

Surveys S-20

Are Shadow Banks Hiding in Croatia as Well?

Mirna Dumičić and Tomislav Ridzak

Zagreb, November 2016



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PUBLISHER

Croatian National Bank
Publishing Department
Trg hrvatskih velikana 3, 10002 Zagreb
Phone: +385 1 45 64 555
Contact phone: +385 1 45 65 006
Fax: +385 1 45 64 687

WEBSITE

www.hnb.hr

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Abstract

This paper aims to shed some light on the term *shadow banking* and the importance of examining shadow banks and their activities from the point of view of financial stability. In this context, an analysis was made of the domestic financial system and business practices in order to assess the role of shadow banks in Croatia and identify systemic risks that may arise from that source. The analysis results suggest that the share of non-bank financial institutions and the maturity structure of their liabilities and claims do not currently pose a risk that could threaten financial stability. However, potential systemic risks are associated with the high level of short-term exposures of non-bank financial institutions to banks, the substantial exposure of some of them to the government, and the strong reliance of some institutions on foreign financing sources. The group of other financial intermediaries, including leasing, factoring and credit unions, stands out among the most risky institutions.

Keywords:

shadow banks, banking sector, non-bank financial institutions, macroprudential policy, financial stability, systemic risks, Croatia

JEL:

E51, F34, G01, G21, G23

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1 Introduction

One of the preconditions for the maintenance of financial stability is the timely identification of systemic risks, regardless of the financial system segment in which they arise. The recent financial crisis has not only revealed the numerous failures in the supervision and regulation of the banking sector but has also uncovered the systemic risks inherent in that part of the financial system partially or completely beyond the reach of regulations, which, due to its size and the links among financial institutions, significantly contributed to the speed of the diffusion and the costs of the crisis. Though this was particularly evident in countries with developed financial systems, regulatory arbitrage activities that heightened systemic risks within the financial system were seen in Croatia as well. Therefore, it has been recognised on both the international and national levels that, following the establishment of the macroprudential framework for banks, it is also necessary to start building an institutional and regulatory framework for the macroprudential supervision of non-bank financial institutions.

A meaningful discussion of possible improvements to the macroprudential regulation of shadow banks requires an understanding of the basic features of their operations and, based on available though still relatively scarce data, an assessment of the size of this financial system segment and its systemic importance. Therefore, this paper aims to shed some light on *shadow banking* and the importance of examining shadow banks and their activities from the point of view of financial stabil-

ity. In addition, to assess the role of shadow banks in Croatia, a preliminary analysis was made of the financial system and business practices that may be characterised as the operations of shadow banks, or activities associated with the circumvention of regulations and transfer of operations from one segment of the financial system to another, maturity mismatches that may result in crisis spillover from one segment of the financial system to the next in case of a stress event, and banks' exposures to non-bank financial institutions. Particular attention was paid to exposures of non-bank financial institutions to the government sector and the reliance of such institutions on foreign financing sources. An analysis was carried out on the basis of financial accounts, money market data, and an examination of Croatian experience with regulatory arbitrage on the part of financial institutions.

The paper is divided into five main sections. The introduction is followed by an explanation of the concept of shadow banks and the types of institutions or activities most often described in this way while problems in analysing that segment of the financial system are picked out. The third section discusses the role of shadow banking from the point of view of financial stability, the fourth section presents shadow banking in Croatia and the last section summarises the main conclusions on the importance of macroprudential regulation of all segments of the financial system and potential systemic risks associated with shadow banking in Croatia.

2 What is shadow banking?

The term *shadow banking* was coined by Paul McCulley, a former chief economist at PIMCO, who used the term in his 2007 speech at the annual financial symposium in Jackson Hole to refer to non-bank financial institutions that are engaged in maturity transformation, i.e. the creation of long-term loans from shorter-term sources, and are not subject to regulations applicable to credit institutions (Kodres, 2013). It was pointed out that, as a rule, such legally and financially complex entities were linked to banks that in this way transferred a part of their operations outside their balance sheets (The Economist, 2014).

In broad terms, shadow banking refers to all activities related to credit intermediation and maturity and liquidity transformation that take place outside the regulated banking system (Bakk-Simon et al., 2012). In narrow terms, shadow banking focuses mostly on funding forms that are very similar to banking operations (The Economist, 2014). Jackson and Matilainen (2012) view shadow banking from the funding perspective, i.e. taking deposits or issuing deposit-like instruments, and the lending perspective, i.e. extending credit to the non-financial sector. The Financial Stability Board¹ defines shadow banks as all entities that are not subject to regulations applicable to banking institutions, perform operations that are essentially similar to banking business and act as financial intermediaries, while the European Commission defines shadow banking as the system of credit intermediation that involves entities and activities outside the regulated banking system (European Commission, 2012).

In other words, this involves the credit intermediation of unregulated or less regulated financial institutions which, in the event of difficulties, do not have the options available to banks, such as reliance on the central bank as the lender of last resort or government guarantee for deposits up to a specific amount.

However, it needs to be said that the term “shadow banking” need not be associated with a type of institutions, as it actually describes a type of activities by which specific institutions circumvent regulatory restrictions (or deftly take advantage of regulatory gaps) and thereby

increase systemic risks that may threaten financial stability. In particular, the approach that prevails in recent conceptual discussions of the problem of shadow banks is that regulations should be directed at activities (an activity-based approach) and not at individual types of non-bank financial institutions in view of their heterogeneity and diversity in business models (Financial Stability Board, 2013), as well as the fact that banks also may be engaged in this type of activity (Perotti, 2013).

From an examination of the literature, it is possible to identify several main features of activities described as shadow banking (European Commission, 2012; Jackson and Matilainen, 2012; Kodres, 2013, and European Commission, 2013):

- maturity transformation – long-term investments are financed by short-term borrowing;
- liquidity transformation – less liquid types of assets are financed by highly liquid liabilities;
- direct or indirect use of financial leverage – investments are financed by borrowing;
- credit risk transfer – the risk that a debtor will not be able to service its obligations is transferred from the lender to a third party;
- accepting funds in a form similar to deposits; and
- funds are often raised in the securitisation process, by securities lending and repurchase transactions.

Based on the listed activities one may conclude that institutions may in practice have large maturity and liquidity mismatches and apply questionable or insufficiently strict lending standards and inadequately manage risks. For this reason, the focus of regulators is currently on instruments such as leverage limits, capital requirements, prudential regulatory regimes equivalent to those applying to banks, limits on concentration, restrictions on the structure of liabilities, restrictions on maturity/liquidity transformation, and liquidity buffers (Financial Stability Board, 2013).

In practice, shadow banking usually implies money market and other funds or products that have the characteristics of deposits and are sensitive to mass withdrawal of funds, the parties included in the securitisation process, investment funds or financial intermediaries such as leasing companies, which grant loans or intensively use financial leverage, including hedge funds, private equity funds and financial entities extending loans or loan guarantees, insurance and reinsurance companies extending loans or loan guarantees and factoring

¹ The Financial Stability Board was established in 2009 as the successor to the Financial Stability Forum founded in 1999 by the G7 countries. The expansion of the membership to the G20 countries has also broadened the set of activities of the Financial Stability Board, which became responsible for the promotion of regulatory changes and policies aimed at maintaining financial stability.

companies that may be used to avoid the large exposure restrictions applying to other financial institutions

(European Commission, 2012; European Commission, 2013).

3 Shadow banking and financial stability

Numerous researches point to the importance of financial institutions and markets for economic development, in particular through their role in capital allocation and facilitating the process of matching entities with surplus and those with deficit funds. It is assumed that financial intermediaries are better equipped to manage various kinds of risks arising in that process, such as credit risk, liquidity risk, etc.

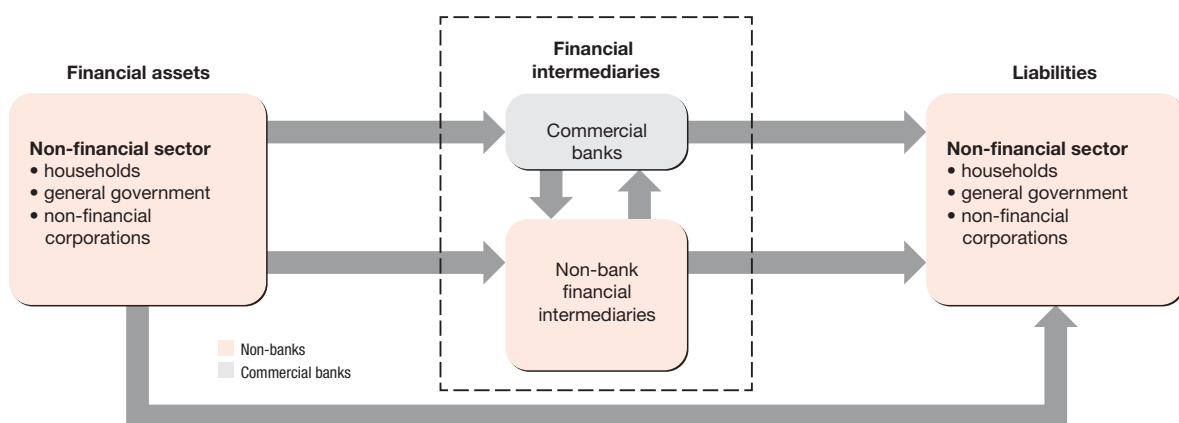
Most European countries are characterised by bank-centric financial systems in which banks play the dominant role in the mobilisation of savings, capital allocation and risk management. By contrast, in systems where a significant portion of financing is raised through capital markets, the emphasis is put on financial markets and non-bank financial intermediaries. There is no uniform opinion about which system is more beneficial for financial and economic development. In bank-centric systems the problems of banks may result in a lack of funding to the economy as there are no sufficiently developed alternative sources of finance, while a well-developed network of financial intermediaries raises the possibility of regulatory arbitrage.

There are several reasons for the emergence of shadow banking, particularly noteworthy being the

avoidance of regulations and the tax burden, which implies a change in the structure of activities of individual institutions in order to reduce the regulatory burden (Adrian, 2014). In this context account should be taken of the possibility of excessive regulation of the banking industry, which is one of the objections raised in the discussions about the complex regulatory changes introduced by the Basel III framework. In particular, if a specific market segment is burdened by strict, and often costly, regulations, this increases the motivation of both entities with surplus funds and entities with deficient funds to simplify their operations or make them less costly, which encourages the development of different types of financial intermediation outside credit institutions or potentially unregulated activities within banks.

Shadow banking should not be perceived as a problem if risks are appropriately managed and if investments are made in the types of assets whose value is justified by fundamentals. Therefore, in addition to the threats it poses, one should also not forget its benefits. This is because shadow banks provide additional financing opportunities, offer an alternative to investing in bank deposits, channel funds more efficiently because

Chart 1 Simplified overview of financial intermediation in an economy



Note: The arrows indicate the direction of the supply of funds. Excluding the rest of the world.

Source: Deutsche Bundesbank (2014): *The shadow banking system in the euro area: overview of monetary policy implications*, Monthly Report, March.

of a higher degree of specialisation and enable risk diversification due to a lower reliance on the banking sector (European Commission, 2012).

However, shadow banking activities often amplify procyclicality by exacerbating debt financing and the build-up of price bubbles during upward phases of the cycle (Bakk-Simon et al., 2012). An intensive use of leverage, the circumvention of regulations and lack of rules governing the failure of such institutions additionally threaten the overall financial system, especially if the institutions are systemically important. In addition, from the central bank's perspective, shadow banking has a strong influence on monetary policy as it may weaken the effects of monetary measures and instruments (Deutsche Bundesbank, 2014).

Risks to financial stability associated with shadow banking include risks of potential budget expenditures to bail out these institutions, risks to depositors in shadow banks and risks to affiliated institutions with large exposures to such institutions, which can also be materialised in the form of fiscal costs. Given that shadow banks are not isolated from the remaining part of the financial system, problems that they might have can spread very quickly through financial markets and other participants in the process of financial intermediation to other financial institutions, especially banks, and can also result in the cross-border spillover of instability.

All these risks additionally confirm the need for stronger and better coordinated supervision of shadow banks in order to reduce systemic risks and the negative consequences of potential crisis episodes.

However, the lack of reliable data and information on the operations of such institutions significantly hampers the examination of systemic risks that could threaten financial stability (Adrian, Ashcraft and Cetorelli, 2013). Apart from being a problem by itself, the absence of comprehensive regulation to ensure adequate supervision of shadow banks results in reduced transparency of these institutions with respect to their liabilities, assets, ownership structure and so on. An important step forward in this regard is the establishment of an effective system for collecting comparable data on international operations of shadow banks.

Among recent actions aimed at creating a framework that would begin to regulate shadow banking and at establishing a database one should mention the col-

lection of the first data on movements of funds associated with shadow banks made by the Financial Stability Board; the repeated warnings of the European Central Bank about the importance of regulatory coverage of shadow banking; establishment of the basis for the construction of an institutional and regulatory framework for analysing non-bank institutions through working groups of the European Systemic Risk Board; and the implementation of a number of European Commission measures aimed at strengthening the formal framework for addressing risks associated with shadow banks, in particular the harmonisation of rules on hedge funds, adoption of regulations on money market funds, introduction of additional regulatory requirements for insurance companies, harmonisation of the framework for alternative investment fund managers and for risk transfer instruments, the strengthening of securitisation regulations and introduction of stricter regulation of credit rating agencies. Furthermore, the authorities responsible for the supervision of banking sectors have stepped up their efforts to supervise the exposures of banks to shadow banks (Kodres, 2013).

Within the EU institutional framework, responsibility for the stability of the overall system on a macro level has been delegated to the European Systemic Risk Board and the Single Supervisory Mechanism, which is responsible for bank supervision within the European Central Bank, while responsibility for stability on a micro level has been delegated to the European Banking Authority (EBA), the European Securities and Markets Authority, the European Insurance and Occupational Pensions Authority (EIOPA) and the Single Supervisory Mechanism. In addition, there are authorities in each member state that are responsible for the stability of the overall system. They include the central bank, a macroprudential authority designated in accordance with the Recommendation of the European Systemic Risk Board (ESRB) on the macroprudential mandate of national authorities and the resolution authority, while microprudential oversight of financial institutions is the responsibility of one or several bodies, depending on the country in question. However, notwithstanding a high degree of harmonisation at the EU level, due to different traditions, national discretions, legal systems, and the like, there are still differences in regulations and their implementation.

4 Shadow banking in Croatia

The Croatian financial system is one of the most developed segments of the domestic economy. However, when the structure, liquidity of individual market segments and the type and complexity of operations performed are considered, it is still relatively underdeveloped.

Applying the methodology of the Financial Stability Board (Jackson and Matilainen, 2012), the basic steps in analysing shadow banks are an assessment of their share in the overall financial system and macro-mapping of the financial system on the basis of financial institutions' balance sheets, which enables an overview of developments in the financial system over time and an analysis of links between institutions within the system. Following the approaches of other countries, the starting point for analysis were financial accounts, which are a compi-

lation of available data of the CNB, Ministry of Finance, FINA and HANFA (Deutsche Bundesbank, 2014).

Research into the potential risks related to shadow banking is based on an analysis of the structure and connections between the segments of the financial system, risks related to maturity and liquidity (mis)matches and the degree of the use of financial leverage.

4.1 Segments of the domestic financial system

As data on the size of assets of financial institutions in Croatia show that the segment of non-bank financial institutions continues to be much smaller than the banking sector, which persistently accounts for more than

Table 1 Structure of Croatian financial sector assets according to CNB and HANFA data (period before comparable financial accounts)

	December 2006		December 2007		December 2008		December 2009		December 2010		December 2011		December 2012	
	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %
Banks	304 605	78	345081	74	368955	77	378726	76	391060	75	407373	76	403015	75
Open-ended investment funds	16039	4	30056	6	9890	2	12035	2	13674	3	11929	2	12960	2
War Veterans' Fund	n.a.	n.a.	n.a.	n.a.	2400	0	2223	0	2005	0	1446	0	1191	0
Closed-ended investment funds	2443	1	3682	1	1896	0	1841	0	1921	0	1678	0	1632	0
Insurance companies	19663	5	12246	5	25690	5	27920	6	30115	6	31996	6	32913	6
Factoring	n.a.	n.a.	4219	1	6343	1	7007	1	5748	1	5801	1	6299	1
Housing savings banks	6371	2	6545	1	6965	1	6738	1	6881	1	7839	1	7297	1
Mandatory pension funds	15919	4	21002	5	22591	5	29265	6	36328	7	41067	8	44985	8
Voluntary pension funds	458	0	812	0	948	0	1363	0	1760	0	4969	0	2143	0
Leasing companies	26969	7	30304	7	35068	7	33666	7	28988	6	25886	5	24587	5
Savings banks	n.a.	n.a.	n.a.	n.a.	138	0	155	0	11	0	35	0	29	0
Credit unions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	515	0	530	0	569	0	579	0
Total	392468	100	464948	100	481885	100	501454	100	519021	100	537587	100	537628	100

Sources: CNB and HANFA.

Table 2.a Structure of Croatian financial sector assets

	December 2012		December 2013		December 2014		June 2015	
	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %
Banks	421786	75.1	423122	74.0	426207	72.8	428350	72.6
Pension funds	52462	9.3	61839	10.8	67551	11.5	70084	11.9
Insurance companies	30392	5.4	30361	5.3	32897	5.6	33589	5.7
Other financial intermediaries (leasing, factoring, credit unions)	29814	5.3	29179	5.1	29940	5.1	26813	4.5
Money market funds	9030	1.6	10038	1.8	9196	1.6	10322	1.8
Investment funds other than money market funds	5800	1.0	5411	0.9	6626	1.1	7562	1.3
Financial auxiliaries (insurance intermediaries, brokers, capital management institutions, exchange offices)	5207	0.9	6086	1.1	6747	1.2	7126	1.2
Captive financial institutions (such as holding companies and SPEs)	6784	1.2	5918	1.0	6002	1.0	5985	1.0
Total	561274	100.0	571954	100.0	585167	100.0	589832	100.0

Source: CNB – financial accounts.

Table 2.b Structure of Croatian financial sector assets (excluding pension funds)

	December 2012		December 2013		December 2014		June 2015	
	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %	Assets, million HRK	Share in total financial sector assets, in %
Banks	421786	82.9	423122	82.9	426207	82.3	428350	82.4
Insurance companies	30392	6.0	30361	6.0	32897	6.4	33589	6.5
Other financial intermediaries (leasing, factoring, credit unions)	29814	5.9	29179	5.7	29940	5.8	26813	5.2
Money market funds	9030	1.8	10038	2.0	9196	1.8	10322	2.0
Investment funds other than money market funds	5800	1.1	5411	1.1	6626	1.3	7562	1.5
Financial auxiliaries (insurance intermediaries, brokers, capital management institutions, exchange offices)	5207	1.0	6086	1.2	6747	1.3	7126	1.4
Captive financial institutions (such as holding companies and SPEs)	6784	1.3	5918	1.2	6002	1.2	5985	1.2
Total	508813	100	510115	100	517615	100	519747	100

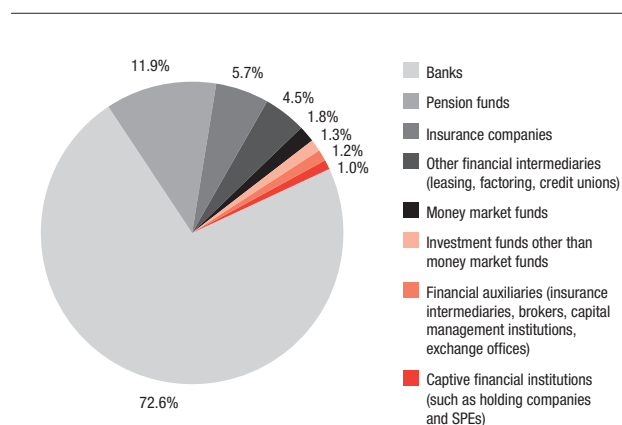
Source: CNB – financial accounts.

70%² of the overall financial system, Croatia's financial system is classified as a bank-centric system, common in most European countries.

From the perspective of time, the share of assets of non-bank financial institutions in the total assets of the financial system went up from 22% at end-2006 to around 27% at end-June 2015 (Tables 1 and 2.a). It should be noted that the share of pension funds grew substantially after 2008. This increase was due to received payments by members, amounting to HRK 53.4bn in the period since their establishment, i.e. approximately 76% of the assets of pension funds.

² Comparable financial accounts are available for the period from 2012 onwards (Table 2), while available HANFA and CNB data are used for the previous periods (Table 1).

Figure 1 Structure of Croatian financial sector assets at the end of the second half of 2015



Source: CNB – financial accounts.

Accordingly, if pension funds are excluded from financial intermediaries (Table 2.b), it is obvious that the importance of other non-bank financial intermediaries has not grown. In addition, it should be said that the increase in the share of non-bank financial institutions in the period since the end of 2008 has been in part caused by regulatory arbitrage as macroprudential measures in the pre-crisis period were directed at banks, while the rest of the system was beyond the reach of regulations, as is best exemplified by changes in the assets of leasing companies. For the sake of comparison, US data as at end-2011 show that the assets of institutions engaged in shadow banking were equal to those of the banking sector, while this share amounted to around 50% in the euro area and was mostly accounted for by securitisation activities, money market funds, the repo market and hedge funds (Bakk-Simon et al., 2012; Deutsche Bundesbank, 2014). According to the ESRB data for the end of the first quarter 2015 and the broader definition, the assets of shadow banks, which include other financial intermediaries, investment funds (money market and others) and captive financial institutions, stood at EUR 36 trillion, accounting for 35% of total financial assets, or 138% of GDP. Financial Stability Board data show that the size of the US shadow banking sector was assessed at EUR 19 trillion at end-2013, or 150% of GDP, while the size of shadow banks at the global level was estimated at EUR 56 trillion (European Systemic Risk Board, 2015).

In addition to the sectors listed in Tables 1 and 2.a, it should be mentioned that in the domestic market there are also credit intermediaries that intermediate between providers (banks) and receivers (households) of financial services by giving information about the types and costs of various banking services and in some instances interact directly with banks instead of clients. Holders of the Ministry of Finance's approval for the provision of consumer credit services³ in most cases have contracts with banks whose loans they offer under a simplified procedure. They do not charge the service directly to users but have special arrangements with banks from which they generate their income.

In addition, Croatia's accession to the EU has facilitated access to the domestic market by financial service entities that are registered in the member states. Some of their activities are recorded directly in the part of financial accounts that covers operations with the rest

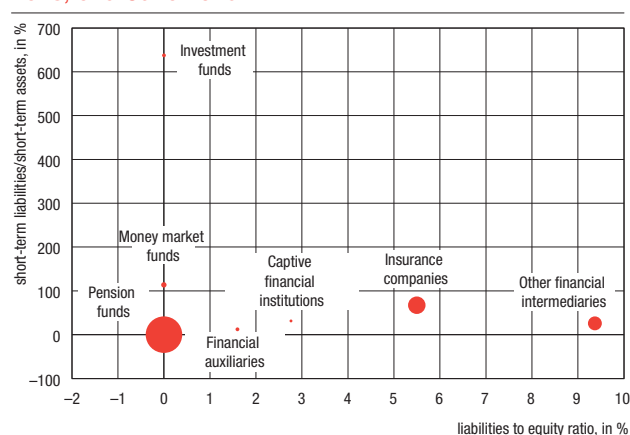
of the world, and some of them are recorded indirectly via segments of the domestic financial system. While there are definitely some entities whose activities are beyond official records at the moment, current anecdotal evidence does not indicate that their operations could give rise to systemic risks.

Some financial entities whose operations have not been in line with regulations or have been outside the reach of regulators appeared in the Croatian market in the past few years. Although they can be classified as shadow banks, their operations have not raised systemic risks. HANFA issued specific warnings several times about the increased risks of dealing with such entities⁴.

4.2 Relation between short-term liabilities and short-term assets and the degree of the use of leverage across sectors

Maturity mismatch between assets and liabilities of non-bank financial institutions, measured in terms of the ratio between short-term liabilities and short-term assets, should not present systemic risk as this ratio is below 100% in most sectors. Investment funds are an exception, as can be expected considering that investments in these funds are usually treated as short-term liabilities, while investments in debt and equity securities are regarded as long-term assets although the character

Figure 2 Degree of maturity mismatch and degree of leverage use, by the type of non-bank financial institutions, end-June 2015



Source: CNB – financial accounts.

³ <http://www.mfin.hr/hr/imatelj-odobrenja-ministarstva-financija-za-pruzanje-usluga-potrosackog-kreditiranja>.

⁴ Royal međugeneracijska solidarnost, FX dealers, Plus500UK Ltd Admiral Markets AS – Admiral ulaganja, FXLider.

of such investments primarily depends on the liquidity of these instruments (Figure 2). The degree of the use of leverage across sectors does not suggest an excessive use of leverage in the financing of activities in most sectors, with the exception of other financial intermediaries, which is an indication of potential risks in their operations (Figure 2).

4.3 Mutual exposures of financial institutions and selected sectors

In order to get a general impression of mutual exposures of financial institutions they are presented not only by figures and tables, but also as charts with data on the relative size of specific non-bank financial institutions, the degree to which they use leverage and mutual exposures as well as claims and obligations against the government, the rest of the world, enterprises and households that exceed a certain share in each sector's assets (Chart 2). A chart analysis of inter-sectoral relations illustrates the positions of the government, banks and non-financial corporations (Charts 2 and 3). This confirms the importance of stable public finances and a sound banking sector for the safeguarding of the financial stability of the system as a whole. Specifically, given the considerable exposure of non-bank financial institutions to the government, potential problems in the public sector would be transferred through the network of financial intermediaries to banks and jeopardise the financing of other sectors of the economy. Such losses would eventually be borne by the household sector, which is the biggest lender to and investor in the ob-

served financial intermediaries (Chart 3).

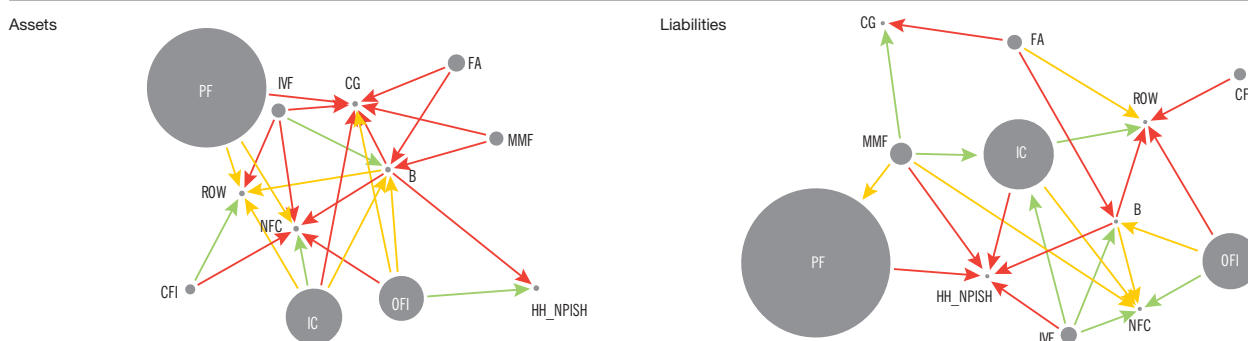
4.4 Mutual exposures of non-bank financial institutions and banks

Due to mutual links between financial institutions and the possibility that problems in one segment of the financial system spill over to other segments, we also study mutual exposures of non-bank financial institutions to banks and exposures of banks to non-bank financial institutions, with a particular emphasis on the maturity structure of such exposures. In addition, the matrix of all mutual exposures of individual sectors within the financial system is also presented.

The relatively large short-term exposure of some non-bank financial institutions to banks points to a potential risk of liquidity shocks being transferred from the banking sector to these institutions. As regards the type of operations, money market funds and financial auxiliaries have the largest short-term exposures to banks. The share of money market funds' short-term claims against banks in these funds' total assets is 50% and the comparable share for financial auxiliaries is 44% (Figures 3 and 4). From the perspective of banks, the total exposure of non-bank financial institutions to banks accounts for approximately 4.3% of bank assets, 4.1% of which goes to short-term exposures that mainly includes deposits, and accordingly from the viewpoint of the system this is not considered a systemic risk.

The short-term exposure of banks to non-bank financial institutions is negligible in relation to their total assets and the total assets of the financial sector so that

Charts 2 and 3 Mutual claims and liabilities of banks and non-bank financial institutions

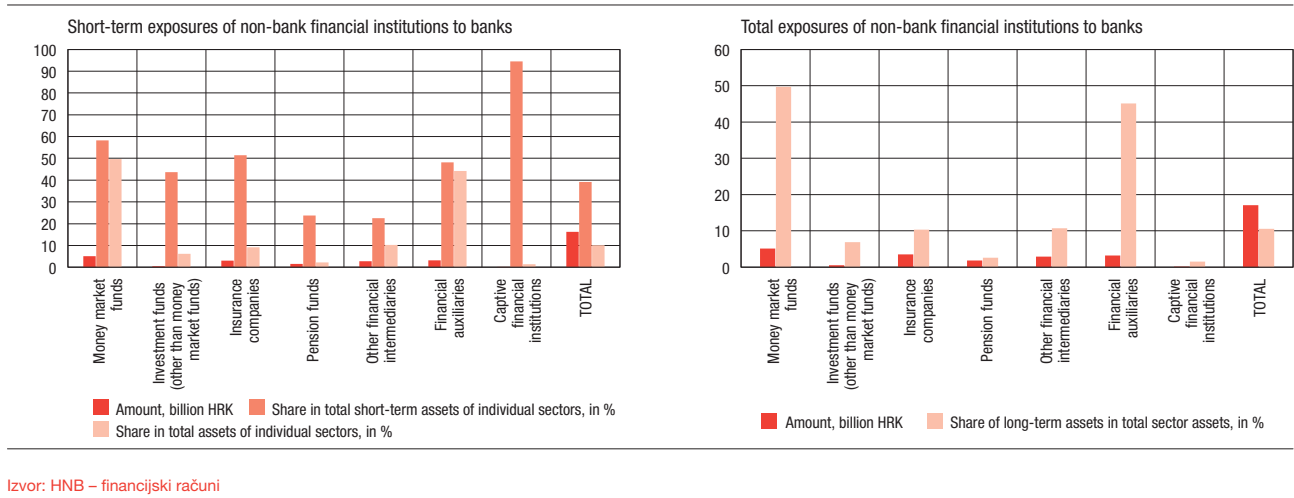


Notes: The size of a circle is proportionate to the size of assets of individual sectors, taking into account only non-bank financial institutions. Red arrows mark claims exceeding 20% in assets or liabilities of individual sectors, yellow arrows refer to 10% of such claims and grey arrows to 5%.

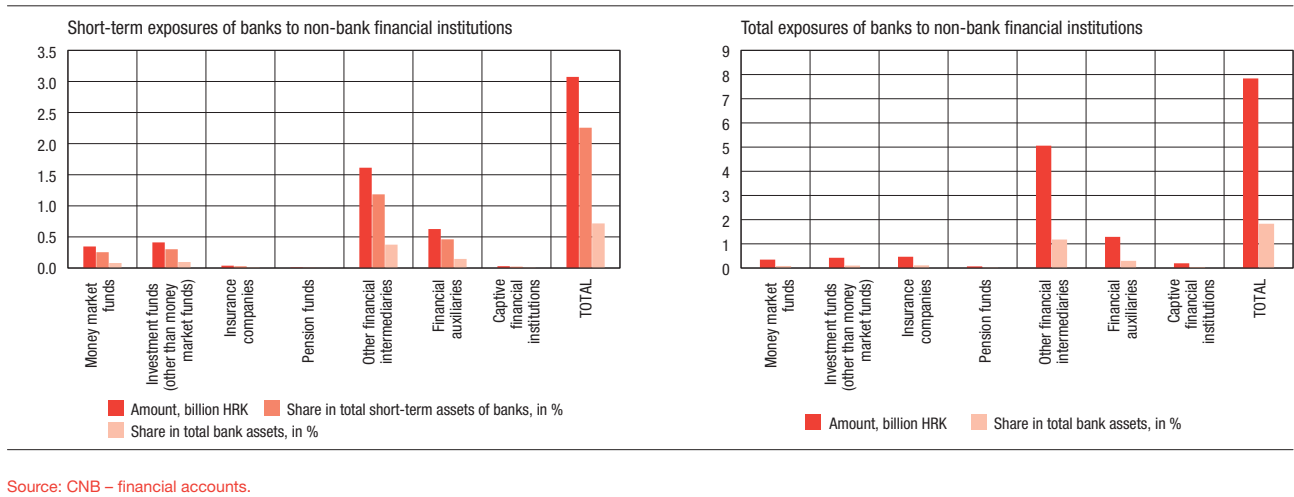
Marks: B – banks; PF – pension funds; IC – insurance companies; IVF – investment funds (other than money market funds); MMF – money market funds; OFI – other financial intermediaries; FA – financial auxiliaries; CFI – captive financial institutions; CG – central government; ROW – rest of the world; NFC – Non-financial corporations; HH_NPISH – households.

Source: CNB – financial accounts.

Figures 3 and 4 Exposures of non-bank financial institutions to banks and maturity structure of these exposures (claims of non-bank financial institutions against banks), end-June 2015



Figures 5 and 6 Exposure of banks to non-bank financial institutions (bank claims against non-bank financial institutions), end-June 2015



Figures 7 and 8 Exposures of non-bank financial institutions to the government and maturity structure of these exposures (claims of non-bank financial institutions against the government)

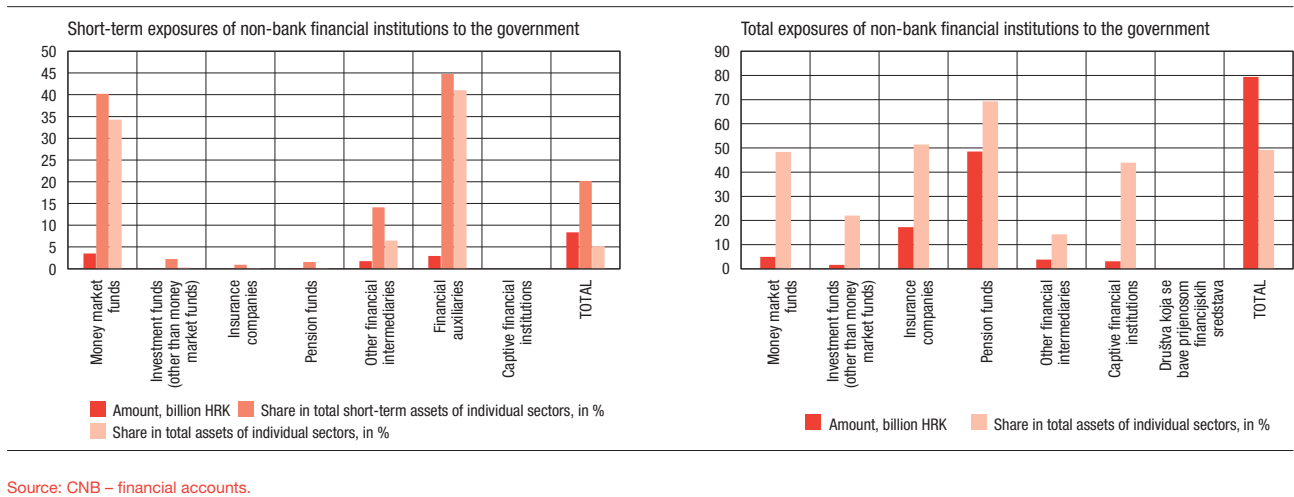


Table 3 Matrix of mutual exposures of individual sectors within the financial system, end-June 2015
in billion HRK

Liabilities	Claims									
	Banks	Pension funds	Insurance companies	Other financial intermediaries (leasing, factoring, credit unions)	Money market funds	Investment funds other than money market funds	Financial auxiliaries	Captive financial institutions	Government	Rest of the world
Banks	n.a.	1.8	3.5	2.9	5.1	0.5	3.2	0.1	19.5	113.2
Pension funds	0.1	n.a.	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Insurance companies	0.5	0.0	n.a.	0.6	0.0	0.0	0.1	0.0	1.4	2.7
Other financial intermediaries (leasing, factoring, credit unions)	5.1	0.0	0.3	n.a.	0.0	0.0	0.0	0.0	0.1	23.7
Money market funds	0.3	2.0	0.9	0.2	n.a.	0.1	0.3	0.0	0.8	0.4
Investment funds other than money market funds	0.4	0.3	0.5	0.0	0.0	n.a.	0.2	0.0	0.0	0.3
Financial auxiliaries	1.3	0.0	0.1	0.0	0.0	0.2	n.a.	0.0	1.7	0.6
Captive financial institutions	0.2	0.0	0.0	0.0	0.0	0.0	0.0	n.a.	0.0	8.6
Government	86.7	48.5	17.3	3.8	5.0	1.7	3.1	0.0	n.a.	124.5
Rest of the world	46.4	9.6	4.8	0.4	0.0	2.2	0.1	0.4	1.6	n.a.

Source: CNB – financial accounts.

it does not constitute a systemic risk (Figures 5 and 6). Overall, banks have the largest exposure to other financial institutions, amounting to 1% of total bank assets, accounted for in equal amounts by short-term loans, long-term loans and equity investments.

4.5 Exposure of non-bank financial institutions to the government and reliance on foreign financing sources

In addition to analysing the mutual exposures of financial institutions, an analysis was made of exposures of non-bank financial institutions to the government, which were, in view of the high level of public debt and risks associated with its financing and refinancing, assessed as a potential source of systemic risks that could spill over to the financial system in the event of an external or internal shock that would make the repayment of government debt more difficult (Figures 7 and 8 and Chart 1). The largest short-term exposures of non-bank financial institutions to the government in relation to individual sectors' assets are those of financial auxiliaries and money market funds, and the largest long-term exposures, in addition to those of the two mentioned sectors, are the exposures of insurance funds and pension funds.

A relatively strong reliance of a part of the non-bank financial system on foreign financing sources was

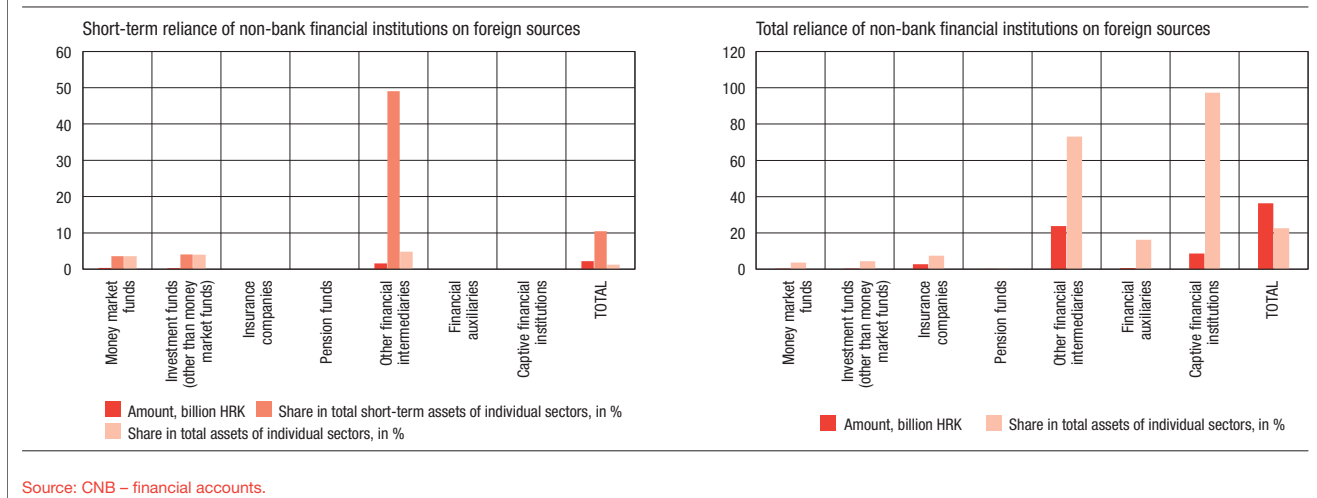
also assessed as a potential systemic risk because these sources can be volatile and, if funds are withdrawn, lead to the spillover of risks to the rest of the financial system (Figures 9 and 10, Chart 2). If captive financial institutions, due to their small share in the total financial system, are excluded, other financial intermediaries have the largest short-term and total exposure to foreign financing sources. A more detailed analysis of their liabilities shows that long-term loans amount to HRK 21bn and account for 65% of total liabilities and for almost 89% of foreign liabilities of these intermediaries.

4.6 Regulatory arbitrage

In an analysis of domestic experience with regulatory arbitrage two examples of such activities by financial institutions can be picked out. The first example of the avoidance of central bank regulations took place within the domestic financial system and the second related to cross-border lending to domestic entities.

Regulatory arbitrage within the domestic financial system was carried out by transferring operations from a more strictly regulated banking system to less regulated segments of the financial system, which took place in the period of enforcement of a number of central bank measures to slow down bank lending in efforts to mitigate the increase in external imbalances and slow down excessively rapid economic growth. At that time clients

Figures 9 and 10 Reliance of non-bank financial institutions on foreign financing sources and maturity structure of these sources



were offered leasing contracts instead of bank loans, which directly circumvented measures by the central bank. This resulted in relatively high growth rates of assets of such financial intermediaries in the pre-crisis period (Table 1).

The second form of regulatory arbitrage included foreign parent banks of domestic banks. While the textbook definition of shadow banking implies the involvement of non-bank financial institutions, instances when operations were transferred from domestic banks to parent banks at the time of application of macroprudential central bank measures to slow down lending correspond to the concept of shadow banking. In that period, international banking groups were less regulated than the domestic banking sector as they were not covered by the lending limits imposed on domestic banks, while domestic banks were interested in transferring operations to foreign institutions with which they were linked by ownership. It may be concluded that the ownership structure of the domestic banking sector, 90% of the assets of which are in foreign ownership, together with the lack of international coordination in macroprudential policy implementation, weakened the impact of domestic macroprudential policy with regard to mitigating systemic risks and their transmission both across countries and across institutions.

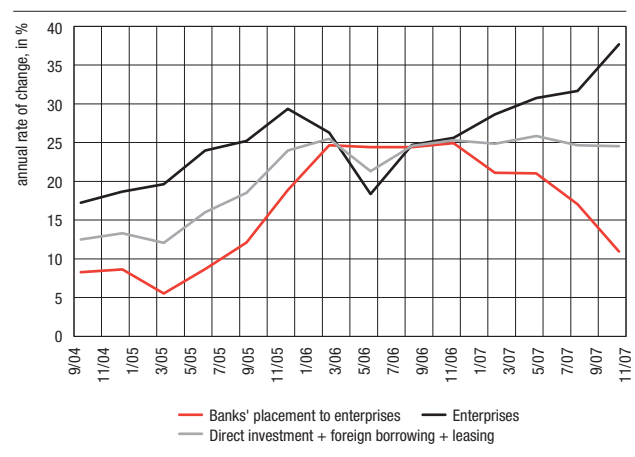
Such examples additionally stress the need for international coordination in drafting the regulatory framework for all financial institutions and coordination in implementing macroprudential policy both on the national and international level, and they uphold the importance of harmonised international regulations for banks and the non-banking segment of the financial

system.

Having in mind the need to limit the room for regulatory arbitrage and following the recommendation of the European Systemic Risk Board, in late 2013 Croatia adopted a special act establishing the Financial Stability Council, which comprises representatives of the CNB, HANFA, the Ministry of Finance and the State Agency for Deposit Insurance and Bank Resolution. Among other things, the main tasks of the Council are to design the macroprudential policy of Croatia, to identify, assess and address systemic risks, and to ensure cooperation and exchange of information between the competent authorities.

In addition, there are several regulations in effect in Croatia that regulate individual market segments and the operation of financial institutions and are in

Figure 11 Financing sources of enterprises in the pre-crisis period



Sources: CNB and HANFA.

alignment with EU regulations (Appendix 1). However, there is still ample room for further regulation of the operation of non-bank financial institutions and their activ-

ities, such as securitisation, which is not regulated in Croatia and has not actually ever been utilised.

5 Conclusion

In view of the growing importance of non-bank financial institutions, which continue to be a less regulated segment of the system, and their close links with the regulated segments of the financial system, it is important to examine the size and number of such institutions and the possibility of their activities leading to systemic risks that might disrupt the stability of the system as a whole. In this regard, there is still room for strengthening the institutional framework and legal basis that would ensure effective and concerted adoption of adequate regulations, and for investigating the effects of individual instruments and their interaction at the level of the entire financial system. One such example could be the use of derivatives, which have not been analysed here because of their (current) relatively small importance for this part of the financial system.

In line with the conclusions of the Financial Stability Board that “domestic” shadow banks in most countries do not present a problem as the majority of such institutions come from “abroad”, it is estimated that the share of shadow banks in the Croatian financial system is currently such that it does not present a source of systemic risk.

The analysis carried out suggests that the share of non-bank financial institutions in the Croatian financial system and the maturity structure of their liabilities and claims do not currently pose a risk that could threaten financial stability. However, due to the large short-term exposures of non-bank financial institutions to banks, there are significant risks that potential shocks, which would create operating difficulties for banks and adversely affect their liquidity, may spill over to these institutions. In addition, a potential systemic risk arises from the high exposures of non-bank financial institutions to the government, which would invariably materialise in case of any difficulties in public debt servicing and affect the rest of the financial system. Some of these insti-

tutions rely heavily on foreign financing sources, which could create difficulties should volatility and turbulence in international financial markets increase. Observed by segments of the non-bank financial system, other financial intermediaries stand out as the most risky institutions as they have a high degree of the use of leverage and significant short-term and total exposure to foreign financing sources. There is also considerable room for further research into this segment. In addition to financial accounts, other data sources may be used for that purpose, such as the Financial Agency database on the performance of enterprises and additional data on the operation of banking and non-banking financial institutions and their exposures.

Among recent activities to strengthen the regulatory framework for all segments of the financial system and reduce the room for regulatory arbitrage and shadow banking activities, one should mention the establishment of the Financial Stability Council. In addition to the recommendation of the European Systemic Risk Board on the macro-prudential mandate of national authorities, this was motivated by previous experience of the avoidance of central bank measures by the transfer of operations to less regulated segments of the financial system or abroad. This also ensured coordinated action of institutions responsible for supervising all financial institutions that may affect financial stability.

This research points to the need for further analysis and research in the field of shadow banking. Apart from an examination of risks and links between various types of financial intermediaries such as the one made in this paper, it is possible to perform an analysis at the level of individual companies and their links, which in some cases may pose risks to financial stability. Finally, special attention is also to be paid to risk analysis of the use of various types of derivatives.

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Appendix 1 List of the major acts governing Croatian financial system

- 1 Act on the Croatian National Bank
- 2 Credit Institutions Act
- 3 Act on the Resolution of Credit Institutions and Investment Firms
- 4 Financial Conglomerates Act
- 5 Act on Settlement Finality and Financial Instruments Settlement Systems
- 6 Credit Unions Act
- 7 Foreign Exchange Act
- 8 Payment System Act
- 9 Act on the Implementation of EU Regulations Governing Payment Systems
- 10 Electronic Money Act
- 11 Act on the Financial Stability Council
- 12 Capital Market Act
- 13 Act on Open-Ended Investment Funds with a Public Offering
- 14 Act on Alternative Investment Funds
- 15 Act on the Fund for Croatian Homeland War Veterans and Members of Their Families
- 16 Retired Persons' Fund Act
- 17 Act on Compulsory Pension Funds
- 18 Act on Pension Insurance Companies
- 19 Insurance Act
- 20 Leasing Act
- 21 Factoring Act
- 22 Act on the Croatian Financial Services Supervisory Agency

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