



## THE IMPACT OF THE CENTRAL BANK REFINANCING INSTRUMENT ON THE MONEY MARKET (EVIDENCE FROM UZBEKISTAN)

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| Article history:   | Abstract:  |
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| <p><b>Received:</b> 20<sup>th</sup> September 2022<br/><b>Accepted:</b> 20<sup>th</sup> October 2022<br/><b>Published:</b> 28<sup>th</sup> November 2022</p> | <p>This article is devoted to the consideration of the emergence of the refinancing instrument of central banks. In addition, it analyzes significance and the stages of the impact of this instrument on the economy in reliance upon the research conducted by scholars and statistical data in the case of Uzbekistan. According to the results of the analysis, this instrument was widely used to curb inflation in the 1990s. However, as a drawback, it has hindered the development of the private sector through the "compression effect". Moreover, the fact that the Central Bank of Uzbekistan did not use a negative base rate of interest in practice and the fact that inflation was low, did not promote any economic growth. Herewith, the article investigates the impact of the central banks' refinancing instrument on interest rates in the money market. According to the results of the analysis, until 2017, the impact of this instrument on the money market interest rate was insignificant, but since 2017, the impact of the refinancing instrument on the money market has been increasing.</p> |

**Keywords:** Monetary policy, inflation, money market, money supply, refinancing policy, base rate of interest.

### INTRODUCTION

The refinancing policy of central banks originated with the emergence of the first central banks. Prior to the emergence of central banks, all commercial banks performed the function of the central bank, that is, the function of issuing money. However, at that time money issue was perceived as gold and silver coins for circulation. So, any commercial bank that had gold and silver could issue coins. Under these conditions there was no need to establish banks. Later this fact complicated the process of issuing money corresponding to the production volume in the economy. That is, additional gold and silver were needed to perform money issuance. Furthermore, finding these precious metals was a difficult process in a time when technology was not developed. Paper money appeared in circulation to solve the problems specified above. Indeed, introduction of paper money solved the problem of providing the money supply suitable for production, but significance of gold in the money supply did not decrease because money had to be backed by gold. Otherwise, these banknotes were not accepted by the people.

In our opinion, introduction of paper money into circulation was one of the greatest achievements in human history. It was the appearance of paper money that gave a boost to the development of the economy

of countries in the last 200 years. On the contrary, up to present time paper money does not comply with the current development trend of the economy. It has become clear that electronic money (non-cash) will be widely used at the next stage of economic development.

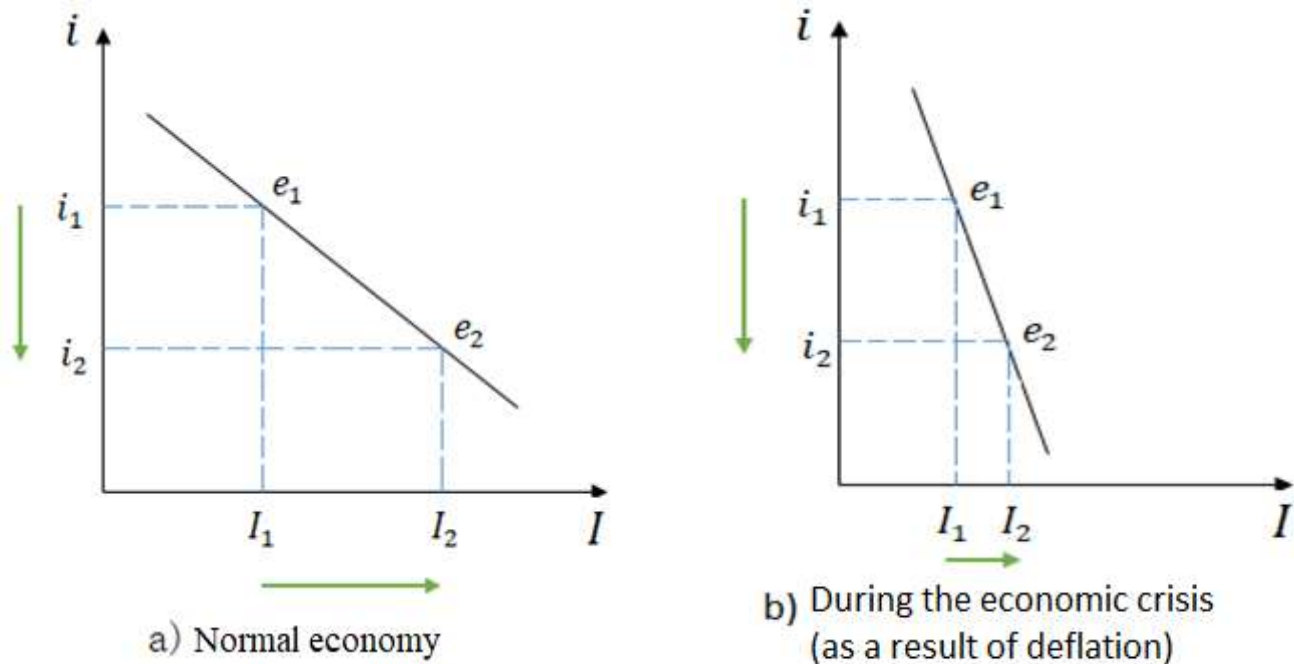
According to the opinion of some economists, this situation creates a problem for commercial banks. The reason is that finding gold and silver was one of the complicated processes, and commercial banks delegated the function of voluntary money issuance to central banks. From the point of view of other economists, the money issuance function of commercial banks has been forcibly transferred to central banks. Because of this fact, it became difficult for the governments to control the process of backing paper money with gold. Moreover, it was convenient for countries to assign the function of issuing money (paper money) to one central bank, and thereby control the gold reserves of this very bank. Another group of economists admits that central banks were established precisely with the aim of lending to the government.

In reliance of the above considerations, the emergence of central banks resulted in the fact that they extended loans to the government and other commercial banks at the expense of interest, and thus the refinancing policy was created.

With the emergence of interest rate policy by central banks, it did not appear that interest rate policy would affect economic growth. J.M. Keynes was one of the first to analyze the impact of the interest policy of central banks on economic cases. In his opinion, the central banks encourage legal entities to raise their investment costs by lowering the interest rate. An increase in investment costs will cause an increase in the gross domestic product

$$i_{CB} \downarrow \Rightarrow I \uparrow \Rightarrow Y \uparrow$$

The main hypothesis of J.M. Keynes was the interrelation between the interest rate of the central bank and the investment costs of companies. We can also see this relationship from the graph below.



**Figure 1. The relationship between the central bank interest rate and investment costs<sup>1</sup>**

It is obvious from the views expressed by J.M. Keynes that under the conditions of a regular economy, the central banks have a wide opportunity to influence economic growth through interest policy (Figure a). However, during economic crises, and mainly when the deflationary process in the economy increases, it will not be possible to raise the aggregate demand by lowering the interest rate. In this situation it is possible to raise aggregate demand by conducting fiscal policy, that is, by changing tax rates.

J.M. Keynes was the first who expressed the views on the interest policy of central banks and these considerations caused a lot of controversial situations and disputes. In particular, central banks can raise the interest rate by increasing money issuance or reduce the interest rate without increasing money issuance. Furthermore, reduction of the base rate of interest by central banks does not increase the investment costs of

legal entities in the first stage, but results in a decrease in the interest rate in the money market. A decrease in the interest rate in the money market also reduces the percentage of commercial banks' loans, and as a result, the investment costs of legal entities increase. It was proved by Milton Friedman that the interest rate of the central banks affects GDP not only through the investment costs of companies, but also impacts the prices of other assets in the economy, in particular, government spending, population consumption and many other indicators. In particular, according to Milton Friedman, central banks can influence changes in short-term interest rates, but then short-term interest rates will cause changes in long-term interest rates. It has been justified that the change of short-term interest rates does not affect the investment costs of companies, but the change of long-term interest rates affects the investment costs of companies, the budget

<sup>1</sup>Developed by the author.



costs of the government and the consumption costs of the population. That is, the increase in the long-term interest rate causes the increase in the cost of attracting financial resources by issuing securities to cover the state budget deficit and to the increase in the cost of purchasing long-term consumer goods (cars, mortgage, etc.) for the population.<sup>2</sup>

In our opinion, inflation in developing countries is a difficult process to forecast. In addition, recent military conflicts in world politics have lowered the possibility of proximity of inflation expectations to real inflation not only in developing countries but also in developed countries. Furthermore, until 1970 there were many controversies and arguments by economists about whether the refinancing rate as an instrument or as a target would give the intended result. However, after the oil crisis of the 1970s, Central banks began to use the interest rate as an instrument. To date nobody doubts the use of the refinancing rate as an instrument by central banks.

#### LITERATURE REVIEW

Refinancing policy is one of the main instruments on the disposal of central banks. Central banks widely

use the refinancing policy to influence the financial market, the volume of foreign trade transactions, and the expected changes in the gross output of the economy. Proceeding from this goal, scholars and research schools of developed and developing countries have conducted extensive research on the application of the refinancing instrument and measuring its efficiency. In particular, the scientific and practical aspects of the impact of the central bank's monetary policy refinancing instrument on the economy have been researched by such foreign economists-scholars as J.M.Keynes, Irving Fisher, Wicksell Knut, M.Friedman, J.Tobin, R.Dornbusch, J.E.Stiglitz, B.Bernanke, M.Gertler, A.S.Blinder, Frederic S. Mishkin, A.K.Kashyap, J.C.Stein, J.B.Taylor, Peter N. Ireland<sup>3</sup>. Moreover, these issues have been comprehensively studied and analyzed in research papers of such Russian economists-scholars as S.R. Moiseev, E.A. Leontyeva, S.M. Drobyshevsky, P.V. Trunin, D.I. Kondratov, S.A. Andryushin, I.S. Ivanchenko<sup>4</sup> and others. Numerous scholars-economists of Uzbekistan, in particular, O. Namozov, N. Jumaev, A. Burkhanov, T. Bobokulov, F. Dodiev, O. Sattarov, A. Absalamov<sup>5</sup> and others conducted scientific studies on the impact of the central

<sup>2</sup>Friedman, M. (1970). A theoretical framework for monetary analysis. *Journal of Political Economy*, 78(2), 193-238.

<sup>3</sup>J.M. Keynes. (2019). General theory of employment, interest and money. Moscow, Yright. Irving Fisher (1963). The Purchasing Power of Money: Its Determination and Relation to Credit Interest and Crises/ Rev. Ed. New York: reprints of Economics Classics. Wicksell Knut (1950). Lectures on Political Economy/ Vol. 2. Edited by Lionel Robins. London. Rutledge and Kegan Paul Ltd. J. Tobin (1969). A General Equilibrium Approach to Monetary Theory/ Journal of Money, Credit and Banking №1. Dornbusch R. (1976). Expectations and Exchange Rate Dynamics. *Journal of Political Economy* 84. Blinder A.S., Stiglitz J.E. (1983). Money, Credit Constraints and Economic Activity. *American Economic Review* 73. Bernanke B., Blinder A. (1988). Credit, Money and aggregate Demand/ *The American Economic Review*. №78. Frederic S. Mishkin (1995). Symposium on the Monetary Transmission Mechanism/ *The journal of Economic Perspective* Vol. 9, No. 4. Kashyap A. K., Stein J. C. (1995). The Impact of Monetary Policy on Bank Balance Sheets. *Carnegie-Rochester Conference Series on Public Policy*, 42(1). Taylor J. B. (1995). The Monetary Transmission Mechanism: An Empirical Framework. *Journal of Economic Perspectives*, 9(4). Peter N. Ireland (2005). The Monetary Transmission Mechanism / FRB of Boston WP No. 06-1.

<sup>4</sup>Moiseev S.R. (2002). The Transmission Mechanism of Monetary Policy / *Finance and Credit* № 18. E.A. Leontyeva. (2012). The mechanism of monetary transmission in Russia / *Working Paper* № 175CEFIR. Drobyshevsky S.M., Trunin P.V., Kamenskikh M.V. (2008). Analysis of the Transmission Mechanisms of Monetary Policy in the Russian Economy Moscow: IET, Trunin P.V., Knyazev D.A., Sattarov A.M. (2010). Analysis of the independence of the central banks of the Russian Federation, the CIS countries of the central banks of the Russian Federation, the CIS countries and Eastern Europe / Moscow: IET. D.I.Kondratov (2010). The

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<sup>5</sup>Dodiev F.U. et al. (2012). Estimating Monetary Policy Transmission Channels in Uzbekistan / *Research project of the Institute for Forecasting and Macroeconomic Research with the support of the United Nations Development Program*. - Tashkent. Namozov O.Sh. (2001). Monetary Policy in a Transitional Economy: Conceptual Approaches and Program Directions. Abstract of the dissertation claiming for the scientific degree of the Doctor of Sciences, Tashkent, Jumaev N.Kh. (2007). Improving the methodology of regulating currency relations in Uzbekistan/ *Monograph* - Tashkent. Science and technology. Burkhanov A. (2020). Indicators to assess financial security of the banks. *Research archive*, (27). Burkhanov A. (2020). Econometric Analysis of World Investment Funds Net Assets. *Research archive*, (22). Bobokulov T.I. (2008). Problems of ensuring the stability of the national currency exchange rate in the Republic of Uzbekistan and ways to solve them. Abstract of the dissertation claiming for the scientific degree of the Doctor of Sciences, Tashkent. Sattarov O.B. et al. (2014). Inflation: problems and solutions/ *Monograph* - Tashkent. Absalamov A.T. (2020). Ways to improve the monetary and credit policy transmission mechanism of the Central Bank of the Republic of Uzbekistan/ Abstract of the dissertation claiming for the scientific degree of the Philosophy doctor in Economics.- Tashkent. Absalamov, A. (2020). Interest rate channel of monetary policy transmission mechanism in Uzbekistan-VECM



bank's currency policy and the central bank's monetary policy instruments on the economy.

J. Taylor is one of the scholars who made a great contribution to the study of the impact of shocks on the economy from the central bank's refinancing policy. Until that time economists studied the interest rate by dividing it into nominal and real interest rates when analyzing the impact of interest policy on economic growth. According to J. Taylor, real interest rates cannot always specify the impact on economic processes. Based on this, J. Taylor divided the nominal interest rate into the market interest rate and the real interest rate. J.B. Taylor proved that "market interest rate" and "real interest rate" did not imply the same thing and economic processes were influenced by market interest rate. In his opinion, in finding the target interest rate, it is required to take into account the nominal interbank interest rate ( $r$ ), the difference between the expected inflation rate and the actual inflation rate, and deviation levels in GDP.<sup>6</sup>

$$\begin{aligned} \text{Market interest rate} \\ &= r + \frac{1}{2} \text{Inflation difference} \\ &+ \frac{1}{2} \text{GDP difference} \end{aligned}$$

From the point of view of Frederic Mishkin, the impact of central bank refinancing on economic growth has always been on the focus of the attention of scholars in the last 50 years. He believes that by reducing the money supply, central banks will increase the real interest rate, making it more expensive for businesses to expand production and reduce their investment costs. A decrease in investment costs result in a decrease in aggregate demand and, as a result, a decrease in aggregate output. According to Frederic Mishkin, central banks decrease the real interest rate by reducing the money supply or by slowing down the growth of the money supply, and this reduces not only the investment costs of companies, but also the lending-based consumption of the population. Furthermore, an increase in the real interest rate through the central banks' tight monetary policy will further exacerbate the expected decline in aggregate demand not only through the interest rate policy, but also through the lending channel.<sup>7</sup>

approach. *International Journal of Research in Social Sciences*, 10(1), 165-173.

<sup>6</sup>Taylor, J.B., (1995). The Monetary Transmission Mechanism: An Empirical Framework. *Journal of Economic Perspectives*, 9 (4), pp. 11-26.

Researches done by Eggertsson G.B., Juelsrud R.E., Summers L.H., and Wold E.G. demonstrate that the decrease of the base rates of interest by central banks primarily reduces the percentage of short-term deposits of the population in commercial banks. As a result of this, the resources of commercial banks decrease and this fact reduces the percentage of bank loans. An increase in the interest rate on commercial bank loans makes it more expensive for companies to expand production and reduce investment costs. Consequently, this fact causes a decrease in aggregate demand and a reduction in aggregate output.<sup>8</sup>

We can describe the considerations of the scholars specified above through the following scheme:

$$i_{CB} \uparrow \Rightarrow i_{deposit} \uparrow \Rightarrow \text{Lending resources} \downarrow \Rightarrow i_{loan} \uparrow \Rightarrow I \downarrow \Rightarrow Y \downarrow$$

They came to this opinion when in 2012-2016 central banks lowered the base rates of interest to a negative state in order to prevent deflation in developed countries. We can explain it in the following way. Lowering the interest rate by the central banks will initially result in a decrease in the interbank interest rate, and it will be complicated for commercial banks to attract resources from the money market. However, commercial banks lend to their customers by selling other assets on their balance sheets, such as securities, in order to cope with competition and avoid losing customers. The fact that this situation lasts for a certain period makes the practice of lending to commercial banks more expensive. As a result, commercial banks are forced to reduce the percentage of deposits.

In reliance upon the opinions of the above scholars, we can explain the impact of monetary policy interest rate changes on the economy as follows. In this case, an increase in the money supply causes an rise in the expected price level, i.e. inflation ( $\pi^e$ ). Although an increase in the money supply in the short run does not increase inflation, in the medium and long run an increase in the money supply will result in the inflation. This leads to a decrease in the base rate of interest ( $r \downarrow = i - \pi^e$ ) and makes an impact on the investment costs of companies and the increase in gross output.

$$M \uparrow \Rightarrow \pi^e \uparrow \Rightarrow r \downarrow \Rightarrow I \uparrow \Rightarrow Y \uparrow$$

<sup>7</sup>Mishkin, F.S. (1995). Symposium on the monetary transmission mechanism. *Journal of Economic perspectives*, 9(4), 3-10.

<sup>8</sup>Eggertsson, G. B., Juelsrud, R. E., Summers, L. H., &Wold, E. G. (2019). *Negative nominal interest rates and the bank lending channel* (No. w25416). National Bureau of Economic Research.





In this research paper we analyze how strong this relationship is in the economy of Uzbekistan.

### RESEARCH METHODOLOGY

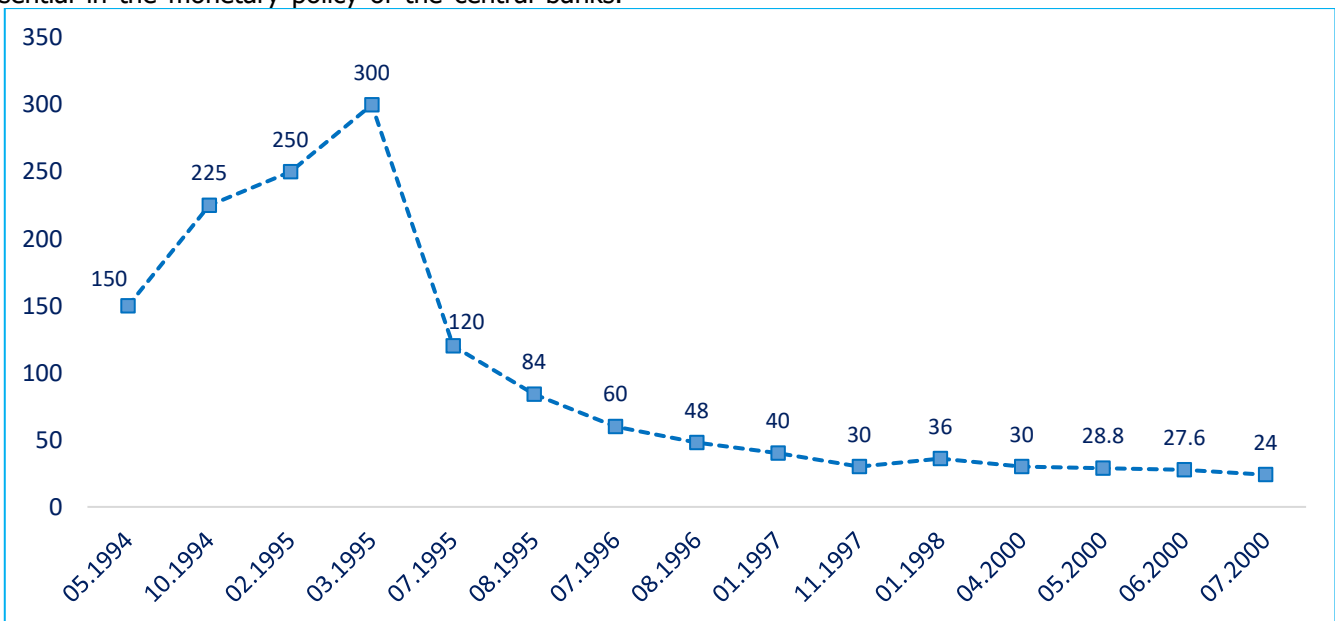
If the change in the refinancing rate by the central banks initially affects the interest rate in the money market, as a result it will definitely affect the inflation rate. We analyze these factors of influence.

Such research methods as induction, deduction, synthesis, and comparative analysis have been widely used in this research. Refinancing instrument of the Central Bank of the Republic Uzbekistan, the data of the Central Bank of the Republic of Uzbekistan and the State Committee of the Republic of Uzbekistan on Statistics have been applied.

### ANALYSIS AND RESULTS

The instrument of refinancing has always been essential in the monetary policy of the central banks.

The central banks used the refinancing instrument to curb inflation, ensure economic balance and promote economic growth. In particular, developed countries reduced the refinancing policy from 2010 to 2019 to a minimum level to ensure economic growth in the period of low inflation. And even currently, when the inflation is intensifying, central banks are trying to curb inflation by raising refinancing rates. It is an obvious fact that today's inflation in the world economy is caused by non-monetary factors, and the expensive monetary policy of central banks is not an adequate measure to prevent it. As a proof, the central bank of Turkey, which is considered a developing country, even reduced the refinancing rate during the period of increasing inflation. As a result, inflation in Turkey rose from 20-30 percent to 70-80 percent, but economic growth constituted 8 percent. Therefore, it is a relative concept that central banks pursue an expensive monetary policy against inflationary processes.



**Figure 1. Refinancing interest rate during the high inflation period<sup>9</sup>**

In the economy of Uzbekistan, the Central Bank of the Republic of Uzbekistan did not have a powerful instrument other than the refinancing rate and reserve requirements to curb the hyperinflation of the 1990s. In particular, the Central Bank raised the refinancing interest rate to 300 percent against hyperinflation represented by a four-digit number in 1995. This

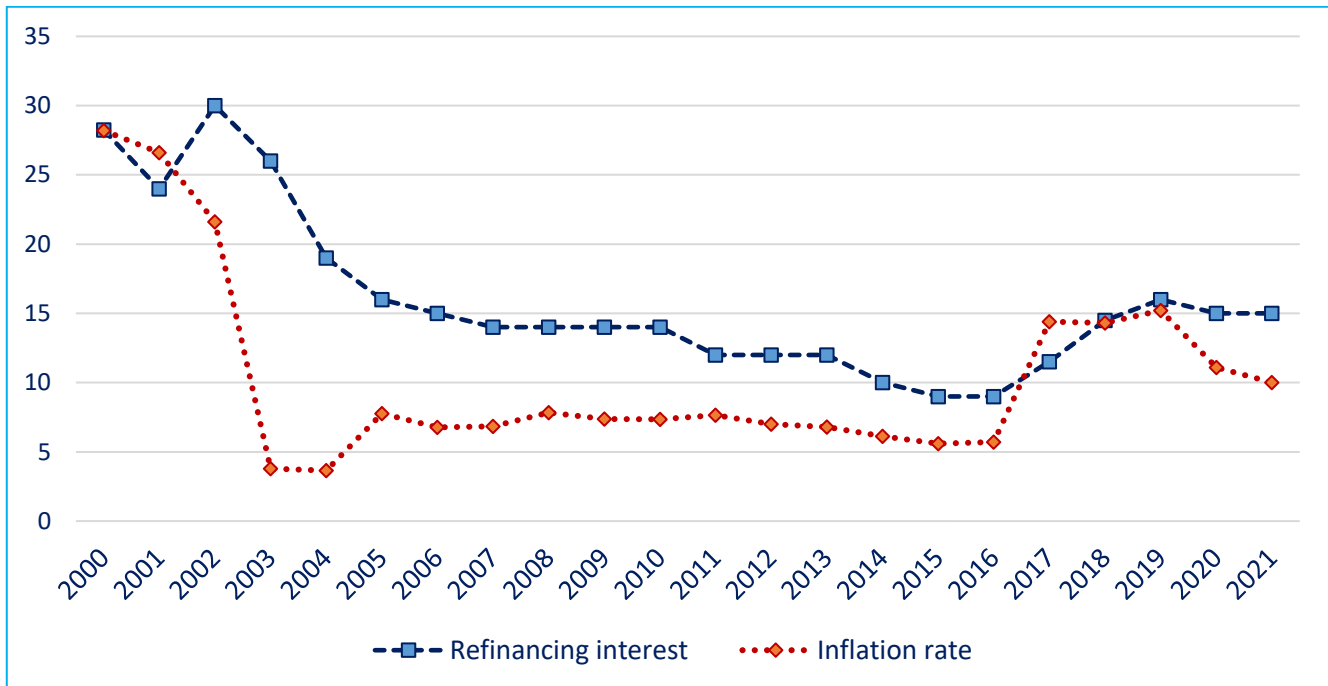
measure definitely yielded a favourable result and in 1996 inflation reached three-digit numbers. As a negative effect of keeping the refinancing rate high by the Central Bank until 1996 it should be noted that it hindered the development of the private sector, which was only "coming into its own" at that time. At that time it was a process of transition from one system of

<sup>9</sup> Data of the official web-site of the Central Bank of the Republic of Uzbekistan <https://cbu.uz/oz/monetary-policy/refinancing-rate/levels/>.



economy to another. This process should be carried out in a sequence of three stages, i.e. the stages of privatization, liberalization and coordination. However,

actually, before the privatization stage was completed, we implemented the coordination stage and faced a great negative impact on the economic development.



**Figure 2. The impact of the Central Bank's base rate of interest on the inflation rate (in percent)<sup>10</sup>**

Although the high inflation rate in the economy of Uzbekistan in 1991-1996 was curbed, high inflation still remained in the early 2000s. In particular, the official inflation rate constituted 28.2 percent in 2000, 26.6 percent in 2001, and 21.6 percent in 2002. However, unofficial inflation was higher. At the same time, the economy had adjusted to the level of inflation in the 1990s and 2000s. That is, deposits and mostly bank loans in the economy were redistributed in the amount of approximately 35-50 percent.

From 2003 the Central Bank implemented a very tight monetary policy and managed to reduce the inflation rate to 3.8 percent in 2003 and 3.7 percent in the following year. As a result, there was the ground to reduce the percentage of refinancing. However, the Central Bank lowered the refinancing rate up to 19 percent and "suffocated" the economy. As we mentioned above, the economy was adjusted to high inflation and our commercial banks provided loans at fixed interest rates. As a result, there was a problem of loan repayment among the customers who were extended loans, and this problem resulted in the deterioration of the loan portfolio of commercial banks.

In our opinion, central banks should not deal with inflation at this level, but should reduce inflation slowly.

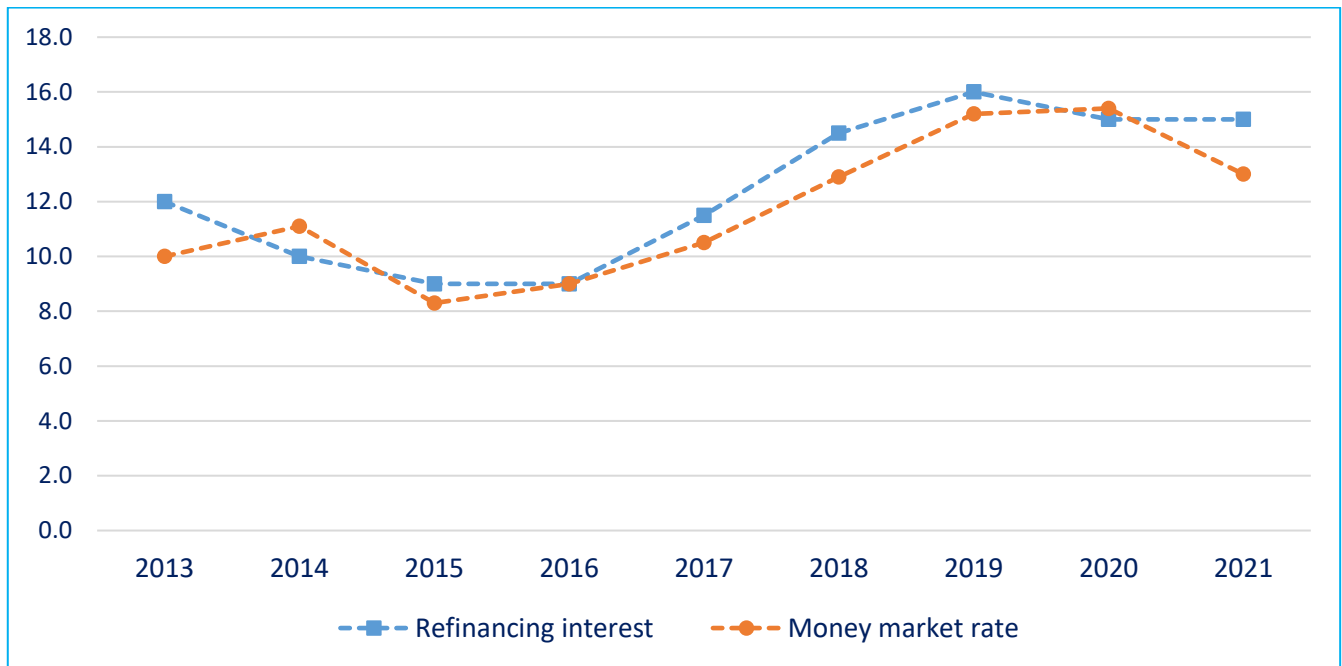
It would not be wrong to call the next 12 years a moderate period for inflation. In particular, in 2003-2016 the inflation rate was kept around 5-8 percent. However, the Central Bank of Uzbekistan conducted a positive policy of the base rate of interest in 2002-2016. In our opinion, we can see that period as a period when it is possible to give a boost for the economy development. In particular, developed countries have increased their refinancing rate against rising inflation as a result of various contradictory and conflict situations that started in 2022, but they keep the base rate of interest rate negative. Even this negative base rate of interest serves to curb inflation.

In 2017-2022, the refinancing rate of the Central Bank of the Republic of Uzbekistan and the inflation rate have become closer to each other. During this period, the correlation between the Central Bank refinancing rate and the inflation rate was equal to 0.64. Thus it is obvious that the Central Bank has widely used refinancing policy to curb inflation. In particular, in 2019, the Central Bank extensively used the refinancing

<sup>10</sup>Developed by the author in reliance upon the data of the official web-site of the Central Bank of the Republic of Uzbekistan <https://cbu.uz>.



policy in its transition to inflation targeting and successful implementation of this regime.



**Figure 3. The impact of the Central Bank's base rate of interest on the interest rate in the money market<sup>11</sup>**

In making an impact on the economic cases through refinancing policy, central banks first try to influence the interest rate in the money market. Due to the underdevelopment of the short-term securities market in the Republic of Uzbekistan, the money market was not liquid at the sufficient level. In particular, in 2013-2019 government securities were not traded. However, it is the government securities that are the most liquid of the stock market and are attractive to commercial banks and yield them good profit.

As proof, in 2013-2016 the relationship between the money market interest rate and the refinancing rate was weak because the central banks should set the upper limit of the interest rate in the money market as the base rate of interest. We can see from the data of the figure above that in 2013-2016 the percentage of refinancing of the Central Bank did not fulfill the above task due to the fact that the Central Bank set the refinancing rate and did not provide loans to commercial banks at this percentage.

Since 2017, many positive reforms have been implemented in the banking system of Uzbekistan, and from the 3rd quarter of 2017 the Central Bank began extending loans to commercial banks at the refinancing

rate, and as a result, there was a lever to influence the interest rate in the money market. In reliance upon the situation in 2013-2022, the correlation between the base rate of interest of the Central Bank and the interest rate in the money market accounts for 0.92. Statistical data for the period of 2016-2022 illustrate that the correlation between them is high.

### CONCLUSION

Currently the use of interest rate policy by central banks against various economic fluctuations has become one of the main instruments. In particular, refinancing policies are widely used in the mortgage crisis of 2008-2013, in mitigating the negative impact of the pandemic on the economy in 2020, and in mitigating the impact on the economy of the political and military conflicts launched in 2022. If in the mortgage crisis of 2008-2013, while mitigating the negative impact of the pandemic on the economy in 2020, central banks lowered the interest rate in order to improve the investment environment in the economy, today they are responding by increasing the interest rate in order to mitigate the impact of political and military conflicts on the economy.

<sup>11</sup>Developed by the author based on the data of the official web-site of the Republic of Uzbekistan <https://cbu.uz>.



We can explain the impact of monetary policy interest rate changes on the economy as follows. In this case, an increase in the money supply causes an rise in the expected price level, i.e. inflation ( $\pi^e$ ). Although an increase in the money supply in the short run does not increase inflation, in the medium and long run an increase in the money supply will result in the inflation. This leads to a decrease in the base rate of interest ( $r \downarrow = i - \pi^e$ ) and makes an impact on the investment costs of companies and the increase in gross output.

$$M \uparrow \Rightarrow \pi^e \uparrow \Rightarrow r \downarrow \Rightarrow I \uparrow \Rightarrow Y \uparrow$$

In reliance upon the analysis it is obvious that a negative impact of keeping the refinancing rate high by the Central Bank until 1996 it should be noted that it hindered the development of the private sector, which was only "coming into its own" at that time. At that time it was a process of transition from one system of economy to another. This process should be carried out in a sequence of three stages, i.e. the stages of privatization, liberalization and coordination. However, actually, before the privatization stage was completed, we implemented the coordination stage and faced a great negative impact on the economic development.

In addition, the fact that the Central Bank of the Republic of Uzbekistan did not use a negative base rate of interest in practice and low inflation, as well as did not widely use this opportunity, did not promote any economic growth. At the same time, when studying the impact of the central bank refinancing instrument on the interest rate in the money market, it has been revealed that the impact of this instrument on the interest rate in the money market was insignificant until 2017. However, since 2017 the influence of the refinancing instrument on the money market has increased. In reliance upon the situation in 2013-2022 the correlation between the base rate of interest of the Central Bank and the interest rate in the money market accounts for 0.92. Statistical data for the period of 2016-2022 illustrate that the correlation between them is high.

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