Banks as the Actors of a Modern Monetary Policy in Russia: Effects of Exposure on the Econom

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Abstract: The article's relevance is determined by the fact that in the conditions of a bank-oriented financial system the “signals” from the central bank regarding decisions about the monetary policy go to the economy via banks, through which the main channels of the transmission mechanism of the monetary policy are implemented. The analysis of the effects of banks as the actors of the monetary policy is therefore relevant. The article, based on a study of the elements of investment potential for their impact on GDP, contains conclusions about the possibility of achieving economic growth as one of the strategic goals the monetary policy through the main channels of the transmission mechanism using its standard tools. The article is to identify and quantify the factors that have significant effects on economic growth through the impact on investment potential. The change in the Bank of Russia’s key interest affects only some of the investment potential elements such as deposits of legal entities in rubles. Such impact can slightly improve GDP. The use of monetary policy tools will enable the influence on the change of the nominal interest rate and, therefore, the adjustment of real rates, and it may also affect aggregate demand (consumption and investment potential).

Keywords: Investment potential, monetary policy, interest rate, economic growth.

INTRODUCTION

Russia is one of the countries with a bank-oriented system, therefore, the “signals” from the central bank regarding decisions about the monetary policy go to the economy via banks, through which the main channels of the transmission mechanism of the monetary policy are implemented (Abramova et al. 2016, 2017, 2018, Maslennikov 2015, Eskindarov 2017, Sokolov et al. 1996). Today, the efficiency of the interest and credit channels of the transmission mechanism plays a primary role in the monetary policy of the Bank of Russia, aiming at regulating inflation, optimizing the level of business activity, and stabilizing the state of the national economy. A change in the nominal interest rate may affect the adjustment of real rates, and, therefore, it also affects aggregate demand which is consumption and investment potential (Abramova and Igonina 2018, Dubova 2017). The need for a consistent decrease of rates, as well as fundamental changes in the ways to combat inflation from the suppression of demand to measures that can stimulate demand and supply were repeatedly pointed out in the studies. [11,12]. In this regard, the analysis of the effects of banks as actors of the monetary policy through the main tools of investment potential, which has a significant impact on GDP, is relevant.

METHODS

For conducting statistical, economic, and mathematical modeling, it is important to define the concept of investment potential in mathematical form. Those means, that can be directed to investments (Abramova and Igonina 2018), can be understood as investment potential.

The elements of investment potential are as follows:

- Total amount of bank deposits and other attracted funds of legal entities and individuals in rubles (total in Russia), billion RUR, EViews – DRUR.
- Total amount of bank deposits and other attracted funds of legal entities and individuals a foreign currency and precious metals (total in Russia, billion RUR, EViews – DUSD).
- Deposits of legal entities in rubles, billion rubles, EViews – DJLRUR.
- Deposits of legal entities in a foreign currency and precious metals, billion RUR, EViews – DJUSD.
- Deposits of individuals in rubles, billion rubles, EViews – DFLRUR.
- Deposits of legal entities in a foreign currency and precious metals, billion RUR, EViews – DFLUSD.
- The volume of debt securities issued in rubles, billion RUR, EViews – CBRUR.
- The volume of debt securities issued in a foreign currency, billion RUR, EViews – CBONRUR.

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• Deposits of credit institutions within the Bank of Russia, billion rubles, EVIEWS – DKOBR.

• The volume of loans provided to legal entities, i.e. residents and individual entrepreneurs in rubles, billion rubles, EViews – TC (Abramova and Igonina 2018).

• The factors that significantly influence the indicators of investment potential are the following:

  • The refinance rate, which was the key rate of the Bank of Russia until 09/13/2013, EViews – IR.

  • Inflation, %, month against previous month, EViews – INF.

  • USD/RUR exchange rate, EViews – KURS.

  • Monetary base in general terms, billion RUR, EViews – DB.

  • A part of income directed to savings in total income distribution, %, EViews – DS (Abramova and Igonina 2018).

Research Methodology

Study period: 01/2010 through 02/2018, monthly.

The following computer programs were used for the research:

• Microsoft Office Excel, which enables organizing large amounts of data.

• EViews, an statistical package, which provides the necessary data processing and the analysis of correlation and regression.

The sequence of work with the mentioned software in this study is the following:

1. Search, selection, and systematization of input data. The Excel sheet is based on the data provided by the Bank of Russia’s website, Russian Federal Statistics Service website, and regulatory legal acts

2. Calculation of missing parameters and determination of assumptions:

   • The key rate of the Bank of Russia. If established before the 15th day, then its value is taken into account in the analysis of the current month. Otherwise, it will occur in the next month due to the pending impact factors.

   • Inflation: CPI (month / previous month) – 100.

   • USD/RUR rate. The data are published daily, therefore calculated by a formula of a simple average for the month (interim).

3. GDP. The data are published quarterly. GDP growth rates (current prices) are calculated by the following formula: the value of the current month / the value of the previous month *100% - 100%.

4. Preparing the systematized data for uploading to EViews.

5. Transferring data from Excel to EViews.

6. Conducting correlation and regression analysis in EViews.

7. Building BVAR-models.

8. Conclusions.

Identification of Investment Potential Elements, Factors, Including those Affecting GDP, and Evaluation

At the first stage, it is important to identify:

1) Investment potential elements that affect GDP the most.

2) Investment potential factors, including the key rate of the Bank of Russia, that have the greatest impact on the identified elements.

3) Investment potential factors, significantly affecting GDP.

Thus, the study is to determine the role of the change in the key rate of the Bank of Russia in the elements of investment potential, that may subsequently influence GDP, and if there is a connection between the values of the key rate as a factor of investment potential and GDP.

Economic and mathematical modeling is based on finding a relationship between variables by creating correlation matrices and performing regression analysis using BVAR-models and parametric models, testing them for autocorrelation and heteroscedasticity.
The Influence of Elements of Investment Potential on GDP

It is important to create a correlation matrix (Table 1). If there are coefficients greater than 0.5, there is a noticeable link between the elements of the investment potential and GDP. These variables are: total amount of bank deposits in rubles (DRUR), deposits of individuals in rubles (DFLRUR), deposits of legal entities in rubles (DJLRUR), deposits of credit institutions in rubles in the Bank of Russia (DKOBR), the volume of debt securities issued in rubles (CBRUR), the volume of debt securities issued in a foreign currency (CBNONRUR), and the volume of loans granted to legal entities in rubles, i.e. residents and individual entrepreneurs (TC).

It is noticeable that the correlation does not show a cause-effect relationship, only reflecting the presence-absence relationship between the parameters. The regression model (Table 2) shows the elements of investment potential that have the greatest impact on GDP.

The regression equation is as follows: GDP = 191119.50 + 3.87*CBNONRUR + 0.65*CBRUR + (-0.97)*DRUR + (-0.40)*DFLUSD + 1.34*DFLUSD + 1.28*DJLRUR + 1.24*DJLUSD + 7.33*DKOBR + 0.14*TC.

The most significant Prob-level coefficients (much less than 0.5) of the model can be observed for the following elements: CBRUR, DRUR, DJLRUR, and TC.

Then, it is necessary to conduct a regression analysis of the model, except insignificant variables, that are: CBNONRUR, DUSD, DFLUR, DJLUSD, DKOBR). The results are presented in Table 3. The determination coefficient (R2) exceeds 0.5 and is equal to 0.94, which indicates a strong relationship between GDP and individual investment potential elements.

The regression equation is: GDP = 11222.55 + + 0.59*CBRUR + (-0.22)*DRUR + 0.94*DJLRUR + 0.14*TC. Thus, the statistical significance of all coefficients was confirmed, the p-level is much lower than 0.05.

The obtained model must be tested for autocorrelation. The probability of Obs*R-squared (=0.026) does not exceed 5%, which indicates the presence of autocorrelation. The next step is to perform the White test for heteroscedasticity in order to determine the model's efficiency using EViews.

The probability of Obs*R-squared is 0.0815. The remaining probabilities are also higher than the significance level (more than 5%). Hence, the null
The closer the determination coefficient (R2) to 1, the more the regression approximates the statistical data. Table 3 shows that the determination coefficient turned out to be equal to 0.96, which indicates that there is a strong connection between the explanatory variables and the dependent variable and also describes the created model as adequate. To check the statistical significance, the obtained t-statistics data (the Student's t-criterion is indicated opposite each parameter in square parentheses). For these purposes, it is important to compare the value of t-statistics with the critical value of the Student's coefficient (2.021) for a reliable probability and the number of degrees of freedom (40).

For four parameters' t-statistics is higher than the critical value, presented in the table. Therefore, they are significant. These are: CBRUR, DRUR, DJLRUR, and TC (by types of economic activity and individual areas of fund use). Thus, the initial data obtained in the parametric model were confirmed.

**The Influence of Investment Potential Factors on Various Investment Potential Elements**

After identifying the investment potential elements that have the greatest impact on GDP (CBRUR, DRUR, DJLRUR, and TC), it is necessary to identify investment potential factors that have a significant impact on these elements (Table 5). For this purpose, several models were created to determine the...
investment factors that have the greatest impact on each of the four elements.

Table 5: “CBRUR – Investment Potential Factors” Regression Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | -3024.86    | 1612.45    | -1.875932   | 0.0676|
| DB       | 1.10925     | 0.17163    | 6.466280    | 0.0000|
| DS       | -38.14531   | 25.12287   | -1.518434   | 0.1364|
| IR       | 110.5453    | 103.7743   | 1.005296    | 0.2026|
| INF      | -902.0217   | 274.0395   | -3.291576   | 0.0002|
| KURS     | 69.93813    | 17.44131   | 4.012496    | 0.0002|

R-squared: 0.648622 Mean dependent var: 12512.03
Adjusted R-squared: 0.819444 S.D. dependent var: 224.781
S.E. of regression: 807.9419 Akaike info criterion: 16.56761
Sum squared resid: 34623056 Schwarz criterion: 16.81081
Log likelihood: -391.841 Akaike-Quinn criter.: 16.66510
F-statistic: 47.53365 Durbin-Watson stat: 1.053234
Prob(F-statistic): 0.000000

Table 6: “CBRUR – Significant Investment Potential Factors” Regression Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | -4236.45    | 1612.45    | -2.685384   | 0.0000|
| DB       | 1.26*DB     | 0.17163    | 7.54449    | 0.0000|
| INF      | 688.52*INF  | 25.12287   | 2.74275    | 0.0051|
| KURS     | 74.27*KURS  | 17.44131   | 4.28904    | 0.0000|

R-squared: 0.731420 Mean dependent var: 13.3800
Adjusted R-squared: 0.903494 S.D. dependent var: 2.69726
S.E. of regression: 0.04376 Akaike info criterion: 1.59658
Sum squared resid: 520.949 Schwarz criterion: 1.05361
Log likelihood: -604.8066 Akaike-Quinn criter.: 1.65906
F-statistic: 408.8997 Durbin-Watson stat: 1.36187
Prob(F-statistic): 0.000000

The most significant factors (p-level is much lower than 0.05) affecting the volume of debt securities issued in rubles, are the monetary base, inflation, and the USD/RUR rate. The coefficient of determination (R2) is equal to 0.85, which is extremely high. It also confirms the adequacy of the model and the presence of a strong relationship between the variables. The importance of “monetary base”, “inflation”, and “exchange rate” is high since the Student’s t-criterium is equal to 6.47 (-3.29), 4.01 which is bigger than the critical value in the table (2.018, the number of degrees of freedom equals 42).

Nevertheless, in order to create an effective model, it is important to eliminate insignificant parameters and conduct an addition regression on the updated model (Table 6).

The updated regression equation is as follows: CBRUR = (-4236.45) + 1.26*DB + (-688.52)*INF + 74.27*KURS. The obtained probabilities for all variables do not exceed 5%, which confirms the significance of these factors. Additionally, the coefficient of determination (R2) is equal to 0.89. Therefore, there is a strong relationship between the parameters and the model is adequate.

Table 7: “CBRUR – Investment Potential Factors” BVAR-Model

The updated regression equation is as follows: CBRUR = (-4236.45) + 1.26*DB + (-688.52)*INF + 74.27*KURS. The obtained probabilities for all variables do not exceed 5%, which confirms the significance of these factors. Additionally, the coefficient of determination (R2) is equal to 0.89. Therefore, there is a strong relationship between the parameters and the model is adequate.
To ensure the correctness of the obtained coefficients, it is possible to carry out the Breusch-Godfrey serial correlation LM-test. The obtained probabilities (0.0159 and 0.0138) do not exceed 5%. Therefore, autocorrelation is present. Using EViews, it is important to perform the White test.

The probability of Obs*R-squared is 0.0207, which means it is below the significance level of 5%. Consequently, the heteroscedasticity takes place, which is why the model may not be efficient enough. Due to the presence of autocorrelation and heteroscedasticity, it is necessary to refer to the BVAR-model (Table 7).

R2 is equal to 0.98. There is a strong relationship between the explanatory variables and the dependent variable, which also describes the created model as adequate. Comparing the value of t-statistics with the critical value of the Student's coefficient (which is 2.021 for the reliable probability of 95% and the number of degrees of freedom of 40), there are two parameters (DS and KURS) that have higher t-statistics and, consequently, they are significant.

Table 8: “DRUR – Investment Potential Factors” Regression Model

The new equation is: \( \text{DRUR} = (-5688.98) + 3.04 \times \text{DB} + (-102.63) \times \text{DS} + 201.45 \times \text{IR} + (-1300.93) \times \text{INF} + 76.09 \times \text{KURS} \). The most significant factors (with the p-level lower than 0.05) that affect DRUR are: monetary base, the share of income directed to savings, inflation, and USD/RUR exchange rate.

The regression analysis with the elimination of insignificant parameters is presented in Table 9. The coefficient of determination (R2), which is equal to 0.95, indicates a strong connection and the adequacy of the created regression.

Table 9: “DRUD – Significant Investment Potential Factors” Regression Model

R2 is 0.99, which indicates a very strong relationship between the explanatory and dependent variables. T-statistics was used to check the statistical significance. There are two parameters with the t-statistics higher than the critical value obtained (1.993 with a reliable probability of 95% and the number of degrees of freedom of 74). Hence, they are significant. Those are DB (monetary base) and DC (income directed to savings).

The adjusted equation (Table 11): \( \text{DJLRUR} = (-141.68) + 0.599 \times \text{DB} + (-31.76) \times \text{DS} + 132.11 \times \text{IR} + (-465.23) \times \text{INF} + 3.27 \times \text{KURS} \). The most significant factors (with the p-level much lower than 0.05) that affect deposits of legal entities in rubles are: monetary base, the share of income directed to savings, key rate, and inflation.

The removal of insignificant variables from the regression proved the initial results. DB, DS, IR, and

The probabilities (0.0000 and 0.0000), obtained by the Breusch-Godfrey test, exceeded 5%, which means the autocorrelation is present. However, heteroscedasticity is absent as the probability of Obs*R-squared is 0.051. The null hypothesis about the absence of heteroscedasticity is not rejected and the model is effective. Thus, it is necessary to create the Bayesian’ regression (Table 10).
INF are significant for DJLRUR, since the p-level exceeds 0.05 and R2 equals 0.88. The model is adequate.

**Table 10: “DRUR – Significant Investment Potential Factors” BVAR-Model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | -141.6799   | 424.4234   | -0.333817   | 0.7394|
| DB       | 0.598888    | 0.060068   | 9.970121    | 0.0000|
| DS       | -31.75552   | 10.17672   | -3.120416   | 0.0026|
| IR       | 132.1125    | 42.12168   | 3.136449    | 0.0024|
| INF      | -455.2291   | 165.1077   | -2.405213   | 0.0000|

The probabilities (0.0005 and 0.0006), obtained by the test for autocorrelation, do not exceed 5%. Therefore, autocorrelation is present. Concerning the White test, it is noticeable that one of the probabilities is 0.1004, which makes it possible to conclude that there is no heteroscedasticity in the model. In this case, it is important to consider that due to the presence of autocorrelation, the coefficients may be overestimated.

**Table 11: “DJLRUR – Investment Potential Factors” Regression Model**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------|-------------|------------|-------------|-------|
| C        | -192.0125   | 402.4023   | -0.477916   | 0.6341|
| DB       | 0.011056    | 0.052581   | 11.60422    | 0.0000|
| DS       | -31.92146   | 10.11842   | -3.144596   | 0.0004|
| IR       | 144.3563    | 28.38316   | 5.065994    | 0.0000|
| INF      | -476.7877   | 100.4024   | -4.748766   | 0.0000|

R2 is equal to 0.95, which indicates a strong relationship between the explanatory and dependent variables. It also describes the model as adequate. Four parameters have higher t-statistics than the obtained critical value (equals 1.993 with a reliable probability of 95% and the number of degrees of freedom of 74). The most significant factors are: monetary base (DB), share of income directed to savings (DS), key rate (IR), and inflation (INF).
Table 13: “DJLRUR – Investment Potential Factors”

| Variable | Coefficient | Std. Error | t-Statistic | Prob
|----------|-------------|------------|-------------|-------
| DJLRUR(-1) | 0.509069 | 0.06154 | 8.27194 | 0.000
| DJLRUR(-2) | 0.047480 | 0.04451 | 1.06676 | 0.000
| C | 150.1617 | 265.369 | 0.588022 | 0.000
| DB | 0.248915 | 0.05341 | 4.65979 | 0.000
| DS | -14.63705 | 6.41185 | 2.22605 | 0.000
| IR | 61.11095 | 27.0352 | 2.26641 | 0.000
| INF | -230.0030 | 71.8814 | 3.22654 | 0.000
| KURS | 1.253539 | 5.06968 | 0.24726 | 0.000

The adjusted equation (Table 14): TC = (15132.96)+4.01*DB + 414.18*DS + 553.76*IR-2253.34*INF-337.41*KURS. The most significant factors (with the p-level lower than 0.05) that affect the volume of loans are: monetary base, the share of income directed to savings, and the exchange rate. The Breusch-Godfrey test confirms that the model has an autocorrelation.

After excluding insignificant factors, the important of the remaining parameters was confirmed (Table 15).

Table 14: “TC – Investment Potential Factors”

| Variable | Coefficient | Std. Error | t-Statistic | Prob
|----------|-------------|------------|-------------|-------
| C | -15132.96 | 610.886 | -2.47639 | 0.0162
| DB | 4007.728 | 0.87304 | 4.58746 | 0.0000
| DS | 414.1609 | 162.4128 | 2.59517 | 0.0125
| IR | 553.7595 | 687.5719 | 0.80536 | 0.4228
| INF | -2253.3 | 1704.243 | -1.32219 | 0.1086
| KURS | -337.411 | 132.8849 | -2.53912 | 0.0129

The p-level is lower than 5% and is equal to 0.000, 0.007, and 0.001 respectively. The updated regression equation is as follows: TC = (17935.25) + 4.34*DB + 441.05*DS + (-281.66)*KURS. The probabilities (0.0000 and 0.0000) are less than 5%, which is why autocorrelation is present. On the other hand, heteroscedasticity is absent, as all the error probabilities greater than 5% are equal to 0.3021, 0.2940, and 0.6027 respectively. The zero hypothesis about the absence of heteroscedasticity is not rejected.

Table 15: “TC – Significant Investment Potential Factors”

| Variable | Coefficient | Std. Error | t-Statistic | Prob
|----------|-------------|------------|-------------|-------
| C | -17935.25 | 571.043 | -3.13715 | 0.0023
| DB | 4330.392 | 0.83099 | 5.18707 | 0.0000
| DS | 414.1511 | 160.0027 | 2.57526 | 0.0071
| INF | -281.6621 | 87.5912 | -3.21563 | 0.0018
| KURS | 0.26513 | Mean dependent var | 14080.63 | 0.0000
| Adjusted R-squared | 0.240366 | S.D. dependent var | 8746.723 | 0.0000
| Sum squared resid | 5172.379 | Schwarz info criterion | 20.75699 | 0.0000
| Log likelihood | -951.2417 | Hannan-Quinn criterion | 20.58187 | 0.0000
| F-statistic | 10.70387 | Durbin-Watson stat | 0.49451 | 0.0000
| Prob(F-statistic) | 0.000004 | Source: created by authors using EViews.

The next step is to create the BVAR-model to refine the coefficients of the linear regression model, since there is autocorrelation, thanks to which the coefficients could be overestimated (Table 16).

The coefficient of determination (R2) is equal to 0.58, which is why there is a connection among the average force between the variables. To calculate the significance, it is important to identify parameters in which t-statistics is higher than the obtained critical
value (= 1.9900 with the reliable probability of 95% and the number of degrees of freedom of 85). Therefore, they are significant. Those are: DB, DS, INF, and KURS.

Table 16: “TC – Investment Potential Factors”

| TC(-1) | 0.447963 (0.06193) | 7.23302 |
| TC(-2) | 0.013376 (0.04254) | 0.31444 |
| TC(-3) | -11871.68 (4482.92) | 2.64826 |
| TC(0) | 601.5000 (118.004) | 5.09796 |
| DB | 2.552154 (0.66709) | 3.82568 |
| DS | 601.5000 (118.004) | 5.09796 |
| IR | 862.7832 (490.505) | 1.79974 |
| INF | -4379.996 (1269.53) | 3.45099 |
| KURS | -323.7873 (94.8514) | 3.43564 |

The Influence of Investment Potential Factors on GDP

The final stage of the correlation and regression analysis is to evaluate the degree of investment potential factors’ influence on GDP directly. The first step is to identify the relationship between the parameters (Table 17).

As seen from the table, the closest connection can be seen between GDP and monetary base, as well as the USD/RUR exchange rate and the key rate of the Bank of Russia. The next step is to build the AR-model (Table 18).

The regression equation is: GDP = 1082.93 +1.84*DB + (-57.80)*DS + 441.25*IR + (-1001.27)*INF + (-47.27)*KURS. The most significant factors of investment potential, affecting GDP, are monetary base, the key rate, and inflation. At the same time, the coefficient of determination is equal to 0.84 and the strong connection between the variables was confirmed. The next step is to exclude insignificant parameters (Table 19). The coefficient if determination is equal to 0.84, which means GDP depends on these factors by 84% and the model is adequate. The obtained probabilities do not exceed 5% (0.000, 0.004, and 0.013 respectively), which means the parameters are significant. The adjusted equation is as follows: GDP = 1053.61 +1.7*DB + 253.99*IR + (-838.27)*INF.

Nevertheless, autocorrelation is present. In this case, heteroscedasticity is absent as all probabilities do not exceed 5% (0.2717, 0.2647, 0.5128).

Since there is autocorrelation in the model, created by the method of least squares, it is necessary to create the BVAR-model (Table 20).

Based on the results obtained, R2 is equal to 0.03. There is a strong relationship between the explanatory and dependent variables. Therefore, the model is adequate. The value of t-statistics in four parameters (DB, IR, INF, and KURS) is higher than the critical one (1.9900 with the number of degrees of freedom of 85).

CONCLUSIONS

1) Among the investment potential elements, the following ones have the largest impact on GDP:

Table 17: The Correlation Matrix for GDP and Investment Potential Factors

| GDP | DB | DS | IR | INF | KURS |
|-----|----|----|----|-----|------|
| GDP | 1  | -0.90171165 | -0.1624965 | 0.66552901 | -0.1227704 | 0.72659797 |
| DB  | 0.90171165 | 1   | -0.1266621 | 0.69166346 | -0.0774378 | 0.79839542 |
| DS  | -0.1624965 | -0.1266621 | 1   | 0.08352181 | 0.02861449 | 0.03072917 |
| IR  | 0.66552901 | 0.69166346 | 0.08352181 | 1   | 0.32883386 | 0.87499716 |
| INF | -0.1227704 | -0.0774378 | 0.02861449 | 0.32883386 | 1   | 0.08073987 |
| KURS| 0.72659797 | 0.79839542 | 0.03072917 | 0.87499716 | 0.08073987 | 1   |

Source: created by authors using EViews.
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Table 18: “GDP – Investment Potential Factors”

Table 19: “GDP – Significant Investment Potential Factors”

- The volume of debt securities issued in rubles, which is most influenced by all factors: the total share of income directed to savings and the USD/RUR rate.

- The total amounts of deposits of individuals and legal entities in rubles is mostly influenced by monetary base and the share of income directed to savings.

- Deposits of legal entities in rubles (bn), that are influenced by monetary base, the share of income directed to savings, the key rate of the Bank of Russia, and inflation.

- The volume of loans granted to legal entities (residents and individual entrepreneurs) in rubles, which is affected by monetary base and the income share directed to savings, as well as inflation and USR/RUR exchange rate.

2) Therefore, if the key rate of the bank of Russia is changed, it will be mostly effective to influence only deposits of legal entities in rubles. Nevertheless, this impact can slightly improve GDP. Additionally, monetary base, the share of income directed to savings, inflation, and the USD/RUR rate have a significant impact on GDP and the key rate of the Bank of Russia.

3) Almost all the factors, that influence the investment potential, can affect GDP (as shown in the AR-model), namely, monetary base, the
key rate of the Bank of Russia, inflation and the USD/RUR rate. This point must be taken into account while conducting state monetary policy.

4) Thus, the impact of banks as subjects of monetary policy on the economy can be improved in the following ways:

- To lend to economic projects rather than economic entities.
- To make certain priority sectoral and regional lending areas within a limited number of megaprojects transparent.
- To stimulate the development of specialized institutions (primarily development banks) to ensure the stable credit selection.
- To make credits for small and medium-sized businesses significantly more affordable.

To support these measures and incentives for credit activity, it is critical to maintain for the next five years and expand the range of special refinancing tools of the Bank of Russia, as well as to intensify the implementation of incentive banking regulation mechanisms based on differentiated regulation of the banking sector.

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