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FACTORS AFFECTING THE BANK INTEREST RATES ON NATIONAL CURRENCY LOANS IN UZBEKISTAN – SVAR APPROACH

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ANNOTATION

This scientific article empirically analyzed the factors affecting the bank interest rates on short term national currency loans in case of Uzbekistan. In our research work, the impulse response of bank interest rates on short term national currency loans to various factors was studied based on statistical data for the period of 2017M1-2023M12. In particular, monthly inflation rate, monthly real interest rate of the Central bank, monthly real money market rate were taken as exogenous variables, and the short term household deposits rates in national currency were taken as endogenous variables and to express the effect between them SVAR model was used. According to the obtained results, we can cite the inflation level as one of the main factors affecting the bank interest rates on short term national currency loans. It was also found that there is a strong autocorrelation in the bank interest rates on short term national currency loans. According to the results of econometric analysis, it was seen that the short term household deposits rates in national currency, the money market rates, and the refinancing rate of the Central Bank have a weak effect on the bank interest rates on short term national currency loans.

KEYWORDS: *inflation, interest rate, credit, money market, deposit, SVAR model.*

INTRODUCTION

Today, the development of the economy cannot be imagined without bank loans. Bank loans are a very necessary source of resources for the economy, the sector to which there are more loans will continue to develop, and vice versa, the sector to which there are less loans will stop developing. One of the main tasks of the state is to support with preferential loans those sectors that are strategically important, but have low profitability or do not meet the credit principles of commercial banks.

In recent years, many measures have been taken by our government to develop the national economy. In particular, in the new Development Strategy of Uzbekistan for 2022-2026, great attention has been paid to the field of economic development and important goals have been set. In the direction of these goals, it is decided to further improve the investment climate in our country and increase its attractiveness. Also, on the basis of the "bottom-up" principle, to establish a new system for the effective use of investments and increase the volume of exports, to implement the strategy of attracting foreign and domestic investments until 2026, on the basis of public-private partnership, energy, transport, health care, education.

In the development strategy, it is also determined to complete the transformation processes in commercial banks with a state share, and to increase the share of the private sector in bank assets. This, in turn, leads to a reduction in the state's intervention in the economy and the distribution of financial resources. As a result, the distribution of financial resources in commercial banks is carried out on the basis of market laws, which forces commercial banks to develop credit portfolio management and analyze the factors affecting loan interest based on modern methods.

Based on the above goals, the assessment of the factors affecting the bank interest rates on short term national currency loans based on modern methods is the basis of this scientific article.

LITERATURE REVIEW

Russian economist E.Razdrokov (2008) analyzed the nature of the loan rate of commercial banks and the factors affecting it. According to him, the bank loan rate should perform accounting, stimulating, distributing and coordinating functions in accordance with the price characteristics. He also noted that bank loan rate is influenced by the central bank's refinancing rate and the expenses related to the allocation of these loans. In our opinion, the

bank loan rates may deviate from the specified rate, taking into account the costs incurred. This can be caused by the money supply, fluctuations in the economy, and fluctuations in the national currency exchange rate.
F. Ferrante and N. Gornemann (2022) studied the general and redistributive effects of national currency devaluation through the heterogeneous household model on the example of banks with limited leverage in a small open economy. Their analysis was based on three assumptions. These are, firstly, banks and enterprises borrow in foreign currency, secondly, the population places deposits in local banks in dollars, and thirdly, these deposits are placed by the rich segment of the population. According to the results of the analysis, the resulting currency imbalance reduces the net worth of banks during the devaluation period and forces them to reduce their credit supply. The coming macroeconomic downturn will be exacerbated by a sharp contraction in consumption among poor households in response to rising borrowing costs and falling labor incomes. Wealthier households are partially insured because they hold more of their wealth in foreign currency assets. They found that large foreign exchange hoardings by wealthier households deepened economic recessions and exacerbated the negative effects for the poor. As a conclusion, in countries with high deposit dollarization, welfare may increase if central banks reduce the devaluation of the national currency in their monetary policy.

G. Bertola and L. Svensson (1993) proposed a stable and realistic nonlinear model of exchange rate dynamics in their scientific works. It also emphasizes that exchange rate forecasts are consistent with existing empirical evidence on exchange rate and interest rate differential behavior in real-life target zones. In their model, the exchange rate oscillates within given bounds at various random time intervals and discretely jumps with large frequency when devaluations occur. They allow for stochastic variation in the probability and magnitude of devaluations, and they provide exact solutions for the stochastic processes observed with the exchange rate and the expected rate of devaluation. This model produces realistic models of the covariation between exchange rate and interest rate differentials and provides interesting interpretations of existing empirical evidence. Also, a nonlinear model developed by them shows how to determine devaluation risk from target zone data.

C. Onyia and E. Aniekwe (2022) studied the effect of the change in the national currency exchange rate on the real GDP and the interest rate in the money market on the example of the Nigerian state. The econometric analysis was carried out on the basis of statistical data of the Nigerian state between 1986 and 2018, and according to the results, it was found that a 1% devaluation of the national currency reduces the real GDP by -0.24%. The probability of this econometric analysis is 0.0124, which gives the reliability of the obtained result. Also, according to the results of the analysis, it was determined that the effect of the devaluation of the national currency on the interest rate in the money market is insignificant. According to them, since Nigeria is an import-oriented country, even a small fluctuation in the devaluation of the national currency will reduce the aggregate demand in the domestic economy.

C. Hellwig, A. Mukherjee and A. Tsyvinski (2006) studied the expectations of local and foreign investors on devaluation and interest rates in the domestic market of the country. In particular, it has been determined that devaluation in the country occurs when a high interest rate is applied to assets or when the Central Bank's foreign exchange reserves decrease. It has also been proven that the attack on currencies in the international market leads to the devaluation of the national currency in developing countries. According to the results of the analysis, it is based on the fact that only if the elasticity of the supply of domestic assets to interest rates is high, attacks on currencies in international markets will have a negligible effect on the devaluation of national currencies in local markets.

RESEARCH METHODOLOGY

Factors affecting the bank interest rates on short term national currency loans in case of Uzbekistan were empirically analyzed. In our research work, the impulse response of bank interest rates on short term national currency loans to various factors was studied based on statistical data for the period of 2017M1-2023M12. In particular, monthly inflation rate, monthly real interest rate of the Central bank, monthly real money market rate were taken as exogenous variables, and the short term household deposits rates in national currency were taken as endogenous variables and to express the effect between them SVAR model was used.

ANALYSIS AND RESULT DISCUSSION

Commercial banks are considered important elements of the financial market, turning idle funds into loan capital and directing them to important sectors of the economy. In the economy of Uzbekistan, bank loans are an important resource that has no alternative in providing the economy with financial resources.
One of the main factors affecting the bank interest rates on short term national currency loans is the inflation rate in the country. In 2022 world economic and political situation has led to an increase in the prices of primary goods in most countries and this has exacerbated inflation in the entire economy. Even in the developed countries USA,

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European Union countries, Great Britain and other developed countries, the level of inflation that has not been tolerated in the last 40 years is observed. This situation mainly affects developing countries. The economy of Uzbekistan is not left out of this situation. Based on this, the percentage of loans in our commercial banks has increased since March 2022.

We will study in case of Uzbekistan the impulse of the bank interest rates on short term national currency loans ($RSTCNC_t$) to various factors on the basis of statistical data for the period 2017M1-2021M12. In particular, monthly inflation rate (CPI_t), monthly real interest rate ($RMMR_t$), monthly real money market rate ($RINR_t$) were taken as exogenous variables, and the short term household deposits rates in national currency ($RSTHDNC_t$) were taken as endogenous variables and to express the effect between them SVAR model was used. These interest rates were converted into reals on a monthly basis.

Regarding the influence of the selected indicators on the short-term loan rate in the national currency, we need to form the SVAR model and perform descriptive statistics of the selected indicators at the initial stage of the analysis using this model. It should be noted that the selected indicators initially affect the bank interest rates on short term national currency loans. At the next stage, the bank interest rates of long-term loans will be adjusted in accordance with the interest rates of short-term loans.

1- Table
Descriptive Statistics of Indicators

	CPI_t	$RINR_t$	$RMMR_t$	$RSTHDNC_t$	$RSTCNC_t$
Mean	1.096721	0.087705	0.013943	0.298338	0.605671
Maximum	4.100000	1.833333	1.758410	1.876283	2.442197
Minimum	-0.500000	-2.933333	-3.008385	-2.656456	-2.633847
Std. Dev.	0.835856	0.857456	0.850471	0.831009	0.917972
Observations	61	61	61	61	61

From the data in the table, we can see that the standard deviation of the inflation rate in our economy is equal to 0.83, and it fluctuated from -0.50 percent to 4.10 percent in the considered period. The standard deviation of the money market rate is 0.85%, with a maximum increase of 1.75% and a minimum decrease of 0.01%. The real indicator monthly change of the main interest rate of the Central Bank was from -2.93 percent to 1.83 percent, with a standard deviation equal to 0.85 percent. The bank interest rates on short term national currency loans in national currency fluctuated between -2.63% and 2.44% during the period under review, and its standard deviation was equal to 0.92%.

At the next stage of our analysis, we determine the correlation matrix of indicators.

2-Table
Correlation Matrix of Indicators

	CPI_t	$RINR_t$	$RMMR_t$	$RSTHDNC_t$	$RSTCNC_t$
CPI_t	1				
$RINR_t$	-0.9819	1			
$RMMR_t$	-0.9739	0.9906	1		
$RSTHDNC_t$	-0.9942	0.9684	0.9645	1	
$RSTCNC_t$	-0.9531	0.9837	0.9873	0.9410	1

Analyzing the data in the table, the correlation of the bank interest rates on short term national currency loans is 0.99 with the money market rate, -0.95 with the monthly inflation rate, and 0.98 with the Central Bank main interest rate and 0.94 with the short term household deposits rates in national currency. If this correlation is inverted only with the inflation rate, we can see that there is a strong logical relationship with the other three indicators.

Below we perform the Augmented Dickey-Fuller Test based on these five selected indicators.

3-Table
Results of the Augmented Dickey-Fuller Test

		t-Statistic	Probability	Хулоса
1	CPI_t	-4.343450	0.0009	I(0)
2	$RINR_t$	-4.338146	0.0009	I(0)
3	$RMMR_t$	-4.265855	0.0012	I(0)
4	$RSTHDNC_t$	-4.372449	0.0008	I(0)
5	$RSTCNC_t$	-4.072080	0.0021	I(0)

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From the above data, it can be seen that all the selected indicators are stationary and this is the reason that we can use the SVAR model based on these indicators.

At the next stage of our analysis, it will be appropriate to choose the optimal lag for the SVAR model.

4-Table
The optimal "lag" selection method (Lag Length Criteria) for the SVAR model

*Note: selection calculation does not impose restricted VAR coefficient restrictions

Lag	LogL**	LR	FPE	AIC	SC	HQ
0	105.5906	NA	2.27e-08	-3.409850	-3.233787	-3.341122
1	291.5858	334.1610*	9.73e-11*	-8.867317*	-7.810942*	-8.454951*
2	311.7645	32.83315	1.17e-10	-8.703883	-6.767195	-7.947879

As can be seen from the above data, the optimal number of lags for our model is 1 based on Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ) tests. Therefore, we can accept the optimal number of "lags" as 1 in our analysis.

When the indicators are analyzed by SVAR model with the number of "lags" assumed to be 1, the results obtained are as follows

5-Table
Results of the SVAR model.

	CPI	RINR	RMMR	RSTHDNC	RSTCNC
CPI(-1)	0.000000	0.000000	0.000000	0.556350	0.956073
	---	---	---	(0.07787)	(0.14714)
				[7.14457]	[6.49791]
RINR(-1)	0.000000	0.000000	0.000000	-0.105887	0.153427
	---	---	---	(0.05930)	(0.11205)
				[-1.78559]	[1.36929]
RMMR(-1)	0.000000	0.000000	0.000000	-0.253835	0.019264
	---	---	---	(0.04915)	(0.09288)
				[-5.16412]	[0.20742]
RSTHDNC(-1)	0.000000	0.000000	0.000000	0.824369	-0.026326
	---	---	---	(0.05787)	(0.10934)
				[14.2460]	[-0.24077]
RSTCNC(-1)	0.000000	0.000000	0.000000	0.082312	0.782172
	---	---	---	(0.03712)	(0.07013)
				[2.21769]	[11.1530]
C	1.085000	0.106667	0.031839	-0.584691	-0.900346
	(0.10726)	(0.10903)	(0.10830)	(0.14706)	(0.21896)
	[10.1157]	[0.97829]	[0.29398]	[-3.97578]	[-4.11192]
R-squared	-0.000000	0.000000	-0.000000	-0.007325	0.132631
Sum sq. resids	41.41650	42.79789	42.22590	41.39844	42.42448
Mean dependent	1.085000	0.106667	0.031839	0.307935	0.626894
S.D. dependent	0.837839	0.851697	0.845986	0.834605	0.910501

According to the results of the model, it is observed that a 1% increase in the inflation rate of the previous month will increase the bank interest rates on short term national currency loans by 0.96%. A 1% increase in the real main interest rate of the Central Bank in the previous month, will increase the bank interest rates on short term

national currency loans, and a 1% increase in the money market rate will increase the bank interest rates on short term national currency loans. But the statistical significance of the influence of the main interest rate of the Central Bank and money market rates on the bank interest rates on short term national currency loans is low.

CONCLUTION

This scientific article empirically analyzed the factors affecting the bank interest rates on short term national currency loans in case of Uzbekistan. In our research work, the impulse response of bank interest rates on short term national currency loans to various factors was studied based on statistical data for the period of 2017M1-2023M12. In particular, monthly inflation rate, monthly real interest rate of the Central bank, monthly real money market rate were taken as exogenous variables, and the short term household deposits rates in national currency were taken as endogenous variables and to express the effect between them SVAR model was used.

It was determined that a 1% increase in the inflation rate in the previous month will increases the bank interest rates on short term national currency loans by 0.95% and the bank interest rates on domestic currency deposits by 0.55%.

It was found that the increase of the real main interest rate of the Central Bank by 1% in the previous month, the bank interest rates on short term national currency loans will increase by 0.15%. But the statistical significance of this indicator was seen to be low.

It was determined that a 1% increase in the bank interest rates on short term national currency loans in the previous month also increases the bank interest rates on domestic currency deposits by 0.08%. That is, the increase in the demand for loans from commercial banks increases the demand for resources on their part and causes an increase in the interest rate in the deposit market.

According to the obtained results, we can cite the inflation level as one of the main factors affecting the bank interest rates on short term national currency loans. It was also found that there is a strong autocorrelation in the bank interest rates on short term national currency loans. According to the results of econometric analysis, it was seen that the short term household deposits rates in national currency, the money market rates, and the refinancing rate of the Central Bank have a weak effect on the bank interest rates on short term national currency loans.

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