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Formal and Functional Analysis of the Role of Money in the Reproduction Process: New Aspects of the Modern Theory of Money

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ABSTRACT

The authors investigate the role of money in the reproduction process from the perspective of a functional approach, including the influence of external factors. The **aim** of the study is to develop the modern theory of money at the formal and functional level based on the analysis of the role of money in the reproduction process in the concept of coordination of monetary, macroprudential and financial policies of Russia for the purpose of economic growth. The **novelty** of the research is due to the development of the modern theory of money on the basis of clarifying the role of money in the reproduction process influenced by decisions made to coordinate the monetary, macroprudential and financial policy. The authors apply **methods** of system-structural, formal-functional, comparative economic analysis, econometric modeling using correlation-regression analysis, economic and mathematical methods. The authors developed a methodological framework for analysis, identified and structured the possibilities and risks of applying macroprudential policy measures for monetary circulation, illustrated the threats to the economy and its main macroeconomic entities due to the spread of coronavirus disease, summarized measures in the field of monetary and financial regulation to overcome threats and strengthen the role of money in the reproduction process. The authors **conclude** that it is necessary to form a trusted digital space, that forms the possibility of leveling the negative impact of external factors on the reproduction process and restoring the reproduction potential of money for economic growth, considering the coordination (conjugation) of monetary, macroprudential and financial policies. The implementation of the authors' proposals to enhance the role of money in the reproduction process will allow to "revive" the economy by increasing the demand for money and ensuring an adequate money supply. It will also enhance the ability of monetary, macroprudential, and financial policy instruments to influence reproduction processes and economic growth.

Keywords: formal and functional level of research; role of money; reproduction process; economic growth; information economy; financial policy; monetary policy; macroprudential policy; liquidity surplus; coronavirus pandemic; trusted digital space

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INTRODUCTION

It is well-known that the role of money in the economy is determined by its functions, which ensure the influence of money as carriers, objects of monetary factors on various forms of social relations, uniting them into a single reproductive process. The authors studied the role of money in the reproduction process at the formal-functional level, which implies the research of the influence of external factors on them. It is important for the study to make judgments about the variability of the role of money influenced by both external economic and behavioral factors, including decisions made in the framework of monetary, macroprudential, and financial policies.

The monetary system, which is a special type of “ecological self-developing” system [1, p. 5–17; 2, p. 6–22], actively interacts with other functional macroeconomic subsystems (monetary, financial, payment, currency, etc.). Therefore, it makes sense to turn to the study of changes occurring in the reproduction process under the influence of monetary, macroprudential, and financial policies, and to determine what role money plays in this process from the standpoint of a functional approach.

This study aims to develop the modern theory of money at the formal-functional level based on the analysis of the role of money in the reproduction process in the concept of coordinating monetary, macroprudential, and financial policies of Russia for economic growth.

The target of the study is the role of money in the reproduction process, the scope of the study is the features of the manifestation of their role under the influence of measures of monetary, macroprudential, and financial policies, regardless of the forms and types of money.

To achieve the goal, the following tasks were consistently solved:

- a methodological basis for the analysis have been developed;

- the features of the implementation of the functions of modern money from the standpoint of their reproductive potential have been formulated;

- the threat of the spread of coronavirus disease as an external factor in the reproduction process that affects the role of money has been identified;

- the opportunities and risks of applying macroprudential policy measures for money turnover and other macroeconomic processes have been identified;

- measures in the field of monetary and financial regulation have been generalized, which make it possible to overcome external threats and enhance the role of money in the reproduction process.

The results of the analysis allowed us to identify the main threats to money turnover as a result of the spread of coronavirus disease as an external factor in the reproduction process and, in connection with this, restrictions on business activity in the economy, which can disrupt the performance of monetary functions. The authors also assessed the measures taken by monetary and financial regulators to support citizens, the economy, and the financial sector in the context of the coronavirus pandemic, seen as an opportunity to increase the role of money in the reproduction process from the point of view of a functional approach to the study of modern money.

RESEARCH METHODOLOGY

General research methodology

To study the role of money in the reproduction process in the concept of possible coordination of monetary, macroprudential, and financial policies, the following main stages are distinguished:

- studying the change in the role of money in the reproduction process influenced by monetary, macroprudential, and financial policies in the historical retrospective, as well as in the conditions of the formation of the digital space;

- identifying opportunities and threats of the impact of decisions in the field of monetary, macroprudential, and financial policies on money turnover and the reproduction process in the context of leveling the consequences of the coronavirus pandemic for various economic entities (state, business, households), as well as for the financial sector as a whole.

In our study, we concluded that in the information economy, the key to the successful fulfillment of its functions by money is the formation of such a trusted digital space, which is distinguished by the presence of effective models for managing economic, technological processes and big data [3, 4]. Only in this case, as well as in the absence of physical boundaries in the information space, numerous participants in economic activity become available to an almost limitless array of information [5], which allows money to freely perform its functions and the monetary system of active properties that allow it to be a catalyst of the reproduction process.

Under these conditions, the role of money in the reproduction process will largely depend on the quality of decisions taken by the monetary and financial regulatory authorities. They must control important aspects of the reproduction mechanism since their decisions can become both a driver of economic growth and a significant brake on it. In this regard, the role of money in the reproduction process will either be realized in accordance with objective economic laws and become significant, or it will be distorted and significantly limited.

An example of the distortion of the role of money in the reproduction process can be the period of the early 1990s, when, influenced by unrelated decisions in the field of monetary and fiscal policy, the structure of money turnover was transformed. Money turnover in the general structure of money turnover reached such high values that a significant part of it was outside the regulated turnover (to a greater extent, this is due to

the expansion of the shadow economy and shadow money turnover), which actually deprived the economy of the opportunity to use it for the development of active properties of the monetary system and government regulators — the ability to effectively influence the reproduction process through monetary and financial policies.

Note that the effectiveness of only monetary and financial policy is not a necessary and sufficient condition for the progressive development of the national economy. It is necessary to achieve a high level of conjugation of the actions of these structural elements of the reproductive mechanism. As for our research — the harmonization of the applied instruments of monetary, macroprudential, and financial policies in achieving the goal of economic growth.

Empirical research methodology

Considering that money acts as an integral institution, consisting of the institution of money and its forms of existence and regulation in various spheres, it is advisable to limit the scope of the study to economic relations, abstracting from the legal and psychological aspects of their manifestation. In this case, the target of the study is the role of money in the reproduction process from the standpoint of the formal-functional approach, and the subject of the study is the features of the manifestation of the role of money under the influence of monetary, macroprudential and financial policies, regardless of the forms and types of money.

To study the impact of monetary, macroprudential, and financial policies on money turnover, lending to small and medium-sized businesses, economic growth, real incomes of the population, and the financial sector, econometric models were used using correlation-regression analysis. Their specifications have been determined in the conditions of the Russian economy. The main model used in the empirical study is as follows:

$$y_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t, \quad (1)$$

where i_t – consumer price index, in % to the corresponding period of the previous year;

FII_t – the level of financial stability at the end of the quarter, in %;

bb_t – the balance of the state (federal – for Russia) budget to GDP compared to the corresponding period of the previous year;

$\alpha, \beta, \gamma, \delta$ – the coefficients of the model $\alpha, \beta, \gamma, \delta > 0$;

ε_t – noise at time t .

As y_t we checked step-by-step:

GDP_t – GDP growth over the corresponding period of the previous year as an indicator of economic growth;

V_t – the velocity of money supply M2 at the end of the period as an indicator of the rate of money turnover;

A_t – assets of credit institutions at the end of the period as an indicator of the development of the financial sector, including the banking sector;

SME_t – the volume of loans provided to small and medium-sized businesses (hereinafter referred to as SMEs) at the end of the period, as an indicator of lending to small and medium-sized businesses;

RDI_t – growth in real disposable income of the population as an indicator characterizing the real income of the population.

The variables listed above were chosen by us as the most indicative ones, which can give an idea of the analyzed questions, although each of them can be supplemented by many other indicators. In addition, we adopted price and financial stability, as well as the ratio of the balance of the state (federal) budget to GDP as indicators characterizing monetary, macroprudential, and financial policies, on the assumption that they are the result of the implementation of these policies and that the goals of these politicians are achieved.

Thus, the following five varieties of the model (1), presented below, were estimated:

$$1. GDP_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t, \quad (2)$$

$$2. V_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t, \quad (3)$$

$$3. A_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t, \quad (4)$$

$$4. SME_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t, \quad (5)$$

$$5. RDI_t = \alpha + \beta \times FII_t + \gamma \times bb_t + \varepsilon_t. \quad (6)$$

The estimation of these models was carried out based on quarterly data for the period 2009–2019. In the course of the analysis, first of all, pairwise correlation coefficients were calculated, and not multiple, to exclude collinearity; lags were determined and evaluated by t -statistics and P -value; autocorrelations were checked with the identification of the Durbin-Watson coefficient, autocorrelations were eliminated using the “generalized least squares method” and the seasonality factor was eliminated.

Empirical analysis result

The performed empirical analysis made it possible to determine the technical characteristics of the models 2–6, presented in *Table 1*.

Estimates of the model specifications (2–6), as well as summary conclusions, are presented below.

Model analysis results (2):

As a result of the analysis of the influence of the balance of the federal budget on economic growth, the hypothesis of the existence of a relationship between them is rejected due to the absence of a significant correlation coefficient. However, even if the balance of the federal budget does not have a direct impact on economic growth, fiscal policy can affect the development of the economy indirectly. This issue is discussed further.

The task of further empirical research is to analyze the impact of price and financial stability on economic growth. Our early works [3, 4, 6] were devoted to this issue. The

Analysis model specifications

	Regression variable	Model	Model specification
1	GDP_t	$GDP_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t$ (2)	$GDP_t = 0,03 - 0,32 \times i_{t-1} + \varepsilon_t$, (7) $GDP_t = 0,05 - 0,14 \times FII_t + \varepsilon_t$ (8)
2	V_t	$V_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t$ (3)	$V_t = 1,43 - 0,0002 \times bb_t + \varepsilon_t$ (9)
3	A_t	$A_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t$ (4)	$A_t = 0,0002 \times bb_t + 0,3 \times FII_t - 0,12 + \varepsilon_t$ (10)
4	SME_t	$SME_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t$ (5)	$SME_t = 2,16 - 1,06 \times FII_t + \varepsilon_t$ (11)
5	RDI_t	$RDI_t = \alpha + \beta \times i_t + \gamma \times FII_t + \delta \times bb_t + \varepsilon_t$ (6)	$RDI_t = 112 - 0,002 \times bb_t - 11,6 \times FII_t + \varepsilon_t$ (12)

Source: compiled by the authors.

analysis was carried out for two periods: long-term and short-term.

The analysis results for the short-term period are presented in the *Appendix (Table 1)* and *Fig. 1*. Model of the impact of price stability on economic growth in the short term (7):

$$GDP_t = 0,03 - 0,32 \times i_{t-1} + \varepsilon_t \quad (7)$$

The results of the analysis of the impact of price and financial stability on economic growth for the long term are presented in the *Appendix (Table 2)* and in *Fig. 2*. Model of the influence of financial stability on economic growth in the long run (8):

$$GDP_t = 0,05 - 0,14 \times FII_t + \varepsilon_t \quad (8)$$

Thus, according to the results of the analysis obtained in the study of the influence of price and financial stability, as well as the balance of the federal budget, it can be argued that the balance of the federal budget does not have a statistically significant direct effect on economic growth, while the impact on price and financial stability is obvious. However,

their impact is different: in the long term, price stability does not have a significant impact on economic growth, and changes in financial stability can explain 30.9% of GDP changes; In contrast, in the short term, financial stability does not significantly affect economic growth, and changes in price stability can explain 93% of GDP changes. Consequently, although in the short term, the change in price stability explains a significant share of changes in GDP, in the long term, its influence weakens, while financial stability, on the contrary, increases.

Model analysis results (3):

As a result of the analysis of the influence of price and financial stability on the velocity of money, the hypothesis of the existence of a relationship between them is rejected due to the absence of a significant correlation coefficient. Therefore, the task of further empirical research was to analyze the influence of the federal budget balance on the velocity of M2 money stock (hereinafter referred to as the velocity of money). As a result of the analysis, the following results were obtained, presented in the *Appendix (Table 3)* and in *Fig. 3*. Model of the influence

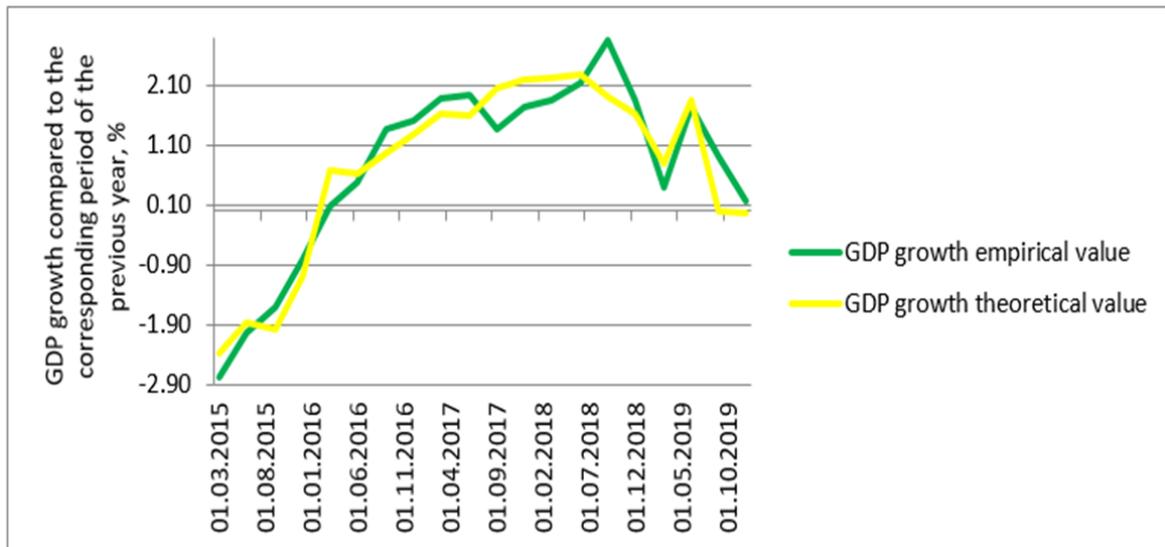


Fig. 1. Empirical and theoretical values of GDP growth

Source: compiled by the authors.

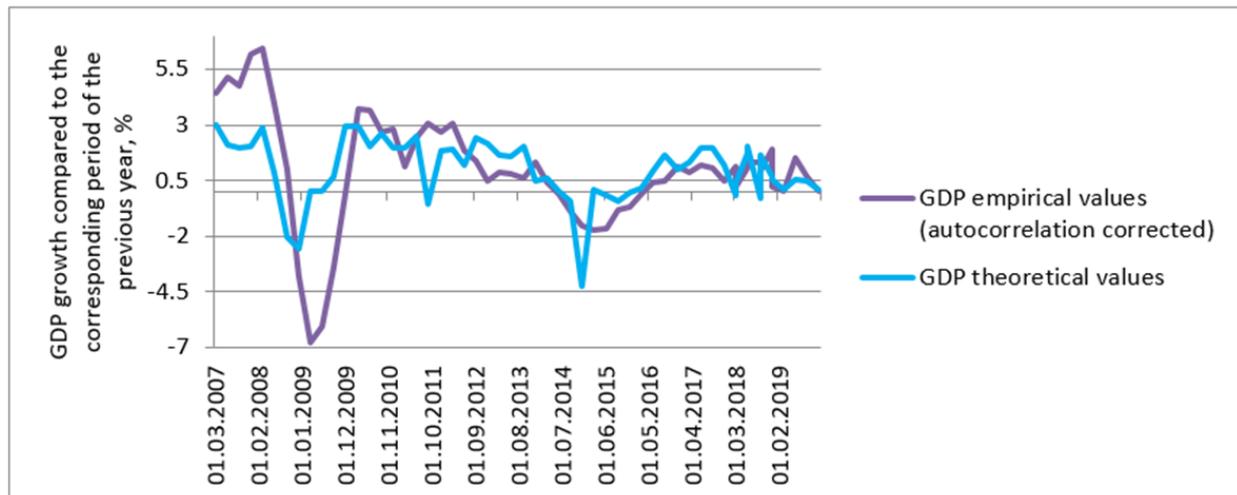


Fig. 2. Empirical and theoretical values of GDP

Source: compiled by the authors.

of the federal budget balance on the velocity money (9):

$$V_t = 1,43 - 0,0002 \times bb_t + \varepsilon_t \quad (9)$$

Thus, the analysis of the impact of price and financial stability, as well as the balance of the federal budget, suggests that price and financial stability does not have a statistically significant effect on the velocity of money, but the influence of the balance of the federal budget is confirmed. Changes in the balance of the federal budget can explain 67.2% of changes in the velocity of money.

Model analysis results (4):

Correlation analysis of price stability and assets of credit institutions allows us to reject the hypothesis that there is a relationship between them. Consequently, in the future, the impact of financial stability and balance of the federal budget on the change in the assets of credit institutions was assessed. The results are reflected in the model (10), in the *Appendix (Table 4)*, and *Fig. 4*. Model of the influence of financial stability and the balance of the federal budget on the change in the assets of credit institutions (10):

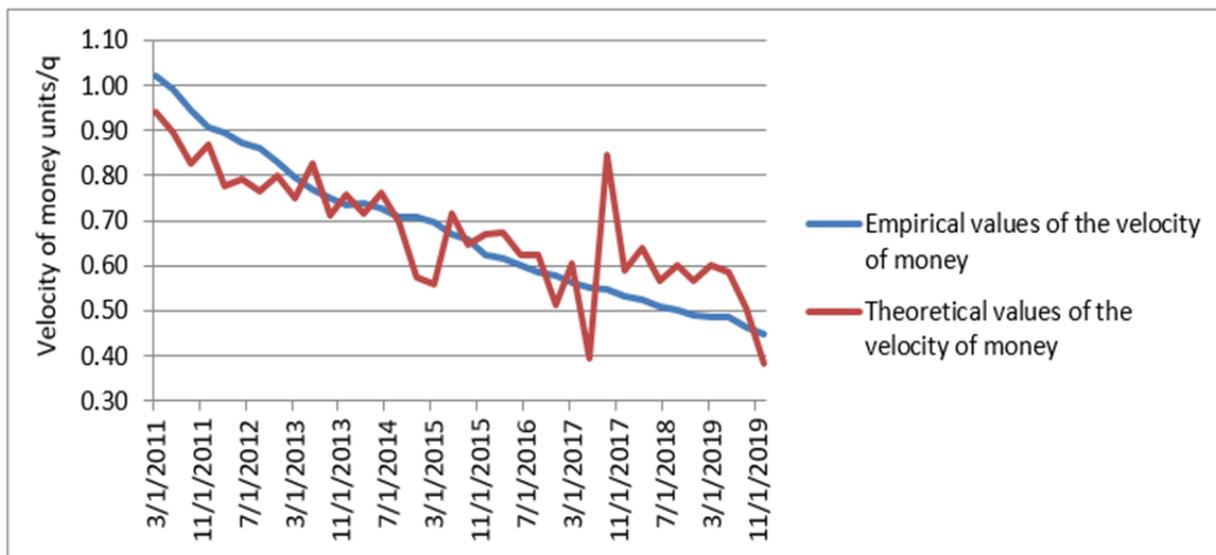


Fig. 3. Empirical and theoretical values of the money turnover rate

Source: compiled by the authors.

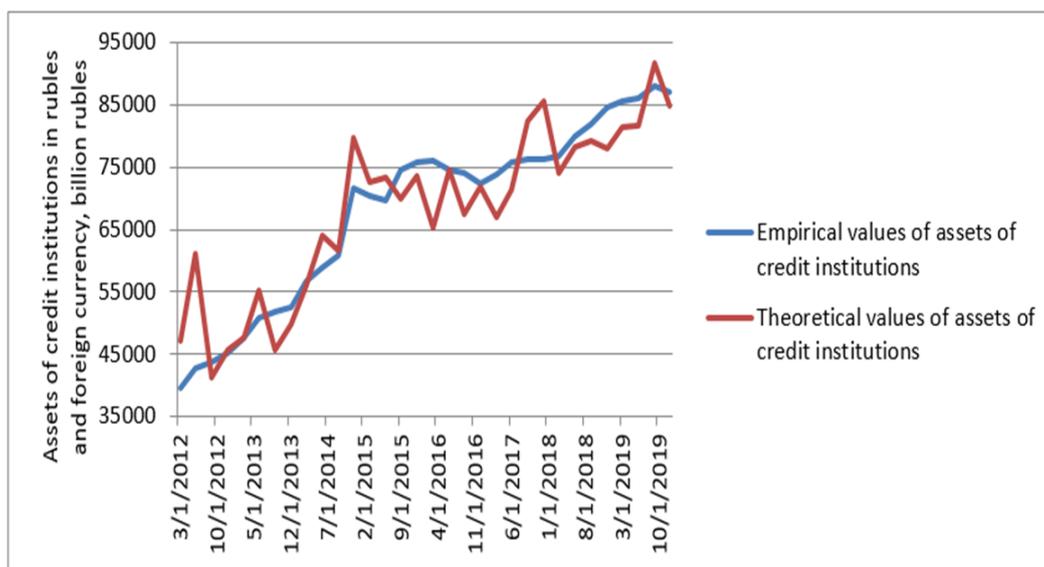


Fig. 4. Empirical and theoretical values of the assets of credit institutions

Source: compiled by the authors.

$$A_t = 0,3 \times FII_t + 0,0002bb_t - 0,12 + \varepsilon_t \quad (10)$$

Thus, the analysis of the influence of price and financial stability, as well as the balance of the federal budget on the assets of credit institutions, suggests that the influence of financial stability and balance of the federal budget is confirmed, and price stability is confirmed. have no statistically significant effect. If, together with financial stability and the federal budget balance, 85% of changes in the assets of credit institutions are explained,

then with each increasing unit of the financial stability index, the assets of credit institutions increase by RUB 0.3 billion, and with each increasing unit, the balance of the federal budget, the assets of credit institutions increase by RUB 0.2 million.

Model analysis results (5):

Regression analysis of the impact of price stability and the balance of the federal budget on the volume of lending to SMEs allows us to reject the hypothesis of a causal relationship between them. However, the assessment of

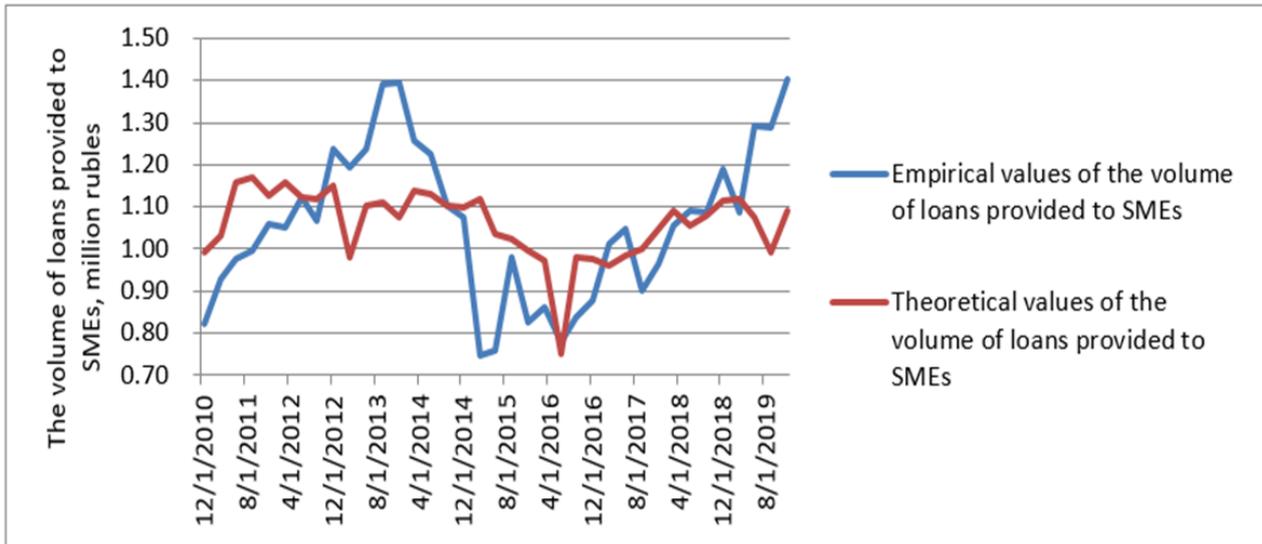


Fig. 5. Empirical and theoretical values of the volume of loans provided to SMEs

Source: compiled by the authors.

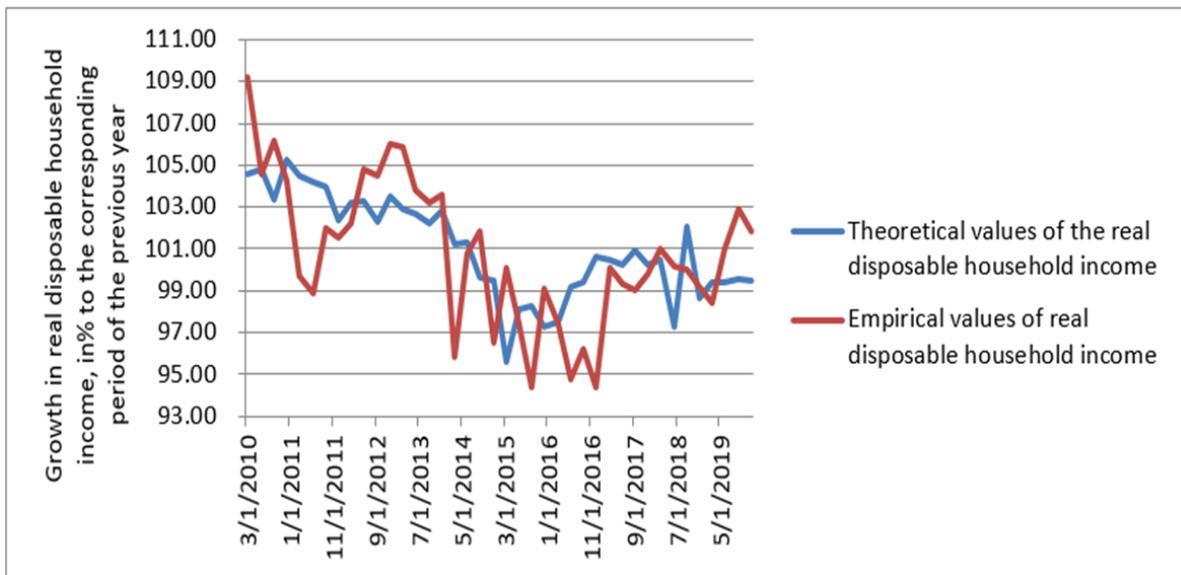


Fig. 6. Empirical and theoretical values of the real disposable household income

Source: compiled by the authors.

the impact of financial stability on the volume of loans provided to SMEs yielded positive results. The results are reflected in the model (11), in the *Appendix (Table 5)*, and *Fig. 5*. Model of the influence of financial stability on the volume of loans provided to SMEs (11):

$$SME_t = 1,3 - 0,8 \times FII_{t-1} + \varepsilon_t \quad (11)$$

Based on the results of the analysis, price stability and balance of the federal budget do not have a statistically significant effect on

the volume of loans provided to SMEs. At the same time, the impact of financial stability is statistically significant. Financial stability explains 20% of the change in the volume of loans issued to SMEs, and with an increase in the financial stability index per unit, the volume of loans issued to SMEs decreases by an average of RUB 0.8 trillion.

Model analysis results (6):

The analysis of the influence of financial stability and the balance of the federal budget on the real disposable income of

The impact of price and financial stability and the balance of the state budget on some economic indicators

Indicator	Price stability	Financial stability	Federal budget balance
Economic growth (in the short term)	+		
Economic growth (in the long run)		+	
Velocity of money			+
Assets of credit institutions		+	+
Volume of loans provided to SMEs		+	
Real disposable household income	+	+	+

Source: compiled by the authors.

the population was carried out. At the same time, the influence of inflation was excluded, since the inflation factor was initially excluded from the indicator of real disposable income of the population. Regression analysis of the influence of financial stability and the balance of the federal budget on the real disposable income of the population confirms the hypothesis that there is a relationship between them. The results of the analysis are reflected in the model (12), in the Appendix (Table 6), and Fig. 6. Model of the influence of financial stability and the balance of the federal budget on real incomes of the population (12):

$$RDI_t = 112,4 - 11,6 \times FII_t - 0,002 \times bb_t + \varepsilon_t. \quad (12)$$

Thus, financial stability and the balance of the federal budget have a statistically significant effect on the real disposable household income. Moreover, if together these factors explain 40% of changes in the level of real disposable household income, then with each increased unit of the financial stability index, the real disposable household income decreases by 11.6 points, and with each increased unit of the balance

of the state budget, the real disposable household income decreases by 0.002%.

Based on the above analysis of the impact of price and financial stability and the balance of the federal budget on economic growth, the velocity of money, the assets of credit institutions, the volume of loans provided to SMEs, and the real disposable household income, it was clarified, the results of which of the analyzed policies affect certain indicators of the economy (Table 2).

Thus, the conducted empirical analysis allows us to conclude that the result of the implementation of monetary policy, the purpose of which is to target inflation, has a statistically significant effect on economic growth and real disposable household income in the short term. The result of the implementation of macroprudential policy (the indicator is the level of the financial stability index) has a statistically significant effect on economic growth in the long term, the assets of credit institutions, the volume of loans provided to SMEs, and the real disposable household income. The result of the implementation of financial policy (the indicator is the balance of the federal budget) has a statistically significant effect on the velocity of the money, the assets of

credit institutions, and the real disposable household income.

Theoretical part: monetary, macroprudential, and financial policies as factors in the manifestation of the role of money in the reproduction process

The role of money is significantly influenced by measures of financial and monetary policy. Financial policy tools (tax base, length of the tax period, structure of taxes and fees, rates of taxes and fees, special tax regimes, structure of revenue and expenditure parts of the budget, budget surplus and deficit, inter-budgetary transfers, budget rule, and other elements of the financial regulation mechanism) — work for the state to fulfill its functions in the process of forming and using various funds, influencing the money turnover. At the same time, in countries with emerging markets, the effect of “fiscal dominance” is observed [7, 8]. Monetary policy decisions directly affect the supply and demand of the money market. Meanwhile, it would be wrong not to consider the impact of macroprudential regulation and measures in the field of macroprudential policy on it. Although the macroprudential policy is a separate regulatory segment with its own targets and instruments, the object of its influence is the credit market and its individual segments, and as a result, through the credit channel of the transmission mechanism of monetary policy, money turnover. Above, we have confirmed the impact of macroprudential policy on the assets of credit institutions, as well as the volume of loans provided to SMEs. In this regard, it is advisable to consider and evaluate the influence of these policies on the functioning of money in the aggregate, considering their measures as factors of changing the role of money in the reproduction process.

Financial and monetary policies, influencing the role of money in the reproduction process, also interact with each other. Some researchers believe that both policies should be applied to ensure economic

growth [9]. Others, while agreeing with the importance of both policies, note that fiscal policy is at the same time a constraint on monetary policy [10]. In this regard, some authors have proved that in pursuing financial and monetary policy, it is first of all necessary to determine which policy is dominant in a particular economy and to pursue the corresponding second policy [11]. There is also a point of view according to which the state budget deficit leads to a depreciation of the national currency, thereby affecting monetary policy [12]. In our earlier works, we investigated the mechanism of mutual influence of financial and monetary policy instruments, as well as measures necessary for their coordination in the context of achieving financial stability and ensuring economic growth [13]. Given the stable set of applied tools of these policies, it is necessary to note the relevance of some recommendations in relation to the current economic situation.

In our opinion, the period 1999–2002 is a striking example of a noticeable increase in the role of money in the economy in the modern history of Russia. During these years, the financial policy of the government and the monetary policy of the Bank of Russia was aimed at increasing the level of monetization of the economy. It was then that the volume of money turnover increased significantly, the level of monetization of the Russian economy reached high values of 40%, the monetary income of the population increased significantly, and the rate of economic growth reached the highest rates of 12% per year (we recall, the above calculations proved the impact of all three policies: financial, monetary, and macroprudential, on the income of the population). This period is characterized by some balanced decisions in the field of monetary and financial policy, which, despite their restrictive nature (restrictions on the foreign exchange positions of commercial banks in monetary policy, restrictions on tariffs of natural monopolies in financial policy, etc.), were

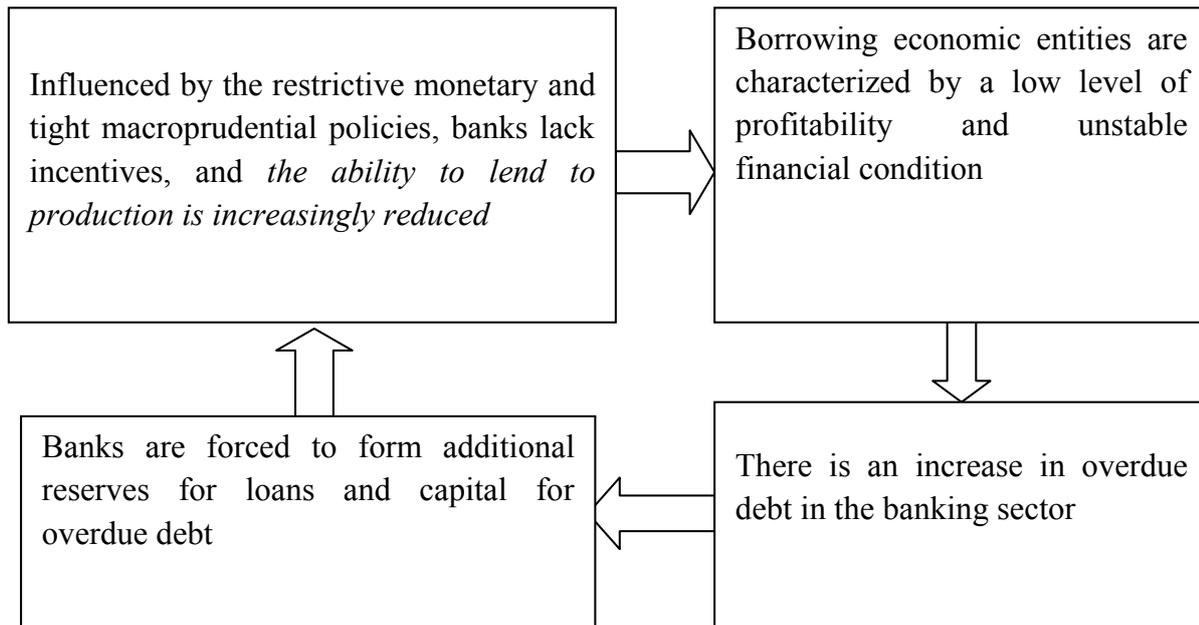


Fig. 7. Banking sector impulses influenced by monetary and macroprudential policies

Source: compiled by the authors.

aimed at harmonizing money turnover, which significantly influenced the reproduction process and gave its positive results.

Following the classical concepts of monetary policy, in all other periods of the modern history of Russia, inflation in the economy was restrained by a significant restriction of the money supply and, in connection with this, by a reduction in money turnover. This was both in the early 1990s and the period 2008–2020. The growth rates of the economy in these years were very modest, if not negative, and the crisis of 2009 hit the Russian economy worse than similar countries with emerging markets. At that time, the economy was characterized by a significant reduction in credit, a necessary component of the reproduction process. Restrictive monetary and tight macroprudential policies have formed a vicious circle, namely: in these conditions, banks lost incentives, and *opportunities for lending to production were increasingly narrowed*; business entities-borrowers were characterized by a low level of profitability, had an unstable financial condition; the share of overdue debts was growing in the banking system; banks were

forced to form additional reserves for loans and capital for this overdue debt; *banks' abilities to lend to the economy were reducing*.

These effects and their conditions indicate *a significant suppression during these periods of the active properties of the monetary system and a significant limitation of the role of money in the reproduction process (Fig. 7)*.

Exploring the role of money in the reproduction process, one cannot ignore the problem of excess/shortage of liquidity in the banking sector, which arose as a result of a violation of the reproduction function of the monetary system.

Shortage of liquidity is common in the economy. The reasons for the shortage of liquidity in the banking sector may be an insufficient amount of resources attracted by banks; lack of long-term money resources in banks in the structure; imbalance in economic development, capital outflow from the country, restriction or closure of foreign capital markets for national banks; lack of refinancing instruments in the system of monetary policy instruments. With the help of refinancing instruments, central banks, as a rule, are very successful in leveling the problem of the

shortage of both ruble and foreign currency liquidity.

The reasons for the excess liquidity are: unstable, including due to the introduction of anti-Russian sanctions, economic situation; changes in tax legislation that increase the burden on business; declining confidence in the banking sector amid active revocation of banking licenses; reorganization of major market players; a significant drop in the creditworthiness of organizations in the real sector due to the low level of their profitability; a high level of credit risks, causing a decrease in the business activity of banks in the field of lending [14], as well as the receipt of funds from the budget channel as a result of the implementation of the “budget rule”. The reproduction potential of Russian commercial banks has grown over the past few years, but at the same time, it has come into conflict with the interests of the real sector of the economy due to restrictive measures in the field of monetary, financial, and macroprudential policies. This was the impetus for the emergence of *excess liquidity* and the consolidation of this trend. In our opinion, we should consider the excess liquidity as a result of destructive phenomena due to the disruption of the reproduction process in the monetary sphere, where the functioning of the basic institution of the market economy — commercial banks — was trapped in a dubious strategy for the development of credit relations and led to numerous violations with their side of the legislation, including those aimed at combating the legalization of proceeds from crime and the financing of terrorism, the withdrawal of capital abroad, the loss of licenses. And money, influenced by these restrictions, lost the ability to perform its functions in full.

The majority of the reasons noted above for the emergence of the excess liquidity are in the sphere of influence of monetary and financial policies, which means that it is their influence or the lack of proper influence

that is the result of the emergence and consolidation of this negative trend for the reproduction process. In conditions of excess liquidity, there is a risk of the regulator (Bank of Russia) losing the ability to effectively manage liquidity, since under these conditions the effect of the key rate on the banking sector is reduced.

When studying the role of money in the reproduction process and its impact on economic growth, it is impossible to leave aside the *aspect related to the population’s money income*, since money is the most sensitive element of economic relations, bearing a significant economic and greatest social burden. The Guidelines for the Unified State Monetary Policy for 2020 and the period of 2021 and 2022 rightly noted that the slowdown in GDP growth is caused by weak investment activity, a significant decrease in annual export growth rates against the backdrop, inter alia, of weakening external demand.¹ Our studies [15, 16] confirm this thesis. Meanwhile, the fall in real disposable household income over some years has become a serious problem constraining economic growth (*Fig. 6*). These processes inevitably lead to a decrease in the role of money in the economy: they restrain consumption, lead to the formation of non-monetary incomes by the population, which further deforms the reproduction process.

The Bank of Russia, when studying the dynamics of monetary incomes and expenditures of the population, confirms the fact of a fall in the real disposable household income. At the same time, an increase in interest payments on loans and a revaluation of the negative impact of an increase in interest payments on the budget of the population due to a significant share of mortgage loans in the loan portfolio is indicated as a factor that has a significant

¹ Bank of Russia website “Main Directions of the Unified State Monetary Policy for 2020 and the Period of 2021 and 2022”. URL: https://cbr.ru/about_br/publ/ondkp/on_2020_2022/ (accessed on 27.11.2020).

negative effect on this trend.² The regulator is also concerned about the transition of the population from savings to consumer behavior. We believe that monetary and financial policy has sufficient tools to influence both nominal and real disposable household income, which is confirmed by the empirical analysis, and today there are the prerequisites for their increase to stimulate reproduction processes. Their adjustment with the help of measures of this policy can have a positive effect on economic growth, as well as on the quality of loan portfolios of commercial banks.

As noted above, the impact of macroprudential policy on the reproduction process requires research and evaluation. Studies show that macroprudential policy has an impact not only on macro-financial stability, but also on economic growth, price levels, and lending volumes [17–19]. Under the influence of systemic risks, its toolkit is significantly replenished by regulators.

The main goal of macroprudential policy is to maintain the stability of the financial system as a whole and to minimize the likelihood of crisis phenomena and their consequences. The goal is good, but today there is an acute question of how much the efforts of the Bank of Russia to maintain macroeconomic stability contribute to the development of lending. Is it necessary to the extent that the Bank of Russia is doing it today, to use measures to curb the formation of bubbles in the financial market? Does it not hinder the development of the national economy? And, finally, what effect do macroprudential regulation instruments have on money turnover? Note that above we have proved the influence of financial stability on the velocity of money.

Macroprudential policy reducing systemic risk is aimed at the accumulation and reliable placement of bank reserves of sufficient liquidity, which forms a margin of safety for

financial institutions and creates material prerequisites for strengthening the financial stability of the banking sector [20]. Based on this, it is no accident that the question arose about the ability of macroprudential policy to restrain the development of lending. Considering that, at the request of the regulatory body, the banking sector forms required reserves, the creation of excess reserves or fixed capital, which in the event of a stress scenario will ensure the ability of financial institutions to lend to the economy, currently significantly reduces the liquidity of the banking sector and limits its lending and investment potential [21, 22]. Considering the fact that the credit channel is a channel for increasing money, we note that this is reflected in the money turnover, which is undoubtedly influenced by these measures.

When systemic risks arise in the financial sector, regulators use aggregated macroprudential instruments that can affect the entire financial system. In this regard, such a tool as the countercyclical capital buffer has proven itself well. It should cover losses of banks in the event of the occurrence of systemic risk limit values in the banking sector. Another macroprudential instrument that has the ability to influence the entire financial system is the requirements for global and national systemically important financial institutions. Concerning them, national regulators, including the Bank of Russia, introduce additional increased requirements.

In the Russian economy, risks often arise in its individual segments, therefore, macroprudential policy is implemented through the use of sectoral instruments aimed at preventing the formation of bubbles and limiting the risks associated with the growth of lending in these risky segments. Over the past few years, such risky segments in Russia have been the foreign currency lending sector, M&A lending (mergers and acquisitions), as well as mortgage and consumer lending. Sectoral instruments of macroprudential policy are aimed at limiting credit and,

² Monetary Policy Report No. 3. Bank of Russia website. URL: https://cbr.ru/Collection/Collection/File/19993/2019_02_ddcp.pdf. (accessed on 27.11.2020).

by limiting systemic risks, restrain the development of lending and the possibility of a multiplicative increase in the money supply, the growth of money turnover.

In general, macroprudential policy measures provide some opportunities, but also carry, as shown above, certain risks for money turnover. The possibilities and risks of applying macroprudential policy measures for money turnover through their impact on various macroeconomic actors are presented in the *Appendix (Table 7)*. Note that these risks for the state as a subject of economic relations are practically balanced with opportunities, while risks prevail for citizens and businesses. The latter testifies to the restrictive impact of macroprudential measures on the business activity of the population and businesses as a result of increased requirements for financial market institutions. This limits their business activity, participation in supporting economic entities with credit resources, thereby suppressing reproduction processes in the national economy. Opportunities are seen as very conditional and have no real prospects of becoming catalysts for economic growth. Against this background, the predominantly negative impact of these measures on money turnover is noticeable, especially in terms of its growth prospects, which limits the growth opportunities of the national economy. The role of money in the reproduction process in such conditions decreases.

In our opinion, the macroprudential policy toolkit has a high potential for suppressing the reproduction function of the monetary system, aimed at limiting the role of money in the reproduction process as a result of a reduction in credit, its functional and organizational components. Given the fact that financial stability affects economic growth in the long term, it is advisable to make decisions in the field of macroprudential policy considering the reproductive vision, avoiding destructive shifts: preferential regulation of macro-financial proportions to the detriment of the prospective development of microeconomics.

As noted above, the role of money in the economy changes under the influence of external economic and behavioral factors, including measures of monetary, macroprudential, and financial policies, which can both enhance and weaken the role of money in the reproduction process. This conclusion was also reached by researchers of the European Central Bank, who argue that to resolve this issue, it is necessary to “coordinate” (coordination) these policies [23]. In this regard, an example of the strengthening of the role of money in the reproduction process, as well as a positive example of the conjugation of actions of monetary and financial policies, is observed in Russia today in the context of the coronavirus pandemic.

The results of the analysis of the main threats to money circulation at the very beginning of the coronavirus pandemic, as well as restrictions in this regard to business activity in the economy, which may disrupt the performance of the functions of money, are presented in the *Appendix (Table 8)*. It also summarizes the monetary regulation measures to support citizens, the economy, and the financial sector in the context of the coronavirus pandemic, adopted by the Bank of Russia as a regulator to overcome these threats, and which we see as opportunities to enhance the role of money in the reproduction process.

We conducted a similar analysis of fiscal policy measures. Its results are presented in the *Appendix (Table 9)* in the form of an analysis of the threats to the economy with the spread of coronavirus disease and measures in the field of financial regulation to overcome these threats and increase the role of money in the reproduction process.

CONCLUSIONS

Our hypotheses about the variability of the role of money under the influence of external economic and behavioral factors, including the decisions made in the framework of various areas of economic policy, primarily

monetary, macroprudential, and financial, have been confirmed.

The results of an analysis carried out over a short time period under conditions of significant restrictions on economic activity influenced by the threat of the coronavirus disease as an external factor affecting the role of money showed that the actions of the government of the Russian Federation and the Bank of Russia in the very first weeks of introducing quarantine measures aimed at various participants in the reproduction process — citizens, enterprises of the real sector of the economy, as well as the financial sector, were of a complex nature. Support for the participants in the reproduction process was carried out simultaneously by measures of monetary and financial policies. These measures did not duplicate, but, on the contrary, complemented each other.

Taken together, these measures simultaneously eliminated the disruptions in money turnover resulting from the decline in business activity and supported the process of reproduction of the economy through monetary and financial policies. It is too early to conclude the effectiveness of these measures (*Tables 4, 5*). However, it is already clear today that money plays a significant role in this process, and money turnover, supported by soft quantitative easing under the influence of agreed decisions in

the field of monetary and financial policy, has a positive effect on the restoration of reproduction process disrupted by business restrictions.

In today's challenging environment, it is important to preserve the trust of the population and business in the decisions of the monetary policy, to create a trusted digital space that allows neutralizing the negative impact of external factors on the reproduction process and restoring the reproduction potential of money in the interests of economic growth, including based on coordination (conjugation) of monetary and credit, macroprudential and financial policies.

It seems important to develop a joint strategy for the development of the credit system, reoriented with the help of monetary, macroprudential, and financial policies to increase its reproductive potential in the interests of economic growth. This will make it possible, against the background of the increasing role of money in the reproduction process, to revive the economy by increasing the demand for money and ensuring an adequate money supply. It can be seen that under these conditions the ability of instruments of both monetary and macroprudential and financial policies to influence reproduction processes and economic growth will increase.

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APPENDIX

Table 1

Results of the regression model evaluation (7)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.96		
R-square		0.93		
Normalized R-square		0.93		
Standard error		0.005		
Observations		16		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	188.87	0.00	
Remaining	14	-	-	
Total	15	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y-intersection	0.03	0.00	0.03	0.03
Inflation	-0.32	0.00	-0.37	-0.27

Source: calculated by the authors.

Table 2

Results of the regression model evaluation (8)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.56		
R-square		0.31		
Normalized R-square		0.29		
Standard error		0.02		
Observations		48		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	20.60	0.00	
Remaining	46	-	-	
Total	47	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y- intersection	0.05	0.00	0.03	0.06
FII	-0.14	0.00	-0.20	-0.08

Source: calculated by the authors.

Table 3

Results of the regression model evaluation (9)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.82		
R-square		0.67		
Normalized R-square		0.66		
Standard error		0.094		
Observations		36		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	69.61	0.00	
Remaining	34	-	-	
Total	35	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y- intersection	1.43	0.00	1.24	1.62
bb	-0.0002	0.00	-0.00	-0.00

Source: calculated by the authors.

Table 4

Results of the regression model evaluation (10)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.93		
R-square		0.86		
Normalized R-square		0.85		
Standard error		0.06		
Observations		33		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	90.6	0.00	
Remaining	30	-	-	
Total	32	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y-intersection	-0.116	0.00	-0.24	0.01
FII	0.302	0.00	0.13	0.47
State budget balance	0.0002	0.00	0.00	0.00

Source: calculated by the authors.

Table 5

Results of the regression model evaluation (11)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.44		
R-square		0.15		
Normalized R-square		0.12		
Standard error		0.11		
Observations		37		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	8.83	0.01	
Remaining	35	-	-	
Total	36	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y-intersection	1.29	0.00	1.12	1.45
<i>FII</i>	-0.78	0.01	-1.30	-0.25

Source: calculated by the authors.

Table 6

Results of the regression model evaluation (12)

RESULTS				
<i>Regression statistics</i>				
Multiple R		0.65		
R-square		0.42		
Normalized R-square		0.40		
Standard error		2.84		
Observations		41		
ANOVA				
	<i>Df</i>	<i>F</i>	<i>Significance F</i>	
Regression	1	14.27	0.00	
Remaining	38	-	-	
Total	40	-	-	
	<i>Coefficients</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Y-intersection	112.37	0.00	107.80	116.94
<i>FII</i>	-11.57	0.00	-19.07	-4.07
<i>bb</i>	-0.002	0.01	-0.0031	-0.0004

Source: calculated by the authors.

Table 7

Opportunities and risks of applying macroprudential policy measures for money turnover

OPPORTUNITIES	RISKS
For the state	
Stimulating the development of the national economy, innovative technologies through ensuring the stability of the financial system as a whole and reducing the likelihood of crisis phenomena and their consequences	The creation of excess reserves or capital stock at the current moment significantly reduces the liquidity of the country's banking sector, limits its lending and investment potential, and the possibility of increasing money turnover
Building a unified system of macroprudential policy instruments, using foreign experience in macroprudential regulation on this basis	Using well-proven macroprudential policy instruments not in accordance with the current state of the national economy (systemic risks), but as a tribute to fashion
The focus of instruments on restrictions in certain sectors of the credit market, which allows harmonious development of its other sectors, excludes regulatory arbitrage	The focus of instruments is mainly on credit restriction, which hinders the development of lending and limits the possibility of a multiplicative increase in the money supply, limiting the growth of money turnover
The opportunity to protect national markets and the interests of national economic entities in the process of applying sectoral instruments aimed at de-dollarization of the national economy	Proportional, but not entirely justified application of restrictions to various institutions of the credit market reduces regulatory arbitrage but can expand the "gray zone" in lending and money turnover
For business and citizens	
Ensuring the stability of the financial system as a whole and minimizing the likelihood of crisis phenomena and their consequences, which has a beneficial effect on the confidence of businesses and citizens in financial market institutions, contributes to the harmonious growth of money turnover	Decrease in liquidity and profitability of financial market institutions due to additional requirements for creating reserves and capital, potential contraction of the volume of money supply
Protecting the interests of financially illiterate and high-risk borrowers – individuals	Impossibility to meet the need for lending of borrowers – individuals in the regulated zone of the credit market, expansion of the "gray zone" in lending and money turnover
Decrease in interest rates in the sector of unsecured consumer lending, decrease in the level of household debt, which contributes to the harmonious development of money turnover	Restriction of opportunities for refinancing loans in the context of a decrease in the key rate, which does not allow high-quality borrowers to increase the volume of debt through newly taken loans and does not contribute to the growth of money turnover
Reorientation of banks' portfolios to segments with a low value of the total cost of a loan	Loss of profitability of banks due to moving into low-risk, low-margin areas, leaving the highest quality segments of lending (mortgage), limiting the opportunities for growth in money turnover
Creation by banks that are actively working in the segment of unsecured consumer lending, the necessary volume of reserves and capital, allowing to reduce the risks of disruption in cash flow	Banks' loss of licenses due to the impossibility of meeting increased regulatory requirements in the process of creating reserves and increasing capital
	Disruption of money turnover due to the impossibility of carrying out payment circulation by economic entities due to the revocation of licenses from banks

Source: calculated by the authors.

Threats to the economy associated with the spread of coronavirus disease, and the monetary regulation measures that provide opportunities to overcome threats and strengthen the role of money in the reproduction process

OPPORTUNITIES	THREATS
For citizens	
Recommendations to banks on the implementation of debt restructuring in connection with a decrease in the level of income of citizens, refusal to collect increased interest, fines and penalties from borrowers; enabling banks to not recognize such loans as restructured; restructuring of mortgage loans and the introduction of mortgage vacations for borrowers with an officially confirmed illness	Decrease in the level of income of citizens, disruptions in money circulation, reduction in the volume of the money supply
Measures to protect citizens from the negative impact on the credit history of events related to debt restructuring in connection with the spread of coronavirus infection, and measures to preserve the full ability of such borrowers to attract loans and borrowings in the future	The negative impact of restructuring on the credit history of the borrower and the inability to attract loans and borrowings in the future, a possible reduction in the volume of money supply
Introduction of restrictions on the maximum amount of fees charged by banks from their clients for transfers between individuals; is working on the issue of establishing limit commissions for acquiring when making online purchases using cards	Reducing the ability for citizens to carry out free and online transfers between individuals, disruptions in money circulation
Decrease in the value of the ratio of the premium to risk on mortgage loans and loans for financing under an equity participation agreement in construction, changing the procedure for applying premiums on loans with a low-down payment	Decrease in the availability of mortgage lending in the context of the suspension of mortgage rates by banks, a possible reduction in the money supply
For organizations of the real sector of the economy	
Dissemination of measures aimed at supporting lending (including payment of wages, reducing the burden on servicing existing loans) of organizations in some industries experiencing difficulties	Significant cost reduction of the enterprise due to work restrictions within the framework of the implementation of measures to contain the pandemic, disruptions in money circulation, compression of the money supply
Implementation of measures aimed at exchanging the lending currency into rubles against the background of increased volatility in the foreign exchange market, which helps to reduce credit risks	Increased volatility in the foreign exchange market, contributing to the growth of credit risks of enterprises – foreign currency borrowers, disruptions in money circulation
Concessional lending to SMEs (simplification of requirements for the borrower: the assessment does not consider debts on taxes, fees, wages, delays on existing loans). Implementation of instruments to limit interest rates on loans to borrowers, instruments to maintain the volume of lending to SMEs, including by expanding the target focus on lending wage liabilities, reducing the rate on the instrument, removing all industry restrictions on lending to SMEs	Significant decrease, and in some cases, the cessation of income generation for the SME sector as the most vulnerable sector of the economy due to work restrictions within the framework of the implementation of measures to contain the pandemic, disruptions in money circulation, a potential reduction in the money supply
Support measures for distance selling the context of the spread of coronavirus pandemic by limiting the maximum value of acquiring commissions for online shopping	Restriction or impossibility of participation in the reproduction process of traditional wholesale and retail trade enterprises, disruptions in money turnover, potential reduction in money supply
For financial sector	
Softening the conditions for the provision of irrevocable credit lines within the framework of compliance with the short-term liquidity ratio N 26 (N 27), reducing the fee for the right to use an irrevocable credit line, revising the procedure for calculating the maximum limit of ICL in the direction of increasing the ability of systemically important credit institutions (SICIs) to manage liquidity in an environment of increased volatility; maintaining the value of the national countercyclical capital buffer at a zero level; indulgence in the calculation of required reserves; change in the timing of the introduction of previously planned restrictions on SICIs	Decreased potential of the financial sector to provide resources to the real economy, potential contraction of the volume of money supply

Table 8 (continued)

OPPORTUNITIES	THREATS
Expansion of the Lombard List and mitigation of requirements for the level of liquidity of securities used by credit institutions in refinancing operations with the Bank of Russia, while maintaining requirements for credit quality; intention of the Bank of Russia to use a set of instruments for providing liquidity for longer periods: resumption of long-term repo auctions and auctions of long-term loans secured by credit claims	Reduction of cash inflows in a number of banks due to credit vacations by companies from affected industries, growth of uneven distribution of liquidity, imbalances in access to medium-term and long-term funding, disruptions in money circulation, potential contraction of money supply
Temporary reduction of the regulatory and supervisory burden, non-application of penalties for some violations for credit institutions, participants in the securities market, and trade and clearing infrastructure	Decreased potential of the financial sector to provide resources to the real economy due to the application of restrictive organizational measures, potential contraction of the volume of money supply
Cancellation in accordance with the countercyclical approach to the implementation of the macroprudential policy of the premium to the risk ratios; a separate 5% limit was allocated for investing pension savings in mortgage-backed bonds	Decrease in interest income of banks, a decrease in mortgage lending, a potential contraction in the volume of money supply
Possibility of credit institutions not to increase reserves for possible losses on overdue loans of borrowers with an officially confirmed illness, borrowers with a significant decrease in the level of income; permission of the MFO, CCCs, and ACCCs not to recognize these loans as restructured	Shrinking the volume of the money supply due to a decrease in the level of income of citizens, an increase in overdue debts with creditors: banks, MFO, CCCs, ACCCs, disruptions in money circulation
The opportunity of credit institutions not to worsen the assessment of the quality of debt service, regardless of the assessment of the financial position of the borrower to create provisions for losses	Significant reduction in the costs of enterprises due to work restrictions within the framework of the implementation of measures to contain the pandemic, the need for banks to create provisions for possible losses on loans due to the deterioration of the financial position of the borrower, disruptions in money circulation, compression of the volume of money supply
Expansion of the refinancing program for SME loans; the ability for lenders not to increase provisions for possible losses on loans to SMEs, as well as self-employed citizens; softening the requirements for the minimum rating of credit institutions for their participation in the new mechanism to support lending to SMEs; the possibility of providing these loans without collateral to credit institutions with a high credit rating, and to credit institutions that do not have such a rating, if there is a guarantee from JSC "SME Corporation"	Significant reduction, and in some cases, termination of income generation by the SME sector as the most vulnerable sector of the economy due to limitations in the implementation of measures to contain the pandemic, disruptions in money circulation, potential contraction of the volume of money supply
Recommendations for keeping banknotes in a credit institution for a period ensuring the cessation of virus activity, limiting the function of issuing and accepting banknotes in ATMs with a recycling mode; recommendations for preventive disinfection of cash transfer devices, as well as ATMs and terminals; recommendations on the priority use of non-cash forms of payment for goods and services: online transfers and contactless payments by cards	Risk of infection and spread of coronavirus in cash service of customers, disruptions in money circulation, compression of the money supply

Source: compiled by the authors based on press releases of the Bank of Russia.

Table 9

Threats to the economy associated with the spread of coronavirus disease, and the monetary regulation measures that provide opportunities to overcome threats and strengthen the role of money in the reproduction process

OPPORTUNITIES	THREATS
For the state	
A significant increase in government spending on the production and purchase of equipment and products for the diagnosis, detection, prevention and treatment of epidemic diseases, personal protective equipment, drugs and medical devices	The spread of coronavirus disease, failures in the protective function of the state, failures in money circulation, a possible reduction in the volume of money supply
Expansion of measures to support the budgets of the Russian Federation	Falling tax revenues to the budget system, disruptions in monetary circulation, reduction in the volume of money supply
The procedure for granting subsidies to regions for taking urgent measures to support small and medium-sized businesses has been established	Insufficiency of own revenues of the budgets of the constituent entities of the Federation, disruptions in money circulation, compression of the money supply.
For citizens	
Distribution of inter-budgetary transfers between the constituent entities of the Russian Federation for financial support of medical workers providing medical care to citizens diagnosed with COVID-19, and to persons at risk of contracting such a disease; implementation of measures to actively support employment	Decrease in the level of income of citizens, disruptions in money circulation, reduction in the volume of money supply
For enterprises of the real sector of the economy	
Delays in the payment of all taxes (except VAT), fees, company contributions in a number of the most affected industries and areas, a moratorium on debt collection and fines by creditors; introduction of a mechanism for subsidizing the interest rate on loans from trade organizations received for the formation of stocks of food and essential goods; introduction of measures of financial support for manufacturers of enterprises producing essential goods, financial support for socially significant industries and enterprises (including transport, culture, etc.); subsidizing interest rates on loans to developers within the framework of project financing in the event of a drop in sales rates in the primary market; creation of a guarantee fund for restructuring loans to companies affected by the exacerbation of the situation in connection with the spread of coronavirus infection; introduction of a mechanism for the non-application of penalties on government contracts	Significant reduction in the costs of enterprises by limiting work in the framework of the implementation of measures to contain the pandemic, disruptions in money circulation, and a reduction in the volume of the money supply
The programs of concessional lending for small and medium-sized businesses have been expanded; deferrals were introduced for the payment of insurance premiums for micro-enterprises; temporary deferral (or moratorium) on the payment of lease payments by SMEs-tenants of state or municipal property	A significant reduction, and in some cases a cessation of income generation by the SME sector as the most vulnerable sector of the economy due to work restrictions within the framework of the implementation of measures to contain the pandemic, disruptions in money circulation, and a potential reduction in the volume of money supply
For the financial sector	
Subsidizing part of the interest on loans to SMEs to credit institutions; establishing the procedure for granting subsidies to credit institutions to ensure deferral of repayment of loans issued to SMEs; the allocation of funds from the reserve fund of the Government of Russia to credit institutions to ensure the deferral of repayment of loans issued to SMEs; increasing the capitalization of regional MFOs to cover preferential microloans of SMEs; increasing the capitalization of regional guarantee organizations in order to expand the ability of SMEs to obtain concessional loans in the absence of collateral	Significant reduction, and in some cases – the cessation of income generation by the SME sector as the most vulnerable sector savings due to restrictions in the implementation of measures to contain pandemic disruptions in money circulation possible reduction in the volume of money supply

Source: compiled by the authors based on materials from the website of the Government of the Russian Federation.

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Abramova M. A. — articulated the problem, developed the conceptual framework of the manuscript, performed a critical analysis of the literature.

Dubova S. E. — conducted a study of the problem, collected and analyzed factual data, developed a tabular presentation of the results.

Bayarsaikhan Z. — described the results and wrote the conclusions of the article.

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