6 Shadow banking – definitions, determinants and risk for a financial system

Introduction

Shadow banking started to be an important part of the financial world after the global financial crisis associated with subprime mortgage credits and securitization based instruments. According to the International Money Fund opinion some of the key drivers of shadow banking development are similar in the emerging and developed economies. In advanced economies, what may be surprising, shadow banking is going to grow deeper, what may be partly explained by achieving lower provisions and margins in comparison with the income collected upon an interest rate gap. The aim of the article is to distinct the shadow and traditional banking system institutions and to describe the benefits and risk associated with shadow banks activities. According to it there was defined a hypothesis that shadow banking system is in most economic functions similar to a traditional system. The second hypothesis underlines the fact that shadow banking instruments' development was not limited to the time of the crisis 2007–2009, but is an integral part of a financial system. In line with the aim and hypotheses described above there were used the research methods of descriptive analysis and synthesis based on the publications of regulatory and supervisory institutions.

1. Shadow banking definitions

The definition of "a shadow bank" was created by the American economist P. McCulley in 2007 and for the first time it was used in a famous speech at the annual financial symposium in the Kansas City Federal

Reserve Bank in Wyoming.[1] P. McCulley's definition indicated shadow banking as being a characteristics of the US financial system.[2] He referred predominantly to nonbank financial institutions that were engaged in maturity transformation of assets during and before the financial crisis of the first decade of 21st century. In this approach the financial system consisted of two parts: a regular banking system and the parallel banking system. Commercial banks being a part of a regular banking system were engaged in maturity transformation in a traditional way, when they used short-term deposits to fund long-term loans. Shadow banks, creating a parallel system, worked similarly, however, they raised short-term resources, gathered in the money markets, and used them to purchase assets with longer-term maturities.

Shadow banking is typically described by financial activities occurring outside the regulated banking sector. As observed by G. Gorton and A. Metrick,[3] Z. Pozsar et al.[4] and also T. Adrian and H.S. Shin,[5] in recent years, the most important activities took the form of rapidly expanding provision of short-term safe debt to financial intermediaries through money market funds (MMFs) and other sources outside of the regulated banking sector. Much of that debt was collateralized through the process called securitization, which involved origination and acquisition of loans by financial intermediaries, the structurization of these loans into diversified pools, and afterwards – separation of these pools to manufacture safe pieces. While regulated banks played a key role in securitization and held large amounts of securitized assets, a great part of the ultimate

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[1] L.E. Kodres, *What is Shadow Banking?*, "Finance & Development" 2013, Vol. 50, No. 2, www.imf.org/external/pubs/ft/fandd/2013/06/basics.htm (accessed 30.05.2015).

[2] P. McCulley, The Shadow Banking System and Hyman Minsky's Economic Journey, "Global Central Bank Focus", PIMCO, May 2009, p. 1.

[3] G. Gorton, A. Metrick, *Regulating the Shadow Banking System*, "Brooking Papers on Economic Activity" 2010, Fall, pp. 261–265.

[4] Z. Pozsar, T. Adrian, A. Ashcraft, H. Boesky, *Shadow Banking*, Federal Reserve Bank of New York, Staff Report no. 458, July 2010, pp. 1–4.

[5] T. Adrian, H.S. Shin, *The Shadow Banking System. Implications for Financial Regulations*, Federal Reserve Bank of New York, Staff Report No. 382, July 2009, pp. 3–7.

financing of securitized assets was delivered by the shadow banking system.

Similar approach was expressed by N. Gennaioli, A. Schleifer and R.W. Vishny, who defined the shadow banking system by financial activities occurring outside the regulated banking sector.[6] They also enhanced promptly expanding provisions of short-term debt within the operations made by financial intermediaries. The funds are mainly collateralized through securitization what involves some steps, like collecting the loans by financial intermediaries, their congregation and transmission to diversified investment pools, and finally segregating the pools' elements to create independent packets covering various rating types (both safe and risky instruments).

Attempts to define and explore the shadow banking system are made by many economists, institutions and government bodies. The parallel banking system is analysed in terms of both entities, as well as instruments and activities covered by this system. The complexity, the wide range of activities and a small transparency of this system makes it difficult to formulate a uniform definition of shadow banking. In Tabel 1 there are shown exemplary definitions of the shadow banking system. The wide range of definitions and perspectives on shadow banking is based on criteria of activities and entities involved in shadow banking system operations.

Despite numerous differences, definitions cited in Tabel 1 in relatively precise extent characterize the phenomenon of shadow banking and at the same time they show some typical characteristics of this system. In detail, these definitions show the shadow banking phenomenon as a complex system of institutions and financial instruments, operating in parallel way to the traditional system of commercial banks. Described institutions are similar to traditional banks in the sense that they are providing credit intermediation services, and are an important link

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[6] N. Gennaioli, A. Schleifer, R.W. Vishny, *A model of shadow banking*, "The Journal of Finance" 2013, Vol. LXVIII, No. 4, p. 1.

between the demand and supply side concerning the money circulating in the market, specifically the borrowers and financial fund providers.[7]

Tabel 1
Review of definitions of shadow banking

Activities	Entities	Activities and Entities
All financial activities, except traditional banking, requiring private or public backstop to operate (Claessens, Ratnowski 2014)	Levered-up financial intermediaries with liabilities perceived akin to bank deposits "the whole alphabet soup" (McCulley 2007)	Credit intermediation involving entities and activities outside the regular banking system (FSB 2013)
Unregulated or lightly regulated bank-like intermediation (FCIC 2010)	Maturity transformation outside banking social contract (Ricks 2010)	Provision of financial products and services by shadow entities and financial markets (Schwarcz 2012)
Money market funding of capital market lending (Mehrling et al. 2013)	Nonbank financial institutions that behave like banks, borrow in short-term, use leverage and lend or invest in long-term in illiquid assets, less regulated (Acharya, Khandwala and Öncü 2013)	Institutions, old contracts (repo), and more esoteric instruments, like ABCP, asset backed securities (ABS), collateral debt obligation (CDO) etc. (Gorton and Metrick 2012)
Market funded, credit intermediation system involving maturity or liquidity transformation through securitization and secured-funding mechanisms (Deloitte 2012)	Entities conducting maturity, credit and liquidity transformation without government guarantee or access to central bank liquidity (Pozsar et al. 2013)	Entities with liabilities supposedly redeemable at par but without a government guarantee, and instruments that trade as if they have a zero performance risk (Kane 2014)
Noncore liabilities capturing non-traditional funding (Harutyunyan et al. 2015)		

Source: *Global Financial Stability Report 2014. Risk Taking, Liquidity, and Shadow Banking Curbing Excess while Promoting Growth,* World Economic and Financial Surveys, International Money Fund, October 2014, p. 91.

The most important characteristics of the shadow banking system activity can be considered through transfer of risk, maturity and liquidity transformation, structuring of financial assets, the developed use of

[7] A. Harutyunyan, A. Massara, G. Ugazio, G. Amidzic, R. Walton, *Shedding Light on Shadow Banking*, International Money Fund, IMF Working Paper, No. WP/15/1, January 2015, pp. 12–13.

leverage, lack of transparency in the rules of operation and regulations applicable immunity to traditional credit institutions.

The financial crisis in 2007–2008 revealed the mistakes and impurities of the shadow banking system, the breakdown of which possibly played a serious role in destabilisation of the regulated banking sector.[8] External investors' activity determines a demand for riskless commitment and secondarily for securitization. Commercial bank assets and leverage are associated by regulations upon which the limits are made for maximum exposure, but commercial and shadow banks become interconnected through markets, therefore all banks increase exposure to systemic risk even though they reduce individual risk through diversification.[9] The shadow banking system may be stable and welfare improving under rational expectations, but exposed to crises and liquidity problems, when investors discount extension of risk.

The main problem, arising within the functioning of shadow banking, was lack of treatment of the shadow banks by traditional banking regulations. It implicated two important threats: the impossibility to borrow from the Federal Reserve as the lender of last resort and lack of insurance of funds for depositors. In a traditional banking system the depositor's funds are covered by insurance what enhances the liquidity and stability of such a system.[10]

2. Economic functions of a shadow banking system

Shadow banks began to play growing role within the subprime mortgage crisis. The securitization process was based on the mortgage value and the assets referring to it. These assets were bought and sold by the chain of financial entities in the form of a package of mortgage loans used to back a security sold to investors.[11] The value of the security was related to the value of the mortgage loans in the package, and the interest on

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[8] G. Gorton, A. Metrick, *op.cit*., pp. 261–265.

[9] N. Gennaioli, A. Schleifer, R.W. Vishny, *op.cit*., pp. 1–5.

[10] *Global Shadow Banking Monitoring Report 2014*, Financial Stability Board, October 2014, p. 22.

[11] L.E. Kodres, *op.cit*.

a mortgage-backed security (MBS) was then paid basing on the interest paid on their mortgage loans by principal proprietors. All these steps were generally made with no supervision of banking regulators, but in the end they created the instability risk to the whole banking sector and influenced its failures.

The Financial Stability Board (FSB), an American financial and supervisory authority, developed a broader description of shadow banks that included all entities operating outside the regulated banking system that perform the core banking functions, especially credit intermediation meant as borrowing money from savers and lending it to borrowers.[12] The FSB classification indicates that shadow banking may take diverse forms in different countries because of alterations of legal and regulatory settings and also various characters of non-bank financial systems expressed by the dynamics of development and innovation level.[13] In Tabel 2 there are enumerated the types of shadow financial entities, which are categorized according to the FSB recommendations and described consistently upon performed economic functions.

These specific economic functions are: management of collective investment vehicles, loan provisioning, intermediation of market activities, assistance of credit creation and securitization based credit-intermediation.[14] Such approach gives the assessment of shadow banking activities in non-bank financial entities including new structures and innovations within these functions. Each of these functions comprises non-bank credit intermediation involving systemic risks connected with the functioning of a regular banking sector, therefore it may be underlined that they also pose relevant shadow banking risks.[15]

The key aspects of intermediation mentioned by FSB are associated with the basic functions of a banking sector and these are: maturity

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[12] *Strengthening Oversight and Regulation of Shadow Banking*, *Policy Framework for Strengthening Oversight and Regulation of Shadow Banking Entities*, Financial Stability Board, 29 August 2013, www.financialstabilityboard.org (accessed 30.06.2015), pp. 6–11.

[13] *Global Shadow Banking...*, p. 35.

[14] *Ibidem*, p. 36.

[15] *Global Financial Stability...*, pp. 86–87.

transformation, liquidity transformation, leverage and credit risk transfer. Maturity transformation is referring to the basic role of banks which is collecting short-term funds to transfer them in longer-term assets. As it goes about liquidity transformation, it is closely connected with the conception of maturity transformation that involves most liquid liabilities (of cash-like liquidity) in order to transform them into less liquid assets such as bank loans. Borrowing money with the purpose to buy fixed assets with the use of leverage may prove magnification of the potential gains (or – eventual losses) on such an investment. The last function will

Tabel 2

Classification of financial institutions by economic functions

Description of an economic function	Classifies financial entities within a shadow financial system
Management of collective investment vehicles with features providing vulnerability to runs	Credit hedge funds, fixed income mutual funds, trust companies
Loan provision that is dependent on short-term funding	Finance companies, leasing companies
Intermediation of market activities dependant on short-term funding or on secured funding of client assets	Broker-dealers
Assistance of credit creation	Mortgage insurers, financial guarantors, insurers that write credit protection
Securitisation-based credit intermediation and funding of financial entities	CLOs/CDOs[*], asset-backed commercial papers (ABCPs)[**], Special Purpose Vehicles (SPVs)

[*] Collateralized loan/debt obligations (CLOs, CDOs) are securities backed by a pool of debt, often low-rated corporate loans. They are similar to collateralized mortgage obligations, except for the different type of underlying loan. In a CLO/CDO, the investor receives scheduled debt payments from the underlying loans but assumes most of the risk in the event that borrowers default. The securities offer the investor greater diversity and the potential for higher-than-average returns. Typically, banks sell CLOs within various tranches reflecting different levels of seniority to cover different risk profiles. See M. Szmelter, *Sekurytyzacja*, in: *Finanse, bankowość i rynki finansowe*, ed. E. Pietrzak, M. Markiewicz, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2006, p. 400.

[**] ABCPs are short-term investment vehicles having a maturity typically between 90 and 180 days. These securities are typically issued by a bank or other financial institution and backed by assets like trade receivables. and are generally used for short-term financing needs. In case of searching higher liquidity the receivables may be sold to another institution, which will issue them to its investors as a commercial paper. The commercial paper is backed by the expected cash inflows from the receivables.

Source: *Global Shadow Banking*..., p. 36.

be connected with credit risk transfer which bases on taking the risk of a borrower's default and shifting it from the initiator of the loan to a different party.[16]

Given that shadow banking activities do not attitude unwarranted risk to the financial system, there is nothing fundamentally risky in obtaining funds from numerous investors in a short period and investing those funds with longer-term maturities. Complications arose in the course of the recent global financial crisis, when investors became alarmed about the value of longer-term assets and many of them decided to withdraw their funds at the same time or did not allow to roll over the maturity dates of their investments. To repay these investors, shadow banks had to sell assets immediately what strongly reduced their value, driving other shadow banking institutions (as well as commercial banks) having similar long-term assets to lessen the book value of those assets to follow the lower market prices. The straight effect within the middle of the crisis was creation of further and further uncertainty concerning the stability of financial institutions (either banks and nonbanks).

If such turbulences occur only outside the banking system, it might probably have been isolated and such entities would have been regularly shut down. However, commercial banks were also involved in the shadow operations. In some cases shadow banks were controlled by commercial banks and therefore due to reputation were rescued by parent bank, in some other circumstances while shadow banks had to withdraw funds from other markets (comprising these ones at which banks sold their commercial papers and other short-term debt) the sources of banks' funding were also reduced. In terms of little transparency and the close-fitting networks between commercial and shadow banks, it was often imprecise who obliged (or would be indebted later), what funds, at what scale or value, to whom exactly.

The shadow banking institutions may be characterized then by the lack of transparency and revealing specified information about the assets' type and value, not wholesome governance and ownership structures

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[16] L.E. Kodres, *op.cit.*

between commercial banks and shadow banks, insufficient regulatory or supervisory control of the instruments and operations associated with traditional banks, inadequate capital needed in case of losses or the need for recovery together with lack of access to formal liquidity support from central level.[17]

The role of non-bank entities in credit intermediation, and their relations with the financial system is still strengthening. Using the broad definition of shadow banking by the Financial Stability Board (FSB), assets of non-bank financial entities in the euro area have over doubled within one decade, to reach 23.5 trillion EUR and 37% share in the total assets of the financial sector by December 2014,[18] while the share of credit institutions in intermediation shrunk from 55% to 49%, what gives approximately 60 trillion EUR of total financial system assets in the euro area.[19] The expansion of the non-bank and non-money market investment fund sector is perceived as the main source of growth of the shadow banking sector, following the global financial crisis and a shift to market-based funding.[20]

A large scale outflow of funds in financial markets was one of main risks reported by the ECB, together with the dull profitability of banks and insurers, both of which have seen their earnings crushed by the low interest rates that have overcome since the financial crisis. The ECB also warned about the sustainability of corporate and sovereign debts, if economic growth does not increase.[21]

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[17] *Ibidem*.

[18] The broad measure of euro area shadow banking entities refers to money market funds and other financial intermediaries, including all non-monetary financial institutions apart from insurance corporations and pension funds. This measure is proposed by the FSB in its mapping exercise. The FSB defines shadow banking as "credit intermediation that involves entities and activities outside the regular banking system. Source *Shadow Banking: Scoping the Issues. A Background Note of the Financial Stability Board*, Financial Stability Board, 12 April 2011, p. 3.

[19] *Structural features of the wider euro area financial system*, Banking Structures Report, ECB, October 2014, pp. 28–45.

[20] *Financial Stability Review*, European Central Bank, May 2015, p. 87.

[21] *ECB warns of risks posed by shadow banking sector*, "The Financial Times", www.ft.com/intl/cms/s/0/8a74dfce-052a-11e5-9627-00144feabdc0.html#axzz3hkeyoWXY (accessed 28.05.2015).

3. Benefits and risk associated with shadow banking system

Estimating the size of the shadow banking system is very difficult because many of its parties do not report to government regulators. The shadow banking system seems to act in a biggest scale in the United States, but nonbank credit intermediation is existing in most countries and its size has overall tendency to rise.[22]

The scale, on which developed the shadow banking system on a global scale has a substantial impact on the global financial system as a whole. The network entities and instruments forming a parallel banking system bring to the financial system many benefits. Shadow banking entities are an important link between investors (and lenders) and borrowers.[23] An important advantage of the shadow banking is to create an alternative for market participants, both for those who are going to invest financial surpluses, as well as those ones who seek additional sources of financing. This is particularly important when other distribution channels of financing are not available for individual groups of parties on both sides, supply and demand ones. It can therefore be appreciated that the shadow banking system enhances the liquidity of the financial sector.

Some of the entities in this system also provide many available opportunities to locate financial means in a complementary way to traditional bank deposits. Money market funds that offer investors a safe investment with high liquidity and diversified nature, play a special role in this regard, being an interesting opportunity to invest capital, particularly for institutional investors. Shadow banking system also allows making adjustment of the offer to customer needs and expectations, which makes the character of shadow banking instruments tailored, flexible and efficient. The examples are such financial instruments like ABSs, ABCPs, CDOs, which cover a wide spectrum of possibilities matched in timing,

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[22] *Global Shadow Banking...*, p. 38.

[23] *Green Paper on Shadow Banking*, European Commission, COM(2012) 102 final, Brussels, 19.3.2012, http://ec.europa.eu/internal_market/bank/docs/shadow/green-paper_en.pdf, pp. 5–6 (accessed 26.06.2015).

the amount of rates of return, risk and leverage.[24] In this way, the shadow banking system also encourages innovation and building competitiveness of financial markets as well as refinement of risk management instruments and portfolio management.[25]

In 2010, the Federal Reserve, the American central bank and the regulator of the banking sector initiated collecting and issuing data on the shadow banking system focusing on the deals in certain types of repo lending operations. In 2012, the Financial Stability Board showed the results of the extensive monitoring examination of nonbank credit intermediation in 25 countries and the euro area. This research was authorised by the G-20 economies. The results of the study showed that the American shadow banking system is the largest in the world. In the countries reporting to the FSB application, the global shadow system has peaked at the level of 62 trillion USD in 2007, then deteriorated to the level of 59 trillion USD during the crisis, and again rebounded to 67 trillion USD at the end of 2011. In 2009–11 the share of shadow banking system was estimated at about 25% of total financial intermediation.

The FSB surveys suggested that domestic shadow banking activity is not substantial in most jurisdictions, but this opinion might be different if taken into consideration cross-border activities and connections through different types of entities.[26] Consequently, real scale of risk connected with shadow banking activities and their systemic importance may be underestimated. The FSB also did not measure the leverage and the transmission channels. The further research and data collection process combined the original dataset with information gathered from regulatory and supervisory reports (about instruments and structure relations) and from the markets (about new trends, instruments, and linkages). The programs of research on shadow banks in the future might use information linked to the four shadow banking activities (maturity and liquidity transformation, credit risk transfer, and leverage) to develop a "systemic

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[24] M. Szmelter, *op.cit.*, pp. 409–411.
[25] T. Adrian, H.S. Shin, *op.cit.*, p. 11.
[26] *Strengthening Oversight*..., pp. 4–5.

risk map" and identify activities that may determine a systemic risk and should be controlled.[27]

However, the lack of regulation of the financial supervision, exercised by servants carrying out its economic functions, reinforces the occurrence of a number of risks associated with shadow banking system, especially in the context of imitation of many banking activities.[28] While making transactions related to shadow banking instruments, the entities of this system are exposed to credit risk, liquidity risk, the risk of insolvency, risk of over leveraging and underestimating of the risk carried by entities.

Liquidity risk that could manifest itself in unexpected mass withdrawal of funds, seems to be especially important. While commercial banks finance lending activity mainly through deposits obtained from customers, shadow banking entities base their activities mainly on short-term funding gained from the market, including the conditional repurchase transactions and short-term securities market. Such a financing structure means that even for an entity located in a good financial position, as a result of a sudden and unexpected withdrawal of funds from his portfolio, it becomes insolvent. Many of such situations took place during the financial crisis in 2007–2009, both in relation to shadow banking entities, as well as traditional banking institutions.[29]

Mass withdrawal of funds may occur due to loss of confidence in the quality of assets, which is particularly dangerous because of the lack of security guarantees given by government or by the central bank or the guarantee fund.[30] It often concerned historically money market funds, which were associated with the sponsoring institutions, often banks.[31] Such linkages created the risk of contagion, especially that banks were

[27] *Global Shadow Banking...*, pp. 38–40.

[28] N. Roubini, S. Mihm, *Ekonomia kryzysu*, Oficyna Wolters Kluwer, Warszawa 2011, p. 302.

[29] *Ibidem*, p. 115.

[30] *82nd Annual Report*, Bank of International Settlements, Basel, June 2012, pp. 66–68.

[31] *Shadow Banking...*, p. 5.

not obliged to carry the reserve on such exposures.[32] This risk was materialized after the collapse of Lehman Brothers in 2008, when many investors started to redeem their shares.

All the institutions offering loans and credits are the subject of a credit risk. Shadow banking entities are not applying to the restrictions, which are obligatory in traditional banking, concerning capital exposure limits and maintaining reserves to cover potential losses amounting to the risks of non-repayment dependant on risk-weighted capital adequacy measures. It will consequently prove the level of leverage, however, in case of shadow banking entities it may be used a very high leverage in operations, especially in terms of profiting from the rising asset prices or the use of arbitrage.[33] The high degree of leverage poses a threat not only to the microeconomic level, the operators themselves, but also at the macroeconomic level, since high leverage may enhance the effect of pro-cyclicality and the emergence of speculative bubbles.[34]

One of the main risks faced by the shadow banking system is the existence of many links between the traditional and the parallel banking system. The latter is not subject to financial supervision, it does not operate in safety nets, and can lead to the systemic risk.

Banks have limited ability to custom capital leverage and obtain profits from its use, carried the lever off the balance sheet through connections with the shadow banking. Securitization companies (special purpose vehicles founded in relation with banks) were often created by the banks, so the banking assets were evident in their balance sheets, and the capital requirements were then much enhanced, due to belief that the risk of this business is transferred to final investors, and SPVs only sell the securities which are the result of securitization.[35] The transfer of assets to off-balance sheet was made by securitization. Benefits for banks

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[32] A. Sławiński, *Przyczyny globalnego kryzysu bankowego*, in: *Nauki społeczne wobec kryzysu na rynkach finansowych*, ed. J. Osiński, S. Sztaba, Szkoła Główna Handlowa, Warszawa 2008, pp. 6–8.

[33] P. Masiukiewicz, *Regulacje a ryzyko shadow banking w Polsce*, "Zarządzanie i Finanse" 2012, nr 4/2, pp. 7–8.

[34] *82nd Annual Report*..., p. 67.

[35] A. Sławiński, *op.cit.*, pp. 6, 41.

were at least two: the banks did not need to include those assets in the calculation of the solvency ratio, while they could continue lending and at the same received an alternative source of financing by selling the commercial papers based on credit assets.[36]

Banking supervisory authorities inspect the exposures of traditional banks to shadow operations and attempt to supplement it through capital and liquidity regulations, because the exposures of shadow banks affect the traditional financial sector and the economy. Many shadow banking institutions are affected by lighter regulations or exist out of the scope of regulators, that is why the central banks and supervisory authorities are anticipating expansion of the range of reported information and implemented regulation on one hand for shadow banks and on the other hand, for the markets used by them. The other potential problem is that shadow banking institutions or operations are tailored in the structure to reach the residence under the supervision of the mild regulators. It might be proceeded in a domestic or global scale, within the sectors of financial system or among different countries.

The supervisory authorities always tried to follow the changes, but they still research the institutions or activities in the shadow sector which are based on incomplete data about various activities, entities, and instruments that build the shadow banking system.

Abrupt reversal of compressed global risk premia amplified by low secondary market liquidity	⇨
Weak profitability prospects for banks and insurers in a low nominal growth environment, amid slow progress in resolving problem assets	⇨
Rise of debt sustainability concerns in the sovereign and corporate sectors in terms of low nominal growth	⇨
Prospective stress and contagion effects in a rapidly growing shadow banking sector	⇧

Figure 1. Key risks to euro area financial stability

Source: *Financial Stability Review...*

[36] *Global Financial Stability...*, p. 82.

The expansion of the shadow banking system was also the matter of concern in the European Union. The European Central Bank indicated the rapid growth of the shadow banking sector as the potential source of risk to financial stability in the euro area and the only risk perceived as increasing (Figure 1).

The ECB specified a broad group of institutions engaged in bank-like operations, for instance investment funds or money market funds, as basis of "future systemic events", due to its enlargement and impenetrability.[37] With the establishment of the Single Supervisory Mechanism (SSM), the ECB was entrusted with the macroprudential tasks and tools provided for the EU law. The ECB's new obligations rely principally on banking sector instruments, including – in addition to banks – shadow banking activities including non-bank financial intermediaries, financial markets and market infrastructures.[38]

Conclusions

The shadow banking sector continues to grow strongly and it becomes an important provider of funds to the real economy. This growth process of this less regulated sector is accelerating, so the systemic importance of this sector has also increased. Taking into consideration more widespread use of synthetic leverage and the growing popularity of demandable equity, the potential of systemic impact of shadow banking is increasing.[39]

From the perspective of financial stability, concerns about the risks posed by shadow banking entities relate to wider consequences for the financial system and the real economy arising from the sector's growing role in financial intermediation. Possible channels of risk transmission include correlated asset exposures along with mutual pledged debts in securities lending and derivative instruments' markets.[40] The greater are

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[37] *ECB warns of risks posed...*
[38] *Financial Stability Review...*, p. 1.
[39] *Ibidem*, p. 6.
[40] *Ibidem*.

the levels of leverage, liquidity gaps and size of entities, the more probable is the amplification and contagion of shocks in the financial system.

There are several transmission channels through which macroprudential policy actions can have cross-border effects. One of them covers regulatory arbitrage.[41] Stricter regulation of banks could lead to credit growth in a non-regulated (shadow) banking sector, which operates more strongly internationally. On the other hand, macroprudential instruments targeting financial markets and non-bank financial institutions can prevent such outflows and ensure consistency in guidelines for various sectors.[42] This can be measured by the relative size of the non-MFI financial sector, including the shadow banking sector, which is largest in the United States, and across Europe – in Luxembourg, the Netherlands and Ireland.[43]

As J.K. Solarz states, relational banking seems to be a good answer for the inevitable confrontation between parallel banking and increasingly regulated traditional banks.[44] The main factors driving the growth of different types of shadow banking are similar over time and across countries: very rigorous banking regulation, sufficient liquidity, and complementarities with the rest of the financial system. Tighter regulation of banks in capital requirements encourages growth in shadow banking activities. Also the growth of pension funds and insurance companies is associated with higher growth of shadow banks, possibly reflecting the demand for shadow banking services, expanding in the current environment of tighter bank regulations and low interest rates. Many observations point to the relocation of some operations, such as corporate lending from traditional banking to the nonbank sector, for example through a broad range of investment funds.[45] Increasing knowledge about the risks relating to the financial system, accompanied by the economic doctrine of financial stability as a public good, influence

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[41] N. Roubini, S. Mihm, *op.cit.*, p. 244.

[42] *Financial Stability Review...*, p. 126.

[43] *Ibidem*, p. 132.

[44] J.K. Solarz, *Równoległa bankowość relacyjna*, in: *Współczesna bankowość detaliczna*, ed. A. Szelągowska, CeDeWu, Warszawa 2010, p. 38.

[45] *Global Financial Stability...*, p. 90.

the rise in the social and economic expectations concerning the role of regulatory and state intervention in the financial market conditions and therefore create additional decision-making shadow banking sector regulations in global and regional level.[46]

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