INFLATION TARGETING: THEORY AND EXPERIENCE OF RUSSIA

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Abstract: The article presents a retrospective analysis of inflation in Russia, including a correlation analysis of inflation with other important macroeconomic indicators. The theoretical basis of inflation targeting is revealed. The problem of choosing the nominal anchor of monetary policy and the impact of the inflation targeting policy on the financial results and financial condition of the Central Bank is considered.

Keywords: inflation, targeting, monetary policy, nominal anchor, exchange rate, economic growth, foreign exchange reserves, international reserves, built-in stabilizer, monetary authorities, financial results of the central bank, financial condition of the central bank, Central Bank of the Russian Federation.

INTRODUCTION

The central banks of all countries pay great attention to the fight against inflation, but they are also very guilty of its occurrence. In economic science, disputes are still being held about the nature, causes and mechanism of inflation. Different scientific schools give different answers to these questions. Monetary and non-monetary factors, supply and demand factors, etc., are considered as inflation factors. The monetary factor of inflation is determined by the excessive supply of money, and non-monetary factors by all other reasons, except for money amount changes (production cost increase, devaluation, structural changes, etc.). All this, in fact, should be considered when they develop and implement the strategy and tactics of inflation targeting. However, it should be borne in mind that the central bank has limited instruments to influence inflation. It can only stop

monetary inflation (although it is its culprit), and non-monetary factors are not subject to it. The problem of non-monetary inflation should be addressed by the government in the framework of appropriate economic policy implementation. Given that monetary factors are the factor of high inflation; the central bank should play the main role in the fight against inflation. The existence of inflation can also be explained by the fact that it is beneficial to governments and central banks. This is because excess monetary emission is an alternative to financing the deficit of the state (federal) budget, and it helps to maintain positive capital (equity) for central banks during monetary policy conduct.

INFLATION IN RUSSIA: RETROSPECTIVE ANALYSIS

Over 20 years (from 2000 to 2019), the volume of cash issued by the Central Bank of the Russian Federation into circulation increased 15 times, the price level grew 6.6 times, the economy (real GDP) grew 2 times, and nominal GDP - 13.4 times. One of the regularities can be noted here: the dynamics of money amount changes in circulation are quite variable, but the rate of inflation and the rate of economic growth are not so variable and are smooth. This leads to strong fluctuations in such an indicator as the ratio of cash amount issued by the Central Bank of the Russian Federation to GDP (economy "saturation" with money).

Table 1. Change of the main macroeconomic indicators of the Russian economy (2000–2019) (%)

Year	Change in cash amount (Russian rubles)	Inflation rate	Economic growth rate	Nominal GDP growth rate	Change of economy "saturation" rate with money
2000	39,5	20,2	10,0	32,2	5,5
2001	– 0,3	18,6	5,1	24,6	– 20,0
2002	50,0	15,1	4,7	20,5	24,5
2003	49,6	12,0	7,3	20,2	24,5
2004	24,9	11,7	7,2	19,7	4,3
2005	31,6	10,9	6,4	18,0	11,5
2006	39,6	9,0	8,2	17,9	18,4
2007	3,3	11,9	8,5	21,4	– 14,9
2008	2,9	13,9	5,2	19,8	-14,1
2009	7,4	8,8	– 7,8	0,3	7,1
2010	2,5	8,8	4,5	13,7	– 9,8
2011	20,9	6,1	4,3	10,7	9,3
2012	2,3	6,6	3,7	10,5	– 7,5
2013	13,6	6,5	1,8	8,4	4,8
2014	6,5	11,4	0,7	12,2	– 5,1
2015	– 3,6	13,9	– 2,3	11,3	– 13,4
2016	3,1	5,4	0,3	5,7	– 2,5
2017	8,5	2,5	1,6	4,1	4,2
2018	8,1	4,3	2,3	6,7	1,3
2019	2,9	3,1	1,3	4,4	– 1,5
Total for 5 years (2015 - 2019)	20,0	32,3	3,2	36,5	– 12,1
Total for 20 years (2000 - 2019)	15,0 раз	6,6 раз	2,0 раз	13,4 раз	1,1 раз

Sources: National accounts // Official website of the Federal State Statistics Service of Russia / www.gks.ru;
Statistics / Official website of the Bank of Russia // https://cbr.ru/

The correlation coefficient between the rate of money amount change and the rate of inflation is positive, which is obvious, and its value is significant and amounts to 0.31. The correlation coefficient between the rate of money amount change and economic growth is even higher and amounts to 0.53 (Table 2). Of course, one cannot conclude from this that money growth is the inflation factor in the economy. The Central Bank of the Russian Federation, on the contrary, proceeded from the need to expand the money supply due to the action of two factors: projected inflation (based on its expectation by economic entities) and economic growth.

Table 2. Correlation matrix of main macroeconomic indicators of Russia (2000 – 2019)

2000 - 2019 (period A)				
	Inflation rate	Economic growth	Nominal GDP	The rate of economy "saturation" change with money
Change of cash amount	0,31	0,53	0,50	0,86
Inflation rate		0,40	0,85	– 0,11
Economic growth			0,82	0,16
Nominal GDP				0,02
2015 - 2019 (period B)				
	Inflation rate	Economic growth	Nominal GDP	The rate of economy "saturation" change with money
Change of cash amount	– 0,87	0,94	– 0,76	0,97
Inflation rate		– 0,93	0,97	– 0,96
Economic growth			– 0,83	0,95
Nominal GDP				-0,90
The difference between the period A and the period B indicators				
	Inflation rate	Economic growth	Nominal GDP	The rate of economy "saturation" change with money
Change of cash amount	1,18	– 0,41	1,26	– 0,09
Inflation rate		1,33	– 0,12	0,85

	Inflation rate	Economic growth	Nominal GDP	The rate of economy "saturation" change with money
Economic growth			1,64	– 0,79
Nominal GDP				0,92
Evaluation of correlation indicator discrepancy for period A and period B				
	Inflation rate	Economic growth	Nominal GDP	The rate of economy "saturation" change with money
Change of cash amount	High discrepancy	Significant discrepancy	High discrepancy	Insufficient discrepancy
Inflation rate		High discrepancy	Insufficient discrepancy	High discrepancy
Economic growth			High discrepancy	Significant discrepancy
Nominal GDP				High discrepancy

The correlation coefficient between the rate of money amount change and economic growth is 0.40. As you know, there is a relationship between inflation and unemployment in the Phillips curve, which turns into the relationship between inflation and the rate of economic growth within the conditions of economic development. The highest value was taken by the correlation coefficients between inflation and nominal GDP growth rates (0.85), and between nominal GDP growth and economic growth rates (0.82). This connection is also obvious and is generated by the fact that inflation and economic growth rates already increase nominal GDP by themselves. Now it is interesting to assess the degree of correlation of the same indicators over the past five years (2015–2019), within which the Central Bank of the Russian Federation applied the inflation targeting policy. During this period, the growth rate of the amount of cash in circulation was moderate and did not exceed 8.5% (in 2015, there was the decrease by 3.6%). It is logical to assume that this is what became the decisive factor for inflation reduction. If it still amounted to 13.9% in 2015 (the effect of previous years on issuing money into circulation may took place), then the inflation rate became insignificant (from 2.5 to 5.4%). At the same time, during this period, the growth rate of the economy significantly decreased. In 2015, the decline of 2.3% was generally observed, and then the annual growth rate was in the range from 0.3 to 2.3%. Is this coincidence related to the fact that now the Central Bank has slowed down the growth rate of the money supply or is due to another factor? Another factor may be the introduction of economic sanctions against Russia by several leading countries of the world.

Over the five years of inflation targeting in Russia, the correlation coefficient between the rate of cash amount change and the rate of inflation generally assumed a negative value and amounted to 0.87. Rather, this should mean that during the fight against inflation, the monetary authorities took the path of money supply reduction. The correlation coefficient between inflation and economic growth also took a negative value and amounted to 0.93. This relationship is significant and "suspicious". It is unlikely that inflation decrease led to economic growth reduction (which can logically follow from the

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Phillips curve); rather, as indicated above, this coincidence is due to the imposition of economic sanctions against Russia. In general, the analysis of the correlation between the considered basic macroeconomic indicators allows us to conclude that there are no stable relationships between them. In different periods, diametrically opposite processes can occur.

THE PROBLEM OF CHOOSING A NOMINAL ANCHOR OF MONETARY POLICY

Until November 2014, the Central Bank of Russia pursued the policy of controlled float of the ruble against a dual-currency basket of 45% euro and 55% US dollars. Such a policy was nothing more than the policy of the exchange rate targeting (with the assumption of its floating within the given corridor). It was assumed that this ensures price stability and was considered, thereby, as a tool to combat inflation. The reasons for this targeting were based on the crisis of 1998, when the ruble devaluation led to a sharp surge of inflation and production decline as the result of the economy destabilization. The crisis of 1998 was the most dramatic of all the recent economic history of Russia. Using the exchange rate as a nominal anchor showed that it does not allow to stabilize prices. The experience of its use is clearly demonstrated. During the period of oil price increase, the ruble should strengthen. To prevent this, the Central Bank of the Russian Federation began to buy foreign currency, increasing international reserves. The acquisition of ever-increasing volumes of foreign currency required an ever greater increase of money issue, and this, ultimately, caused the increase of prices. Thus, on the contrary, the policy of the exchange rate use as a nominal anchor led to inflation increase. To prevent this, they developed the financial and budgetary mechanism of the Stabilization Fund of the Russian Federation (since 2004). Further development of this mechanism led to the separation of the Stabilization Fund of the Russian Federation into the Reserve Fund and the National Welfare Fund of the Russian Federation (since 2008) (Sukharev, 2009). Nowadays, only the National Welfare Fund of the Russian Federation remains in the composition of Russian public finances. Monetary policy in terms of external shocks requires coordination with the fiscal policy (Ponomarenko, 2019; Sinyakov & Yudaev, 2016).

So, it turned out that the exchange rate as a nominal anchor can be effective only if the fiscal and monetary policies are coordinated. However, as it turned out, the flaws of such a nominal anchor were not limited to this. So, during the period of oil price reduction the Central Bank of the Russian Federation was required to finance the balance of payments deficit. Such financing did not occur for a long time and the monetary authorities, without waiting for the exhaustion of foreign exchange reserves, made a decision on the devaluation of the national currency, as they understood that it should inevitably occur after their exhaustion, but then this would have a negative impact on the financial condition and financial performance of the central bank (Smirnova, 2014). The Central Bank could not afford to sell foreign exchange reserves cheaply and without result for macroeconomic stability, and then gradually increase them again, buying foreign currency at a higher rate.

At the end of 2014, the Central Bank of the Russian Federation decided to change its monetary policy and switched to inflation targeting, refusing to control the ruble exchange rate. The national currency rate was given to the market, which was supposed to stabilize it (there was the transition from administrative-market to market regulation). The main idea of the monetary authorities in Russia was that the main thing is to maintain the stability of the money supply, and not the ruble exchange rate. By abandoning the

regulation of the ruble exchange rate, the monetary authorities declined responsibility for its possible fluctuations, but at the same time indicated that the Central Bank of the Russian Federation could enter the foreign exchange market in order to provide a stabilizing effect on the ruble exchange rate during the period when the market could not cope with it (for example, its participants will be carried away and lose their proper benchmark, which can destabilize the national economy and the financial system of the country). The floating exchange rate was considered by the Central Bank of the Russian Federation as a kind of "built-in stabilizer" that allows the economy adjustments to be influenced by external changes (for Russia, this is mainly the change of oil prices on world markets).

Inflation targeting, in fact, came down to money supply reduction, although officially the monetary authorities assign the role of the main instrument of inflation targeting to interest rate changes. Note that before the inflation targeting policy, this monetary policy tool was used, therefore it is not a new tool and, in this regard, cannot fundamentally solve the problem of inflation limitation. The Central Bank in its "Guidelines for Monetary Policy" began to assume that interest rate monetary policy is less effective under controlled currency floatation than under the conditions of the national currency free float and does not provide any arguments in favor of this (The main directions of the unified state monetary policy for 2020 and the period 2021 and 2022). A possible appeal to the Mandell-Fleming model may be inconsistent due to all the limitations of this model and not taking into account other important features of the economies of certain countries, as well as the more "tiniest" factors that are outside this model, but which have a dominant effect on the overall conclusion. As mentioned above, the monetary policy of inflation restriction may be ineffective in a controlled (especially fixed) exchange rate. Therefore, the inflation targeting policy is consistent with a free exchange rate. The effectiveness of the interest rate policy in this should be called into question, but on the contrary, the interest rate policy will be effective, rather in the conditions of a fixed exchange rate, since the changes in the interest rate will not be offset by a corresponding change of the exchange rate. A free exchange rate allows for greater control over the money supply, which is necessary in the context of inflation targeting.

THE THEORETICAL BASIS AND THE CONCEPT OF INFLATION TARGETING

The inflation targeting mechanism is based on the views of the new classical macroeconomics (the theory of new classics) and the use of rational expectation theory. The Taylor rule is main here, according to which the deviation of current inflation from expected inflation causes the deviation of actual GDP from potential GDP. Targeted inflation acts as the expected inflation (provided that the public trusts that the central bank can achieve such a goal with acceptable plus or minus deviations from it). With inflation targeting, expectations of price changes become anchored, which ensures stability (more precisely, less fluctuation amplitude) of the national currency and increases financial and, in general, macroeconomic stability. Inflation targeting provides predictability and low inflation, reduces the real interest rate due to lower interest rate risk. The expectation of low inflation increases the effectiveness (efficiency) of monetary policy. The ideas of inflation targeting are also found in the writings of new Keynesians. So, O. Blanchard and H. Gali in their article of 2007 introduced the concept of "divine coincidence", according to which there is no alternative between stabilization of inflation and stabilization of the deviation between actual and potential GDP (Blanchard & Gali,

2007). This follows from the new Keynesian Phillips curve, in which inflation is determined by expected inflation and the difference between potential and actual GDP. Thus, the new Caseian theory accepts that price stability achieved through inflation targeting leads to financial stability.

Inflation targeting can have not only positive, but also negative aspects. So, in conditions of external economic shocks, its use leads to production and employment decrease. However, it is assumed that such an influence takes place only in the short term, and it has a positive effect on economic growth in the long term. At the same time, one must take into account the fact that GDP losses in the short term purely mathematically lead to lower average long-term economic growth rates (unless it is proved that DURING favorable periods the economic growth rates will be higher and more than "compensate" for the lost growth rate in adverse periods). The Russian monetary authorities proceed from the fact that the precondition for economic growth is stabilization of prices and, on the whole, financial and macroeconomic stability provision, and the central bank has no other instruments to influence economic growth (Yudaev, 2014; Yudaev, 2014). This position is often criticized by several Russian economists (Glazyev, 2017). For example, the US Federal Reserve is obliged to stabilize not only the level of prices, but also the level of production, while in this alternative the latter plays a large role. In the "Guidelines for a unified state monetary policy", the Central Bank of the Russian Federation proceeds from the fact that monetary policy can only create conditions for the development of the economy, and the conditions for its long-term development are the growth of labor productivity and the speed of new technology introduction. The Central Bank of the Russian Federation can affect aggregate demand and, thus, the intensity of economic resource use (on the deviation of current GDP from potential) at a given point in time, and not on the growth of the country economic potential (The main directions of the unified state monetary policy for 2020 and the period 2021 and 2022).

The inflation target is usually some low inflation rate (Hammond, 2012). The logical question arises here: why is it not customary (with rare exceptions) to choose zero level as a target? This is due to the following reasons:

1. The inability to achieve complete stabilization of the price level. Here we can recall the era of gold and silver money circulation, when the level of commodity prices fluctuated, and these fluctuations were significant. Similarly, the policy of targeting zero inflation, which is not able to achieve full price stability. During zero inflation targeting there will be slight inflation in some years, and deflation in other years. There are fears that during deflation there will be a recession in the economy or its growth rate will decrease. It is also believed that with deflation, banks will often face bankruptcy. Indeed, during the era of inflation dominance, economic actors get used to life in the world of inflation, and deflation seems unusual for them, and they are less adapted to it. According to the authors, the widespread practice of deflation will adapt the behavior of subjects for such economic realities, and they will feel like "fish in water" under it.

2. The existence of non-monetary inflation, which the central bank cannot influence directly and significantly (On non-monetary inflation factors in 2017–2019). Therefore, a predicted non-monetary inflation rate can be set as a target.

According to the authors, in addition to these two factors, one should note such as the interest of the monetary authorities in inflation, which provides the central bank with the opportunity to expand the money supply and get a positive financial result from its activities.

THE IMPACT OF INFLATION TARGETING POLICIES ON FINANCIAL RESULTS AND THE FINANCIAL CONDITION OF THE CENTRAL BANK

Inflation targeting is a responsible monetary policy aimed at low inflation provision by the central bank. The inflation rate has a dominant effect on the financial performance and the financial condition of the central bank. Even though central banks are not commercial organizations and are institutions that produce money, they should strive to prevent losses on their balance sheet and negative capital (excess of liabilities over assets). Losses and negative capital can lead to sharp criticism of the monetary authorities, accusing them of incompetence and inefficiency of the issuing institution. From the position of the balance sheet, the central bank cannot cover its losses by issuing money. The additionally issued money will represent the central bank obligation increase, and not the increase of its own funds. However, money supply increase and inflation ultimately result that the central bank makes a profit or increases capital. Profit is conditioned by the fact that the central bank acquires profitable assets by issuing money (mainly securities). For the central bank, the financial resources received from the issue have a cost much less than if it would attract them in the open market. The Central Bank only bears the costs of money generation and cash circulation provision, which usually does not exceed 0.15 - 0.20% of issued cash. The difference between the market value of financial resources and the cost of money production and securing money circulation forms the seigniorage of the central bank — a specific monopoly income received by the issuing bank (Smirnova, 2014). The greater the inflation, the greater the amount of seigniorage obtained. The increase of central bank capital occurs due to revaluation of international assets of the central bank and the reflection of positive revaluation amounts directly to special accounts opened as part of capital (revaluation of precious metals, revaluation of foreign currency, etc.) bypassing the profit and loss account. The transition to the inflation targeting regime does not allow central banks to receive seigniorage on the previous scale, which reduces their financial resource base and limits the potential space of monetary policy. Note that the central bank may abandon a trend of monetary policy if it leads to the emergence of negative capital.

CONCLUSIONS

Summarizing all mentioned above, we can draw the following conclusions:

The first is that inflation targeting is based on the theoretical ideas of new classics and new Keynesians, where the theory of rational expectations plays a central role. In these views, the deviation of actual inflation from the targeted (expected) generates the deviation of actual GDP from potential GDP.

The second is that inflation targeting is ineffective under the controlled exchange rate regime. To limit inflation, it is advisable to use the free-floating currency regime. Using the exchange rate as a nominal anchor can lead to an excessive expansion of the money supply due to the need to purchase foreign currency.

Third, the main tool for inflation targeting in Russia is officially the interest rate (key rate), but in practice, the monetary authorities stabilize inflation by managing money supply. The transition to inflation targeting led to cash growth rate decrease in Russia.

Fourth, the establishment of a non-zero inflation target is explained by the presence of non-monetary inflation, which the central bank cannot control and the occurrence of deflation due to a possible deviation of actual inflation from target inflation.

It is generally accepted that deflation impedes economic development and negatively affects the banking system.

Fifth, inflation targeting is a responsible monetary policy in which the central bank sets a low quantitative measure of inflation that it must achieve. This holds back the central banks from the temptation to expand the money supply unjustifiably to solve budgetary and macroeconomic problems. It is assumed that macroeconomic problems should be addressed in low inflation terms.

The work of central banks in inflation management requires the further development of inflation targeting theory to increase its effectiveness and the effectiveness of economic policy aimed at the economy growth rate increase.

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