UDC 336.63

INFLATION TARGETING MONETARY POLICY OF CENTRAL BANK: THE CASE OF UZBEKISTAN

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Annotasiya. Mamlakatimizda inflyasion targetlash pul-kredit siyosatiga oʻtish, pul taklifini qat'iylashtirish, ishsizlik darajasini pasaytirish, barqaror iqtisodiy rivojlantirish masalalarining tutash nuqtasini topish muhim masalalardan biridir. Maqolada inflyasion targetlash siyosatini amalga oshirishda pulning miqdor nazariyasiga hamda rivojlangan mamlakatlar tajribasiga tayangan holda inflyasiya darajasini pasayishidagi "yoʻqotish" va "yutuqlar" ni e'tiborga olish, uni ishsizlik darajasi bilan mutanosibligini, iqtisodiyotning hozirgi, qisqa va uzoq muddatli barqaror rivojlanishini ta'minlash muammolariga javob topishga harakat qilindi.

Kalit soʻzlar: inflyasiya, targetlash, real, kutilayotgan, ishsizlik, foiz stavkasi

Аннотация. Одной из важнейших задач является нахождение «опорной» точки между целями обеспечения устойчивого экономического роста при ужесточении предложения денег, переходе к инфляционному таргетированию в монетарной политике, снижении уровня безработицы в стране. В статье на основе изучения опыта развивающих стран и опираясь на количественную теорию предложения денег сделана попытка найти оптимальное соотношение между «издержками» и «выигрышем» снижения инфляции в текущем, средним и долгосрочным периодах для устойчивого развития экономики.

Ключевые слова: инфляция, таргетирование, реальная, ожидаемая инфляция, безработица, процентная ставка

Annotation. An important aspect in the sustainable development of the economy is to find out the leveling point between the tighten inflation targeting monetary policy and lowering of unemployment in a country. In this article on the basis of new methodology and developing countries' experience a robust attempt was made to use quantitative theory of money in order to optimize the ratio between "costs" and "gains" of inflation reduction in the current, short and long-run sustainable development of the economy.

Key words: inflation, targeting, real, expected inflation, unemployment, and interest rate.

Introduction. The development of science, education and the digital economy in the Republic of Uzbekistan, the use of block chain the, cryptocurrency, electronic money and other modern technologies in improving the information platform and monetary policy instruments of the banking system, as in developed countries, combining them with alternative fiscal policy, the transition to inflation targeting is increasing [1,2]. The Central Bank is conducting research in this area, including the adoption of the "Main directions of monetary policy for 2019 and 2020-2021."

According to it, the issue of improving monetary policy in the country, the transition to inflation targeting is set, and in the coming years it is planned to reduce inflation to below ten percent [16]. The article tries to find answers to the problems of ensuring the current, short and long-term sustainable development of the economy, taking into account the "losses" and "gains" in the reduction of inflation in the implementation of inflation targeting policy, based on the theory of money and the experience of developed countries.

Literature Review. The world's leading banking scholars Kidland, Prescott (1977), Barro, Gordon (1983b) and Rogoff (1985) studied the problems of central bank independence and the variability of time in the elaborating of optimal strategic banking development plans. The time inconsistency occurs when the central bank announces its future goals in the initial planning period and these goals differ from the results achieved in the real world. U.S. analysts Kidland and Prescott noted that in the short term, monetary policymakers will face the challenge of balancing the rate of unemployment with the rate of inflation. They expect entrepreneurs to have low inflation but politicians want higher inflation to ensure low unemployment. Therefore, representatives of the private sector act accordingly in the market, believing that monetary policy is an alternative, based on the theory of rational expectations. As a result, in the long run, these expectations lead to a high rate of inflation and a natural rate of unemployment in the economy. To solve this problem, the above scholars proposed the rule of monetary policy and the reduction of inflation. They stressed that the implementation of this rule requires that private sector representatives expect stable prices and that policymakers adhere to it.

Barro [3 - 8] objected to this, proposing an econometric model that would explain the central bank's reputation so that monetary policymakers would keep their promises if a rule was kept and followed.

Research methodology. The research process used methods of cognitive theory such as induction and deduction, logical approach, time and space, comparative analysis. As a result of the research, the relationship between money supply, inflation, unemployment and sustainable economic growth, which are the mechanisms of monetary policy in the Republic of Uzbekistan, and macroeconomic parameters were identified, regression equations were developed and proposals were made to curb inflation. According to the above-mentioned model, if monetary policymakers do not meet the announced expected level of inflation, then the private sector will completely lose confidence in the words of bank representatives for life. Relying on both approaches, Rogoff suggested the direction of entrepreneurial behavior and the central bank's policy-making rule. In particular, a firm's actions in response to a monetary policy rule may affect the stability of the economy. Therefore, in some cases, the inflation rate may be partially higher if it serves for stability. Hence, inflation policy can partially keep the inflation rate high in order to optimize gross domestic product volumes and respond to external shocks. As a result, it will be possible to reduce the differences in unemployment rates with inflation and respond to external influences [9,11, 15].

$$y = y' + \beta(\pi - \pi^*)$$

$$L = \omega\pi^2 + (y - ky')^2$$

y '- GDP growth rate at full employment, %

k-The effect of a one percent reduction in the natural unemployment rate on the growth rate of GDP, (coefficient).

β - "achievement" under the influence of inflationary shock, acceleration of economic growth, %

ω -Expenditure on inflation, "losses" of the economy, %

π^*- expected inflation rate, %

Monetary as a result of structural changes in the economy the degree of influence of factors on inflation, the period and its changes in duration. The L-monetary policymaker's "loss" over a period of time, that is, lowering inflation, can reduce the country's unemployment rate and, consequently, economic growth in the short term, without changing other factors. To prove this, let us refer to the law of quantity of money supply in economic theory. According to it, in macroeconomic stability, the amount of total money in the economy is equal to the total value of goods and services produced:

$$P * Y = V * M$$

Where P is the price vector for goods and services, Y is the vector of quantity of goods and services, V is the annual turnover rate of money supply, and M is the quantity of money supply. From the above equation, based on the assumption that the variables change according to the exponential law, we obtain their growth rates and form the following equation [15]:

$$\pi + y = v + m$$

Here π is the real picture of inflation in the reporting period,%

y - Economic growth rate, %

v - Annual turnover rate of money supply, %

m - growth rate of money supply, %.

If we find the rate of inflation from the equation: : $\pi = y - v - m$

Thus, an increase in inflation leads to economic growth by lowering the unemployment rate, and a decrease in it leads to a slowdown in economic growth by raising the unemployment rate without changing other factors [15].

At the same time, the duration of the impact of monetary factors on the price level was seven according to the results of the central bank researchers its highest sensitivity is two, making up a quarter observed after the quarter. Although the impact of monetary factors on inflation increased to some extent at the end of the study period from 2006 to the first half of 2017, its absolute value remained insignificant, and showed an inverse correlation between monetary aggregates and inflation over certain periods [16].

If the expected future inflation rate is $\pi = \pi^*$ for the current period, then ōp
$\omega\pi + \beta^2\pi = \beta y'(k - 1) + \beta^2\pi^*$

If $\pi = \pi^*$, then the rate of economic growth in the coming period of the economy will remain the same as in the current period, without changing other factors $y = y'$

$L_s = \omega(k-1)\beta)^2 \frac{1}{\omega^2} + (y' - ky')^2$. In this case, the amount of economic "loss" is found from the following formula.

$$L_s = \frac{\beta^2}{\omega}(y'^2(k-1)^2) + y'^2(k-1)^2$$

$$\mathbf{L_s = (\frac{\beta^2}{\omega} + 1)(y'(k-1))^2} \qquad (1)$$

$L = \omega\pi^2 + (y' + \beta(\pi - \pi^*) - ky')^2$.

To find the optimal level of inflation, we take the first product of the variables in the equation, set the result to zero, and find π from it:

$$\frac{dL}{dP} = 2\omega\pi + 2[y'(1-k) + \beta(\pi - \pi^*)]\beta = 0$$

$$\omega\pi + \beta^2\pi = \beta y'(k-1) + \beta^2\pi^*;$$
So

$$\pi = \frac{\beta(\beta\pi^* + y'(k-1))}{\omega + \beta^2}$$

If $\pi = 0$, then the expected economic growth rate will be equal to the previous period

$$y = y'$$
$$\pi_p = 0$$

The amount of "loss" of the economy is determined as follows.

$$\mathbf{L_p = y'^2(k-1)^2} \qquad (2)$$

If $\pi = 0$, then $\quad \pi = \frac{\beta(\beta\pi^* + y'(k-1))}{\omega + \beta^2}$ is formed.

$$\pi f = \frac{\beta y'(k-1)}{\omega + \beta^2}$$

If $\pi = 0$ and the long-run inflation rate is equal to $\pi = \pi f$.
$L = \omega\pi^2 + (y' + \beta(\pi - \pi^*) - ky')^2$ is formed.

$$L = \omega\pi^2 + (y' + \beta\pi - ky')^2$$

$$L = \omega(\frac{\beta y'(k-1)}{\omega+\beta^2})^2 + (y' + \beta\frac{\beta y'(k-1)}{\omega+\beta^2} - ky')^2 \ldots$$

$$\mathbf{Lf = \frac{y'^2(k-1)^2}{1+\frac{\beta^2}{\omega}}} \qquad (3)$$

Excessive tightening of the money supply can lead to a decline in investment activity in the economy. Its unreasonable easing and a sharp increase in lending will not only stimulate consumer and investment demand, but also lead to a sharp rise in inflation. It should be noted that monetary policy alone cannot be the main source of sustainable growth of the country's economic potential. In the long run, the main factors ensuring economic growth are the implementation of sustainable structural reforms aimed at ensuring full natural employment in the economy, improving the competitive

environment, increasing labor productivity and energy efficiency, strengthening the internal and external competitiveness of the economy through infrastructure development. The task of developing and implementing effective and forward-looking monetary policy in the transition to inflation targeting is directly related to the implementation of a number of principles. Therefore, the above econometric modeling methods were used to solve these problems in a holistic, systematic way.

Results and discussion. The central bank cannot directly influence the efficiency of technological factors or technological development through the use of monetary policy instruments. At the same time, measures in the monetary sphere are mainly aimed at short-term regulation of the economy, balancing seasonal and periodic fluctuations and preventing deviations from the economic potential of growth rates, which will have a short-term effect. The current macroeconomic conditions under the influence of the above factors show that in the short term, a sharp increase in lending to the economy, increased investment and consumer demand has led to an increase in inflation. In 2019, the volume of GDP in current prices, according to preliminary data, amounted to 511838 billion soums, and the money supply (as of January 1, 2019) amounted to 80165 billion soums, which is 4.2 times and 3.4 times more than in 2013. This means that the GDP growth rate was much higher (1.2 times) than the money supply.

Table- 1.

Gross domestic product and money supply in the Republic of Uzbekistan (M2)
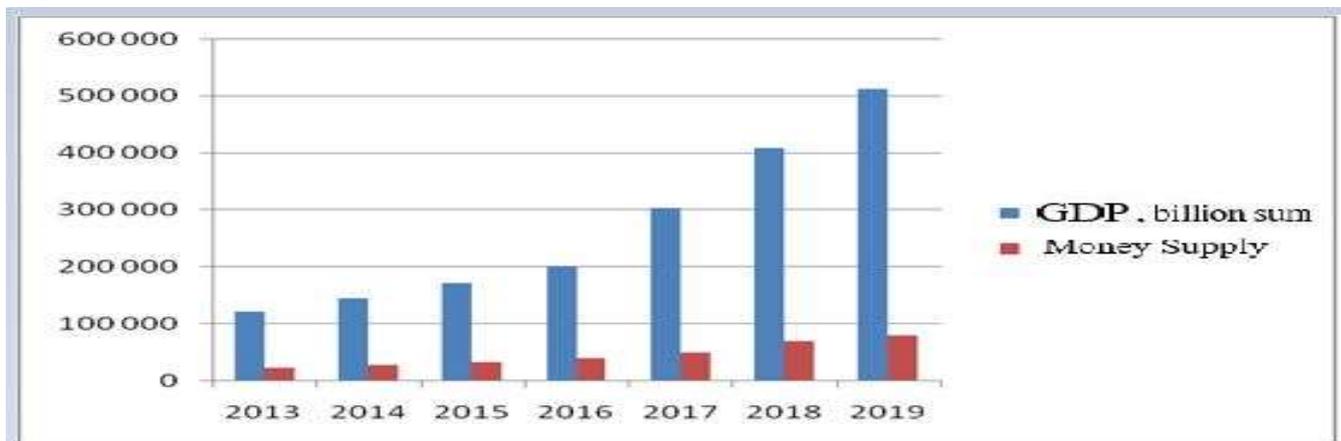
Source: Statistics Committee and Central Bank of the Republic of Uzbekistan [14] Money Supply Based on the study of the dynamics of inflation targeting policy instruments and the experience of developing countries, we have identified the "gains" and "losses" that can be achieved by increasing (decreasing) the inflation rate by one percent [10,11,12]. In particular, for the Republic of Uzbekistan, the costs of increasing the ō-inflation rate, the "losses" of the economy, or in other words, the elasticity of inflation coefficient $\omega = -0.224$. β -"achievement" under the influence of inflationary shock, acceleration of economic growth $\beta = 0.162$.

The effect of reducing the natural unemployment rate by one percent on the growth rate of GDP, (coefficient), $k = 1.2$. Putting the found coefficients into the above formulas (1), (2), and (3), we calculated L_p, L_s and L_f current, short-term, and long-term "losses" as a result of curbing inflation: $L_{p,} = 1,12$; $L_{s} = -1,26$; $L_f = -1,12$. This means

that if the inflation rate does not change in the expected period, the unemployment rate in the country will increase by 1.12%, and in the long run the unemployment rate will decrease by 1.12%. If inflation falls by one percent in the medium term, the unemployment rate will rise by 1.26 percent.

As international standards for the level and rate of unemployment and the calculation of inflation have not yet been introduced in our country, there are some conditional hypotheses in these calculations. As the database improves, the practical significance of the model increases and can be used in the practice by the Central Bank of Uzbekistan for inflation targeting monetary policy.

Conclusion. 1. In preparation for the transition of the Central Bank to the inflation targeting policy in the Republic, special attention should be paid to the speedy resolution of these problems. As a result of the implementation of monetary policy under the proposed model, it will be possible to alternate the money supply rate and plan it taking into account the level of unemployment.

In this process, the amount of bank reserves will change, the interest rate will be set for the short term. The Central Bank will not be able to influence economic growth in the long run.

2. The Central Bank must be independent in order to move to an inflation targeting policy. The independence of the central bank is determined by:

(1) The CB is free to pursue its objectives,

(2) The CB decisions cannot be changed by other organizations.

So independence means the purpose of the bank and the freedom of the instruments used.

3. If the central bank is independent, confidence in the bank will be high. The main goal of monetary policy is to ensure low inflation. Future scenarios identify changes in external and internal conditions under the influence of various factors and a set of measures to be taken by the Central Bank in response to them.

4. Along with setting the main directions of monetary policy for the coming years, the Central Bank will ensure the consistency and continuity of goals and actions in this area. This, in turn, will create predictable economic conditions, strengthen the confidence of the population and businesses in the monetary policy and increase its effectiveness.

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