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MEĐUZAVISNOST TRADICIONALNOG BANKARSTVA I BANKARSTVA U SENCI U EVROPI

Rezime

Finansijska kriza koja je izbila u SAD-u se brzo raširila na evropske zemlje, izazivajući snažnu bankarsku krizu i krizu javnog duga. Time je razotkriven značaj kratkoročnog finansiranja za tradicionalne banke, koje je uvećalo njihovu izloženost uslovima na međubankarskom tržištu. Finansijske inovacije, a posebno proces sekjuritizacije, vodile su rastućem značaju različitih institucija koje pripadaju bankarskom sistemu u senci - koje obavljaju kreditnu, likvidnosnu i ročnu transformaciju, bez pristupa likvidnosti centralne banke ili nekom drugom obliku garantovane likvidnosti. Evropske banke su preuzele aktivnu ulogu u američkom procesu sekjuritizacije, ali su takođe sekjuritizovale i proizvode sa evropskog tržišta. Autori su koristili raspoložive statističke podatke Evropske centralne banke o bankarstvu u senci, i prema užoj i prema široj definiciji, kako bi analizirali različite mere međuzavisnosti između bankarstva u senci i tradicionalnog bankarskog sistema. Analiza pokazuje da neregulisane finansijske institucije predstavljaju izvor ozbiljnih sistematskih rizika, ne samo zbog veličine, već i zbog jake mreže međuzavisnosti sa regulisanim bankarskim sektorom.

Ključne reči: bankarski sistem u senci, tradicionalno bankarstvo, međuzavisnost, sistematski rizik, izloženost, finansijska intermedijacija

JEL: G21, G23, G32

INTERCONNECTEDNESS BETWEEN SHADOW AND TRADITIONAL BANKING SYSTEMS IN EUROPE

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Summary

The financial crisis that emerged in the US quickly spread across Europe, causing a severe banking and sovereign debt crisis. That revealed the importance of short-term financing for traditional banks, which increased their exposure to the financial conditions on the interbank market. Financial innovations, especially the securitization process led to the growing importance of different institutions within the shadow banking system - which undergo a credit, liquidity and maturity transformation, without accessing the central bank liquidity or other forms of guarantees. The European banks had an active role in the US securitization process, but also securitized the products from the European market. The authors used the available data from the ECB statistics on shadow bank entities, broadly and narrowly defined, in order to analyze the various measures of interconnectedness between the shadow and traditional banking systems. The analysis showed that non-regulated financial institutions pose severe systemic risks, not just because of their size, but also due to the strong web of interconnectedness with the regulated banking sector.

Keywords: shadow banking system, traditional banking, interconnectedness, systemic risk, exposure, financial intermediation

JEL: G21, G23, G32

Uvod

Finansijska kriza je pokazala značajnu međupovezanost institucija tradicionalnog i bankarstva u senci, što je izazvalo brzo širenje zaraze od nereguliranih finansijskih institucija na one regulisane i ugrožavanje finansijske stabilnosti. Analizu razvoja i rizika koji potiču iz bankarskog sistema u senci, međupovezanosti između tradicionalnog i bankarstva u senci, kao i veze između američkog i evropskog bankarstva u senci, komplikuje nedostatak relevantnih podataka. Pored toga, ne postoji čak ni univerzalno prihvaćena definicija bankarskog sistema u senci (BSS). Evropska centralna banka (ECB) je usvojila definiciju predloženu od strane Odbora za finansijsku stabilnost (FSB) iz izveštaja za 2011. godinu. FSB definiše BSS u širem smislu kao "sistem kreditne intermedijacije koji uključuje subjekte i aktivnosti koji su izvan regulisanog bankarskog sistema". On takođe savetuje regulatore da usmere fokus svoje politike na kreditnu intermedijaciju koja se odvija van banaka, koja može da izazove sistemski rizik (posebno se misli na ročnu i transformaciju likvidnosti, nesavršen transfer kreditnog rizika i/ili stanje zaduženosti), i onu u kojoj ima elemenata regulatorne arbitraže (FSB, 2011, str. 3). FED u svom izveštaju definiše BSS kao "mrežu specijalizovanih finansijskih institucija koja kanališe sredstva od suficitarnih subjekata ka investitorima kroz metode finansiranja bazirane na sekjuritizaciji i finansijskim instrumentima pokrivenim zalogom" (Adrian & Ascraft, 2012, str. 1). MMF u svom Izveštaju o globalnoj finansijskoj stabilnosti široko definiše BSS kao "kreditnu intermedijaciju izvan konvencionalnog bankarskog sistema" (MMF, 2014, str. 66).

Analiza razvoja veličine i structure BSS-a u evrozoni je složen zadatak. ECB klasifikuje najveći deo institucija BSS-a kao ostale finansijske posrednike (OFI). Ova kategorija obuhvata sve finansijske institucije izuzev monetarnih finansijskih institucija (MFI predstavlja regulisani bankarski sektor: centralne banke, kreditne institucije i investicioni fondovi na tržištu novca), osiguravajućih kompanija i penzionih fondova. Ova definicija uključuje posrednike kao što su regulisani investicioni fondovi (IFs), ali isključuje investicione fondove sa tržišta novca (MMFs)

koji obavljaju neke poslove BSS-a (Bakk-Simon et al., 2012, str. 9). Krupna prepreka u analizi kretanja u BSS-u je nedovoljna granularnost podataka. ECB računa pokazatelj BSS-a kao sumu bilansa nemonetarnih finansijskih posrednika uz isključenje osiguravajućih kompanija i penzionih fondova (OFIs) i MMFs, od koje se oduzima suma bilansa investicionih fondova uz isključenje MMFs-a. Banke u senci se dalje raščlanjavaju na fondove sa tržišta novca, finansijske institucije sa specijalnom namenom (FVCs) i preostale nekategorisane posrednike. ECB prati bilansne podatke o prve dve vrste finansijskih institucija, ali nije isti slučaj i sa trećom vrstom, što je ozbiljan problem obzirom da više od 70% ukupne imovine BSS-a otpada upravo na nju - 7,6 biliona evra (ECB, 2013, str. 92).

Rad je organizovan na sledeći način. U prvom delu se analiziraju razvoj i struktura BSS-a u Evropi, zatim se analizira proces finansijske intermedijacije koji vrše banke u senci, njihove sličnosti i razlike u odnosu na tradicionalni bankarski sektor, i na kraju kanali međusobnog uticaja između BSS-a i regulisanog bankarskog sektora i njihov uticaj na sistematski rizik.

Razvoj i struktura bankarskog sistema u senci u Evropi

Finansijski sektor u evrozoni je bankocentričan jer banke zadovoljavaju 75% finansijskih potreba preduzeća. Zato je presudno obezbediti stabilno poslovanje banaka kako bi uredno nastavile da kreditiraju privrednu aktivnost i podmiruju investiciju i potrošačku tražnju (Popović, 2016, str. 225). Evropske banke su univerzalnog tipa, što znači da pružaju usluge i komercijalnog i investicionog bankarstva, ali takođe i ostale finansijske usluge kao što su usluge osiguranja. One objedinjavaju tradicionalnu finansijsku intermedijaciju sa tržišnom i sekjuritizovanom intermedijacijom (Jeffers & Plihon, 2013). Proces evropske integracije i uvođenje jedinstvene valute su vodili većoj prekograničnoj ekspanziji banaka i brojnim bankarskim merdžerima u evrozoni. Finansijska deregulacija u Evropskoj Uniji je počela tokom 1980-ih i ubrzana je tokom 1990-ih stvaranjem zajedničkog tržišta za finansijske i bankarske usluge. Prema Jeffersu i Plihonu (2013, str. 7) posledica intenzivne finansijske deregulacije je finansijska

Introduction

The financial crisis highlighted the significant interconnections between traditional and shadow banking entities, which caused the quick spreading of the contagion from unregulated financial institutions to the regulated sector, thus jeopardizing financial stability. The analysis of the development of and risks posed by the shadow banking system, as well as of the mutual connection between traditional and shadow banks and between the US and European shadow banking, is complicated by the lack of adequate data. There is not even a universally accepted definition of the shadow banking system (SBS). The European Central Bank (ECB) accepted the definition proposed by the Financial Stability Board in its 2011 report. The FSB defines the shadow banking system broadly as “the system of credit intermediation that involves entities and activities outside the regular banking system”. It also advises regulators to narrow their policy focus to non-bank credit intermediation which raises the systemic risk concern (especially maturity and liquidity transformation, imperfect credit risk transfer and/or leverage), and indications of regulatory arbitrage (FSB, 2011, p. 3). The FED in its report defines the shadow banking system as “a web of specialized financial institutions that channel funding from savers to investors through a range of securitization and secured funding based techniques” (Adrian & Ascraft, 2012, p. 1). The IMF in its Global Financial Stability Report broadly defines shadow banking as: “credit intermediation outside the conventional banking system” (IMF, 2014, p. 66).

The analysis of the evolution in terms of the size and structure of the shadow banking system in the Euro area is challenging. The ECB categorizes the majority of shadow banking activities as other financial intermediaries (OFIs). This category includes all financial institutions except for monetary financial institutions (MFIs represent the regulated banking sector: central banks, credit institutions and money market funds) and insurance corporations and pension funds (ICPFs). This definition includes intermediaries like regulated investment funds (IFs), but excludes money market funds (MMFs) which engage

in shadow banking activities (Bakk-Simon et al., 2012, p. 9). A major obstacle in analyzing the development of the shadow banking system is the insufficient granularity of data. The ECB calculates the indicator for shadow banking as the sum of data for “non-monetary financial intermediaries other than insurance corporations and pension funds” (OFIs) and MMFs minus the data for “investment funds other than MMFs”. Shadow banks could be further divided into money market funds, financial vehicle corporations (FVCs) and “other miscellaneous” intermediaries. While the ECB monitors the data on the first two types of financial institutions, further granularity for the third category is not available, and those institutions hold more than 70% of the total assets intermediated by shadow banking entities (7.6 trillion EUR) (ECB, 2013, p. 92).

The paper is organized as follows: it first analyzes the development and structure of shadow banking activities in Europe, and then it analyzes the process of financial intermediation carried by shadow bank entities, along with the similarities and differences in relation to the traditional banking sector. Finally, it studies the interconnection channels between the shadow and regulated banking sectors and their influence on systemic risks.

Development and Structure of Shadow Banking System in Europe

The financial sector in the Euro area is bank-centric, since banks provide 75% of financing for the euro economy. Therefore, it is crucial to protect the soundness of the banks’ balance sheets in order to maintain their lending activities to the economy and have them meet the investment and consumption demand (Popović, 2016, p. 225). The European banks are universal, which means they perform both commercial banking and investment banking activities, and provide other financial services like insurance. They integrate traditional financial intermediation with market and securitized intermediation (Jeffers & Plihon, 2013). The process of European integration and introduction of common currency led to the intensified bank expansions abroad and also to a number of bank mergers in the Eurozone. Financial deregulation in the

evropskog bankarskog sistema, pogotovu tokom 2000-ih. Finansijalizacija evropskih banaka je prouzrokovala promene u modelu univerzalne banke, porastao je udeo aktivnosti investicionog bankarstva u odnosu na tradicionalne bankarske poslove. Evropske banke su se sve više okretale prema ritejl poslovima u međunarodnim okvirima, i počele su da investiraju u finansijske derivate i raznorodne kompleksne hartije od vrednosti. Značaj hartija od vrednosti je porastao i na strani aktive i pasive, a banke su počele da se više oslanjaju na tržišne izvore finansiranja i uvećale su svoj tržišni portfolio.

Finansijalizacija banaka u Evropi je pospešila razvoj bankarstva u senci. Deregulacija i evropska integracija su zaoštrile konkurenciju između banaka, kao i banaka i ostalih finansijskih institucija. Tradicionalne banke koje su se isticale na domaćem tržištu, nisu bile dovoljno velike da se nametnu i na većem EU tržištu. To je pokrenulo proces restrukturiranja u bankarskom sektoru. Banke su bile primorane da rastu. Period između kraja 1990-ih i ranih 2000-ih je bio period intenzivnih bankarskih merđžera i akvizicija (što je bilo u skladu sa globalnim trendom rasta M&As). Banke iz SAD-a su ravile poslovanje u Evropi i ušle su u procese akvizicije i poslovne alijanse sa evropskim institucijama. Spajanja američkih investicionih banaka i drugih kompanija fokusiranih na poslove sa hartijama od vrednosti sa evropskim institucijama su dodatno pojačali konkurentske pritiske na banke iz EU, kako u njihovim tradicionalnim poslovima tako i u poslovima investicionog bankarstva i upravljanju imovinom. Period niskih kamatnih stopa je pokrenuo trku za profitom i usmeravanje plasmana ka rizičnijim privatnim zajmotražiocima (ECB, 1999). Takođe, banke su težile ka nekamatnim izvorima prihoda, npr. iz oblasti osiguranja (bankoosiguranje je glavni distribucioni kanal za proizvode životnog osiguranja u Evropi) (Popović et al., 2017). Sve ovo je pojačalo aktivnosti banaka na tržištu i podstaklo razvoj BSS-a u Evropi. On nije odvojen od tradicionalnog bankarskog sistema, već

postoji jaka međupovezanost između njih.

Slika 1. prikazuje promene u strukturi evropskog finansijskog sektora koje se opažaju iz promena u učešćima različitih institucija u ukupnoj aktivi sektora. Uočava se trend opadanja udela MFIs i rastući udeo OFIs od 2000. godine. Tako su OFIs povećale svoj udeo sa 16,5% u 2000. godini na 29% u 2008. godini u kojoj je izbila i kriza u evrozoni, a rast udela je nastavljen i u narednim godinama sve do 39% u 2015. godini. U istom periodu udeo kreditnih institucija je opao sa 62,9% na 47,6%.

Slika 1. Udeo pojedinačnih finansijskih institucija u ukupnoj imovini finansijskog sektora evrozone

Izvor: ECB. 2016. Report on Financial Structures, October. Frankfurt am Main, p. 57-58; kalkulacija autora na osnovu podataka: ECB. 2002. Report on Financial Structures. Frankfurt am Main, p. 17

Na slici 2. se porede ukupna imovina bankarskog sektora i BSS-a. Slika uključuje širu i užu meru veličine BSS-a. Šira mera obuhvata MMFs, investicione fondove izuzev MMFs, FVCs i ostale OFIs (prema metodologiji ECB, 2016 i European System Risk Board, 2016, str. 14). Uža mera se obračunava kao razlika šire mere i investicionih fondova, jer se radi o regulisanim subjektima sa izuzetkom hedž fondova, a regulisani subjekti ne bi trebalo da se tretiraju kao deo BSS-a (Bakk-Simon et al., 2012, str. 20). Šira mera uključuje sve finansijske posrednike koji su uključeni u aktivnosti bankarstva u senci, nastojeći da obuhvati sve oblike kreditne intermedijacije koji se odvijaju mimo poslovnih banaka, ali se time ipak precenjuje veličina BSS-a (Deutsche Bundesbank, 2014, str. 19)

European Union started during the 1980s and was accelerated during the 1990s by the creation of the common market for financial and banking services. According to Jeffers and Plihon (2013, p. 7), the consequence of intensive financial deregulation was the financialization of European banking systems, especially during the 2000s. Financialization of European banks caused some changes in the universal banking model, when the share of investment banking activities rose significantly in comparison to traditional banking business. The European banks increasingly engaged in retail business at the international level, and started to invest in derivatives and different complex securities. The importance of securities increased both on assets and liabilities side, and the banks started to rely more on market-based sources of financing and increased their market portfolio. The financialization of banks in Europe facilitated the development of shadow banking. Deregulation and European integration intensified the competition among banks and between banks and other financial institutions. Traditional banks, which were large players on their national markets, became insufficiently big for the competition at the significantly larger EU market. That caused the restructuring process in the banking sector. Banks had to increase their size. The late 1990s and early 2000s was the period of intensive bank mergers and acquisitions (which was in line with the rising global M&A trend). The US banks developed their business in Europe as well, along with the process of acquisitions and business alliances with the European institutions. The mergers of the US investment banks or securities-oriented companies with some European institutions further increased the competitive pressures on the EU banks, not only in their traditional business, but also regarding the investment banking activities and asset management. The period of low interest rates caused the race for profit, and shift of investments to riskier private debtors (ECB, 1999). Moreover, the banks sought for non-interest revenues, for instance from insurance activities (bancassurance

is the main distribution channel for life insurance products in Europe) (Popovic et al., 2017). All of the above facilitated the banks' market activities and, thus, the rise of shadow banking in Europe. The shadow banking system in Europe is not separated from the traditional banking system; instead, there is a strong interconnection between them.

Graph 1 depicts the changes in the structure of the European financial sectors according to the different institutions' shares in total assets holdings at the sector level. Since 2000 there has been a decreasing trend in the share of MFIs, and an increasing share of OFIs. The OFIs sector increased its share from 16.5% in 2000 to 29% in 2008 when the crisis in the Eurozone emerged, and continued to increase its share of total assets in the following years, to up to 39% in 2015. In the same period the share of credit institutions fell from 62.9% to 47.6%.

Graph 1. The share of different financial institutions in total assets of the Euro area financial sector

Source: ECB. 2016. Report on Financial Structures, October. Frankfurt am Main, p. 57-58; Authors' calculation based on the data from: ECB. 2002. Report on Financial Structures. Frankfurt am Main, p. 17

Graph 2 compares the total amount of assets held by the banks and the SBS. The Graph includes both broad and narrow measure of the SBS size. The broad measure comprises the MMFs, investment funds without the MMFs, FVCs and other OFIs (according to the methodology applied by the ECB, 2016 and the European Systemic Risk Board, 2016, p. 14). The narrow measure is calculated as the broad measure without investment funds, since they are regulated entities, with the exception of hedge funds, and regulated entities should not be considered as part of the shadow banking system (Bakk-Simon et al., 2012, p. 20). The broad measure includes all financial intermediaries

Slika 2. Veličina imovine tradicionalnog i bankarstva u senci u evrozoni

Izvor: ECB, 2016. Report on Financial Structures, October. Frankfurt am Main; Deutsche Bundesbank, 2014. Monthly Report, March, p. 20

Aktiva kojom upravljaju subjekti BSS-a, i prema širem i prema užem pristupu, raste u kontinuitetu, sa izuzetkom 2008. god. BSS prema širem pristupu je krajem 2015. godine raspolagao imovinom koja je po obimu bila ravna imovini bankarskog sektora. Ovaj rast su predvodili investicioni fondovi uz isključenje MMFs i sektor ostalih OFIs, čija imovina se uvećala više od tri i po puta. Imovina bankarskog sektora se više nego udvostručila u periodu od 1999. god. pa sve do izbijanja krize, ali od tada se primećuje opadajući trend. Zbog svega toga može se konstatovati da se struktura finansijskog sektora u evrozoni bitno promenila od 2008. godine, i da je udeo MFIs opao relativno u odnosu na udeo OFIs.

Ispitivanje značaja procesa finansijske intermedijacije u sektoru bankarstva u senci zahteva i analizu njihovih potraživanja i obaveza prema nefinansijskom privatnom sektoru. Slika 3. prati strukturu izvora finansiranja nefinansijskih kompanija iz evrozone, po instrumentima i vrstama finansijskih institucija.

Levi segment slike 3. prikazuje udeo pojedinačnih sektora unutar finansijskog sektora evrozone u ukupnim izvorima finansiranja nefinansijskih korporacija (NFCs) u 2015. god. Monetarne finansijske institucije su obezbedile više od polovine eksternih izvora finansiranja povučenih od strane NFCs. Kredite NFCs su najvećim delom odobravalе banke (73% ukupnih kredita odobrenih NFCs), koje

su takođe kupile oko 20% dužničkih hartija od vrednosti i nešto ispod 10% kotiranih akcija NFCs (desni deo slike 3). Iako bankarski krediti i dalje ostaju glavni izvor finansiranja za NFCs od strane finansijskog sektora u evrozoni, primećuje se blago opadajući trend njihovog udela u korist drugih izvora finansiranja. Finansijska kriza je doprinela da godišnji neto rast obima kredita MFIs padne i čak uđe u negativnu zonu prvo u 2009. i 2010. god, a potom i u periodu 2012-2014, kao posledica bankarske i dužničke krize i povezane recesije (ECB, 2016, str. 9). Neto promena drugih izvora finansiranja je ostala pozitivna tokom krize. Šire definisan BSS je tako uspeo da uveća svoj udeo u ukupnim izvorima finansiranja NFCs na 37% u 2015. god. BSS je stajao iza 26% svih kredita odobrenih NFCs u datoj godini, bio kupac skoro 39% emitovanih dužničkih hartija od vrednosti (41,5% ovih hartija su kupile osiguravajuće kompanije i penzioni fondovi) i skoro 80% kotiranih akcija (12,3% akcija su kupile ICPFs). Među široko definisanim

Slika 3. Uloga finansijskih institucija u finansiranju nefinansijskih kompanija u evrozoni, po instrumentima

Izvor: ECB, 2016. Report on Financial Structures, October. Frankfurt am Main

that are in principle engaged in shadow banking activities while it tries to capture all forms of credit intermediation outside the commercial banks, yet it overestimates the size of the SBS (Deutsche Bundesbank, 2014, p. 19).

The assets held by shadow banking entities, both broadly and narrowly defined, have been growing constantly, with the exception of 2008. The assets of the broadly defined SBS reached the level of bank assets at the end of

2015. This increase was driven by investment funds excluding MMFs and OFIs, whose assets increased by more than 3.5 times. The banks' assets more than doubled from 1999 until the outbreak of the crisis, but since then there has been a downward trend. Consequently, it can be stated that the structure of the Euro area financial sector has changed since 2008, and that the share of MFIs has fallen relative to the share of OFIs.

Analyzing the importance of the financial intermediation process carried out by financial institutions other than banks, requires the analysis of the liabilities and claims of non-

bank financial intermediaries vis-a-vis the non-financial private sector. Graph 3 shows the structure of the source of finance provided to non-financial corporations in the Euro area, by instrument and by type of financial institutions.

OFI, investicioni fondovi imaju najveći značaj kao kupci dužničkih hartija od vrednosti i akcija kompanija (32,6% i 57,2% respektivno, dok je njihova uloga u odobravanju kredita marginalna). U razmatranom periodu ističe se pad uдела finansijskih instrumenata u posedu MFIs u odnosu na udeo ostalih finansijskih institucija.

Još jedna značajna karakteristika BSS-a u Evropskoj monetarnoj uniji je velika heterogenost u njegovoj veličini i strukturi među zemljama članicama. Institucije bankarstva u senci u Luksemburgu i Holandiji drže više od 60% celokupne imovine BSS-a u Evrozoni. Ako se uključe i podaci za BSS u Irskoj, Francuskoj i Italiji, taj udeo raste na 85%.

Slika 4. Struktura bankarskog sistema u senci u evrozoni, po zemljama

Izvor: ECB. 2016. Report on Financial Structures, October. Frankfurt am Main

U Luksemburgu, Holandiji, Irskoj, Malti i Kipru institucije bankarstva u senci drže primetno veće iznose aktive od tradicionalnih banaka. Prema ECB (2013, str. 89) ovo je rezultat određene specijalizacije u sferi netradicionalnog bankarskog poslovanja u ovim zemljama, a ne domaće tražnje za ovakvim tipom finansijske intermedijacije. Preduzeća iz drugih zemalja koriste finansijske institucije sa specijalnom namenom u ovim zemljama iz razloga povoljnijeg obavljanja određenih finansijskih poslova.

Sličnosti i razlike između tradicionalnog bankarskog sistema i sistema bankarstva u senci u procesu finansijske intermedijacije

Zaduživanje i kreditiranje su važna odlika svake privrede. Pojedinci i kompanije koriste kredite da bi finansirali svoje poslovanje i svakodnevne aktivnosti. Poslovi uzimanja

i davanja finansijskih sredstava mogu da se realizuju preko dva koncepta finansiranja - direktnog i indirektnog. Kod indirektnog finansiranja, finansijska sredstva se kanališu od poverilaca ka dužnicima preko posrednika, najčešće banke ili neke druge finansijske institucije. Preovlađujući obim kredita obezbeđuje tradicionalni bankarski sistem. On obuhvata poslovne banke, štedno-kreditne zadruge, kreditne unije i štedionice.

Banke povezuju poverioce i dužnike preko svojih depozitno-kreditnih poslova:

1. Finansijski suficitarni subjekti polažu novac u banku u vidu depozita;
2. Banke imaju obavezu da deo tih depozita drže u formi obaveznih rezervi koje se

izdvajaju kod centralne banke;

3. Banke koriste preostala sredstva i plasiraju ih u vidu kredita finansijski deficitarnim subjektima.

Proces kreditiranja često uključuje likvidnosnu, ročnu i valutnu transformaciju finansijskih sredstava. Na bazi likvidnih depozita po viđenju banke odobravaju i kredite sa dužim rokovima dospeća.

Kvalitativno gledano, i u suštini,

ovde se radi o ročnoj i likvidnosnoj transformaciji finansijskih sredstava. Ipak, banke su specijalizovane za procenu kreditne sposobnosti klijenata i monitoring korišćenja kredita. Na taj način pružaju koristi od diversifikacije svojim deponentima (Noeth, 2012, str. 2).

Pri vršenju transformacije depozita u kredite tradicionalne banke kontroliše centralna banka. Banke su obavezne da održavaju unapred definisan nivo obaveznih rezervi kod centralne banke, a od njih se zahteva i da održavaju zadovoljavajući nivo kapitalizovanosti kao zaštitu od gubitaka. Takođe, bankarski depoziti su najčešće osigurani. Banke koje imaju hitne potrebe za likvidnošću mogu koristiti kredite za likvidnost od centralne banke - u vidu diskontnih kredita ili preko operacija na otvorenom tržištu. Konačno, u periodima krize pojedinačnih banaka centralna banka obavlja ulogu kreditora u poslednjoj instanci. Sve navedene mere su usmerene na očuvanje stabilnosti bankarskog sistema, prevenciju navala na banke i podršku

The left part of Graph 3 shows the share in the total amount of financing provided by the Euro area financial sector to non-financial corporations (NFCs) in 2015. The funds from monetary financial institutions accounted for more than a half of the external financing of NFCs. The loans to NFCs were mostly granted by banks (73% of total loans granted to NFCs), but they also bought around 20% of debt securities and slightly less than 10% of quoted shares of NFCs (right part of the graph). Although bank loans still remain the main source of financing provided by the Euro area financial sector to NFCs, their share has been slowly decreasing in favor of other sources. The financial crisis caused the net flow of loans from MFIs to decline and even turn negative in 2009 and 2010, and again from 2012-2014, as a consequence of the bank and debt crisis and the subsequent recession (ECB, 2016, p. 9). Other flows of funding remained positive in the period of crisis. The share of funds provided to NFCs by the broadly defined shadow banking system in 2015 was almost 37%. The SBS provided around 26% of total loans granted to NFCs in that year, having purchased almost 39% of issued debt securities (41.5% of debt securities were bought by insurance corporations and pension funds) and almost 80% of quoted shares (12.3% of quoted shares bought ICPFs). Among the broadly defined OFIs, investment funds have the greatest importance as buyers of companies' debts and shares (32.6% and 57.2% respectively, whereas their role in providing loans is insignificant). In the reporting period there has been a decline in the share of observed instruments held by MFIs relative to other financial institutions.

Another characteristic of the shadow banking system in the European Monetary Union is large heterogeneity in terms of its size and structure among the member countries. Shadow banking entities in Luxemburg and Netherlands hold more than 60% of assets held by the SBS in the Euro area. Together with the shadow banks from Ireland, France and Italy, that share is almost 85%.

Graph 4. Country structure of SBS in the Euro area

Source: ECB, 2016. Report on Financial Structures, October. Frankfurt am Main

In Luxemburg, Netherlands, Ireland, Malta and Cyprus shadow bank entities hold a significantly larger amount of assets than traditional banks. According to the ECB (2013, p. 89) this is the result of a specific specialization in the non-traditional banking activities in those countries, not so much of the domestic demand for this type of financial intermediation. Corporations from other countries use financial vehicles located in these countries due to the more favorable conditions for performing certain financial services.

Similarities and Differences between Traditional and Shadow Banking System in the Process of Financial Intermediation

Borrowing and lending is an important feature of every economy. Individuals and companies use loans to finance their business and everyday activities. The borrowing and lending activities can be in the form of direct or indirect financing. In indirect financing, financial resources are channeled from lenders to borrowers through an intermediary, a bank or another financial institution. The predominant amount of loans is available through the traditional banking system. The traditional banking system includes commercial banks, savings and loan associations, credit unions, and savings banks.

Banks match borrowers and lenders through their deposit-lending activities:

1. The surplus holding entities deposit money in a bank;
2. Banks must keep a fraction of deposits in the form of reserves with the central bank;

očuvanju stabilnosti kompletnog finansijskog sistema. Pored tradicionalnih banaka, na finansijskom tržištu u današnje vreme egzistira i paralelni BSS, koji nudi slične usluge kao i bankarski sektor ali kroz druge tipove finansijskih institucija. Ovi finansijski posrednici se razlikuju od banaka. Oni ne moraju da zadovolje specifične regulatorne zahteve koji su nametnuti tradicionalnim bankama. Obzirom da implementacija regulative implicira značajne troškove, subjekti BSS-a uživaju prednosti koje im donosi regulatorna arbitraža. Oni tako mogu da zaobiđu regulaciju predviđenu za tradicionalne banke.

Banke u senci su takođe deo indirektnog finansiranja. One isto kanališu finansijska sredstva od finansijski suficitarnih ka deficitarnim subjektima, s tim što je ovaj transfer sredstava kompleksniji. U ovoj šemi finansiranja, dužnici na istovetan način komuniciraju i uzimaju zajmove od finansijskih institucija (hipotekarni, studentski, auto krediti itd). Ipak, ovi zajmovi nisu finansirani iz depozitnog potencijala. Umesto toga, izvori finansiranja se uglavnom obezbeđuju kroz repo sporazume i investicione fondove sa tržišta novca. Ova sredstva su veoma likvidna i kratkoročna, što ih čini bliskim bankarskim depozitima. Davalac kredita izdvaja i grupiše odobrene kredite i prodaje ih drugoj instituciji. Nakon toga počinje proces sekjuritizacije (Kodres, 2013, str. 42). Na osnovu pula kredita emituju se nove hartije od vrednosti u nekoliko etapa. One se prodaju šarolikoj grupi investitora koja počinje sa pojedincima a završava sa različitim institucionalnim investitorima, kao što su investicioni i hedž fondovi. Pored njih, kupci ovih hartija su i same poslovne banke. Investitori ostvaruju prinos na svojoj investiciju kroz pravo na alikvotni deo naplaćenih rata kredita od svih kredita iz pula. Vrednost emitovanih hartija je tako determinisana vrednošću pula kredita koji je u osnovi njihove emisije. Ove derivatne hartije gube na vrednosti ukoliko dođe do prekida u otplati kredita iz pula, odnosno ukoliko dođe do bankrotstva dužnika.

Proces sekjuritizacije obavljaju finansijske institucije kao što su finansijske holding kompanije, investicione banke i specijalne institucije sa zvaničnom državnom potporom. Iako se može činiti da u stabilnim vremenima

BSS smanjuje transakcione troškove za investitore, on ne nudi nikakvu sigurnost za investirana sredstva. Zbog toga je sistem skloniji paničnim ponašanjima investitora. U BSS-u, umesto povlačenja depozita dolazi do oskudice kratkoročnog finansiranja u periodima nestabilnosti. Kad je pristup finansiranju onemogućen, ili kada su prekidi u otplati kredita iz pula masovni, cela struktura derivatnih instrumenata postaje bezvredna. Na kraju krajeva, investitori snose najveće troškove.

Tradicionalne i banke u senci povezuju dužnike i poverioce. Obe grupe subjekata finansiraju svoje aktivnosti sa kratkoročnim izvorima na osnovu kojih odobravaju dugoročne, manje likvidne kredite. U svemu tome, aktivnosti bankarstva u senci su kompleksnije, često ne do kraja jasne, a sam sistem je neuporedivo manje regulisan. Zbog toga je sistem već prouzrokovao i, ako se ne stavi pod jaču superviziju, može nastaviti da izaziva u budućnosti masovna bankrotstva kako samih institucija koje ga predstavljaju, tako i investitora.

Međuzavisnost tradicionalnog bankarskog sistema i sistema bankarstva u senci i uticaj na sistematski rizik

Analiza sistemskog značaja bankarstva u senci zahteva razumevanje međuzavisnosti između BSS-a i tradicionalnog bankarskog sistema. Ona je preduslov za stvaranje međunarodnih standarda kojima se mogu predupređiti finansijska zaraza i koncentracija rizika. Sistematski rizik ne postoji samo zbog veličine BSS-a već i zbog jakih veza tradicionalnih banaka i subjekata koji predstavljaju BSS. Izdvajaju se različiti direktni i indirektni kanali uticaja među njima. Prema FSB (2011b, str. 4-5) direktne veze postoje jer: su banke veoma često deo lanca kreditne intermedijacije bankarstva u senci; banke pružaju eksplicitnu ili implicitnu finansijsku podršku BSS-u; banke investiraju u finansijske proizvode koje emituje BSS i odobravaju im kredite ali i obrnuto. Formalno, banke mogu da se pojave u ulozi vlasnika subjekata koji predstavljaju BSS, kao što su finansijske kompanije ili brokersko-dilerske kuće (FSB, 2012, str. 20). Indirektne veze se

3. Banks use the remaining deposits to provide loans to entities facing a deficit of financial resources.

The process of lending often includes liquidity, maturity and currency transformation of financial resources. Based on liquid demand deposits, banks are able to grant loans with longer maturity. Qualitatively speaking, this is essentially a maturity and liquidity transformation of financial resources. However, banks are specialized in assessing the borrowers' creditworthiness and monitoring the granted loans. Thereby, they offer diversification benefits to depositors (Noeth, 2012, p. 2).

While transforming deposits into loans traditional banks are supervised by the central bank authority. They are obliged to maintain the predefined level of reserves with the central bank. Banks are required to hold a certain level of capital as a protection against losses. In addition, deposits are often a part of the pre-specified deposit insurance schemes. Banks that need short-term liquidity injections can borrow from the central bank through the discount window or open market operations. Finally, in times of distress, the central bank plays the role of the lender of the last resort for affected banks. All of the stated safety measures are aimed at the stability of the banking system, prevention of the bank runs and soundness of the overall financial system. Besides the traditional banks, in the financial markets nowadays there is a parallel, shadow banking system, which provides similar activities as a banking sector but through other specialized financial institutions. These are financial intermediaries that are different from banks. They operate beyond the system of regulation placed on traditional banks. Since regulation is costly, these institutions use the so-called regulatory arbitrage. They bypass the regulation imposed to traditional banks.

Shadow banks are also part of the indirect financing. They channel financial resources from surplus holders to deficit facing entities. Nevertheless, this process of financial resources transfer is more complex. In this scheme of financing, borrowers still communicate to and get loans from financial institutions (mortgages, student loans, car loans, etc.). But these loans are not funded by deposits. Instead, they are usually funded by repo agreements and

money market mutual funds. These resources are usually very liquid and short term, so in a way similar to bank deposits. The loan provider pools and sells the loan to another institution. Then the securitization process starts (Kodres, 2013, p. 42). Based on the pool of loans new securities are issued in several stages. They are sold to various investors from individuals to institutional ones, including investment and hedge funds. In addition, banks buy them, too. Investors are paid interest on their investment based on the underlying pools' loan payments. The value of the derived securities is also based on the value of the underlying pool of loans. Finally, the derived instruments lose value if there is a default on loan repayment, or in the case of the debtor's bankruptcy.

The securitization process is organized through financial institutions such as financial holding companies, investment banks and government sponsored entities. Although it may seem that in the stable times shadow banking reduces transaction costs for investors, it basically does not offer any kind of protection for the invested money. This makes this system more prone to panic runs. In this system, instead of deposits withdrawal, there is a shortage of short-term funding in the periods of instability. When the funding is cut off, or the underlying loans become non-performing, the whole structure of derived instruments becomes worthless. Ultimately, investors bear the greatest losses.

Traditional and shadow banks bring borrowers and lenders together. They finance their activities with short-term resources based on which they provide longer-term, less liquid loans. In the process, the activities of shadow banks are more complex, often vague and the system is incomparably less regulated. This is why the system has already caused and, if not put under stronger supervision, will continue to cause massive defaults of both shadow banks and investors in the future.

Interconnection between Shadow and Traditional Banking System and Influence on Systemic Risk

The analysis of the systemic importance of shadow banking activities requires an understanding of the interconnectedness

realizuju kroz tržišni kanal, obzirom da obe grupe subjekata mogu investirati u sličnu aktivu (proizvode proistekle iz sekjuritizacije) i poslovati sa sličnim partnerima, oni mogu koristiti i bliske poslovne modele, upražnjavati zajedničke računovodstvene prakse, a ne treba zapostaviti ni tokove informacija i tržišnu percepciju paralelnih tenzija na finansijskom tržištu (ECB, 2015, str. 8-9).

MMF (Aregui i ostali., 2013, str. 6) sugerise dva skupa mera koje regulatori mogu da koriste da identifikuju sistemske rizike koji proističu iz međuzavisnosti: analizu mreže i tržišno (cenovno) bazirane mere. Analiza mreže pomaže u identifikovanju ključnih elemenata u kompleksnoj mreži odnosa između različitih finansijskih institucija i time daljem ispitivanju nivoa izloženosti i proceni direktne transmisije rizika. Zbog toga je prvi korak u analizi odmeravanje uzajamne izloženosti među finansijskim institucijama. Nažalost, jedna sveobuhvatna analiza različitih kanala povezanosti u Evropi je ograničena usled nedostatka adekvatnih podataka. Na primer, podaci o direktnoj uzajamnoj izloženosti različitih finansijskih institucija su raspoloživi tek od 2014. godine. Uz to, ECB u bilansnoj statistici monetarnih finansijskih institucija ne vrši dublje raščlanjavanje Ostataka domaćeg sektora (*Other residence sector*) na dovoljno duge vremenske serije. On se sastoji od institucionalnih subjekata koji su locirani u evrozoni, a ne pripadaju MFIs ili sektoru Vlade (*General government*); a to su Ostali finansijski posrednici (*Other financial intermediaries* - OFIs) i Pomoćne finansijske institucije (*Financial auxiliaries*), osiguravajuće kompanije i penzioni fondovi, nefinansijske kompanije i domaćinstva (ECB, 2007, str. 9). Takođe, podacima o OFI sektoru bi trebalo pristupiti sa rezervom, jer ne postoji celovit obuhvat različitih finansijskih instrumenata i institucija, a i određeni podaci su rezultat kalkulacija na bazi dostupnih podataka. Tržišno bazirane mere sistemskog rizika koriste cene imovine kao što su akcije, obveznice, derivati ili svopovi kreditnog rizika, da bi se

izvela ocena međupovezanosti koja proističe iz direktnog i indirektnog kanala prelivanja uticaja (međuzavisnost finansijskog stanja finansijskih institucija). Nažalost, takva informacija nije dostupna za najveći deo evropskog finansijskog sektora. Pored toga takva mera reprezentuje uglavnom tržišnu percepciju rizika koja ne odlikava u punoj meri verovatnoću bankrotstva institucije.

ECB i drugi regulatori kontinuelno rade na prevazilaženju informativnih ograničenja, pa bi u budućnosti mogli s pravom računati na veću granularnost podataka. To bi omogućilo sveobuhvatniju analizu sistemskog rizika u Evropi i posebno segmenta koji je uzrokovan međupovezanošću različitih finansijskih institucija, kako u Evropi, tako i u celom svetu.

ESRB (2016, str. 16) analizira međuzavisnost kreditnih institucija i subjekata koji predstavljaju BSS prema široj meri (OFIs i IFs) na osnovu sledećih indikatora- kreditna izloženost banaka prema institucijama bankarstva u senci i zavisnost kreditnih institucija od depozita subjekata BSS-a i obrnuto. Oko 8% ukupne imovine kreditnih institucija u evrozoni predstavljaju krediti odobreni subjektima BSS-a, investicije u njihove dužničke hartije od vrednosti, akcijski kapital i investicione jedinice investicionih fondova (Slika 5.)

Slika 5. Izloženost monetarnih finansijskih institucija prema bankarstvu u senci

Izvor: ECB, MFIs and SHS statistics, Statistical Data Warehouse, 7.4.2017

Udeo kredita MFIs odobrenih BSS-u (finansijske institucije bez MFIs, osiguravajućih kompanija i penzionih fondova) ispoljava uzlazni trend, kao što se može opaziti na slici 5. U 2013. godini krediti odobreni BSS-u su iznosili oko 3,7% bankarske aktive (1,21 biliona evra), da bi od tada njihov udeo nešto pao, i na kraju se ustalio na nivou od 3% bankarske aktive. Investicije u kratkoročne i dugoročne hartije od

between the shadow and traditional banking systems. It is a precondition for the creation of international standards to prevent financial contagion and avoid risk concentration. Systemic risk does not exist just because of the size of the shadow banking sector, but also because of the strong linkages between traditional and shadow bank entities. There are different direct and indirect channels of connections among them. According to the FSB (2011b, p. 4-5) direct linkages exist because: banks are often a part of the shadow banking credit intermediation chain, they provide explicit or implicit financial support to the SBS, invest in financial products issued by the SBS and grant loans to them and vice versa. Banks can also be the owners of shadow banking entities like finance companies and broker-dealers (FSB, 2012, p. 20). Indirect links are realized through the market channel, given that both groups of entities can invest in similar assets (securitized products) and have common counterparties, use similar business models, common accounting practices, and one should also take into account the information flows and market perception of coincident financial market stress (ECB, 2015, p. 8-9).

The IMF (Aregui et al. 2013, p. 6) suggests the two sets of measures that regulators can use to identify systemic risk stemming from interconnectedness, i.e. network analysis and market (price)-based measures. Network analysis helps identify the core elements in the complex web of relations among the different financial institutions and thus further investigate the level of exposure and assessment of direct risk transmission. Thus, the first step in this analysis is the measurement of mutual exposures among the financial institutions. Unfortunately, such comprehensive analysis of different interconnection channels in Europe is limited by the lack of adequate data. For instance, the data concerning the direct mutual exposure of different financial institutions are available only since 2014. Also, the ECB in its MFIs balance sheet statistics does not provide a breakdown of “Other Residence Sector” into sufficiently long time series. It consists of institutional units located in the Euro area,

other than MFIs and entities belonging to the “General Government” sector: “Other Financial Intermediaries (OFIs) and Financial Auxiliaries”, “Insurance Corporations and Pension Funds”, “Non-Financial Corporations” and “Households” (ECB, 2007, p. 9). Moreover, the OFIs data available in the ECB statistics should be interpreted with care, since there is no full coverage of different financial instruments and institutions, and some data are the result of the calculations based on the available accounts data. Market-based measures of systemic risk use the prices of assets like stocks, bonds, derivatives or credit default swap prices, to assess the interconnectedness arising from both direct and indirect spillover channels (interdependence of the financial positions of financial institutions). Unfortunately, such information is not available for a significant part of the European financial sector, and also such measures capture mainly the market perception of risk that does not fully reflect the default probability of the concerned institution.

The ECB and other regulators continuously work on information limitations, so in the future deeper granularity of data could be expected. That would enable a comprehensive analysis of the interconnectedness dimension of systemic risk in Europe, but also in the rest of the world.

The ESRB (2016, p. 16) analyzes the interconnectedness between credit institutions and shadow banking entities broadly defined (OFIs and IFs) using the following indicators - banks’ credit exposure vis-à-vis SBS and credit institutions’ dependence on deposits from SBS and vice versa. Around 8% of assets owned by the credit institutions in the Euro area are loans to SBS entities, investments in debt securities, equity and investment fund shares issued by broadly defined shadow bank entities (Graph 5).

Graph 5. Exposure of MFIs to SBS

Source: ECB, MFIs and SHS statistics, Statistical Data Warehouse, 7.4.2017

vrednosti OFIs-a su nešto veće, pa su u 2013. god. iznosile skoro 4% bankarske imovine, da bi u trećem kvartalu 2016. god. pale na 3,35% (pad sa 1,21 na 1,05 biliona evra). Investicije MFIs-a u listirane akcije i jedinice investicionih fondova iza kojih stoje OFIs su beležile konstantan rast u posmatranom periodu, iako su apsolutno i relativno gledano manje zastupljeni u bankarskoj aktivni - oko 0,8%. Depoziti BSS-a kod MFIs su relativno visoki, i čine nešto preko 6% MFIs pasive. Njihov maksimum je zabeležen tokom 2011. god. (2,32 biliona evra, što je tada iznosilo preko 7% ukupne pasive), da bi otada došlo do

neznatnog pada ovog udela. U pogledu ročnosti može se konstatovati da polovina tih depozita ima rok dospeća kraći od jedne godine.

Ukupna direktna obostrana izloženost evropskih finansijskih institucija je prikazana na slici 6. Izloženost BSS-a prema MFIs-u je veća nego u obrnutnom slučaju, što je naročito slučaj sa investicionim fondovima sa tržišta novca, i oni investiraju uglavnom u dužničke hartije od vrednosti kreditnih institucija (oko 70% njihove aktive). Izloženost investicionih fondova koji investiraju u obveznice i hedž fondova prema MFIs-u je 11% i 8% respektivno (ESRB, 2016, str. 6).

Slika 6. Direktna obostrana izloženost finansijskog sektora u evrozoni, prema tipu instrumenta, Q3 2016

Izvor: kalkulacija autora na osnovu podataka: ECB, SHS, BSI statistics, Statistical Data Warehouse and ECB. 2016. Report on Financial Structures, October, str. 13

The share of loans MFIs granted to the SBS (financial corporations except for MFIs and the ICPFs sector) has had an increasing trend, as shown on Graph 5. In 2013 loans to the SBS amounted to around 3.7% of bank assets (1.21 trillion euros), and despite a slight decline since then, these loans still remain at a high level - around 3% of bank assets. The holdings of short- and long-term debt securities issued by the OFIs sector are larger, in 2013 almost reaching 4% of bank assets, and having fallen to 3.35% in Q3 2016 (a drop from 1.21 to 1.05 trillion EUR). The MFIs investments into listed shares and investment fund units issued by OFIs recorded a constant rise in the observed period, although in both absolute and relative terms they account for

a smaller proportion of bank assets, i.e. around 0.8%. The deposits from the SBS institutions with the MFIs are higher, and account for slightly less than 6% of the MFIs liabilities. The maximum was reached during 2011 (2.32 trillion EUR, slightly above 7% of total liabilities), and there has been a slight drop since. A half of these deposits have maturity below 1 year.

The direct mutual exposure of the European financial institutions is shown on Graph 6. The exposure of the SBS to MFIs is larger than vice versa, which is particularly the case with MMFs, as they invest mainly in debt securities of credit institutions (around 70% of their assets). The exposure of bond funds and hedge funds to MFIs is 11% and 8%, respectively (ESRB, 2016, p. 6).

Graph 6. Direct mutual exposure of the Euro area financial sector, per type of instrument, Q3 2016

Source: Authors' calculations based on the data from: ECB, SHS, BSI statistics, Statistical Data Warehouse and ECB. 2016. Report on Financial Structures, October, p. 13

Najveći zajmodavci među tri razmatrane grupe subjekata su MFIs, a najveći deo njihovih kredita je odobren drugim MFIs (oko 82% ili 5,4 biliona evra), dok krediti OFIs-u čine oko 15% svih kredita (935 milijardi evra). Drugi najveći zajmodavac su OFIs. Oko 74% njihovih kredita je odobreno MFIs (oko 2,2 biliona evra), a blizu 25% interno, odnosno među institucijama koje čine ovaj finansijski podsektor. Sa druge strane, osiguravajuće kompanije i penzionirani fondovi nemaju istaknutu ulogu kada se radi o odobravanju kredita drugim finansijskim institucijama. To se kompenzuje njihovom ulogom vodećeg investitora u listirane akcije i jedinice investicionih fondova. Njihove ukupne investicije u ove plasmane u četvrtom kvartalu 2016. god. su iznosile 2,744 biliona evra, a dominantna pozicija (skoro 98,1%) su bile akcije investicionih fondova. Oko 2,54 biliona evra (oko 95%) otpada na jedinice investicionih fondova koji pripadaju OFIs podsektoru. Investicije u listirane akcije i akcije investicionih fondova koji pripadaju MFIs-u su iznosile oko 142 milijarde evra (oko 5,2% ukupnog razmatranog portfolija osiguravajućih kompanija i penzioniranih fondova). Podsektor OFIs sledi sličan obrazac kada se radi o ovom portfoliju, što znači da se najviše investira u sam podsektor. Investicije u listirane akcije i jedinice investicionih fondova iznose oko 1,964 biliona evra, a 83% tog iznosa je plasirano u isti podsektor, pri čemu preovlađuju investicije u akcije investicionih fondova (skoro 1,47 biliona evra). Što se tiče investicija u listirane akcije i akcije investicionih fondova koji pripadaju MFIs-u, one iznose oko 278,5 milijardi evra (oko 14,2%). MFIs takođe beleže značajnu izloženost prema OFIs-u, jer od njihovih ukupnih investicija u listirane akcije i jedinice investicionih fondova koje su na nivou od 350 milijardi evra, nešto iznad 71% su investicije u akcije i jedinice fondova koji pripadaju OFIs podsektoru, dok oko 26% čine investicije u akcije i jedinice fondova koji pripadaju MFIs podsektoru. Najveći investitor u dužničke hartije od vrednosti finansijskog sektora je MFIs - oko 2,65 biliona evra. Kratkoročne i dugoročne hartije od vrednosti MFIs čine oko 60% portfolija tih hartija, a blizu 40% otpada na hartije OFIs podsektora. Kratkoročne i dugoročne hartije od vrednosti MFIs su veoma atraktivne i za druge

finansijske podsektore, pa tako oko 51% svih dužničkih hartija u posedu OFIs-a i oko 63% u posedu osiguravajućih kompanija i penzioniranih fondova jesu emitovane upravo od strane MFIs.

Međuzavisnost u evropskom finansijskom sektoru se može proučavati ne samo na osnovu direktne obostrane izloženosti na evropskom nivou, nego i po pojedinačnim zemljama i njihovoj izloženosti prema finansijskim institucijama iz matične zemlje i drugih zemalja evrozone. Povrh toga, važno je pratiti međuzavisnost koja proističe iz izloženosti prema istoj vrsti imovine. Prema Izveštaju o finansijskoj strukturi (2016, str. 13-18), najveća izloženost MFIs je zabeležena u četiri najveće EMU privrede - Nemačkoj, Francuskoj, Italiji i Španiji, a njen najveći deo se odnosi na izloženost prema drugim domaćim MFIs. Izloženost prema domaćem OFIs podsektoru je takođe veoma visoka, posebno u Španiji gde je čak veća od izloženost prema domaćim MFIs. U Nemačkoj i Francuskoj, domaće kreditne institucije obimno investiraju u kreditne institucije i OFIs podsektor lociran u drugim zemljama evrozone. Pojedinačno gledano zemlja sa najvećom izloženosti domaćim kreditnim institucijama prema domaćem OFIs podsektoru je Holandija (oko 85%). OFIs podsektor u Austriji, Luksemburgu, Malti, Nemačkoj, Francuskoj i Irskoj je uglavnom orijentisao svoju izloženost prema domaćim OFIs kao i onim lociranim u drugim zemljama evrozone. Izražen je i nivo njihove izloženosti prema MFI podsektoru.

Svi analizirani indikatori pokazuju da međusobne veze između različitih tipova finansijskih institucija u Evropi postaju sve jače i razvijenije, i da se posebno ističe rast izloženosti prema subjektima BSS-a. Takođe, analiza je pokazala da se opaža blagi trend promene u strukturi eksternih izvora finansiranja nefinansijskih kompanija gde bankarske izvore zamenjuju izvori koji potiču od drugih finansijskih institucija.

Zaključna razmatranja

Finansijske institucije koje ulaze u sastav bankarskog sistema u senci u Evropi su izvor visokog sistematskog rizika, ne samo zbog svoje veličine, već i zbog veoma složenih veza sa drugim finansijskim institucijama, kao i zbog

The largest borrowers are MFIs, and the largest portion of these loans is granted to other MFIs (around 82% or 5.4 trillion EUR), while loans to OFIs account for 15% of total loans (935 billion EUR). The second largest lender is the OFIs sector. Around 74% of their loans is granted to MFIs (around 2.2 trillion EUR) and close to 25% to other OFIs. ICPFs do not have a significant role in granting loans to other financial institutions. The largest holder of listed shares and investment funds' units is the ICPFs sector. Its total investments in these securities in Q3-2016 amounted to 2.744 trillion EUR and most of that (almost 98.1%) was invested in investment funds' shares. Around 2.54 trillion EUR (or 95%) was placed in the IFs units issued by OFIs. Investments in listed shares and IFs units issued by MFIs amounted to around 142 billion EUR (or around 5.2% of the total ICPFs portfolio of listed shares and IFs units). OFIs are very exposed to the same sector. Their total exposure to the listed shares and IFs units is around 1.964 trillion EUR, and 83% of that is investments in other OFIs, most of which are in the IFs shares (almost 1.47 trillion EUR). Investments in the listed shares and IFs units issued by MFIs are around 278.5 billion EUR (or 14.2%). MFIs are also significantly exposed towards OFIs, given that out of their total investments in the listed shares and IFs units amounting to about 350 billion EUR, slightly above 71% is accounted for by the investments in the shares and IFs units issued by the OFIs sector, and around 26% by the investments in the shares and IFs units issued by other MFIs. The largest holder of debt securities issued by financial institutions is the MFIs sector - around 2.65 trillion EUR. Around 60% of that is accounted for by short- and long-term securities issued by other MFIs, and close to 40% by those issued by the OFIs sector. Short-term and long-term MFIs securities are very attractive for other financial sectors as well, hence around 51% of all debt securities owned by OFIs and around 63% of all debt securities owned by ICPFs are the ones issued by MFIs.

The interconnectedness in the European financial sector could be analyzed not just through the direct mutual exposure at the European level, but also across individual countries and their exposure to the financial

sectors located in the same and in other Euro area countries. Besides, it is important to examine the interconnectedness arising from the exposures to common assets. According to the Report on Financial Structures (2016, p. 13-18), the largest exposure of MFIs is in the 4 largest EMU economies – Germany, France, Italy and Spain, most of which refers to the exposure towards other domestic MFIs. Their exposure to domestic OFIs is also very high, especially in Spain where it is higher than the exposure to domestic MFIs. In Germany and France domestic credit institutions invested sizable amounts into the credit institutions and OFIs from other EMU countries. The country with the highest exposure of domestic credit institutions towards domestic OFIs is the Netherlands (around 85%). OFIs in Austria, Luxembourg, Malta, Germany, France and Ireland are mostly exposed towards domestic and other Euro area OFIs. Equally important is the level of their exposure to the MFIs sector.

The analyzed indicators show that the linkages between various types of financial institutions in Europe have been growing, especially the exposures towards shadow bank entities. Also, the analysis has shown that there is a mild trend of substituting the financing of nonfinancial corporations by banks with the financing via other financial institutions.

Concluding Remarks

Financial institutions making the shadow banking system in Europe are the source of significant systemic risk, not just because of their size, but also because of the very complex net of relationships with other financial institutions, and because of the fact that they hold the same assets and have the same business partners as the regulated financial sector. These risks materialized after the financial crisis and caused significant changes in the financial regulation in Europe (Popović & Janković, 2017). The first step towards the better and more comprehensive regulation of the overall financial system was the process of macro-mapping the Euro area shadow banking system based on the financial sector balance sheet statistics. There was and still is the problem of insufficient granularity of data. Very often, the data released by the ECB

činjenice da drže iste oblike imovine i imaju iste poslovne partnere kao i regulisani finansijski sektor. Ovi rizici su se materijalizovali nedugo po izbijanju finansijske krize i prouzrokovali značajne promene u finansijskoj regulaciji u Evropi (Popović i Janković, 2017). Prvi korak ka boljoj i sveobuhvatnijoj regulaciji celog finansijskog sistema je bio proces makro-mapiranja BSS-a u evrozoni zasnovan na bilansnoj statistici finansijskog sektora. Postojao je, i još uvek postoji problem nedovoljne granularnosti podataka. Veoma često, podaci koje objavljuje ECB su rezultat kalkulacija i procena na bazi raspoloživih podataka, tako da se mogu pojaviti razlike u istim podacima koji su objavljeni u različitim izveštajima za različite godine. Veliki deo BSS-a još uvek nije detaljnije statistički obuhvaćen, što sprečava temeljno razumevanje specifičnih rizika i što je još važnije samog sistematskog rizika koji on izaziva. Različiti regulatori pored toga prihvataju različite definicije BSS-a zbog čega se pojavljuju razlike među njima, a prikupljeni podaci o poslovanju BSS-a na svetskom nivou time postaju teško uporedivi. Proučavanje međusobne zavisnosti koja se javlja između različitih finansijskih institucija i među pojedinačnim zemljama i kontinentima je presudno za formulisane adekvatne regulacije na međunarodnom nivou, obzirom da su evropske kreditne institucije i OFIs intenzivno investirali u institucije američkog bankarstva u senci, što se ispostavilo kao bitan kanal za brzo širenje zaraze na Evropu. Evropske banke su tako bile značajno uključene u proces finansijske intermedijacije u SAD-u preko aktivnosti njihovog BSS-a. Na drugoj strani, američki fondovi sa tržišta novca su plasirali značajne iznose kratkoročnih sredstava u evropske banke.

Rastući značaj bankarskog sistema u senci je praćen jačanjem njegovih veza sa regulisanim finansijskim institucijama. Kreditne institucije

se kod kratkoročnog finansiranja više oslanjaju na druge finansijske institucije, što izaziva brzu transmisiju šokova, a samo kratkoročno finansiranje je više osetljivo na panično ponašanje investitora i oskudicu likvidnosti. Ovo zabrinjava regulatore koji nastoje da nađu adekvatan pristup kojim bi obuhvatili i nadgledali interakciju među institucijama. Postoji i jaka potreba za međunarodnom saradnjom. Adekvatna makroprudencijalna regulacija bi morala da ima globalnu prirodu. U suprotnom, razlike u nacionalnoj regulativi koja se odnosi na BSS mogu pokrenuti regulatornu arbitražu i nove potencijalne sistemske rizike. Međunarodna reakcija regulatora na finansijsku krizu je rezultirala u preporukama FSB-a o nadzoru i regulaciji BSS-a (FSB, 2011a). FSB, zajedno sa Bazelskim komitetom za nadzor banaka se angažovao na "Radnom zadatku 1: Interakcija banaka sa subjektima bankarstva u senci". Cilj predloženih mera je da se unapredi konzistentnost konsolidacije za potrebe prudencijalne regulacije među zemljama, što bi omogućilo adekvatno praćenje svih bankarskih aktivnosti i njihovu interakciju sa BSS-om; da se kontroliše rizik zaraze koji proističe iz međupovezanosti tradicionalnog i bankarskog sistema u senci i da se uvedu kapitalni zahtevi zavisni od nivoa rizika bankarskih plasmana u vlasnički kapital fondova. Bazelski komitet za nadzor banaka je pripremio određene mere - Bazel II. 5 i Bazel III, sa ciljem da poveća otpornost tradicionalnog bankarskog sektora u pogledu rizika koji se mogu ostvariti a povezani su sa BSS-om. Na osnovu preporuka FSB-a, Evropska komisija je izdala Zeleni papir o bankarstvu u senci u 2013. godine. Nakon njega je usledilo formulisane paketa propisa kojim se priprema uspostavljanje regulatornog okvira za poslove bankarstva u senci, i on se sastoji od dva dela: Komunikacija Komisije o bankarstvu u senci (Evropska komisija, 2013a) i Regulacija za fondove tržišta novca (Evropska komisija, 2013b).

are the calculations and estimations based on the available data, so there might be differences in the data published in various reports in different years. A large part of the shadow banking sector is still not captured in more detail, which prevents the thorough understanding of the specific and more important systemic risks that it causes. There are also differences in the accepted definition of shadow banking among different regulators, which makes the data on shadow bank activities throughout the world insufficiently comparable. However, studying the interconnectedness among the different financial institutions across the different countries and continents is essential for the creation of adequate regulation at the international level, since the European credit institutions and OFIs invested heavily in the American shadow banking entities, which turned out to be an important channel for a very quick spreading of the contagion to Europe. The European banks were significantly involved in the process of financial intermediation in the US via shadow banking activities. On the other side, the US money market funds placed significant amounts of short-term resources in the European banks.

The growing importance of the shadow banking system is accompanied by the rising interconnection with the regulated financial institutions. When it comes to short-term funding, credit institutions rely more on other financial institutions, which can cause a quick transmission of shocks across institutions, while short-term funding is in itself more susceptible to panic runs on the part of investors and liquidity shrinkage. This raises concerns for regulators that endeavor to find the adequate approaches to capture and monitor this

interaction among institutions. There is a strong need for international cooperation. The adequate macroprudential regulation has to be global. Otherwise, the diverse national shadow banking requirements can cause regulatory arbitrage and new potential systemic risks. The international reaction of regulators to the financial crisis resulted in the Financial Stability Board's recommendations concerning the oversight and regulation of shadow banking activities (FSB, 2011a). The FSB, together with the Basel Committee on Banking Supervision worked on "Work Stream 1: Banks' Interactions with Shadow Banking Entities". The proposed measures are aimed to improve the consistency of consolidation for prudential regulatory purposes across different countries, which would enable the adequate capturing of all banks' activities and their interactions with the shadow banking system; to control the contagion risks arising from interconnectedness of traditional and shadow banking system and to introduce the risk sensitive capital requirements for banks' investment in the equity of funds. The Basel Committee on Banking Supervision also developed certain measures within Basel II.5 and Basel III, which are aimed to enhance the resistance of the traditional banking sector against some risks posed by shadow banking. Based on those FSB recommendations, the European Commission released the Green Paper on Shadow Banking in 2013. It was followed by a legislative package that set the regulatory steps for shadow banking activities, which consists of two parts: Communication from the Commission on Shadow Banking (European Commission, 2013a) and Regulation on Money Market Funds (European Commission, 2013b).

Literatura / References

1. ECB. 2016. Report on Financial Structures, October. Frankfurt am Main: European Central Bank.
2. Adrian T., Ascraft, A. 2012. Shadow Banking Regulation. Staff Report No. 559. April 2012. New York: Federal Reserve Bank of New York. Pristupljeno: 14.2.2017 https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr559.pdf
3. Aregui et. al. 2013. Addressing Interconnectedness: Concept and Prudential Tools. IMF Working Paper WP/12/199. Washington: International Monetary Fund
4. Bakk-Simon, K. et al. 2012. Shadow Banking in the Euro Area, an Overview. Occasional Paper Series No. 133, Frankfurt am Main: European Central Bank, April. Pristupljeno: 4.1.2017 <https://www.ecb.europa.eu/pub/pdf/scpops/ecbocp133.pdf?4e7d9b9457759addc96d58dd6dcf1891>
5. Deutsche Bundesbank. 2014. Monthly Report, March. Frankfurt am Main: Deutsche Bundesbank
6. ECB, MFIs, SHS, BSI statistics, Statistical Data Warehouse, Pristupljeno: 7.4.2017 <http://sdw.ecb.europa.eu>
7. ECB. 1999. Possible Effects of EMU on the EU Banking Systems in the Medium to Long Term, February. Frankfurt am Main: European Central Bank.
8. ECB. 2002. Report on Financial Structures. Frankfurt am Main: European Central Bank.
9. ECB. 2007. Monetary Financial Institutions and Markets Statistics Sector Manual, Frankfurt am Main: European Central Bank.
10. ECB. 2013. Enhancing the Monitoring of Shadow Banking. Monthly Bulletin, February. Frankfurt am Main: European Central Bank.
11. ECB. 2015. Report on Financial Structures, October. Frankfurt am Main: European Central Bank.
12. ECB. 2016. Report on Financial Structures, October. Frankfurt am Main: European Central Bank.
13. European Commission. (4.9.2013a). Shadow banking - addressing new sources of risk in the financial sector. Communication from the Commission to the Council and the European Parliament. COM (2013) 614 final, Brussels. Pristupljeno: 26.1.2017 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0614:FIN:EN:PDF>
14. European Commission. (4. 9. 2013b). Money market funds. Proposal for a Regulation of the European Parliament and of the European Council. COM (2013) 615 final. 2013/0306 (COD). Brussels, Pristupljeno: 26.1.2017 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2013:0615:FIN:EN:PDF>
15. ESRB. 2016. EU Shadow Banking Monitor, No. 1, July. Frankfurt am Main: European Systemic Risk Board
16. FSB. 2011a. Strengthening oversight and regulation of shadow banking. Recommendations of the Financial Stability Board. Basel: Financial Stability Board. Pristupljeno: 27.1.2017 http://www.fsb.org/wp-content/uploads/r_111027a.pdf?page_moved=1
17. FSB. 2011b. Shadow Banking: Scoping the Issues, A Background Note of the Financial Stability Board. Basel: Financial Stability Board. Pristupljeno: 6.4.2017 <http://www.fsb.org/2011/04/shadow-banking-scoping-the-issues/>

18. FSB. 2012. Global Shadow Banking Monitoring Report, November. Basel: Financial Stability Board. Preuzeto: 6.4.2017 http://www.fsb.org/wp-content/uploads/r_121118c.pdf
19. IMF. 2014. Shadow Banking Around the Globe: How Large and How Risky?. Global Financial Stability Report: Risk Taking, Liquidity, and Shadow Banking - Curbing Excess While Promoting Growth, October. Washington: International Monetary Fund. Preuzeto: 4.1.2017 <http://www.imf.org/external/pubs/ft/gfsr/2014/02/pdf/text.pdf>
20. Jeffers, E., Plihon, D. 2013. Universal Banking and Shadow Banking in Europe. Preuzeto: 30.3.2017 http://gdre2013.conference.univ-poitiers.fr/wp-content/uploads/sites/21/2014/05/Jeffers_Plihon.pdf
21. Kodres, L. E. 2013. What Is Shadow Banking? Finance & Development, June 2013, Vol. 50, No. 2. Preuzeto 9.4.2017 <http://www.imf.org/external/pubs/ft/fandd/2013/06/pdf/basics.pdf>
22. Noeth, J. B. 2012. Traditional Versus Shadow Banking. Page One ECONOMICS NEWSLETTER, February 2012. St. Louis: Federal Reserve Bank of St. Louis, Preuzeto: 9.4.2017 https://files.stlouisfed.org/files/htdocs/pageone-economics/uploads/newsletter/2012/PageOne0212_Banking_Shadow_Banking.pdf
23. Popović, S. 2016. Banking Union for Decreasing Systemic Risk in EMU in: Risk Management in the Financial Services Sector. Faculty of Economics, University of Belgrade, Reviewers: Daykin Chris, Evgenevna Baskakova Marina, Jakovčević Drago, Boričić Branislav, pp. 213-231.
24. Popović, S. Janković, I. 2017. Can Banking Union Help Viability of Eurozone Banking Sector? Some Preliminary Results. Series: Economics and Organization, Facta Universitas. Vol 14, No. 1, ISSN 0354-4699, DOI: <http://dx.doi.org/10.22190/FUEO1701001P>, p. 1-15
25. Popović, S., Redžepagić, M., Janković, I. 2017. The Potentials of Bancassurance in Serbia, in: Challenges and Tendencies in Contemporary Insurance Market, University of Belgrade, Faculty of Economics Publishing Centre, Editors: Jelena Kočović, Branislav Boričić, Biljana Jovanović-Gavrilović, Martin Balleer, ISBN: 978-86-403-1522-7; COBISS. SR-ID 233297932, p. 185-203