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The Evolving Role of National Central Banks

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ABSTRACT

The article is devoted to the study of modern trends in the development of functions and instruments of central banks (CB). The article **aims** to identify new CB approaches to crisis management and the used tools' analysis and to study the transformation of CB activities and their current role. The authors use general scientific and special research **methods**, including comparative legal analysis and the method of systematization. The article focuses on the current international discussion on the evolving role of CB, provides an overview of experts' opinions on issues related to assessing how CB activities influenced the formation and development of the 2007 global financial crisis. The spread of the latest crisis caused by the COVID-19 pandemic was different from the spread of the 2007 crisis when financial markets were first hit and then stress spread to the real economy through reduced confidence and tightening credit conditions for businesses and households. The authors note that the pandemic crisis developed differently: first, the real economy was affected, which was accompanied by a fall in GDP, and then conditions in the financial sector worsened. The authors systematized the CB measures in response to the pandemic and analyzed them by groups of countries: the CB measures of the advanced economies and countries with emerging markets were broadly similar. Based on a comparative analysis of the monetary instruments, the authors **conclude** that the advanced economies CBs have extremely limited opportunities to use interest rates to manage the crisis, while the emerging markets CBs still have some space for their regulation. The paper also analyses other CB instruments used during the crisis caused by the pandemic. The authors note that the measures implemented by CBs reflect their increased role in modern economic systems and the change in the long-known traditional functions. This research may be useful to state bodies in the implementation and coordination of the policy in the field of regulation of CB activities.

Keywords: central banks; functions of central banks; banking system; financial crisis; crisis caused by the COVID-19 pandemic; central banks instruments

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INTRODUCTION

Currently, all spheres of human activity are rapidly changing, and the activities of central banks have also changed significantly. After the financial and economic crisis of 2007–2009 in many countries, in addition to price stability, the direct responsibility of the central banks included the obligation to maintain financial stability. The expansion of the functions of the central banks became noticeable in its activities to restore national economies after unexpected crisis phenomena. Realizing the traditional function of a lender of last resort in a crisis, the central banks in the last decade have significantly expanded the lists of programs for emergency placement of liquidity, acquired assets and potential partners. This was reflected in a sharp increase in their balance sheet accounts. Thus, if in 2007 the assets of the central banks of the United States, the European Union, Great Britain and Japan, respectively, amounted to from 6 to 20% of nominal GDP, then at the end of 2020 the balance sheet of the Federal Reserve System (FRS) was 34% of the national nominal GDP, the European Central Bank (ECB) — 59%, Bank of England — 40%, Bank of Japan — 127% [1].

By allocating emergency liquidity to participants in certain segments of the capital market and/or setting requirements for banks that provide certain loan products, the central banks become the regulator of macro-social and economic processes that previously belonged to the exclusive powers of the government.

Changes in the activities of the central banks, which were initially formed in the course of overcoming the consequences of the global financial crisis of 2007–2009, were even more clearly manifested in the measures that the central banks of most countries implemented in response to the crisis caused by the COVID-19 pandemic.

The empirical basis of this article was data from several databases. First of all, this is the database of the International Monetary Fund (IMF) "Policy Tracker", which contains data on measures implemented and continuing to operate in different countries in 4 areas: fiscal policy; monetary policy, macro-prudential policy; monetary policy. Only those monetary policy measures that were introduced in the sample countries in 2020 were selected from this database. The second source is the database of the Bank for International Settlements (BIS) [2], which contains a description and assessment of the actions taken by the central banks in 39 countries. Central banks' press releases and individual private databases also served as other sources of information.

The study aims to identify new approaches of the central banks to managing crises caused by systemic shocks and the tools used. The transformation of the functions of the central banks and their role in economic systems is analyzed. Comparison of the experience of anti-crisis management of the central banks of advanced economies and emerging market countries made it possible not only to identify the most effective approaches that had the greatest efficiency, to highlight common features in anti-crisis strategy and tactics but also to trace the evolution of the traditional functions of the central banks.

DISCUSSION ON THE ROLE AND ACTIVITIES OF CENTRAL BANKS

In the 1990s, it was believed that the main instruments by which the central banks could "softly" and flexibly manage national banking systems were short-term refinancing operations of commercial banks and open market operations, limited to the purchase/sale of government securities on the secondary market. These operations allowed the central banks, under normal conditions, to carry out monetary regulation by economic methods, and to provide timely liquid support to individual financial institutions to ensure the stability of their activities. In other words, the so-called standard approach prevailed in monetary theory, containing the following central bank recommendations for conducting monetary policy:

- central banks should focus on achieving price stability, as maintaining a low and stable inflation rate helps to maintain aggregate output at an efficient level;
- central banks should, as the main instrument of monetary policy, regulate the value of the policy (key) short-term interest rate;[1]
- central banks, acting as a lender of last resort, can prevent the development of a systemic banking crisis;
- the implementation of the function of the lender of last resort should be based on the principles of Baijot;[2]
- the banking system is stable if individual credit institutions are financially stable;

control over compliance by credit institutions with regulatory requirements and supervision over their activities should be carried out by a body separate from the central bank.

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[1] The documents of the Basel Committee on Banking Supervision use the concept of "policy interest rate". In the documents of the ECB and the Bank of Russia — the concept of "key interest rate". In this work, these concepts are used as synonyms, namely "policy (key) interest rate", and hereinafter — the policy interest rate.

[2] Bagehot's principles (Walter Bagehot, 1893), which essentially determined the rules for the Central Bank to act as a lender of last resort before the global financial crisis, stated: 1) the Central Bank can lend only to solvent banks; 2) loans should be allocated against liquid collateral; 3) rates on emergency loans of the Central Bank should be higher than the market average. In the context of counteracting the consequences of the global financial crisis, these principles have been radically revised. To restore the functioning of national banking systems, it was recognized that the Central Bank should: a) allocate emergency liquidity to temporarily insolvent financial institutions; b) in conditions of systemic stress, loans can be provided with illiquid collateral or without collateral; c) rates on emergency loans should be below market rates. Re-thinking the lender of last resort. BIS Papers. 2014. No. 79. 140 p. URL: https://www.bis.org/publ/bppdf/bispap79.pdf (accessed on 20.03.2022).

In numerous publications, for example [3, 4], it was proved that in order to achieve price stability (target inflation levels), the central bank must have political independence from the government, not credit budget expenditures, not participate in the monetization of the budget deficit or public debt, and to finance own expenses not to resort to budget financing.

However, the development of the global financial crisis of 2007–2009 showed the "inadequacy" of the pre-crisis regime of financial stability and set the task of developing new monetary rules. In order to stop the spread of stressful situations, the central banks implemented various sets of measures, which later became known as "unconventional" monetary policy. Thus, the central banks began to regulate many areas of economic activity that were previously the responsibility of the fiscal and social policy. Central banks have become "judges of probity, arbiters of capital markets, rescuers of banks, backstops to governments and overarching umpires of the financial system".[3]

In scientific sources, for example [5, 6], the point of view has become widespread that one of the root causes of the global financial crisis was the "failures" of financial regulation, in connection with which the following important conclusions were made:

- it is necessary to introduce supranational regulation of the activities of globally significant financial institutions;
- traditional micro-prudential financial regulation does not allow to identify the strengthening of systemic risk factors, cross-border and network risks;
- separation of financial regulation and supervision is inefficient;
- the construction of financial market regulation by the branches of financial intermediation generates serious failures and regulatory arbitrage;
- there are important shortcomings in the infrastructure of the financial market that need to be eliminated;
- it is necessary to revise the rules for implementing the function of the lender of last resort of the central banks, adapting them to the new conditions of complex financial systems;
- the use of a single instrument of monetary policy — a short-term policy interest rate — is not enough to achieve the goals of monetary policy;
- the performance of the central bank only as a lender of last resort in relation to commercial banks does not prevent a systemic banking crisis.

In almost all countries, in response to the crisis of the 2010s institutional transformations and legal reforms were carried out to regulate the activities of the central banks, giving them new powers and tools. The empowerment of national central banks with new powers and tools meant their entry into the "new normal". It also provoked a resumption of the previous discussion about an acceptable degree of independence and autonomy of the central banks, the compatibility of monetary policy objectives, financial stability policies, and crisis management policies.

According to historical data, the main drivers of reforms in the status and powers of the central banks were:

- economic recession or financial crisis;
- external pressures such as IMF loan condition;
- changes in the ideology of state policy, political structure and institutional environment;
- the need to maintain favorable economic conditions, for example, positive economic growth rates in conditions where economic entities have limited access to market sources of financing.

The crisis of 2007–2009 showed that the focus on price stability is too narrow to maintain financial stability. To overcome the narrowness of the approach, it is necessary:

- to take into account the situation in the financial sector as a whole to ensure the effectiveness of macroeconomic policy;

[3] Challenges for central banks: wider powers, greater restraints. Ernst & Yang, 2013. p. 8. URL: https://www.omfif.org/wp-content/uploads/2020/02/OMFIF-EY-Central-Banking-Report.pdf (accessed on 15.06.2021).

- to coordinate monetary and fiscal policy, since the translation of the effects of the policy interest rate on the real sector of the economy is undergoing changes in the current economic conditions;
- to consider the contradictions in the dependencies between stable inflation rates, full employment and financial stability;
- to assess the extent to which monetary policy is limited in its ability to manage crises;
- to develop a new model for the central banks' efficient business.

A rather extensive flow of scientific literature is devoted to the analysis of the evolution of the functions of the central banks in changing macro conditions. It is possible to identify sources affecting certain areas of the central bank activities [7], as well as for the period of 2010–2020 in the flow of literature, several waves of increased attention to changes in the activities of the central banks can be distinguished. During the first wave (2010–2012), the attention of experts was focused on issues related to assessing how the activities of the central banks influenced the formation and development of the global financial crisis and how the activities of the central banks should be transformed in order to eliminate the likelihood of systemic crises in the future [8]. During the second wave (2013–2016), the problems of making the central banks responsible for maintaining macro-financial stability were actively discussed [9]. In 2018–2019, during the discussions, the following issues were raised: has the independence of the central banks become excessive in the context of the expansion of their powers and the tools used? What could be the new institutional mechanisms of interaction between the central banks and the ministries of finance? What should be the responses of the central banks to the increased demands of society for their activities [10]? The problem of effective financial regulation remained relevant: new international standards contributed to the increase in the stability of national financial systems, but not to a sufficient extent [11].

In response to the issues raised during the discussion and criticism of the current situation of expanding the functions, powers and tools used by the central banks, experts from the BIS and the IMF substantiated the need to protect the independence of the central banks in order to increase the efficiency of their activities and maintain financial stability. The IMF proposes to update the Monetary and Financial Policies Transparency Code.[4]

Comparison of the experience of anti-crisis management of the central banks of advanced economies and emerging market countries made it possible not only to identify the most effective approaches that had the greatest efficiency, to highlight common features in anti-crisis strategy and tactics but also to trace the evolution of the traditional functions of the central banks.

ANALYSIS OF THE ACTIVITIES OF THE CENTRAL BANKS DURING THE CRISIS OF 2020

The crisis caused by the COVID-19 pandemic has affected the economies of many countries, simultaneously affecting aggregate demand, aggregate supply and financial conditions. If during the spread of the global financial crisis of 2007–2009 the deterioration in the general financial condition led to a reduction in real economic activity, during the crisis of 2020 the sequence was different: a sharp closure of territories, enterprises, certain types of activities, i.e. the reduction in real economic activity led to a deterioration in the overall financial conditions. While it has been recognized that fiscal action is better suited to counter the COVID-19 crisis, monetary policy has played a key role in responding

[4] Staff Proposal to Update the Monetary and Financial Policies Transparency Code. IMF Policy Paper. 2019, May. 48 p. URL: https://www.imf.org/-/media/Files/Publications/PP/2019/PPEA2019011.ashx (accessed on 15.06.2021).

quickly to the sudden and sharp contraction in economic activity and market freezes. The current situation required the central banks to implement a set of various measures, including those that were used to counteract the global financial crisis [2].

Due to financial regulatory reforms implemented in many countries after the global financial crisis, bank capitalization was much higher than on the eve of the previous crisis.[5] This allowed national regulators to implement a variety of support packages, worrying less about the potential insolvency of credit institutions and the possible need for their emergency recapitalization.

In general, central banks around the world have responded quickly and on a massive scale to the COVID-19 crisis, expanding both existing financial sector support programs and launching new ones, often working in conjunction with fiscal authorities to provide additional support to individual sectors of the economy. Although individual measures implemented by the central banks reflect the characteristics of their economy, institutions and the degree of development of the financial market, they also had a number of common features: a) the speed and scale of the anti-crisis measures of the Central Bank of the Russian Federation; advanced and emerging market economies overlapped in many ways; b) the central banks of both groups of countries used a wider range of instruments than when overcoming the crisis of 2007–2009.

Let us compare the monetary measures to manage the COVID-19 crisis that were urgently implemented by the central banks of five developed countries (US, UK, Germany, Canada, Japan) and five emerging markets (Brazil, Russia, India, China and South Africa). Considering the general goals of the measures introduced by the central banks of these two groups of countries (stabilizing the situation in the financial markets, preventing the development of a new systemic financial crisis and limiting the reduction in real activity), they used both general (*Table*) and specific national instruments and a set of measures.

Interest rates. Table 1 shows that the central banks of the advanced economies included in the sample actively used traditional tools of monetary regulation, including the reduction of the policy interest rate: the Fed lowered the policy interest rate from 1.625 to 1.125%, the Bank of England — from 0.75 to 0.10%; The Bank of Canada — from 1.75 to 0.25% [12], but unlike the Bank of Japan and the ECB, kept them positive [13]. The central banks of the BRICS countries, in addition to lowering policy interest rates,[6] used other traditional instruments to a much lesser extent than the central banks of advanced economies. If in advanced economies policy (key) rates approached zero or became even more negative, i.e. since the national central banks have practically no room left to regulate financial conditions through changes in the values of short-term interest rates, in the BRICS countries, even at the height of the crisis, the nominal values of policy interest rates remained positive. At the same time, while emerging market central banks had room to cut nominal policy interest rates further, they were not prepared to cut them to negative levels.

In addition to regulating policy interest rates, the central banks of emerging markets began to use in their public communications an "unconventional" instrument of the central banks of developed countries — "instructions on future changes in interest rates" to stabilize the expectations of the market participants [14].

In general, the central banks of both groups of countries, in managing the COVID-19 crisis, to a lesser extent than in counteracting the

[5] According to BIS calculations, capital exceeded Tier 1 capital adequacy by about $ 5 trillion. Valencia F., Varghese R., Yao Weijia, Yépez J.F. Handle with Care: Regulatory Easing in Times of COVID-19. IMF Working Paper. 2021. No. 49, p. 3. URL: https://www.rba.gov.au/publications/bulletin/2020/dec/the-response-by-central-banks-in-advanced-economies-to-covid-19.html (accessed on 20.03.2022).

[6] The Central Bank of Brazil reduced it by 225 bps up to 2%; the Central Bank of Russia — by 200 bps up to 4.25%; The Reserve Bank of India cut the repo rate by 115 bps to 4%, and the reverse REPO rate by 155 bps up to 3.35%; The People's Bank of China reduced rates on targeted loans, 7- and 14-day REPOs by 30 bps, and on the 1-year medium-term lending program (MLF) by 30 bps; the South African Reserve Bank — by 25 bps up to 3.25%. URL: https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#B (accessed on 20.03.2022).

Table

Monetary instruments used by Central Banks during the crisis caused by the COVID-19 pandemic

Instruments	Advanced economies					BRICS countries				
	USA	UK	G	C	J	B	R	I	RPC	RSA
Lowering the policy (key) interest rate*	+	+		+		+	+	+	+	+
Lending operations / liquidity provision										
Liquidity provision	+	+	+	+	+	+		+	+	+
Target lending	+	+	+		+	+			+	+
Asset purchase programs										
Government bonds	+	+	+	+	+			+		
Commercial bills	+	+	+	+	+					
Corporate bonds	+	+	+	+	+					
Other private assets			+							
Required reserve ratio										
Decreased reserve requirement	+					+		+	+	

Note: G – Germany; C – Canada; J – Japan; B – Brazil; R – Russia; I – India.

* Except for the eurozone (–0.5%) and Japan (–0.1%), where policy interest rates were already negative.

Source: [2].

consequences of the global financial crisis, used the regulation of policy interest rates and tried to focus on market expectations, more clearly informing about their possible future dynamics.

Refinancing of commercial banks and other business entities. Both advanced and emerging market central banks have provided additional liquidity to financial institutions, with the exception of Russia, whose banking system was running a significant structural liquidity surplus at the start of the COVID-19 crisis. Many of the central banks included in the sample have expanded the scope and scope of established lending programs to financial institutions and introduced new emergency lending programs, amended Lombard lists of accepted collateral and lists of possible participants, based on the experience gained in the process of countering the spread of the global financial crisis.

Thus, the Central Bank of Brazil opened a lending program for financial institutions, accepting corporate bonds and pools of loans as collateral. The program of new time deposits with special guarantees (DPGE)[7] has become a special way of supporting banks. A number of central banks in emerging markets make extensive use of directed lending programs. For example, the Reserve Bank of India introduced the TLTRO-2.0[8] (Targeted Long-Term Repo Operations) program, according to which financing was provided on an auction basis for a period of 3 years at a policy repo rate, the attracted financing was to be directed to investments in investment-grade bonds, commercial bills, non-convertible liabilities of non-banking financial corporations. The People's Bank of China, among other measures,

[7] Preserving the regular operation of the financial system and the Brazilian economy. URL: https://www.imf.org/en/News/Articles/2020/10/05/mcs100520-brazil-staff-concluding-statement-of-the-2020-article-iv-mission (accessed on 15.06.2021).

[8] Reserve Bank Announces Targeted Long-Term Repo Operations 2.0 (TLTRO 2.0). 2020. Apr 17. URL: https://www.rbi.org.in/CommonPerson/english/Scripts/PressReleases.aspx? Id=3207 (accessed on 15.06.2021).

expanded its bank lending program to resume lending and rediscount commercial bills of medical and consumer goods manufacturers, micro, small and medium-sized enterprises and enterprises in the agricultural sector, providing for lower interest rates.[9] Both central banks provided liquidity support to local governments through repo operations and increased limits on local government issuance of bonds.

In general, central banks around the world have responded quickly and on a massive scale to the COVID-19 crisis, expanding both existing financial sector support programs and launching new ones, often working in conjunction with fiscal authorities to provide additional support to individual sectors of the economy.

Similarly, a number of central banks in developed countries have introduced targeted lending programs [15]. Thus, the Central Bank of Japan provided loans to financial institutions to stimulate corporate financing, temporarily increased the purchase rate of exchange-traded funds (ETFs) and public real estate investment trusts (J-REIT), as well as the purchase of commercial bills and corporate bonds. In the US, the Fed simultaneously launched several directed lending programs, including a commercial bill financing program[10] to stimulate bond issuance by companies and municipalities; a program for lending to primary dealers who have accepted a wide range of investment-grade securities as collateral; asset-backed securities term lending program (student loans, car loans, credit card loans, small business administration guaranteed loans, etc.) aimed at supporting the issuance of such instruments,[11] etc.

Government funding. Although the current operating standards of the central banks prohibit them from directly supporting national governments and/or buying government securities in the primary market, the laws of various countries contain provisions that allow such transactions in emergency cases. Thus, the Bank of England, as during the global financial crisis, announced a possible direct advance on the account (overdraft) of the Treasury, if necessary. A special place among the central banks' support measures was occupied by financial support operations for local governments, carried out mainly through asset purchase programs. Providing direct financial support to central and local authorities, certain sectors of the economy, or groups of households, thus, the central banks of both advanced economies and countries with emerging markets replaced budget spending programs with their own measures, i.e. carried out quasi-fiscal operations.

Asset purchase programs. Central banks have put in place various asset purchase programs to keep the markets liquid and keep them running smoothly. Program volumes were very large, in some cases unlimited, and the rate of increase in purchases exceeded those during the global financial crisis. In April 2020 alone, the 4 largest central banks bought assets worth almost $ 1.5 trillion, or 6 times more than at the peak of the global financial crisis [16]. In advanced economies, asset purchase programs have played a key role, while in emerging market economies their role has been more limited. In advanced economies, only 40% of asset purchase programs were new, while in emerging markets, the proportion of new programs exceeded 90%. One of the common characteristics was that asset purchase programs mostly included long-term instruments (over 70% of

[9] PBOC increases re-lending, re-discount quota by 500 billion yuan to support small businesses. 2020, 27 Feb. URL.: https://news.cgtn.com/news/2020–02–27/PBOC-increases-re-lending-re-discount-quota-by-500-billion-yuan-OqpvLCqbh6/index.html (accessed on 20.03.2022).

[10] Commercial Paper Funding Facility: Program Terms and Conditions. 2020. No. 30. URL: https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20201130a1.pdf (accessed on 20.03.2022).

[11] Term Asset-Backed Securities Loan Facility (TALF). 2020, July 28. URL.: https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200728a6.pdf (accessed on 20.03.2022).

activities). In advanced economies, existing programs have mostly expanded in scope, but less in frequency and type of assets acquired. Private asset purchase programs accounted for about half. In developed countries, the central banks have activated such programs to directly support the non-financial sector. Most of the programs included promissory notes or corporate bonds. Other asset types included covered bonds, stocks, asset-backed securities, and mortgages [12].

Mandatory reservation. Only the United States among the advanced economies has made changes to its reserve policy. In emerging markets, reserve policy changes have been more frequent. In most cases, this was a reduction in the required reserve ratio, i.e. filling the financial market with additional liquidity. For example, the reduction by the Central Bank of Brazil of the required reserves for term deposits from 25% to 17% contributed to the injection of 68 billion reais ($ 12 billion) into the banking system. China lowered its required reserve ratio by 200 bps for banks implementing inclusive financial policies and rural banks. Finally, some central banks have announced measures to change the composition of commercial bank assets that can be counted as reserves. For example, the Central Bank of Argentina allowed the use of its own debt instruments in this capacity, the Central Bank of the Philippines — loans guaranteed by SMEs, the Central Bank of Malaysia — government bonds.

Various central bank responses to the COVID-19 crisis have put an end to the distinction between "traditional" and "unconventional" monetary policy. The use of indicators of the likely change in interest rates in the future, the purchase of assets and various lending programs have become common tools of monetary policy and crisis management. But even after the central banks of both groups of countries curtails emergency measures, their balance sheets will remain significantly larger than on the eve of the crisis for a long time, and the central banks themselves are subject to more risk factors. By acquiring, for example, financial instruments such as corporate bonds, commercial paper, pools of credit, or by providing long-term unsecured loans, central banks take on corresponding additional risks (credit risk, currency risk and interest rate risk).

Due to the expansion of the tools used, the motives for the actions of the central banks varied and changed over time. Many central banks have focused on stabilizing markets. This helped justify quick and large purchases of government bonds and intervention in private markets in ways that had not previously been used. Another clear difference between the anti-crisis measures of the central banks during COVID-19 and the previous crisis is that the central banks of emerging markets, using "non-traditional" tools that were applied in the past by the central banks of advanced economies, did not provoke the development of negative market reactions. A group of emerging market central banks that used foreign exchange intervention accumulated more in official reserves than they spent.

In an effort to help the economy recover, many central banks have scaled up their operations, reflected in a significant increase in their balance sheets. In addition to monetary regulation measures, the central banks applied macroprudential regulation measures. Thus, the central banks of developed countries allowed financial institutions to release a conservative capital buffer and introduced a ban on the payment of dividends. Central banks in advanced economies have significantly relaxed prudential requirements for credit institutions and the rules for assessing assets, including those denominated in foreign currency, in order to maintain their formal solvency and ability to continue lending to the real sector of the economy.

CURRENT CHANGES IN THE FUNCTIONS OF CENTRAL BANKS

Since the late 1980s, the following definition of the functionality of the central bank has become generally accepted: 1) a single emission center; 2) the regulator of the economy by monetary methods; 3) lender of last resort for banks; 4) state bank; 5) the organizer of the national payment system.

The presented narrow approach showed its failure during the global financial crisis of 2007. Moreover, during the financial reforms of the 2010s, the functions and powers of the central banks were expanded and transformed considering the complexity and dynamics of financial markets, as well as the digitalization of financial intermediation. The crisis of 2020 made additional adjustments to the tools and functionality of the central banks. Let us outline the main directions of these changes.

Historically, the state regulation of money circulation and money issues is the first most important function of the majority of the central banks. But at present, the need to preserve this function for the central banks is increasingly being questioned both by supporters of the rejection of the monetary monopoly of the central bank and a return to private money[12] and by those who prove the possibility of a transition to a single world currency or several currencies in common circulation [17, 18]. The reduction in the use of cash, the development of financial technologies, and the experiments of the central banks to create digital national currencies suggest that in the future the function of the central banks as an "issuing center" can be supplemented by the function of "controller of the national currency" if central banks will be responsible and keep records of distribution digital currencies between users. As follows from the projects of a number of the central banks for the issuance of national digital currencies, the central banks will keep records of their direct circulation or delegate this authority to systemically important banks.

The second traditional function of the central banks is monetary regulation or the implementation of the state monetary policy. Using the instruments of monetary regulation and manipulating their reserves, the central banks, through their balance sheet operations, influence the money supply or the value of interest rates in the economy. At the same time, as follows from the practice of the central bank in the course of relieving the negative consequences of the crises of recent years, the central banks began to extend their regulation to market segments that are not directly responsible (for example, the real estate market) and introduce new tools that replace budget spending programs. Thus, the central banks, together (and in some cases instead) with the ministries of finance, become the conductors of the state financial policy.

The toolkit of monetary regulation intersects with another classic function of the central banks — the function of the lender of last resort, which implies liquidity support for significant participants (or segments) of the financial market if other mechanisms for replenishing liquidity temporarily do not work. Depending on the structure and depth of the national financial market, the function of a lender of last resort began to extend to non-bank financial intermediaries, backbone producers, and even local governments. In countries where there are high currency risks for exporting producers, the central banks, providing them with financial assistance, began to perform the function of a "hedger of last resort" [19].

The central banks have become more active in influencing financial market participants, giving "voice signals to the market". This happens not only in connection with a change in the policy interest rate. As practice shows, the central banks can perform the function of supporting the last resort, using the so-called "announcement effect", when in order to normalize the situation in any market segment or restore confidence in a certain type of market participants of the central banks, it is enough to announce about the introduction of a specific program.

In fulfilling the new functions, the central banks directly stimulated the total spending of economic entities by purchasing various classes of stock instruments, thereby financing the relevant non-banking segments of the financial market and supporting overall economic activity. Thus, the central banks began to perform the function of a "market maker of last resort" [20].

[12] For example, in the early summer of 2021, El Salvador made a legislative decision to equate private money in the form of digital program code with other fiat currencies and allowed their use as an official means of payment.

In recent years, the central banks have begun to pay increased attention to the development of the nationwide financial literacy of the population, i.e. perform an educational function. It was recognized that financial literacy is one of the three key elements (along with protecting consumers of financial services and increasing the availability of these services) for expanding the financial opportunities of citizens and maintaining financial stability in general. Many countries, including Russia, are currently implementing national programs for the financial education of the population. In Russia, this function is included in the current legislation on the Central Bank, and relevant programs are being implemented.

The indicated processes of the evolution of the functions of the central banks radically change their role and place, on the one hand, in the system of public administration, and on the other hand, make their activities more complex, or, figuratively speaking, "the art of the possible".

CONCLUSIONS

The standard approach to doing business in the midst of the global financial crisis that existed before the 2007 crisis was not effective enough. It did not take into account the peculiarities of the evolution of modern financial systems and markets, the role of non-bank financial intermediaries, the relationship between various types of financial institutions, as well as cross-border links between national financial systems, etc. The response of the world community to the failures identified by the crisis was large-scale reforms of financial regulation and the expansion of the powers and responsibilities of the central banks. As a result, the decisions of the central banks began to go beyond the purely monetary sphere and affect the distribution of resources between sectors of the economy and influence the level of income differentiation of the population.

At the very beginning of the 2020 global crisis caused by the pandemic, the central banks quickly and on a large scale introduced various measures designed to stop the negative consequences of an unexpected and sharp contraction in economic activity. In addition to maintaining the proper level of liquidity in the national financial system, the central banks paid great attention to the mechanisms of interaction with the ministries of finance (treasury), new channels for financing business, and supporting the population. To do this, the central banks used programs and measures that operate under normal conditions; introduced the tools used during the global financial crisis; developed and applied new tools that change the prevailing ideas about what central banks should and can do, and about their role in the modern economy.

Central banks around the world responded quickly and on a massive scale to the economic crisis caused by the pandemic, often in concert with fiscal authorities. In advanced economies, they served a dual purpose: at the beginning of the pandemic, monetary policy measures were aimed at stabilizing financial markets and preventing the likelihood of the pandemic escalating into a new financial crisis; as liquidity in the domestic and corporate sectors began to deteriorate, the central banks' priority became to contain the contraction in real activity by providing credit to the private sector on attractive terms, despite the increase in credit risk. Emerging market central banks' responses reflected a number of specific factors facing their economies. In the early 2020s, most of these countries were at the bottom of the business cycle, when aggregate demand was generally below potential. In the context of large capital outflows and devaluation of national currencies, the central banks in these countries pursued a monetary policy focused on domestic goals, namely, to support aggregate demand.

In the process of managing the current crisis, the central banks of many countries have significantly expanded the scope of their function as a lender of last resort, providing emergency financing not only to banks, financial institutions and certain segments of the financial markets but also to industries and groups of enterprises that are important for the national economy. By providing direct financial support to central and local governments, individual sectors of the economy, or groups of households, the central banks of both advanced economies and emerging market countries, thereby replaced budget spending programs with their own measures, i.e. carried out quasi-fiscal operations. The use of new tools and the revitalization of the activities of the central banks make it possible to formulate their modern functions in a new way: the regulator of the national money circulation; conductor of state financial policy; hedger of last resort; market maker of last resort; state banker; educator (development of financial literacy).

In conclusion, we note that in the process of managing recent crises, central banks have been actively expanding their tools and functions, including by increasing their balance sheet assets and liabilities. This fact cannot be unequivocally assessed, since its consequences are still difficult to assess in terms of improving economic activity in the long term and further impact on inflation. At the same time, the change in the functions and development of the operations of the central banks is an evolutionary process and should correspond to the dynamics of the economic development of countries.

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