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DETERMINATION OF THE IMPACT OF OPTIMAL RATE OF GROWTH OF THE MONEY SUPPLY WITH THE MAIN MACROECONOMIC INDICATORS

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Abstract

This paper examines the scientific and theoretical foundations of monetary policy aimed at ensuring the stability of the rate of growth of money supply. In addition, the article designed Scenarios of the monetary policy of the Central Bank of Uzbekistan, aimed at ensuring the optimal growth of the money supply in the 2015-2017 bienniums. The paper empirically investigates major drawbacks and finds out main outcomes of the monetary characteristics as whole. Furthermore, concluded points will be underlined for the further development of the study globally.

Keywords: The Base Model, Exchange Rate, Money Supply, Monetary Base, Circulation Of Money, Deflator, Inflation, Monetization, Interest Rate Transformation

INTRODUCTION

One of the most pressing questions of monetary policy, taught in the modern economic literature is the question of adherence to certain rules or the freedom of action of the central bank. Many studies devoted to the analysis of monetary policy in developed and developing countries emphasized the importance of implementing monetary policy in accordance with certain rules of conduct or standard strategy (Abdukarimov B.A, 2013).

In order to achieve the ultimate goals of central banks choosing a particular set of intermediate targets controlled the actions of the monetary authorities, such as the interest rate, the monetary base or the exchange rate. Targets can be pronounced in Canada, New Zealand, Sweden and the United Kingdom or not explicit as in the US or Germany, as a guide can serve

a range of inflation and the average inflation rate over a certain level (Akimov & Dollery, 2006; Beatty & Ritter, 1986; Mishkin, 2007).

The key issue here is the choice of optimal monetary policy in particular economic conditions. Depending on the latter to ensure the optimal monetary policy preference rules or freedom of action of the monetary authorities, monetary authorities in most countries are guided by pre-established rule, under which the selection is determined and the extent of the use of an instrument of monetary policy based on the current macroeconomic situation and the state of the banking system (Ruziev & Midmore, 2014).

Under the rule of monetary policy to understand the system response of the Central Bank in response to changing macroeconomic fundamentals, the most common rules of monetary policy can be attributed Taylor Rule and McCallum rule.

Taylor Rule specifies how the central bank can alter the short-term interest rates in response to changes in prices and real output deviation from its equilibrium level. Taylor Rule has stabilization properties, as far as it minimizes the cyclical fluctuations in the economy. However, experience has shown that the Taylor rule has certain drawbacks.

Performance gap, inflation and GDP may not be inclusive information economic variables, there are also other important indicators, such as monetary and credit aggregates, exchange rate, budget parameters, etc. to be considered for in-depth analysis. Besides the GDP gap and long-term equilibrium, real interest rate is unobservable variables. Various methods of evaluation, lead to different results, and accordingly formed various recommendations to manipulate short-term nominal interest rate.

In addition to the standard Taylor rule as a measure of inflation used by the change in the GDP deflator, many researchers in their work reasonably, use other price indices (CPI index base prices, price expectations, etc.). Taylor used the issue as a potential time trend of actual GDP. In the future, the researchers will use other methods to identify the variable: the constitution will trend Hodrick - Prescott, Baxter - King Kalman decomposition Beveridge - Nelson, structural models, and so on. N. Each obtained estimate of the output gap is an individual, and as a result the monetary, the authorities implemented a variety of solutions with regard to rates or other tools (Akimov & Dollery, 2006; David Airey & Myra Shackley, 1997, 1997).

Another rule of monetary policy used by central banks is usually McCallum, where the main instrument of monetary policy is not the interest rate, and the control of monetary aggregates. The essence of the rule is to control the monetary base, depending on the dynamics of nominal GDP and the velocity of money. In his research papers, B. McCallum has shown that if you follow this rule, the dynamics of the main macroeconomic indicators of the US

economy will be much better than their actual behavior. Especially, during the period of the 1930s and 1970s (these periods in the history of the Fed marked the most serious mistakes in monetary policy pursued by the United States).

LITERATURE REVIEW

One factor complicating the use of cash balances as a tool of monetary policy is the instability of the demand for money due to shocks, which partly determines the priority of central banks use as a tool of monetary policy interest rate (Akimov & Dollery, 2006; Ruziev & Majidov, 2013). Empirical studies show that the central banks of most countries at different times acted in accordance with the rule or Taylor or McCallum rule. Economists for many countries empirically estimated the rules of monetary policy and their variations. J. B. Taylor first estimated monetary policy rule for the United States. In addition, studies have shown that the Western central banks in conducting monetary policy followed by targeting certain types of interest rate. B. McCallum conducted research in the countries of the US, UK and Japan, based on an analysis of historical data, Taylor used to compare and study the results obtained by the Taylor rule with alternative instruments and target variables. The study presents a comparative analysis of the actual values with the values according to the rules, including the use of the interest rate and the monetary base as a tool (Ruziev & Ghosh, 2009; Vakhabov & Bobakulov, 2009).

The study found that the results of the rules of monetary policy largely depend on the tool than on the choice of the target parameter. The paper R. Clarida, H. and M. Gertler Ghali presented the results of assessments of monetary policy on the basis of consideration of the rights for the US, Germany, Japan, Britain, France and Italy . The methodology of these authors has become the basis for a number of follow-up studies, including for analysis of monetary transition countries (Russia, the Czech Republic, Poland, Slovenia, Lithuania, Estonia, Romania, Kazakhstan and relative ones) (Gürgen, 1999a, 1999b; Ruziev & Majidov, 2013).

In the Czech Republic, Poland, Slovakia and Slovenia, it was determined that the Taylor rule suitable for targeting the exchange rate, as a rule McCallum can be used for inflation targeting. Vladimir Kuzin rule-based monetary policy conducted an analysis of regulatory measures of inflation in Germany. A. Esanov assessed monetary policy in Russia, the results of this study have shown that the Taylor rule does not fully describe the behavior of the Central Bank in relation to the establishment of the interest rate, and generally opposite the McCallum explains the action of the monetary authorities, that as a benchmark using monetary aggregates. Similar results in terms of the monetary policy pursued by the Bank of Russia received the Dr. S. Robyshevsky. P. Xe and H. Liu first investigated the monetary policy of China because of the Taylor rule, another study examined the possibility of using the alternative

rule (McCallum) to determine the direction of monetary policy in China (Blank, 2012; Lin, Cai, & Li, 2003; Ruziev & Majidov, 2013).

THEORETICAL BASIS

The Choice of Monetary Rules

The main instrument of monetary policy in the country is the money supply (M2). Last modified refinancing rate Central Bank of Uzbekistan took place in December 2010, reducing it by obvious amount. From the first in January 2011, it is 12%. Prior to that, the refinancing rate since July 15, 2006, (down from 16% to 14%) remained unchanged, which suggests that the refinancing rate in Uzbekistan is flexible, in contrast to control monetary aggregates. Therefore, in this study, the analysis of money supplies growth in order to achieve the targets for key macroeconomic indicators.

Method of Calculation

The distinctive feature of McCallum rule is to determine the rate of money supply for the given parameters change in GDP, inflation and the velocity of money.

This model is important for evaluating the effectiveness of monetary policy already in place, and to determine the optimal forecast of growth of the money supply in order to improve macro-economic indicators.

McCallum formal rules can be represented as follows:

$$\Delta m_t = \Delta \overline{X} - \Delta V_t + \lambda(\Delta \overline{X} - \Delta X_t)$$

Where

Δm_t - The annual percentage change in the money supply;;

$\Delta \overline{X}$ - The annual growth of nominal GDP target;

ΔV - The average change in the velocity of money;

λ - The extent of possible deviation of actual GDP from its target value;

ΔX_t - The annual rate of change of the actual nominal GDP.

Index $\Delta \overline{X}$ - Is the product of the target parameters deflator and real GDP growth.

Thus, according to this rule, on the basis of predetermined target parameters of inflation and nominal GDP growth, the central bank can set the optimum level of money supply growth.

Been some transformation in the base model, the average change in the velocity of money expressed by the difference of the percentage change in nominal GDP and the percentage change in the money supply. This model is used to determine the impact of changes

in the money supply and nominal GDP in previous years the growth of the money supply in the current period and the construction of the forecast changes in the money supply in the medium term. The right to take the following form:

$$\Delta m_t = \Delta\overline{GDP}_t - \sum_{i=1}^{n}\frac{1}{n}(\Delta GDP_{t-1} - \Delta m_{t-1}) - \lambda(\Delta\overline{GDP_t} - \Delta GDP_t)$$

After a simple mathematical transformation model has the following form:

$$\Delta m_t = \alpha + \sum_{i=1}^{n}\beta_i GDP_{t-i} + \sum_{i=1}^{n}\gamma_i m_{t-i} + \delta GDP_t + \varepsilon_t$$

Where:

α - It includes targets nominal GDP growth;

Δm_t - Percentage change in the money supply in period t;

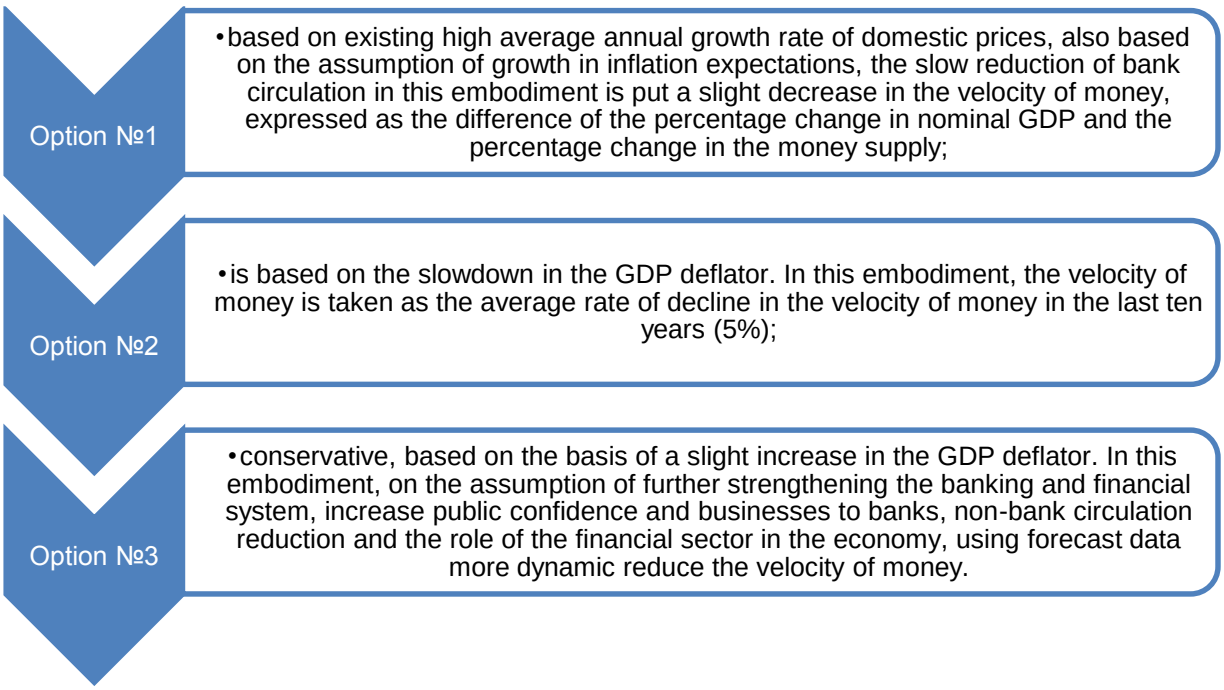
GDP_{t-i} - Percentage change of the nominal GDP in the previous period;

m_{t-i} - Percentage change in the nominal money supply in the previous period.

The analysis uses quarterly growth rate of nominal money and nominal GDP for the period since 2000 by 2009 (12).

According to this model, it will be determined by the value λ- deviation targeted GDP growth rate of the actual, which also uses in the preparation of the forecast growth in the money supply.

Based on the model of McCallum is possible to calculate the predicted values of optimum rate of growth of money supply in view of the three options:



$\Delta\overline{X}$ for the forecast period was assumed on the basis of the parameters of the target annual real GDP deflator and the medium term.

Development scenarios of monetary policy in the 2015 -2017 years

Forecast of the main indicators of the monetary policy for the period -2015 -2017 years. Calculation takes into account the three alternatives of economic development in relation to the dynamics of changes of key macroeconomic parameters and external risks.

Scenario Save (Or Insignificant Adjustments) Of The Current (Current) Economic Growth Model (Option №1)

It involves maintaining the current in recent years, a moderately tight monetary policy while maintaining imbalances in the monetary system.

The presence of significant amounts of bank circulation of cash, there are no significant changes in the existing system of currency regulation, maintaining the gap between the official exchange rate and the exchange rate on the parallel foreign exchange market, significant volumes of directed credit and a large number of preferential lending programs.

This option implies the preservation of relatively high inflation expectations and a gradual decline in the GDP deflator, which will amount to an annual average of 10.8%. However, it allowed a slight reduction in the velocity of money, due to the lack of efficiency of the individual channels of the transmission mechanism, such as credit and interest, (rate cut will not have a significant impact on the growth of lending to the real sector of the economy).

In this scenario, the most effective channel for the currency will remain the channel due to persistently high demand for foreign currency on the parallel foreign exchange market and a decline in remittances. In addition, in order to stimulate exports, there will be a depreciation of the currency at the level of previous years, given the devaluation processes, the revision of monetary policies in the countries - main trade partners of the country.

It is assumed a slow reduction in the gap between the official rate and the parallel market exchange rate, the balance in the currency market will be achieved gradually. The main sources of development - the preservation of the existing growth of the resource base, with the expansion of the share of deposits of the population and an increase in total capital (Lin et al., 2003).

External economic factors will continue to have a dampening effect on the increase in the scale of the banking system and increasing the level of financial intermediation. The instability of the markets of major trading partners will put additional pressure on the banking

system in terms of the need to increase the volume of lending in order to maintain domestic producers oriented to export their products.

The main risks - the limitations of the resource base may prove to be a deterrent for a growing economy the availability of financial resources in the required volumes. This in turn could have a negative impact on the transformation processes in the economy. External economic factors will continue to have a dampening effect on economic activity, high volatility and uncertainty of the world market, the emergence of new geo-political risks and unstable economic growth in the countries - trading partners may affect the amount of remittances, and, accordingly, the level of the exchange rate on the parallel foreign exchange market. The worsening financial state enterprises-exporters and businesses with loans in foreign currency, may lead to an increase of bad debts of the banking system, which is a significant risk to the macroeconomic stability of the country as a whole.

In the case of countries - major trade partners, devaluation of national currencies at a rate exceeding the rate of depreciation of the sum, it can adversely affect the competitiveness of domestic goods on the price factor, which requires an adjustment of monetary policy. Nevertheless, you must take into account the possible negative effects of the devaluation, including strengthening of inflation due to imported inflation, the decline of confidence in the national currency, the growth of non-bank circulation of foreign currency and an increase in dollarization of the economy (Akimov & Dollery, 2006; Fry, 1988; Ruziev & Ghosh, 2009).

Calculations showed that for the first scenario, the average annual growth rate of the money supply will be at 23.6%, due to a gradual decline in the GDP deflator and the elasticity of the money supply, as well as the preservation of the current trend of growth in lending. Moderate rate of increase in the money supply cause a slow increase in the coefficient of monetization of the economy - an average of 1.1 percentage points a year and in 2018 will be about 28%. The devaluation of the nominal exchange rate will be an average of about 10.0% per year

The Growth Scenario Resource Efficiency And Effectiveness Of The Reforms (Version №2 and №3)

It is based on the assumption that the implementation of additional drastic measures aimed at increasing the level of financial intermediation, including to improve the availability of credit and foreign exchange resources for a wide range of subjects of economy. It assumes the liberalization of the currency market, the removal of excessive restrictions in the sphere of currency regulation. Increased availability of financial resources will be achieved through the liberalization of interest rates, the concentration of preferential loan products to the most priority

areas consistent with the objectives of sustainable development. Accelerating the liberalization process will improve the efficiency of the interest rate and credit channels, which will increase the effectiveness of transformational function of the banking system and to significantly increase its lending capacity. A qualitative increase in the scale of the banking system will contribute to a more rapid reduction in the velocity of money, which together with the lower rate of the GDP deflator and a higher rate of real GDP growth will contribute to a more rapid buildup of the level of monetization of the economy.

The second scenario Central bank will make more active use of refinancing instruments to regulate liquidity in the banking system. Increasing access to financial services for the subjects of the economy will be achieved through the provision of multi-channel provision of banking products, development of remote banking services, improve the quality and the list of services, taking into account the current demand of economic entities, the development of complex products, the creation of new facilities of the financial infrastructure - specialized funds (providing guarantees to attract additional external funding for implementing the co-financing) (Zettelmeyer & Taube, 1998).

Introduction of new methods and technologies for the provision of financial services, new tools and products due to the demographic situation - the growing proportion of the elderly population, a large number of young people. As far it requires the creation of a mechanism of preserving and increasing the pension system, as well as the expansion of the volume of student loans and loans to start a business to prevent the negative impact of the current pressure on the labor market, including due to the return of migrant workers. In this embodiment, there will be a gradual reduction of the refinancing rate, taking into account the further reduction of the GDP deflator, which will have a positive impact on improving access to credit.

The main Risks

Speeding up the process of liberalization of the financial sector, a more loose monetary policy, with insufficient quality of structural changes in the economy may lead to instability in the financial sector, reduce the efficiency of current transformation and building inflationary processes, increase the level of dollarization and the growth of the informal sector.

Projected Calculations

It shown that, due to a significant reduction in the GDP deflator, high GDP growth, reduction of inflation elasticity of money growth will have a higher growth rate of the money supply by an average of 26.8% during the period under review. The level of monetization of the economy and

Ki will increase by an average of 1.9 percentage points a year and 7 201 will reach more than 30%. Such an increase that will help meet the demand of economic agents for cash, as well as the gradual reduction of arrears in the economy. The devaluation of the nominal exchange rate of the second embodiment will average 8.6%.

The Main Differences from the Embodiment Variant №2 №3

It is the extent of adverse external factors. According to this embodiment, it is expected to attract foreign investment and international credit lines on a long-term basis to the banking system. In addition, due to the liberalization process is projected to attract in the capital of the banks of private capital, all of which will enhance the ability of banks in lending to major investment projects (Djanibekov & others, 2008). In addition, it is anticipated to further active development of the stock market, capable to provide mobilization of resources to sustain high rates of economic growth. Due to the qualitative development of the financial system will experience increased confidence of economic agents in the banks, it has been facing reductions off-bank circulation of cash (Kotz, 2003). As well as the involvement of the funds traded on the parallel foreign exchange market that will significantly expand the resource base of the banking system and will significantly increase the volume of lending the real economy (McKinley & Karwowski, 2015).

This option is based on a lower level of inflation and high real GDP growth, which leads to the possibility of increasing the level non-inflation monetization of the economy. In this embodiment, there will be a more moderate rate of devaluation of the national currency, without compromising the terms of trade (Lindgren, Garcia, & Saal, 1996).

The main Risks

Given the unfavorable geopolitical situation in several countries of the world and including in the - major trading partners of the republic, as well as the strengthening of the crisis in the global economy for the country, there are significant risks of the development of this option. One of these risks is to reduce the demand for migrant workers it is reflected in the level of effective demand of the population, in addition to the established date, remittances were a significant reserve for the involvement of additional capital into the formal financial sector (Pomfret, 2000).

The Forecast Calculations

It shows that in the third embodiment, the average annual growth rate of the money supply will be about 29.3%, which will increase the level of monetization of the economy to 31% in 201 7 of Reducing inflation will allow for the reduction of the refinancing rate to 6% 201 7 year. The level

of devaluation of national currency in accordance with this scenario variant will be about 7.7% annually.

CONCLUSION

Uzbekistan as one of the developing country as whole, has achieved tremendous success and results for the prosperity of our country, further deepening and improving the effectiveness of the reforms. Industry, construction and transport, agriculture, small business and entrepreneurship, science, education, social sphere, in a word, whatever sector, all of them demonstrate high growth rates. The dynamic development of our economy at a steady pace in confirmation of this makes us all glad. Among the few countries in the world for the last 11 years, the growth of the gross domestic product of our country is maintained at more than 8 percent, and it would not be wrong to say that it is a rare example in the world. Paper investigates the major outcomes of economic indicators while making quantities and qualitative analyses of monetary system in Uzbekistan. Scientific and theoretical foundations of monetary policy aimed at confirming the steadiness of the rate of growth of money supply. Furthermore, the article makes conclusion while considering current status quo of the monetary policy of the Central Bank of Uzbekistan. Outcomes of this research open doors for the future investigations and studies of economy and monetary poly of the Republic of Uzbekistan and Central Asian states as whole.

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