: Broad and narrow shadow banking size with respect to GDP



Source: Authors' presentation based on the Financial Stability Board's Shadow Banking Monitoring Dataset

Figures 6 and 7 suggest that the ranking of countries in terms of absolute size of shadow banking approximately follows their economic power. It does not come as a surprise that the US is far ahead of other countries with its broad and narrow shadow banking amounting to USD 25 and USD 14 trillion, respectively. However, the Netherlands represents an obvious outlier with the size of its broad shadow banking, ranking third in a sample. Further, the discrepancy between its broad and shadow measure is very prominent. This peculiarity can be explained by special financial institutions (SFI) that account for two-thirds of the OFI sector in 2013. Most of these SFI are established by non-financial corporations with the sole aim of performing intra-group financial transactions. Thereby, they are not involved in credit intermediation outside of the group. It is estimated that there is around 14 000 SFI which are owned by multinational companies who use them to provide external funding for the group members and no other entities. The position of the United Kingdom is also specific. Broker-dealers subsector accounts for one third of OFI assets, but majority of them are prudentially consolidated into banking group.

Having that in mind, the highest ranking of the Netherlands in the Figure 8 comes as a logical outcome. Acting as an international financial hub for multinationals allows the Netherlands to raise disproportionately the portion of OFI in the overall financial system. It is the sole country in which OFI dominates the rest of the sectors in the total financial system.

It is worth noting that some of emerging countries rank high with respect to the share of shadow banking in the total financial system. While Brazil ranks 10th according to the absolute size of its shadow banking, it reached striking 2nd place when ranked using relative importance of narrow measure for financial system as a whole. Mexico and South Africa follow its case, since they rank 3rd and 5th according to the same criteria. These results point to an important observation, emerging markets warrant a special attention due to their growth that is above average. The case of China also points out that one should apply due care when analyzing OFI in emerging countries, because there is no single OFI's subsector that might account for observed general growth. In sum, developed countries tend to have more important shadow banking than emerging ones. This is in line with their better developed financial systems, which is manifested in deeper financial markets and proliferation of financial innovations.

3. Shadow banking system regulation

World financial crisis in 2008 and latter bank crisis in Eurozone showed some deficiencies in current regulation of traditional banking sector, but shadow banking activities as well. Regulators in the US and Europe responded with different initiatives in relation to shadow banking activities, but such efforts have an important flaw. Macroprudential policy has to be global, in international cooperation, since different national shadow banking approaches can cause regulatory arbitrage and potential systemic risks. Tobias and Song Shin (2009) stressed that what is necessary is macroprudential systemic regulator, able to "gather, analyze and report systemic information" (p.15). More information is needed about the activities of a wide variety of financial institutions that represent shadow banking system and hedge funds on one side, and changes in regulation towards capital requirements with a systemic focus on the other side. Creating comprehensive regulatory framework for the institutions that belong to shadow banking system on international level is very challenging, due to a number of reasons. These institutions are the part of global financial market and are very interlinked with each other, but also with traditional banking system. They are very different in size, structure, business model, there are different regulation requirements between main markets, etc.

The international reaction of regulators on the financial crisis was coordinated through G20 Summits on financial markets and world economy and Financial Stability Board. The results are FSB recommendations on the oversight and regulation of shadow banking activities (First report was released on 27 October 2011, Consultative documents on 18 November 2012, and Final Documents: Strenghtening Oversight and Regulation of Shadow Banking, on 29 August 2013). The Document from 2011 was the first comprehensive international treatment of shadow banking issue, and the first task of FSB was to actually define shadow banking!

FSB approach to shadow banking has two steps: monitoring of sources of systemic risks outside the banking system, based on macro-mapping exercise to gather information on all non-bank financial entities and activities, and strengthening regulation of the shadow banking system (FSB, 2013a). It defined principles for regulatory measures:

1. Focus - they should target the externalities and risk created by shadow banking system;
2. Proportionality - they should be proportional to the risks shadow banking brings;
3. Forward-looking and adaptable to emerging risks;
4. Effectiveness - international consistency in addressing common risks and avoiding creating cross-boarder arbitrage opportunities;
5. Assessment and review - regularly assessing the effectiveness of implementation and necessary adjustments.

FSB initiated five work-streams in which it worked with the relevant institutions to develop precise and effective policy recommendations (FSB, 2013a). Basel Committee on Banking Supervision (BCBS) worked on WS1: Banks' interactions with shadow banking entities, to improve international consistency of consolidation for prudential regulatory purposes so that all banks' activities and their interaction with the shadow banking system are appropriately captured, to control the contagion risks from interconnectedness with the shadow banking system and introduce risk sensitive capital treatment for banks' investment in equity of funds. The International Organization of Securities Commissions (IOSCO) worked on WS 2: Money market funds, to enhance corresponding regulation. Recommendations in this area cover explicit definition of MMFs, valuation of their assets, liquidity management, specific measures for MMFs with stable NAV, methodology for credit ratings, disclosure to investors and guidelines for use of repos. IOSCO and BCBS also worked on WS3: Other shadow banking entities to asses risks to financial stability and propose necessary policy recommendations for shadow bank entities other from MMFs. Given the fact that these entities are very different in size, types, business models and risk profiles, they operate in different legal and regulatory framework, and they are subject to constant innovation, WS3 adopted economic function-based approach, and their activities should be examined and regulated according to their economic functions. FSB subgroup and IOSCO worked on WS4: Securitization, to facilitate standardization of securitization products, improve disclosure and meliorate monitoring of retention requirements implementation. The other FSB subgroup worked on WS5: Securities lending and repos to asses financial stability risks and develop appropriate regulation recommendations. More details on the progress in those workstreams and new regulation requirements could be found in Association of German Banks (2014).

FSB gives recommendations that became operational after national legislators adopted them in the national law. The most important and comprehensive legislation act that regulates shadow banking activities in the US is Dodd-Frank Wall Street Reform and Consumer Protection Act (DFA) from June 2010. Although it did not mention the term “shadow banking”, all US regulation of shadow banking activities is included in it or derives from it (Association of German Banks, 2014, p.11). This act treats shadow banking according to their size as non-bank systemically important financial institution. DFA was amended to include some recommendations of FSB and its workstreams. It established the Financial Stability Oversight Council,whose task is to identify financial stability risks from the activities of large, interconnected bank holding companies or nonbank financial companies, to promote market discipline, and to respond to emerging threats to the stability of the US financial system (FSOC, 2016). It drafts recommendations for regulatory measures and proposes them to responsible supervisors (which are not required to follow them). FSOC annual reports give details about regulatory changes undertaken in a given year.

In Europe, regulatory process relied more on the FSB conceptual framework. In March 2013, European Commission released the Green paper - on shadow banking, based on FSB recommendations, and in September 2013 a legislative package that set regulatory steps for shadow banking activities. It consists of two parts: Regulation for Money Market Funds (European Commission, 2013b) and Commission communication on shadow banking (European commission, 2013a). In November 2015, the European Commission adopted a regulation on the transparency of securities financing transactions. Relevant regulators are: European Central Bank, the European Banking Authority, the European Securities and Markets Authority, the European Insurance and Occupational Pension Authority and the European Systemic Risk Board (European Commission, 2012). Cicero Group Report (2013) gives more details about undertaken and proposed changes in shadow banking regulation. Information on shadow banking supervision in Europe could be found on European Commission web-site on Financial supervision of shadow banking.

Conclusion

The aim of the paper was to present main characteristics and challenges of the shadow banking imposed on traditional banks and broader financial systems. Although it is the alternative vehicle for financial intermediation, the fact that it is often underregulated and complex in terms of constituent institutions and activities, may lead to significant risk accumulation and its shift to systemic level. In the aftermath of the latest global financial crisis, regulators put significant effort to increase the transparency of the shadow banking, measure its size more precisely and supervise its interconnectedness with traditional banks. The goal is to increase financial stability without restricting further growth and development of contemporary financialsystems.

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Summary

The paper analyses main participants, activities, size, associated risks and regulation of the shadow banking system. The shadow banking covers financial institutions involved in maturity and liquidity transformations and credit risk transfer that happen outside the official banking regulation. These activities, often very complex and vague, may bear significant but underestimated risk for investors since there is no traditional backup in the form of capital buffers, liquidity provisions and insurance for the time of distress. The significant growth of the shadow banking in the latest years, accompanied by stronger interconnectedness with traditional banks, may increase the systemic risk in the financial sector. Different regulators and supervisors in the US and Europe put significant effort to collect data to measure and mitigate systemic risks associated with numerous activities, institutions and instruments that represent the shadow banking system.