

Deposit savings and criteria impacting its usefulness

Lela Oniani¹, Merab Diasamidze²

Tamar Ghogoberidze³

Associate Professor¹ Associate Professor² Assistant professor³

lela.oniani@bsu.edu.ge

merab.diasamidze@bsu.edu.ge

tamar.gogoberidze@bsu.edu.ge

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Abstract

Savings is one method for achieving a person's financial goals and well-being, i.e., setting away money for future purposes. After monthly household expenses, you should save a small portion of your income and make it a habit; this will help us achieve our goals in the future, and it is essential to keep the savings secure. And now we confront a conundrum: where to keep the savings. Bank or pension fund? Where will it be more efficient and trustworthy to make a "micro" investment with our savings, which can reach a "macro" level in importance in the future?

In the paper, we discuss the savings of individuals placed on bank deposits, in particular the advantages of standard and accumulative deposits in the deposit market of Georgia, and how effective and dependable it is to place savings on deposits. To do so, we conducted an empirical analysis of the trends observed over the past 10 years, which allowed us to identify the factors influencing the deposit market. Among these variables, the implementation of the deposit insurance system, which strengthened the credibility of commercial banks despite its impact on pricing, as well as the dynamics of inflation and gross domestic product, as well as the results of the lariization program, receive the most attention. Through regression analysis, the cause-and-effect relationships of elements influencing the deposit are discovered, and recommendations for long-term investment methods are formulated.

Keywords: Savings, Bank, pension fund, "Micro" Investment, Deposit insurance, Lariization

I. Introduction

Banks are profitable financial institutions that provide banking and other financial services to customers by accepting deposits and making loans. To meet their customers' financial needs, commercial banks must mobilize and amass sufficient deposits. The primary source of banking systems' financial resources is customer deposits.

All commercial banks are highly dependent on customer deposits for their operations. The success of the process of deposit mobilization is contingent upon the evolution of the financial system and the strategic practices adopted by banks (Richard, 2015). According to the research of Richard Zenon, a bank's ability to extend credit is contingent on its ability to attract deposits, making deposits the ultimate source of profit and growth. However, the mobilization of deposits should encourage customers to place their savings in the bank, with the interest rate

on deposits serving as the primary incentive. For banks to be competitive in the banking industry, they need a sufficient share of the deposit market. Deposit mobilization is ineffective if its influencing factors are not managed.

Empirical evidence has confirmed that influencing factors can be divided into bank-specific and macroeconomic factors, and it should be noted that economic growth in the short-term boosts deposit growth, although the effect is insignificant (H. Gunasekara¹, P. Kumari, 2018). Scientific research has demonstrated that a broad money supply has a negative effect on deposits in the short term (I. Nandom Yakubu, A. Hashi Abokor, 2020). Also, inflation maintains a positive effect on bank deposits over the short-term Bank profitability has a positive and statistically significant effect on deposit growth, implying that the greater the profitability, the greater the mobilization of deposits (Nesru Kasim ,2022).

The primary objective of this research is to examine the long-term savings of individuals placed on bank deposits, the benefits of deposits on the Georgian deposit market, and how effective and trustworthy it is to place savings on deposits. Consequently, we assigned the following tasks:

1. To investigate specifically the volumes and growth trends of individual deposits.
2. On the basis of the collected statistical data, examine the price dynamics of the aforementioned deposits and identify the primary influencing factors;
3. Let's perform an empirical analysis based on data from the past decade.
4. To analyze the identified factors, in particular the relationship between the volume of deposits and prices and the GEL exchange rate, inflation, and gross domestic product;

Long-term deposits of individuals and analysis of their influencing factors are the focus of this study. The object of study is the Georgian deposit market.

Theoretical and methodological foundations of the study include the systematization of data, their analysis using the correlation and regression methods, and the graphical representation of established relationships between deposits and factors.

II. Main text

The deposit market is a money market where short-term excess liquidity is traded by banks. This is crucial to the operation of the monetary transmission mechanism. In addition, deposit market indices are utilized in the pricing of a variety of financial instruments, such as variable-rate bonds and bank loans, as well as derivatives. The majority of the funds raised by commercial banks come from deposits, which ensures their financial stability. Deposits also play an important role in determining the quality of liquidity for commercial banks. The deposit base, which is comprised of the funds of legal and natural persons placed in current and settlement accounts, term and savings deposits in the bank, ensures the functioning of the bank.

Currently, bank deposits are a safe and dependable way to store savings, as well as a solid, albeit less significant, source of income. The modern banking system offers these products in

various forms and conditions at all stages of development. The development of the deposit market is directly related to economic growth and population income growth. Companies and individuals have some

financial resources, so the demand for deposit accounts will increase; this is a prerequisite for this is a prerequisite for the growth and development of this segment of the money market.

Based on the objective, it is essential to examine the dynamics of deposits and interest rates, which are characterized by their trend over the past few decades, as well as the primary factors that have influenced the volume of deposits and the volatility of interest rates. Individuals' long-term deposit volumes and interest rates for the years 2010 to 2022 are displayed in the table below.

Table I

Long-term deposits of individuals and the dynamics of interest rates

Years	In national currency		In foreign currency	
	Deposit volume	interest rate	Deposit volume	interest rate
01.2011	51,816	13.7	476,523	10.5
01.2012	125,266	14.0	1,013,923	9.8
01.2013	160,422	14.1	1,050,891	9.6
01.2014	251,758	12.8	946,813	8.2
01.2015	242,948	11.9	1,201,114	6.7
01.2016	419,912	12.6	2,429,573	5.6
01.2017	321,225	12.4	2,172,260	5.1
01.2018	353,378	11.7	2,107,369	4.5
01.2019	506,968	10.9	2,380,226	4.3
01.2020	1,032,391	10.4	4,077,698	4.1
01.2021	884,052	11.1	4,261,312	3.9

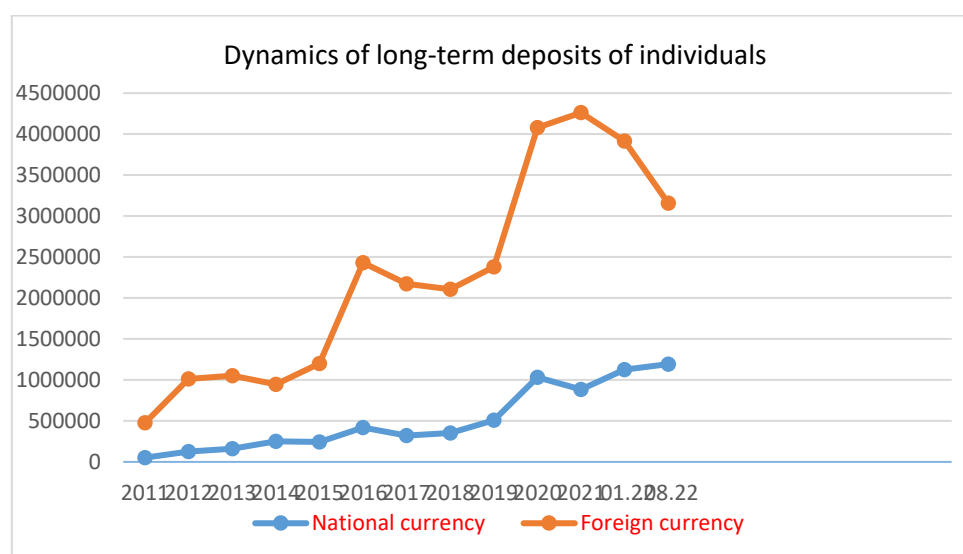
Source: National Bank of Georgia

As shown in the table, despite the lარიზაცია program and the subsequent announcement of a complete "logdown" due to the global pandemic, the volume of time deposits in foreign currency continues to increase, compared to deposits opened in national currency: On January 1, 2011, 51,816,000 GEL was credited to the accounts as a balance, and on January 1, 2012, the volume of long-term deposits increased to 125,266,000 GEL, a 241% increase. As of January 1, 2014, the balance on long-term deposits in domestic currency increased by 63%

compared to the same month in 2013, and in foreign currency, the increase was 79% compared to the previous year. As for deposits opened in foreign currency, in 2020 the balance increased by 58% compared to the data of 2019, but by January 1, 2022, a 9% decrease was recorded compared to 2021. Additionally, the % rates of deposits opened in foreign currency decreased gradually compared to the January 1 data. From 2020 to August 2022, the interest rate decreased by an average of 1.3 percentage points; consequently, the price decrease can be considered one of the determining factors for the decline in the balances of deposits (in foreign currency), whereas the interest rates on long-term deposits in the national currency are on the rise. Diagrams 1 and 2 are presented to enhance comprehension of the subject at hand.

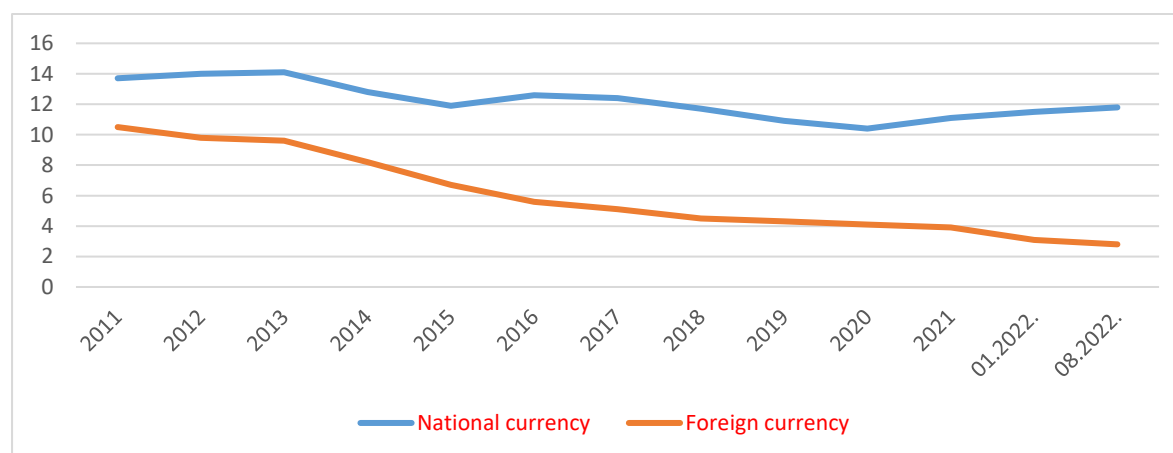
Digram I

Dynamics of long-term deposits of individuals



Source: Compiled by the authors based on National Bank data

Diagram II Dynamics of long-term deposits interest rates



Source: Compiled by the authors based on National Bank data

Among the long-term deposits of individuals, we studied separately the dynamics of balances and interest rates for deposits opened for 5 to 10 years and more than 10 years, which provides us with additional information regarding the dependability of bank savings (Table II).

Table II
Amount of deposits from individuals attracted by commercial banks in national currency and interest rates (thousands of GEL)

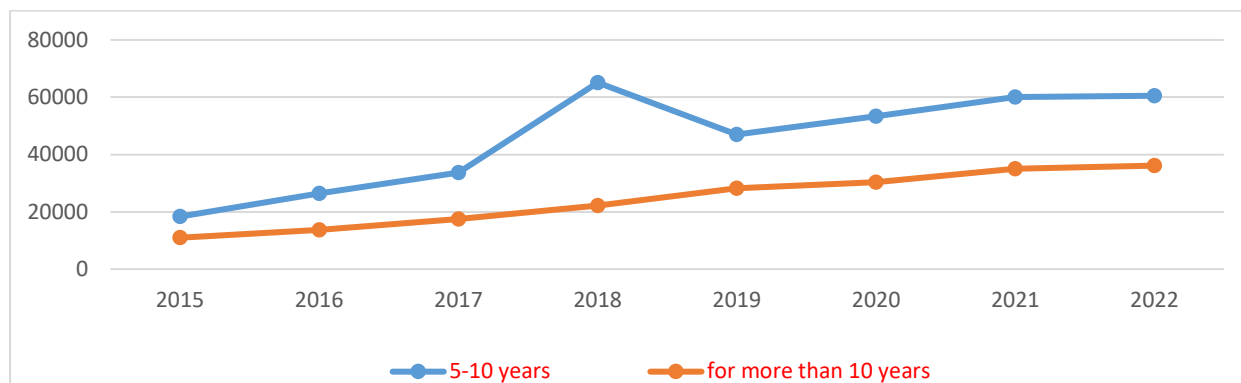
Years	From 5 to 10 years	interest rate	for more than 10 years	interest rate
2015	18349	11,1	10963	11,38
2016	26443	12,13	13659	10,79
2017	33713	12,16	17520	9,77
2018	65094	11,86	22159	9,75
2019	46946	11,91	28227	10,11
2020	53332	12,36	30374	11,33
2021	60009	11,82	34986	10,93
2022	60543	11,92	36121	12,04

Source: Compiled by the authors based on National Bank data

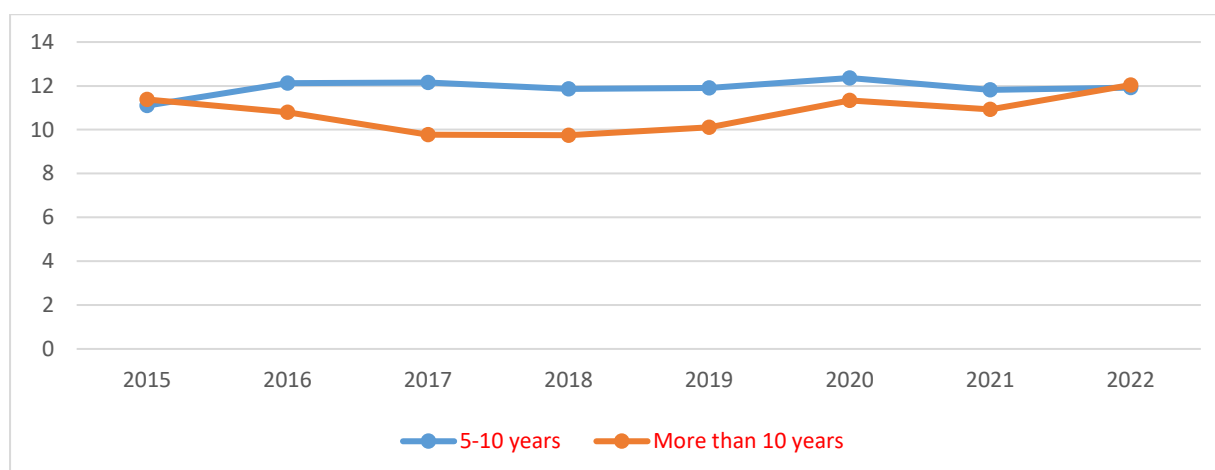
In both cases of residual maturity, from 5 to 10 years inclusive and over 10 years, the volume of deposits of natural persons has risen steadily from 2015 to the present, with the growth of deposits with a maturity of 5 to 10 years being particularly strong. In the following year,

despite a 72% decline compared to the previous period, it began to increase again in 2020-2021.

As for deposits with a maturity of more than ten years, their volumes grew steadily between 25 and 28 percent until 2019, and during the pandemic, the growth rate dropped to 75 percent, although there was no downward trend compared to data from previous years. This circumstance also indicates that despite the high pandemic risks, there was no decrease in the balances of long-term deposits, and that the market-wide decline in interest rates in 2017-2018 had no effect on the volume decline. Only in the current period of 2022 did interest rates on deposits with a maturity of more than 10 years increase by 1.11 percent, indicating a positive trend; it should be noted that this trend was facilitated by the introduction of the deposit insurance system, which increased the dependability of banks.

Diagram III**Amount of deposits of individuals**

Source: Compiled by the authors based on National Bank data

Diagram IV**Dynamics of interest rates on deposit**

Source: Compiled by the authors based on National Bank data

III. Research methodology

To achieve the research objective, annual data from 2006 to 2021 were utilized. National Bank of Georgia information, scientific research, and econometric models. Initially, a set of variables affecting the margin of deposit was chosen: 1. Rate of growth of deposits; 2. Interest rate on deposits in percent; 3. % of inflation; 4. Real GDP growth percent; 5. Broad capital (billion).

Dependent Variable: Deposit Rate Margin.

The effect of selected factors on the margin of the deposit rate was investigated.

Table III displays the covariance of all factors over a 16-year period.

Table III**Factors affecting bank deposits**

	Growth rate of deposits %	Interest rate of deposits	Deposit Rate Margin	inflation	Real GDP growth-%	broad money (billion)
	1	2	3	4	6	7
2006	307.63	11.81	2.61	9.2	9,4	1.47
2007	193,44	12,05	3.3	9.2	12,6	2.26
2008	31,94	13,79	3.79	10.0	2,4	1.99
2009	-25.63	14,33	12.63	1.7	-6,3	2.33
2010	53.03	14,02	6.92	7.1	6,2	2.96
2011	141.75	13,97	5.47	8.5	7,4	3.78
2012	28.06	14,01	13.11	-0.9	6,4	4.06
2013	56.94	13,51	13.01	-0.5	3,6	5.41
2014	-3.5	12,23	9.13	3.1	4,4	5.91
2015	72.84	11,78	7.78	4.0	3,0	5.68
2016	-23.5	12,95	10.85	2.1	2,9	6.52
2017	10.01	11,80	5.8	6.0	4,8	8.35
2018	43.46	11,21	8.61	2.6	4,8	9.67
2019	103.64	10,48	5.58	4.9	5,0	11.49
2020	-14.37	10,91	5.71	5.2	-6,8	13.65
2021	27.37	11,08	1.48	9.6	10,4	16.10

Source: Statistical database of the National Bank of Georgia

Inflation has two effects on bank deposits. First, it diminishes the purchasing power of money, leading to a rise in prices. Consequently, household incomes and the likelihood of making a bank deposit decline. In contrast, bank savings are worthless under conditions of high inflation. Under such circumstances, the populace attempts to invest their savings in foreign currency, thereby increasing the dollarization rate. A change in the gross domestic product

affects the population's standard of living, the real GDP per capita rises, the population has the opportunity to create more savings, and the volume of deposits rises if other acceptable conditions are met.

To analyze the data, descriptive statistics and econometric tools were employed. The use of descriptive statistics allows for a clearer understanding of the current situation and a more appropriate conclusion.

Table V

	Y	X1	X2	X3
Mean	7.236250	62.69438	5.112500	6.295625
Median	6.360000	37.70000	5.050000	5.545000
Maximum	13.11000	307.6300	10.00000	15.20000
Minimum	1.480000	-25.63000	-0.900000	1.470000
Std. Dev.	3.723980	88.44348	3.593304	4.270955
Skewness	0.267333	1.507486	-0.141720	0.800329
Kurtosis	1.959327	4.783057	1.815869	2.495250
Jarque-Bera	0.912579	8.179570	0.988336	1.877918
Probability	0.033631	0.016743	0.010078	0.041035
Sum	115.7800	1003.110	81.80000	100.7300
Sum Sq. Dev.	208.0204	117333.7	193.6775	273.6158
Observations	16	16	16	16

Descriptive statistics

Source: calculated by the author with the Eviews progr

The multicollinearity test, the normal distribution test of the variables, and the multicollinearity test, the normal heteroskedasticity test were used to evaluate the quality of the regression model.

Checking the data, the interest rate on deposits and real GDP growth-percent were excluded from the variables, despite the fact that both variables affect deposits; however, using them would have rendered the model insufficient due to errors in statistical accounting.

The results of the Jarka Bera test for normal distribution of individual variables indicate that all three variables have a normal distribution.

Construction of the following regression model is possible:

$$\text{DRM} = \alpha + \beta_1 \text{GRD} + \beta_2 \text{infl.} + \beta_3 \text{BM} + \varepsilon$$

Where, DRM is Deposit Rate Margin (dependent variable);

GDR- Growth rate of deposits ;(independent variable);

Inflacion- (independent variable);

BM- broad money (independent variable).

β_1 , β_2 and β_3 - Coefficients of model variables.

According to the descriptive statistics, the average value of deposit rate margin is 7.2362500, with a minimum value of 1.480000 and maximum value of 13.11000. Likewise, the values of the independent variables are unstable during the reporting period. This is due, on the one hand, to the 2008 Russia-Georgia war, and, on the other, to the economic crisis of 2008-2009, as well as the pandemic situation, which impeded the growth of the volume of deposits and, consequently, the margin of deposit rates. Using the results of econometric research, it is possible to predict the occurrence of shocks over the

Regression analysis

Table VI

Dependent Variable: Y

Method: Least Squares

Date: 11/12/22 Time: 23:23

Sample: 2006 2021

Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	-0.008473	0.002126	-3.986208	0.0018
X2	-0.887516	0.048416	-18.33118	0.0000
X3	-0.274307	0.038129	-7.194263	0.0000
C	14.03182	0.354074	39.62965	0.0000
R-squared	0.981153	Mean dependent var		7.236250
Adjusted R-squared	0.976442	S.D. dependent var		3.723980
S.E. of regression	0.571583	Akaike info criterion		1.931505
Sum squared resid	3.920491	Schwarz criterion		2.124653
Log likelihood	-11.45204	Hannan-Quinn criter.		1.941396
F-statistic	208.2391	Durbin-Watson stat		2.017805
Prob(F-statistic)	0.000000			

Source: calculated by the author with the Eviews program

period of time actually observed. However, in addition to the above-mentioned factors, the introduction of the deposit insurance system had a positive effect on the rate of deposits, which could be said to have offset the impact of the factors. The EViews program was used to analyze the regression model in order to assess its quality.

The statistical significance of the variables included in the model is confirmed by their reliability probability indicators, which is less than 0.05. $\text{prob} < 0,05$ The coefficient of determination $R^2 = 0.976442$, with high quality also shows the correctness of the model.

Durbin-Watson's multicollinearity index in the regression analysis = 2.01, compared to the threshold values, it is established that there is no autocorrelation between the variables of the model $0,86 < DW < 2,26$.

In order to evaluate the relationship between the variables in the chosen time interval, it is necessary to check the model for functional stability, that is, for heterostatics, for this a null hypothesis, H_0 : the balances of the model variables are heteroskedasticity; Ramsey's test was used to check. According to the test data

$F_{\text{statistic}} (0,595138) < F_{\text{critical}} (3,01)$. i.e. The functional form of the model is correctly selected and the hypothesis H_0 is rejected. To confirm the absence of heteroskedasticity, it was also used Breusch- Pagan -Godfrey test, according to which Probability = 0.6104. when $\text{Prob.} > 0,05$, means that there is no heterostatics in the model.

According to the results of the model, inflation reduces the margin of the deposit rate by the highest percentage, under conditions of constant other factors, a one percent increase in inflation reduces the deposit interest margin by 0.88.

Table VII Model evaluation criteria

criteria	values	$F_{\text{statistic}}$	Probability	$F_{\text{statistic}} (\text{critic})$
Jarque-Bera	1,636561		0,441190	-
Durbin-Watson	2.017805	208.2391	0.000000	-
Ramsey RESET Test	$F_{\text{statistic}} < F_{\text{critical}}$	0,595138	0.4567	3,01
Breuscha-Pagana	Probability = 0.61 > 0,05	0,595138	0.6104	-

Source: Authors' calculations

The conducted econometric analysis establishes the results of the influence of the principal factors on the margin of deposit rates, which do not reflect a favorable economic climate, but the model maintains a high level of quality when the values of the variables are unstable. The tests evaluate the regression model (multicollinearity, heteroskedasticity, and normal

distribution) demonstrate the model's high accuracy, allowing the results to be applied to the evaluation of

used to evaluate the regression model (multicollinearity, heteroskedasticity, and normal distribution) demonstrate the model's high accuracy, allowing the results to be applied to the evaluation of future periods in order to limit shock states in advance. There is no regularity in the relationship between the variables in the data, as the real GDP growth rate, for instance, does not conform to any pattern. In 2019, it is lower than in previous years, the deposit growth rate is high, and the data of other years are also inconsistent, despite the fact that the standard deviation Std between the actual data and the model's forecast data is small. Error = 0,571583, indicating that the regression model fits the selected variables and their data with a high degree of precision.

Generally speaking, broad money should have a positive effect on deposit growth, which in turn increases margins. This is true according to the data, but only in the short term. Long-term, the growth of real GDP stimulates economic activity and reduces the amount of funds deposited in banks. This ratio has been stable in the analyzed data since 2015, but it has begun to fluctuate since the 2019 pandemic.

IV.Conclusion

The study assesses the influence of inflation, broad money, and deposit growth on the deposit rate margin over a sixteen-year period. The obtained results confirm that the growth rate of deposits and broad money are significant determinants, but the ratios are disrupted in some years due to shock processes during the examined period. The stability of the banking system, which is determined by the interest rate on deposits and the real GDP, is dependent on the volume of deposits. In order to achieve high quality of the model in the study, these factors were omitted; however, it is believed that the impact of these factors during a stable period will not compromise the model's adequacy and that additional conclusions will be possible. The diagnostic tests of the regression model permit the improvement of the inflation regression coefficients in order to implement a monetary policy that will reduce the inflation growth rate, thereby increasing the growth rate of deposits and the margin.

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