ORIGINAL PAPER

DOI: 10.26794/2587-5671-2024-28-4-144-156
UDC 336.74(045)
JEL E42, E58, G2

Impact of Non-Bank Financial Intermediation on Banking Crises

V.V. Kuznetsova[a], O.I. Larina[b]
[a] Lomonosov Moscow State University, Moscow, Russia;
[b] State University of Management, Moscow, Russia

ABSTRACT

The article is devoted to the study of trends in the development of non-bank financial intermediation. The scale of the non-banking segment of the financial market has increased significantly, and it is believed that at the beginning of 2022 it accounted for about half of global financial assets, which may affect the financial stability not only of individual states, but also of the entire global economy. In this regard, the analysis of risks emanating from non-bank financial intermediation institutions is an urgent task of national financial regulatory authorities. The present study is aimed at solving this problem. The **purpose** of the study is to identify the impact of non-bank financial intermediation on the banking sector in order to determine the prospects for its anti-crisis regulation and develop approaches to the formation of strategies for managing systemic risks that may be caused by the activities of such institutions. The study is based on data from the Financial Stability Board, the International Monetary Fund, and the Bank of Russia. **Methods** of analyzing regulatory documents and comparative economic analysis are used. The paper systematizes possible channels for the implementation of risk factors and develops new approaches for the diagnosis of systemic risks due to the influence of non-bank financial institutions. There are suggestions made regarding the formulation of systemic strategies for risk management: strengthen regulation and supervision of NBFP institutions; provide conditions for providing liquidity in case of stress in the NBFP sector; ensure coordination between the Central Bank and sectoral regulators in order to manage crisis situations. Possible tools for setting up macroprudential policy to control risk factors of certain groups of non-banking financial institutions in order to ensure the stability of financial markets are presented: limitations of interrelationships with the banking system; indicators of sensitivity to customer panics; improving the quality of risk assessment; prohibition of secondary and tertiary securitizations of assets. It is concluded that there is a need for national authorities to apply 4 main approaches to regulation, primarily aimed at reducing liquidity risks, financial leverage, currency gaps and interconnectedness.

Keywords: financial system; non-bank financial companies; financial stability; digital technologies; systemic risk; regulation and supervision; banking crises; macroprudential policy

For citation: **Kuznetsova V.V., Larina O.I. Impact of non-bank financial intermediation on banking crises. *Finance: Theory and Practice.* 2024;28(4):144-156. DOI: 10.26794/2587-5671-2024-28-4-144-156**

INTRODUCTION

"Black clouds are gathering over the global financial system. Many analysts fear that regulators will soon discover that they not only have no control, but also no understanding of the non-banking financial sector."[1]

Even before the global crisis (2007–2009), experts noted that part of financial intermediation "migrates" from traditional banks to other financial organizations. But a systematic study of the scale and activities of "shadow banking"[2] [1, p. 2], as well as existing relationships with national banking systems began later — after the establishment of the Financial Stability Board in 2009 (further — FSB). FSB was given broad powers: to develop the general concept of "shadow banking", to collect information and analyze statistical data characterizing the evolution of market dynamics of the sector, to develop general recommendations for the regulation and supervision of organizations and institutions belonging to this segment of the financial sector. In its activities, the FSB pays special attention to monitoring the risks arising from the activities of shadow banking institutions and organizations for national financial systems, including threats to the development of a systemic crisis.

The functioning of non-bank financial intermediation institutions can involve a variety of risks that can become systemic. The complexity of the sector, its close ties with the traditional banking system, which are not always possible to clearly trace, have made it difficult and make it difficult to accurately assess the market volume and the possible risks generated by non-bank financial intermediation. At the same time, most national regulators currently do not have accurate estimates of the extent of non-bank financial intermediation and its links with the traditional banking system and the real sector of the economy.

As shown by the incomplete data published by the FSB in the relevant reviews (data on non-bank financial intermediation, the FSB receives only from 29 jurisdictions), since the global financial crisis, the scale of the non-banking financial sector has increased many times: at the beginning of 2022, it accounted for about half of global financial assets (see below for more details). At the same time, there was a process of entering the market of new types of financial intermediaries and the complexity of their network relationships both within the sector and with traditional banks. In Russia, these trends can also be traced.

NON-BANK FINANCIAL INTERMEDIATION: CONCEPT AND OVERVIEW OF SOURCES

In the Russian scientific literature, a limited number of publications are devoted to the problems of shadow banking. In particular, in the article by V.M. Usoskin (2016) considers the development of this segment of the financial market in the U.S. and the EU, as well as the peculiarities of its legal regulation [2]. Similar issues are devoted to the publication of N.N. Rubtsova [3]. In the article V.M. Usoskin (2019) considered the influence of the Basel Standards on the activities of traditional banks and non-banking intermediaries, and the author concludes that: "the financial instability of shadow structures, the lack of channels for their support from official bodies and the potential danger of "contamination" of traditional banking institutions in the event of financial cataclysms still pose a real threat to economic stability" [4, p. 78]. Similar problems are addressed in paper by A.V. Ramazanov [5].

At the same time, the development of the non-banking sector, according to a number of researchers, contributes to the availability of credit and financial services for economic

[1] The dangerous growth of shadow banking. World Finance. 17.01.2023. URL: https://www.worldfinance.com/special-reports/the-dangerous-spread-of-shadow-banking (accessed on 11.05.2023).

[2] We considered that the term "shadow banking" was proposed by Paul McCulley at an economic symposium in Jackson Hall, organized by the Federal Reserve of Kansas in 2007, he defined "shadow banking" as "full alphabetic" of financial institutions.

entities, and thus supports economic growth. Thus, a study by specialists of the Bank of England shows on the basis of data on the U.S. that with the tightening of monetary policy, non-bank financial intermediaries increased the supply of syndicated loans to non-American corporations compared to banks [6, p. 2]. Non-bank financing organizations also play an important role in the government and corporate bond markets, which can contribute to greater stability in the budgetary sphere.

At the initial stage, FSB experts used the concept of "shadow banking" when organizing work on monitoring and analyzing the evolution of the dynamics of financial services outside the scope of traditional banks. But, as reviews of scientific publications showed, different meanings were put into this concept in different studies. B. Bernanke, as head of the Federal Reserve System, noted that "shadow banking consists of a set of different institutions and markets that together perform the functions of traditional banking, but they are outside or only indirectly related to the traditional system of regulated depositary institutions".[3] Other specialists put a narrower meaning in this concept, for example, the institutional approach to the definition of shadow banking was presented in the publication 2013: "shadow banking activity consists in the transformation of credit, urgency and liquidity without direct and indirect access to public sources of liquidity or credit support" [7, p. 1].

Despite significant differences in the understanding of what shadow banking is, until 2019 the FSB used this concept, collecting and analyzing data on market development, based on the legal status of financial institutions and organizations. Since 2019, FSB experts have instead introduced the concept of "non-bank financial intermediation" (further — NBFI), which unites all legal organizations outside the regulated banking system that provide various financial services. FSB experts noted [8] that financial intermediation of such institutions is distinguished by four key features:

- transformation of urgency (for example, attracting short-term funds to invest in long-term assets);
- liquidity transformation (for example, the use of such cash liabilities to buy non-tradable assets such as loans);
- leverage (for example, the use of debt financing mechanisms for the purchase/investment of fixed assets);
- transfer of credit risk (for example, acceptance of the borrower's default risk and its transfer from the loan organizer to a third party).

At the same time, the FSB began to classify NBFI organizations according to the functional criterion (economic function performed by the organization) into 6 segments (see *Table 1*), and began to use three indicators to measure the scale of the FSB sector:

- *broad indicator* includes all financial institutions, including such as insurance corporations, pension funds, securities market professionals and financial support organizations (all financial institutions, except for political and commercial banks). According to this indicator, the scale of non-bank financial intermediation for 2021 amounted to $ 239.3 trillion, or about half of global financial assets;
- *intermediate indicator* includes a part of the NBFI sector, which includes money market funds, hedge funds, other investment funds, central counterparties, brokers/dealers. Their assets amounted in 2021to $ 152 trillion;
- *narrow indicator* includes non-bank financial organizations, which regulatory authorities assess as intermediary institutions capable of posing risks to financial stability, such as banking ones (for example, trusts, special legal entities and others), which accounted for $ 67.8 trillion (see *Table 1*).

[3] Speech by B. Bernanke at the Conference of European Central Banks, Frankfurt, Germany, 19 November 2010. URL: https://www.federalreserve.gov/newsevents/speech/bernanke20131108a.htm (accessed on 13.05.2023).

Currently, the largest share of the narrow NBFI indicator (20.5 trillion dollars, or 30.3%) is in the U.S., in second place — 8 jurisdictions of the euro area (15.7 trillion dollars, or 23.2%), and in third place — China (11.4 trillion dollars, or 16.8%). The U.S. share in the narrow indicator of the NBFI decreased in 2008–2016, and subsequently remained at a relatively stable level. A similar figure of China decreased in 2016–2020, but began to grow again from 2021. In general, in 16 of the 29 jurisdictions for which the FSB collects data, the annual growth rate of the NBFI in 2021 outperformed their 5-year average.[4]

According to experts, Russian banks are not slightly exposed to risks from institutions classified as the NBFI,[5] since the financial sector of Russia is dominated by traditional banks in terms of assets. But in recent years, the number of various non-credit financial institutions has begun to grow in the Russian financial market. In 2022 alone, the number of such NBFIs as operators of investment platforms increased by 14 units; operators of information systems issuing digital financial assets by 3 units; collective investment market organizations by 10 units; mutual investment funds by 198 units; management companies of specialized companies by 16 units (see *Table 2*).

The growing number and diversity of NBFI organizations represented in the Russian financial market shows that the problem of improving prudential regulation [see, for example, 9] and careful monitoring of the dynamics of development of the NBFI sector is also relevant for our country. The Bank of Russia, as well as individual specialists, conducts regular monitoring and analytical analysis of the situation in the NBFI sector.

SYSTEMIC RISKS ARISING FROM THE NBFI

As noted above, after the global financial crisis, the scale of the NBFI has almost doubled (see *Fig.*). Moreover, the tightening of prudential requirements for traditional banks or individual organizations of the NBFI (for example, insurance) has stimulated and stimulates the entry of new intermediaries into the market and the accelerated growth of the sector as a whole.

Many NBFI institutions provide services similar to traditional banks: they convert savings into loans, participate in the transformation of urgency and liquidity, and they also play a significant role in the short- and long-term funding markets. But if all such operations can be concentrated in one traditional bank, in the non-bank financing sector they are usually carried out by different institutions. Nevertheless, they all have risks that are the same or similar to those of traditional banks. But the NBFI institutions are not always subject to the same level of regulatory requirements or close supervision as traditional banks [10].

The complexity of the NBFI sector, the network effects and the relationship of non-bank intermediaries with traditional banks make it extremely difficult to analyze the sources of systemic risk formation. At the same time, the network relationships formed between traditional banks and NBFI organizations differ from country to country: their configuration in the U.S. is different, for example, from the Chinese one [11]. The relative "closeness" of the sector, the lack of unambiguous reporting criteria and methods for calculating indicators allows NBFI participants to manipulate financial and statistical reporting data, combining off-balance sheet assets and liabilities [12].

Key features of the NBFI (primarily the transformation of urgency and liquidity, as well as a high level of leverage, the policy of using risky investment strategies by sector institutions) can now become sources of a

[4] Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p. 37 (89 p.). URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022/ (accessed on 11.05.2023).

[5] Global Monitoring Report on Non-Bank Financial Intermediation, 2021. FSB, 2021, Dec. p. 19 (75 p.). URL: https://www.fsb.org/2021/12/global-monitoring-report-on-non-bank-financial-intermediation-2021/ (accessed on 11.05.2023).

Table 1

Structure of the Narrow NBFP Indicator for 2021

Economic Functions (EF)	Typical entity types**	Size, trillion dollars	Sector's share, %	Growth rate in 2021, %
EF1. Collective investment institutions	Money market funds, fixed income funds, hedge funds, real estate funds*	51.6	76.2	10.6
EF2. Organizations whose loans are dependent on short-term funding	Microfinance companies, leasing and factoring companies, consumer lending companies	4.6	6.8	7.7
EF3. Organizations whose mediation depends on short-term funding	Brokerage and dealer companies, custodians, securities financing companies	4.6	6.8	5.6
EF4. Organizations that promote lending	Credit insurance companies; credit guarantee companies	0.2	0.2	4.0
EF5. Organizations whose credit intermediation is based on securitization	Securitization trusts; structured financing trusts; legal entities – ABS and MBS issuers	5.1	7.5	9.0
EF6. Other	Other financial intermediaries	1.7	2.4	10.8
Total		67.8	100	9.9

Source: Compiled by the authors on the basis of Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p. 3 (89 p.). URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022/ (accessed on 12.05.2023).

Notes: * money market funds, fixed income funds, real estate funds are varieties of investment funds; special legal entities are project companies (SPV) that issue asset – backed securities (ABS) and mortgage-backed securities (MBS); ** in Russia there are also non-bank financial organizations capable of generating the risks under study. The so-called non-credit financial organizations are recognized as: professional participants in the securities market; management companies of an investment fund, a mutual investment fund and a non-governmental pension fund; specialized depositories of an investment fund, a mutual investment fund and a non-governmental pension fund; joint-stock investment funds. Non-bank financial organizations carry out: clearing activities, actuarial activities; They perform the functions of: central counterparty, trade organizer, central depository, insurance business entities, non-governmental pension funds, microfinance organizations, consumer credit cooperatives, housing savings cooperatives, credit bureaus, rating agencies, agricultural consumer credit cooperatives, pawnshops (Article 76.1 of the Federal Law "On the Central Bank of the Russian Federation").

Table 2

Change in the Number of NBFI Organizations in Russia in 2022

Financial market institutions' names	Number at 01.01.2022	Number at 01.01.2023
Subjects of the insurance business, total	222	215
Including: • insurance organizations	147	140
• mutual insurance company	16	18
• insurance brokers	59	57
• associations of insurance entities	20	20
Professional participants of the securities market, total	472	515
Including: — brokers	251	253
– forex dealers	4	4
– dealers	279	277
– trustees	182	179
– depositories	250	252
– registrars	31	31
– investment advisers	126	179
Infrastructure organizations, total	72	90
Including: • clearing organizations	6	6
• stock exchanges	6	6
• trading systems	1	1
• commodity supply operators	4	4
• repositories	2	2
• central depository	1	1
• central counterparties	3	3
• news agencies	5	5
• operators of investment platforms	50	64
• financial platform operators	5	6
• information system operators serving platforms that issue digital financial assets	0	3
• payment system operators and foreign payment system operators	28	25
Subjects of the collective investment market, total	328	338
Including: • non-state pension funds	41	39
• joint-stock investment funds	2	2
• management companies of collective investment organizations	259	268

Table 2 (continued)

Financial market institutions' names	Number at 01.01.2022	Number at 01.01.2023
• specialized depositories of collective investment organizations	26	29
Mutual funds, total	1965	2163
Including: – open	262	277
– interval	44	50
– closed	1534	1705
– stock exchanges	125	13
Microfinance entities and cooperatives, total	6015	5341
• microfinance organizations	1267	1162
• housing savings cooperatives	48	44
• credit consumer cooperatives	1775	1517
• agricultural credit consumer cooperatives	694	638
• pawn shops	2231	1980
Management companies of specialized companies	55	71

Source: Compiled by the authors based on materials from the Bank of Russia. Annual Report 2022. P. 350–351.

systemic financial crisis, when the central banks of many countries tighten financial conditions to slow down inflation, increase prudential requirements for supervised organizations, and asset price volatility increases. The change in the general financial conditions makes the NBFI institutions more vulnerable to various risks (see *Table 3*), the materialization of which can provoke investor panic (such as raids on banks) and emergency asset sales.

The tightening of the global macro-financial environment increases the instability of the NBFI sector due to the relatively high level of leverage. The actual vulnerabilities of NBFI institutions due to financial leverage may not be known to both regulators and market participants, as they are difficult to measure or it is embedded in various transactions and operations [13]. Under the current conditions, the financial leverage of NBFI institutions can take various forms: the use of buyback agreements or margin borrowing on major brokerage accounts; a variety of financial derivatives or structured financing mechanisms. Moreover, individual transactions may include several forms of financial leverage, for example, secured credit transactions may contain three levels of leverage.

NBFI banks and organizations are directly interconnected through funding channels operating in both directions. Banks continue to be net recipients of funding from NBFI institutions. Although the total share of non-bank financing of banks has gradually decreased since 2013, it is significant in a number of jurisdictions: in South Africa — more than 30% of total bank assets; in Luxembourg — more than 20%; in Australia,

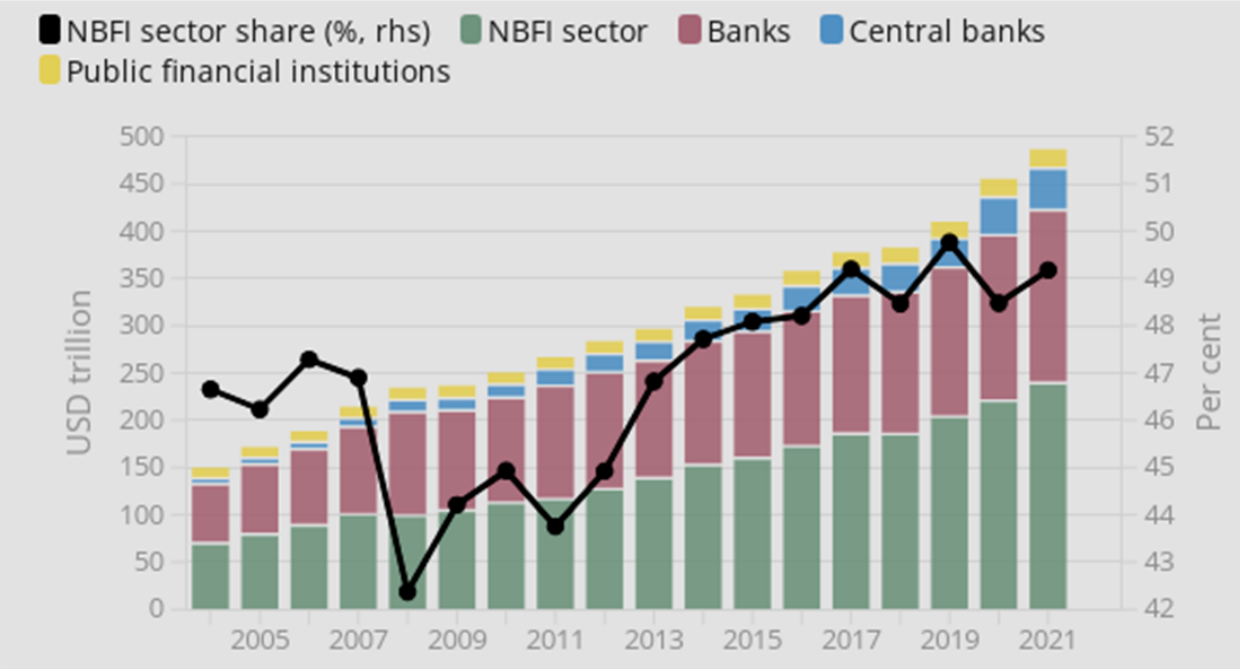

Fig. **Global Financial Assets Dynamics**

Source: Compiled by the authors based on materials from the Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p. 37 (89 p.) URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022 (accessed on 11.05.2023).

Argentina, Brazil, Chile, Switzerland, South Korea — more than 10%.[6]

Credit database information[7] shows that after the global financial crisis, the share of NBFI institutions in the syndicated loan market has increased significantly. At the same time, NBFI organizations specialize in lending to borrowers with higher leverage and a lower level of interest coverage than banks. The rapid growth of non-bank lending can exacerbate the negative consequences of financial shocks, as in crisis situations, NBFI institutions reduce their loan supply more than banks for firms most dependent on lending [14]. Unlike traditional banks, NBFI institutions do not have direct access to the Central Bank's liquidity support programs, so in the case of a limited supply of market liquidity, they become catalysts for its further compression, which can increase financial stress in the money markets.

To replenish liquidity, NBFI institutions begin to sell assets under stress, which provokes waves of price decline, further asset sales, an increase in risk premiums and requirements for additional collateral, which further worsens the situation. A decrease in the cost of collateral, an increase in discounts implies a tightening of secured credit conditions, which is rapidly spreading in the unsecured lending market, including money markets. This may mean that the liquidity stress of NBFI institutions can be transformed into stress in all systemically important segments of financial markets, including the traditional banking system. The latter is possible for at least two reasons. First, a significant part of the NBFI's institutions are either owned or funded by traditional banks. Secondly, commercial banks are directly involved in the NBFI through broker-dealer activities. In the event of market stress and

[6] Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p. 25. (89 p.). URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022/ (accessed on 11.05.2023).

[7] URL: https://www.library.hbs.edu/find/databases/dealscan (accessed on 11.05.2023).

Table 3

Theoretical Assessment of Potential Vulnerabilities Main NBFP Institutions

NBFI Institutes (2021 sector assessment)	Financial leverage	Liquidity risk	Interconnectedness	Currency gaps
Investment funds, excluding money market funds and hedge funds ($ 58 trillion, 12% GFA*)	Low, but average for bond funds subject to derivatives risks	High for fixed-income funds holding illiquid assets of the EM** or with high yields	High, including cross-border (ME and DE***), possible links with banks on derivatives	Low, but possible significant externalities for foreign exchange markets
Insurance companies ($ 40 trillion, 8% GFA)	Low	Low, but medium with tougher policies	Average; banks — large holders of bank debts; there may be requirements for additional collateral	Low, but medium with tougher policies
Pension funds ($ 43 trillion, 9% GFA)	Low, but medium in countries with a large share of schemes with established payments	Low, but can be high in countries with a large share of schemes with established payments and negative cash flows	Data does not allow for a reasonable assessment	Low
Money market funds ($ 8.5 trillion, 2% GFA)	No data	Low, but average for fixed assets	High among key participants in the main funding markets	No data
Structured financing companies ($ 6 trillion, 1% GFA)	Average/ high	Average	Average; insurance companies and pension funds can be large investors in these structures	Low
Hedge funds ($ 6 trillion, 1% GFA)	Average/high	Average	Average/High	Average
Central counterparties ($ 0.7 trillion, 0.1% GFA)	No data	High, but they also have strong risk management and financial control	High, given the systemic role in the markets	No data

Source: Compiled by the authors based on materials from the Global Financial Stability Report, April 2023. IMF, 2023. p. 61 (126 p.). URL: https://www.imf.org/en/Publications/GFSR/Issues/2023/04/11/global-financial-stability-report-april-2023 (accessed on 11.05.2023).
Notes: * GFA — global financial assets; ** EM — Countries with emerging markets; *** DE — developing economies.

a fall in the cost of collateral, dealer banks face the risks of prolongation of positions, which, in fact, do not differ from the classic withdrawal of deposits. Thus, the NBFI can be a source of systemic risk, especially if the development of the sector is mainly motivated by regulatory arbitration.

POSSIBLE NBFP MANAGEMENT STRATEGIES TO PREVENT SYSTEMIC CRISES

In 2013, the FSB recommended that national regulators strengthen regulation in 5 areas of the NBFI to reduce systemic risks[8]:

1) reduction the effects of the spread of the crisis between the NBFI and the traditional banking system (risk of infection);

2) reduction the sensitivity of money market funds to "raids" (panic);

3) increase the accuracy of assessment of systemic risks generated by NBFI organizations;

4) reduction of incentives for secondary and tertiary asset securitization;

5) elimination of pro-cyclical risks associated with secured financing contracts such as REPO transactions, securities lending, which can exacerbate the lack of financing during periods of serious financial stress.

The 2022 FSB report[9] proposes a variant of a functional approach to regulating the activities of NBFI institutions (*Table 4*).

In the report of the International Monetary Fund[10] is emphasized that in the current conditions of increasing interest rates to contain inflation, increase asset price volatility and increase risks and uncertainties, the NBFI sector can become a source of systemic risk.

Thus, fears that the NBFI will become a source of a deep systemic crisis, which will provoke a serious decline in the real sector and lead to a significant decrease in household well-being, naturally raise the issue of improving the prudential regulation of NBFI institutions and strengthening supervision. To this end, in our opinion, four main regulatory strategies can be applied:

- *for institutions with high liquidity risks:* regulation of NBFI liabilities. It is possible to restrict the use of liquidity tools and spread the rule of "automatic suspension" of operations in the event of stressful situations. This strategy is appropriate, as it will allow the regulator to influence the volatility of asset prices in a timely manner and provide liquidity reserves for repayment of obligations;
- *for institutions with high financial leverage:* restrictions on the use of deposit-like instruments to finance long-term investments. Possible measures: capital requirements, liquidity standards and restrictions on the use of client assets to transform urgency. This strategy should help to limit the creation of "bubbles" and also be aimed at controlling the risk of loss of liquidity;
- *for institutions sensitive to currency gaps:* reducing the asymmetry of information regarding the quality of assets providing liabilities. The strategy is aimed at limiting currency risks, similar to banking methods of regulation can be used (limits of open positions, liquidity reserves, risk assessment and control, etc.);
- *for institutions with interconnectedness:* development of system crisis management plans. It is a well-known fact that even excellent regulation cannot prevent systemic crises, but it is important that regulators are ready to manage a complex situation, so it is important to have a comprehensive plan with possible alternative management tools.

It should be noted that in addition to the NBFI sector, high-tech companies

[8] An Overview of Policy Recommendations for Shadow Banking. SB, 2013, Aug. 15 p. URL: https://www.fsb.org/2013/08/an-overview-of-policy-recommendations-for-shadow-banking (accessed on 15.05.2023).

[9] Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p.32, 33. (89 p.). URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022/ (accessed on 15.05.2023).

[10] Global Financial Stability Report, April 2023. IMF, 2023. p. 59 URL: https://www.imf.org/en/Publications/GFSR/Issues/2023/04/11/global-financial-stability-report-april-2023 (accessed on 11.05.2023).

Table 4

Possible List of Regulatory and Supervisory Measures Introduced for NBFP Institutions and their Economic Functions

Economic functions	Tools
EF1 Collective investment institutions	Instruments should be aimed at reducing the risks associated with the transformation of liquidity and the use of leverage, including: - limits: on investments in illiquid assets; concentration of assets; leverage level; mandatory liquidity reserves; - price-based instruments: fees for asset dilution and restriction of pricing based on fluctuations in securities rates; - instruments based on quantities (volumes): redemption amounts; redemption suspensions The last two types of instruments can be activated discretely or on a permanent basis by decision of both the supervisory authority and fund managers
	Instruments aimed at reducing the risks (credit and liquidity) associated with financing long-term investments with short-term borrowing: - capital requirements (either similar to banking or separate regimes); - standards of maximum permissible risks and leverage; - the standard of the mandatory liquidity reserve; - restrictions on the types of liabilities that the institution can issue For organizations belonging to EF3, requirements may be introduced regarding the use of customer funds
EF2 Organizations whose loans depend on short-term funding and **EF3** Organizations whose mediation depends on short-term funding	The instruments are aimed at reducing the risks of credit, liquidity, counterparty. In addition to capital requirements and liquidity standards, restrictions on the scale and volume of business are possible; requirements for risk management and mandatory risk sharing with the policyholder. Tools are introduced on an ongoing basis
EF4 Organizations that promote lending	The instruments are aimed at reducing the risks of securitization, including: restrictions on the transformation of urgency/liquidity; accepted collateral; risks associated with financing allocated to banks or accepted from banks (other financial organizations). To ensure proper incentives, it is possible to introduce rules limiting hidden risks (for example, retention requirements for the issuance of securitizations). Tools should be introduced on an ongoing basis
EF5 Organizations whose credit intermediation is based on securitization	Policy instruments are aimed at reducing the risks of securitizations, including: restrictions on the transformation of urgency/liquidity; accepted collateral; risks associated with financing allocated to banks or accepted from banks (other financial organizations). To ensure proper incentives, it is possible to introduce rules limiting hidden risks (for example, retention requirements for the issuance of securitizations). Tools should be introduced on an ongoing basis

Source: Compiled by the authors based on materials from Global Monitoring Report on Non-Bank Financial Intermediation, 2022. FSB, 2022, Dec. p. 32, 33. (89 p.). URL: https://www.fsb.org/2022/12/global-monitoring-report-on-non-bank-financial-intermediation-2022/ (accessed on 15.05.2023).

simultaneously operating in several jurisdictions (bigtech companies) have also entered the financial intermediation market, which poses a new problem of organizing effective supervision and monitoring of the influence of bigtech companies. Such dynamics suggest that the perimeter of financial regulation and supervision should be expanded.

CONCLUSION

Currently, the NBFI sector is represented by a wide range of organizations, and the practical application of innovative financial technologies stimulates the entry into the market of new types of financial intermediaries, whose activities give rise to new risks, including systemic ones. But so far, financial regulators and supervisory authorities cannot clearly identify them and assess their importance for maintaining financial stability.

The article presents an analysis of the state of the NBFI sector and possible channels for implementing risk factors that may affect financial stability: relationships with the banking system; sensitivity of some institutions to customer panic; existing fragmentation in risk assessment; secondary and tertiary asset securitizations.

The following directions and actions can be implemented as recommended measures to maintain financial stability and to prevent the development of the crisis in the NBFI sector:

- strengthening the regulation and supervision of NBFI institutions. First of all, it is necessary to close the main data gaps, stimulate proper risk management in the relevant organizations, introduce the necessary prudential requirements;
- in case of stress in the NBFI sector, direct access of NBFI institutions to the Central Bank's liquidity programs is possible (specific conditions for providing liquidity should be provided);
- it is necessary to ensure coordination between the Central Bank and sectoral regulators (if any) in order not only to identify risks, but also to manage crisis situations.

REFERENCES

1. Nath R.D., Chowdhury M.A.F. Shadow banking: A bibliometric and content analysis. *Financial Innovation*. 2021;7(1):68. DOI: 10.1186/s40854–021–00286–6
2. Usoskin V. Shadow banking: Place and role in financial intermediation. *Den'gi i kredit = Russian Journal of Money and Finance.* 2016;(4):20–27. (In Russ.).
3. Rubtsov N.N. Shadow banking and its role in the modern global financial system. *Kreativnaya ekonomika = Journal of Creative Economy.* 2016;10(6):577–600. (In Russ.). DOI: 10.18334/ce.10.6.35301
4. Usoskin V.M. Shadow banking: regulatory reform and its effectiveness. *Finance: Theory and Practice*. 2019;23(4):69–79. DOI: 10.26794/2587–5671–2019–23–4–69–79
5. Ramazanov A.V. On the essence and regulation of shadow banking. *Finansy i kredit = Finance and Credit.* 2022;28(6):1379–1398. (In Russ.). DOI: 10.24891/fc.28.6.1379
6. Elliott D., Meisenzahl R.R., Peydró J.-L. Nonbank lenders as global shock absorbers: Evidence from US monetary policy spillovers. *Journal of International Economics.* 2024;149:103908. DOI: 10.1016/j.jinteco.2024.103908
7. Pozsar Z., Adrian T., Ashcraft A., Boesky H. Shadow banking. *FRBNY Economic Policy Review.* 2013;(Dec.):1–16. URL: https://www.newyorkfed.org/medialibrary/media/research/epr/2013/0713adri.pdf (accessed on 11.05.2023).
8. Kodres L.E. What is shadow banking? *Finance & Development*. 2013;50(2):42–43. URL: https://www.imf.org/external/pubs/ft/fandd/2013/06/pdf/basics.pdf (accessed on 11.05.2023).
9. Gospodarchuk G.G., Zeleneva E.S. Effectiveness of macroprudential policy: Problems of measurement and evaluation. *Finance: Theory and Practice*. 2023;27(1):32–41. DOI: 10.26794/2587–5671–2023–27–1–32–41

10. Kelleher D., Basil P. The increasing dangers of the unregulated "shadow banking" financial sector. Washington, DC: Better Markets, Inc., 2022. 18 p. URL: https://bettermarkets.org/wp-content/uploads/2022/03/BetterMarkets_Report_Dangers_of_the_Shadow_Banking_System_March2022.pdf
11. Liu A., Liu J., Shim I. Shadow loans and regulatory arbitrage: Evidence from China. BIS Working Papers. 2022;(999). URL: https://www.bis.org/publ/work999.pdf (accessed on 11.05.2023).
12. Adrian T., Jones B. Shadow banking and market-based finance. IMF Departmental Paper. 2018;(14). URL: https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2018/08/01/Shadow-Banking-and-Market-Based-Finance-45663 (accessed on 11.05.2023).
13. Aldasoro I., Doerr S., Zhou H. Non-bank lending during financial crises. FDIC Working Paper. 2022. 42 p. URL: https://www.fdic.gov/analysis/cfr/bank-research-conference/annual-21st/papers/zhou-paper.pdf (accessed on 12.05.2023).

ABOUT THE AUTHORS

Valentina V. Kuznetsova — Cand. Sci. (Hist.), Assoc. Prof., M.V. Lomonosov Moscow State University, Moscow, Russia
https://orcid.org/0000-0002-8698-4295
vkuz_55@mail.ru

Olga I. Larina — Cand. Sci. (Econ.), Assoc. Prof., State University of Management, Moscow, Russia
https://orcid.org/0000-0002-9841-8194
Corresponding author:
oilarina@mail.ru

Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 09.06.2023; revised on 10.07.2023 and accepted for publication on 27.07.2023.
The authors read and approved the final version of the manuscript.

Translated by V. Timonina