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FACTORS AFFECTING INVESTMENT ACTIVITY OF BANKS AND WAYS TO IMPROVE THEM

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Abstract

The article analyzes the improvement of investment activity of commercial banks. As an important indicator, the effects of other indicators of commercial banks on the funds of commercial banks for investment activities were analyzed through the correlation coefficient, and econometric modeling was carried out using the method of least squares. Conclusions and suggestions are given on the results of econometric modeling.

INTRODUCTION

The purpose of commercial banks, as the name implies, is to carry out commercial activities aimed at making a profit and on this basis achieve maximum efficiency. Commercial banks are organized based on the legal requirements and criteria in force in the country and carry out commercial activities permitted by the legislation. In practice, commercial banks carry out commercial activities in lending, investment activities, provision of intermediary services, provision of banking services and other areas. The organization of commercial banks in Uzbekistan is based on the "Universal" model of the banking system, and commercial banks are allowed to carry out lending and investment activities in parallel. In this regard, the main activity of commercial banks is lending, but they can also carry out investment activities, in particular, investment in investment projects, purchase of securities, brokerage of securities.

Analysis of literature

The issue of increasing the investment activity of commercial banks has not lost its relevance in any period, because of this, many scientific researches have been conducted and are being conducted in this direction.

In this regard, the following research works are noteworthy. According to Matthew (2009), monetary policy has taken many forms over the years. Monetary policy manifests itself in the process of regulating money supply and demand in order to curb inflation in the economy.[1]

Taylor (1998) argues that the performance of banks in developed and developing countries can be characterized empirically using the rules of monetary policy. Such rules, formalized by simple

[1]Koshy Mathay, September 2009, "Back to basics: What is monetary policy?" Finance & Development, pp. 42-63.

equations, describe the influence of central banks on important macroeconomic indicators such as economic growth and inflation.[2]Formally, the relationship between short-term interest rates, economic growth and inflation can be determined using the Taylor rule. However, in their opinion, this regime will be effective only if the Central Bank has enough tools to regulate inflation.[3]

RESEARCH METHODOLOGY

In the study, as an important indicator, the effects of other indicators of commercial banks on the funds of commercial banks for investment activities were analyzed through the correlation coefficient, and econometric modeling was carried out using the method of least squares.

ANALYSIS AND RESULTS

Investment activity is the largest activity of commercial banks after lending. The role and importance of this activity is increasing day by day, both from the macro-economic and micro-economic point of view. From this point of view, we have recognized in the above chapters and paragraphs of our research that studying the development and progress of this activity, researching its future perspective is of current importance. In this part of our study, we will perform an econometric analysis of the investment activity of commercial banks in Uzbekistan and consider the model. In our research, we will do it on the basis of statistical data of 18 commercial banks operating in Uzbekistan.

In the analysis, the sum of the sums of their portfolio of securities and the total sum of the repo operations was taken as the results of investment activity of commercial banks. Commercial banks not listed in Annex 1 were not included in the analysis due to the fact that repo operations were not carried out, the portfolio of securities was not available or the weight was too small.

In the first part of our analysis, we select indicators suitable for modeling from the data presented in the appendix. In our analysis, we take the total investment activity indicators of commercial banks as a result indicator. We mentioned above that the total investment performance is the sum of the securities portfolio and the REPO operations. In order to determine how strong or weak the influence of other factors is on the change of this indicator, we will perform a correlation analysis. The correlation coefficient is an important indicator of the extent to which one factor affects the change of another factor, and it varies between -1 and 1. If the indicator is between 0 and 1, the factor sign is positive for the resulting sign change, and if it is between -1 and 0, the factor sign represents the opposite effect on the resulting sign change. The closer the correlation coefficient is to 1 or -1 , the stronger the relationship [4]. In order to continue the analysis, we need to select factors with a correlation coefficient higher than 0.7 or lower than -0.7, because in this case it means that the factors have a strong influence on the resulting sign. Among the factors, we highlight those with the strongest correlation and describe them in Table 1.

[2]Taylor JB "An historical analysis of monetary policy rules" NBER Working Paper 6768, 1998. - 53 pages.
[3]Absalamov AT Interest rate channel of monetary policy transmission mechanism in Uzbekistan-VECM Approach// (IJMT) ISSN: 2249-2496, International Journal of Research in Social Sciences, Volume 10, Issue 1 (January 2020). 165-173 pages.
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Table 1 Correlation matrix of factors affecting the investment activity of commercial banks in Uzbekistan

Number of banking service centers (BXMS)	Plastic card number (PKS)	Terminal Number (TS)	National currency deposits (MVD)	Deposits of legal entities (in national currency) (YUShMVD)	Total investment activity (JIF)	Indicators
1.0000	0.4545	0.7020	0.3862	0.5227	0.7898	**Number of banking service centers (BXMS)**
	1.0000	0.8651	0.9163	0.6804	0.6909	**Plastic card number (PKS)**
		1.0000	0.8390	0.7383	0.8025	**Terminal Number (TS)**
			1.0000	0.8297	0.6692	**National currency deposits (MVD)**
				1.0000	0.7828	**Deposits of legal entities (in national currency) (YUShMVD)**
					1.0000	**Total investment activity (JIF)**

Note: Calculations were calculated in the Gretl software package.

the t erminal number (TS) (0.8025) has the strongest correlation with investment activity (JIF) . It is followed by the number of banking service centers (BXMS) (0.7898), the volumes of deposits of legal entities in national currency (YUShMVD) (0.7828). These three factors are strongly related to investment activity. From the point of view of sufficient strength and significance of the indicators of the number of plastic cards (PKS) and the amount of deposits in national currency (MVD) with investment activity, we considered it appropriate to use them for analysis. All of these factors have a direct impact on changes in the results of investment activities.

In the next part of the analysis, we will consider the descriptive statistics analysis of selected indicators (Table 2).

It can be seen from the descriptive statistics of the data that the number of observations (the number of commercial banks) in this study is 18. The lowest amount of JIF was 10, the highest amount was 2844.8, the minimum number of banking service centers (BXMS) was 2, and the maximum was 244.

Table 2 Descriptive statistics of some indicators of the activity of commercial banks in Uzbekistan as of December 2020

Indicator	Average	Median	Minimum	Maximum
JIF	588.55	343.30	10,000	2844.8
BXMS	65,812	41,000	2.0000	244.00
PKS	1088779	715894	34513	3714964
TS	16829, 0	13720, 0	187.00	48742, 0
MVD	3114.8	2569.8	136.90	8759.3
YuShMVD	2034.0	1971,2	113.50	4497.5
Indicator	**Standard deviation**	**Variation**	**Asymmetry**	**Excess**
JIF	685.16	1.1641	2.0947	4.5664
BXMS	67,580	1.0269	1.5377	1.2613
PKS	1.0767e+006	0.98889	1.2278	0.34562
TS	12949,	0.76943	0.92110	0.075195
MVD	2262.4	0.72634	1.0420	0.31560
YuShMVD	1192.9	0.58647	0.52730	-0.48222

Note: Calculations were calculated in the Gretl software package.

The minimum number of plastic cards (PKS) was 34513, and the maximum number was 3714964. The minimum number of terminals (TS) was 187, and the maximum number was 48742. The minimum amount of national currency deposits (MVD) was 136.9, and the maximum amount was 8759.3.

At the next stage of the research, we will build econometric models of the influence of factors on the indicators of investment activity of commercial banks using the least squares method and select the most appropriate model.

We describe it in a model built on a linear function. That is, the general formula is as follows:

$$Y = a_1 x_1 + a_2 x_2 + \ldots + a_n x_n + const + e \quad (1)$$

Here:

Y is the resulting sign;

a_1, a_2 ... a_n – coefficients in front of independent variables;

x_1, x_2 ... x_n – free variables;

const – initial value of Y;

e is an unaccounted part.

We use natural logarithmic values of all indicators in order to ensure statistical significance of indicators in modeling.

According to the inductive analysis of this model, the indicator representing the statistical significance of the above model (*F-statistic*) is less than 0.05, therefore this model is statistically significant. the coefficients indicating the effect on the variable are also less than 0.05, and the natural logarithmic value of the number of plastic cards is statistically significant at 10 percent confidence level.

Table 3 The number of plastic cards (PKS) opened by commercial banks in Uzbekistan and the volume of deposits of legal entities in national currency (YUShMVD) on the investment activity of commercial banks (JIF)

(dependent variable Ln_JIF)

Factors	Coefficient	Standard error	t-statistics	P-value	Confidence level
const	-7.53710	1.74905	-4,309	0.0006	***
Ln_ YuShMVD	0.962469	0.309559	3,109	0.0072	***
Ln_ PKS	0.456435	0.221718	2,059	0.0573	*
Dependent variable mean		5.672717	Standard deviation		1.419164
Sum of Squares of Residuals		6.000230	Standard error		0.632468
R-squared		0.824752	Adjusted R-squared		0.801385
F -statistics(4, 34)		35.29642	R- faith (F)		2.13e-06
Logorithmic closeness to truth		-15.65373	Akaike Criterion		37.30746
Schwartz criterion		39.97857	X a nna-Quinn criterion		37.67577

Note: Calculations were calculated in the Gretl software package.

The coefficient of determination (Adjusted R-squared) of the developed equation is equal to 0.8813, and our model can explain 80.13 percent of the influence of factors on the investment activity of commercial banks. However, when our model was tested for heteroskedasticity, it was found to be present, so heteroscedasticity-eliminating modeling was performed (Table 4).

Table 3 Number of plastic cards opened by commercial banks in Uzbekistan and the volume of deposits of legal entities in national currency (YUShMVD) on the investment activity of commercial banks (JIF), heteroskedasticity is eliminated (dependent variable Ln_JIF)

Factors	Coefficient	Standard error	t-statistics	Thank you	Confidence level
const	-7.88733	1.86016	-4,240	0.0007	***
Ln_ YuShMVD	0.908293	0.317244	2,863	0.0118	**
Ln_ PKS	0.511356	0.231616	2,208	0.0432	**
Sum of squared deviations		5.672717	Standard error of the model		1.596076
R-squared		0.817982	Adjusted R-squared		0.793713
F -statistics(4, 34)		33.70470	R- faith (F)		2.82e-06
Logorithmic closeness to truth		-32.31586	Akaike Criterion		70.63172
Schwartz criterion		73.30284	X a nna-Quinn criterion		71.00003

Note: Calculations were calculated in the Gretl software complex.

In our model shown in Table 4, heteroscedasticity was eliminated.

Inductive analysis of the model. The value of the Fisher-Snedekor F-criterion in the model is less than 0.05, so the model is statistically significant. The statistical significance of the obtained independent variables (Ln_ YuShMVD and Ln_ PKS) was confirmed to be less than 0.05 and statistically significant when tested by Student's t-test. Therefore, this model is suitable for use in inductive analysis.

Interpretive analysis of the model.

$$Ln\_JIF = -7.88733 + 0.908293 Ln\_YuShMVD + 0.511356 Ln\_PKS + e \quad (2)$$

Here:

Ln_JIF – natural logarithmic value of total investment activity ;

Ln_ YuShMVD – National currency deposits of legal entitiesnatural logarithmic value ;

Ln _ PKS – natural logarithmic value of the number of plastic cards ;

e - unaccounted factors.

The coefficient of determination of the created equation is equal to 0.7937, and 79.37 percent of the investment activity of commercial banks can be explained through the created model. According to the correlation coefficient, the independent variables of the model are correctly related.

CONCLUSION

Ln_ YuShMVD (0.908293) - when other factors remain unchanged, an increase (decrease) of deposits of legal entities in national currency by 1 (one) percent leads to an increase (decrease) in the results of investment activity of commercial banks by 0.91 percent. The coefficient in front of Ln_ PKS (*0.511356*) shows that, other factors remaining unchanged, an increase (decrease) in the number of plastic cards by 1 (one) leads to an increase (decrease) in the investment activity results of commercial banks by 0.51 percent.

Based on the results of the analysis, it is appropriate to note the following as a conclusion:

1. Analysis shows that all indicators of the banking system have a complex effect on increasing the investment potential of commercial banks in Uzbekistan , especially the volume of deposits of legal entities in national currency and the number of plastic cards in circulation are the most important;
2. The results of the econometric analysis show that there are opportunities to increase the investment activity of commercial banks by encouraging the increase in the volume of deposits of legal entities in national currency;
3. The results of the correlation coefficient show that the investment activity of commercial banks can be improved by increasing the number of banking service centers and increasing the number of payment terminals. In this regard, it is advisable to carry out wider and deeper econometric analysis and research in the future.

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