



Assessment of The Impact of Macromonetary Indicators on Bank Capital Returns

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Abstract

This article presents scientific conclusions on the emergence and evolutionary development of the need for financial security in the operations of commercial banks. The study explores theoretical approaches to how global financial crises have shaped the necessity of financial security mechanisms within the banking sector. It also identifies and analyzes the specific dimensions of financial security relevant to commercial banks. Furthermore, the research systematizes and reviews the scholarly contributions of various researchers who have addressed issues related to ensuring financial security in the banking industry.

Keywords: commercial banks, financial security, profitability, capital adequacy, liquidity, leverage ratio.

INTRODUCTION

Profitability indicators, which reflect the financial efficiency of a bank, are among the key elements in ensuring its financial security. One of the most important of these indicators is return on capital, which serves as a primary measure of how effectively a bank utilizes its capital. Profitability is a crucial requirement in evaluating the efficient use of bank capital. Given that return on capital is shaped by both external and internal factors, its assessment holds significant analytical value.

A study conducted by M. Goncharova et al. highlights the influence of the Basel I international financial framework on banking supervision in the European Union and Russia [1]. Their research is aimed at identifying and assessing this impact through the formulation of scientific conclusions. The authors examine the institutional implementation, standard-setting, and legislative adaptation processes that followed the introduction of Basel I. According to their analysis, in the EU, Basel I standards were incorporated through the Capital Adequacy Directive and are enforced institutionally by European banking supervisory authorities. In contrast, Russia's Central Bank did not officially adopt Basel I in 2004; however, it introduced regulatory measures that aligned with its key criteria. The authors attribute the incomplete adoption in Russia to factors such as a weak institutional framework, political interference, and lack of transparency.

LITERATURE REVIEW

Profitability indicators, which reflect a bank's financial efficiency, are among the critical components ensuring its financial security. One of the most important profitability indicators is the return on capital, which serves as a key measure of how effectively a bank utilizes its capital resources. Profitability is essential in evaluating the efficiency of capital usage, and given that return on capital is shaped by both external and internal factors, its assessment holds substantial analytical significance.

V. Manuylenko, in his study, examines the prospects of transitioning from Basel I to Basel III within the Russian banking system [2]. According to his analysis, the primary challenges associated with this transition include:

1. Lack of infrastructure, such as underdeveloped information systems and weak reporting standards;
2. Institutional complexity, including insufficient independence of supervisory authorities and weak enforcement mechanisms;
3. Vulnerability of small banks, which often lack the capacity to comply with Basel III requirements;

4. Limited financial market diversity, particularly a narrow market for liquid assets. These elements, taken together, form a systemic challenge to securing financial stability in Russia's banking sector.

B. Balin, in his comparative study, evaluates the distinctions between Basel I and Basel II standards. He argues that while Basel I offers simplicity and clarity, it permits only a superficial risk assessment. In contrast, Basel II introduces a more nuanced and detailed risk analysis framework. However, Balin highlights that developing countries face several barriers in implementing these standards, including limited credit information, underdeveloped rating agencies, insufficient regulatory capacity, and high compliance costs. These challenges underscore the institutional complexities involved in ensuring financial security in emerging markets [3].

In their critical work, J. Danielson et al. assess the limitations of Basel II, noting several systemic issues: the subjectivity in internal risk assessments; the Value-at-Risk (VaR) model fails to account for extreme financial stress and crisis periods; cyclical capital requirements, which may exacerbate economic downturns; increased market concentration, favoring large financial institutions. These issues indicate that while Basel II aimed to refine risk management, it also introduced unintended vulnerabilities [4].

From this perspective, the implementation of Basel I and II primarily considers monetary and quantitative aspects, often underestimating institutional and structural limitations. The difficulties in risk identification and measurement, especially for smaller banks, can impair their competitiveness. Thus, successful implementation requires an integrated approach that incorporates institutional, regulatory, and national economic values.

The Basel II framework, despite increasing capital adequacy requirements and emphasizing supervisory oversight and transparency, revealed its limitations during the 2008 global financial crisis. The crisis highlighted the standard's inability to effectively absorb shocks, prompting the development of Basel III.

The Basel III framework, introduced between 2010 and 2017, marked a significant shift in regulatory standards. By enhancing capital adequacy, introducing capital conservation buffers, setting liquidity coverage and leverage ratios, Basel III aimed to address the deficiencies exposed by the crisis and usher in a new era of financial security for banks.

In the context of Uzbekistan, Sh. Ibodullayev contributes to the academic discussion by analyzing the national banking system's alignment with Basel III standards [5]. He notes that implementation began in 2015, and emphasizes the importance of ensuring capital profitability, especially in relation to term deposits and investments in high-risk assets.

P. King and H. Tarbert, in their joint study, explore both legal and practical dimensions of Basel III's introduction. They trace the regulatory response to the 2008 crisis, highlighting issues such as liquidity shortages, subjectivity in internal risk models, and insufficient market discipline. Their conclusions support prioritizing capital quality, macroeconomic cycle alignment, liquidity management, and a stronger role for central regulatory bodies [6].

P. Slovik and B. Cournede focus on the macroeconomic impacts of Basel III. They categorize the effects as: Short-term (1–5 years): Higher capital requirements increase banks' operational costs, reduce lending, raise interest rates, and slightly lower GDP (by 0.05–0.15%); Long-term (5+ years): A reduced probability of crises, more efficient credit allocation, and stable GDP growth are expected [7].

In a complementary study, K. Budnik et al. assess the macroeconomic effects of Basel III's final implementation phase in the Eurozone. They note that GDP may decline in the short run and lending might tighten, which could adversely impact small business profitability [8].

G. Penacchi and J. Santos investigate the relationship between regulatory standards and the focus on return on equity (ROE). They emphasize that high ROE levels enhance a bank's market valuation and influence management decisions. However, they caution that prioritizing ROE may drive banks toward riskier investments, potentially undermining financial stability. Lastly, N. Sinitin and A. Sokol provide a systematized analysis of factors influencing bank profitability in the European Union. Their findings highlight capital adequacy, loan portfolio quality, inflation, and operational costs as key drivers of profitability. They conclude that while capital adequacy is essential, macroeconomic instability poses a destabilizing threat to sustained profitability [9].

ANALYSIS AND RESULTS

In our view, while banking-specific indicators undoubtedly influence the profitability of bank capital, macroeconomic factors display distinct and often more complex patterns of impact. Given this, our analysis aims to identify and evaluate the influence of both banking system variables and macroeconomic indicators on bank capital profitability.

Building on the empirical groundwork presented in the previous section—where we assessed the determinants of bank asset profitability, we now shift focus to evaluating the determinants of capital profitability. Specifically, our study centers on the return on capital (ROE) of Uzsanot-Qurilish Bank during the 2017–2024 period, analyzing its relationship with the following explanatory variables:

1. Monetary policy indicators.
2. Interest rate policy of banks.
3. International currency flows and policy dynamics.

To rigorously investigate these relationships, we employ econometric models suitable for both short-term and long-term dynamics. The models selected for this study include: the Autoregressive Distributed Lag (ARDL) model, suitable for series with mixed stationarity properties (I(0) and I(1)); the Vector Error Correction Model (VECM), which captures both short-term fluctuations and long-run equilibrium relationships between variables.

All estimations and diagnostics are performed using Stata 17 software, which provides robust tools for time-series and error-correction modeling.

As a preliminary step, we conduct unit root testing using the Augmented Dickey-Fuller (ADF) test, the results of which are reported in Table 1. These tests confirm the suitability of the ARDL framework, as the series under study exhibit a combination of stationary and non-stationary characteristics.

Our first phase of analysis specifically targets the influence of monetary policy indicators on bank capital returns. Given the structure and properties of the data, the ARDL model is deemed appropriate to capture the dynamic interplay between return on equity and monetary variables over the selected period.

Table 1. Descriptive statistics and stationarity test results of monetary macro indicators and bank return on equity

| Indicator name | Mean | Std. err. | [95% confidence. | Stationary state |
|---|----------|-----------|------------------|-----------------------|
| (1) Monetary policy indicators | | | | |
| Exchange rate of the som against the US dollar | 9934.756 | 396.2373 | 9126.625 | I(0) – stationary |
| Inflation rate, % | 12.60312 | .5228158 | 11.53684 | I(1) – non-stationary |
| Central Bank refinancing rate, % | 14.09375 | .3363387 | 13.40778 | I(0) – stationary |
| Trading volume in the foreign exchange market (bought), million dollars | 2446.528 | 171.8207 | 2096.098 | I(1) – non-stationary |
| Trading volume in the foreign exchange market (sold), million dollars | 1646.047 | 115.8525 | 1409.764 | I(1) – non-stationary |
| (2) Interest rate policy of banks | | | | |
| Interest rate on short-term deposits in soums, % | 16.58899 | .2906416 | 15.99623 | I(1) – non-stationary |
| Interest rate on long-term deposits in soums, % | 16.98498 | .6304221 | 15.69923 | I(0) – stationary |
| Interest rate on short-term loans in soums, % | 21.27811 | .4980941 | 20.26225 | I(0) – stationary |
| Interest rate on long-term loans in soums, % | 21.62065 | .5062308 | 20.58819 | I(0) – stationary |
| (3) International currency flows and policy indicators | | | | |
| Gold and foreign exchange reserves of the Central Bank, million dollars | 31976.9 | 689.0425 | 30571.59 | I(1) – non-stationary |
| Foreign trade balance (difference between exports and imports) | -4693.13 | 606.0648 | -5929.21 | I(1) – non-stationary |
| External debt, million dollars | 23318.78 | 1507.776 | 20243.65 | I(1) – non-stationary |
| Foreign investments, billion soums | 27237.41 | 5745.653 | 15519.08 | I(1) – non-stationary |
| Foreign investments, million dollars | 2287.024 | 419.8351 | 1430.764 | I(1) – non-stationary |
| Budget deficit, (relative to GDP, %) | -.99375 | .2786393 | -1.56203 | I(1) – non-stationary |
| Dependent variable | | | | |
| ROE | 11.79887 | .7560907 | 10.25682 | I(1) – non-stationary |

Table 2. The impact of monetary policy indicators on bank capital return ARDL model Akaike's information criterion and Bayesian information criterion

| Model | N | ll(null) | ll(model) | df | AIC | BIC |
|-------|----|-----------|-----------|----|----------|----------|
| . | 30 | -86.01866 | -70.52684 | 9 | 159.0537 | 171.6645 |

| | | | | |
|----------------|-----------------|------------------------|---|--------|
| Sample: | 2017q3 - 2024q4 | Number of observations | = | 30 |
| | | R-squared | = | 0.6220 |
| | | Adj R-squared | = | 0.4779 |
| Log likelihood | = - 70.526838 | Root MSE | = | 3.0352 |

| D.ROE | Coefficien t | Std. err. | t | P>t | [95% confidence. | interval] |
|--------------------------|-----------------|--------------|-------|-------|---------------------|-----------|
| ADJ (Adjustment) | | | | | | |
| ROE L1. | -1.063556 | .202268 2 | -5.26 | 0.000 | -1.484196 | -.6429165 |
| Long run | | | | | | |
| exchange rate L1. | .0001275 | .001002 4 | 0.13 | 0.900 | -.0019572 | .0022122 |
| inflation L1. | -1.262034 | .534560 6 | -2.36 | 0.028 | -2.373713 | -.150354 |
| MBrefinance L1. | 1.005264 | .431076 1 | 2.33 | 0.030 | .108792 | 1.901736 |
| L1 received currency. | .0000764 | .001161 1 | 0.07 | 0.948 | -.0023382 | .002491 |
| currency sold L1. | -.0053798 | .001969 8 | -2.73 | 0.013 | -.0094762 | -.0012833 |
| Short run | | | | | | |
| exchange rate D1. | .0001356 | .001074 1 | 0.13 | 0.901 | -.0020981 | .0023693 |
| inflation rate D1. | -.2567673 | .546655 8 | -0.47 | 0.643 | -1.3936 | .8800656 |
| inflation LD. | 1.088572 | .523151 7 | 2.08 | 0.050 | .0006182 | 2.176525 |
| MBrefinance D1. | 1.069154 | .481497 6 | 2.22 | 0.038 | .0678254 | 2.070484 |
| currency received D1. | .0000813 | .001236 | 0.07 | 0.948 | -.0024892 | .0026518 |
| currency sold D1. | -.0057217 | .002382 4 | -2.40 | 0.026 | -.0106763 | -.0007671 |
| _cons | 22.46635 | 16.4375 2 | 1.37 | 0.186 | -11.71735 | 56.65004 |

Therefore, we conclude that it is not necessary to re-run the multicollinearity test. The multicollinearity results presented in Table 2 are considered sufficient. When using the ARDL model, if we pay attention to building the model with a maximum of 2 lags, it turns out that lags(1 0 2 0 0 0) is acceptable.

As can be seen in Table 2, the impact of monetary policy indicators is statistically significant. The Akaike Information Criterion (Model capacity and error balance) is 159.05 and the Bayesian information criterion (strict model capacity and error balance) is 171.66, indicating that the model can be accepted.

We attempt to simulate the short- and long-run effects of monetary policy using the ARDL model reformulated in EC (Error Correction Term) format, as presented in Table 2. We focus on formulating the following scientific conclusions. First, we consider the long-run effects:

First, it can be seen that inflation and the volume of currency sold in the foreign exchange market have an inversely proportional effect. While inflation leads to a decrease in the financial efficiency of the bank, excessive sales of currency also reduce the return on capital.

Secondly, it can be seen that the Central Bank's refinancing rate has a proportional effect, which indicates that the refinancing rate does not negatively affect the return on capital.

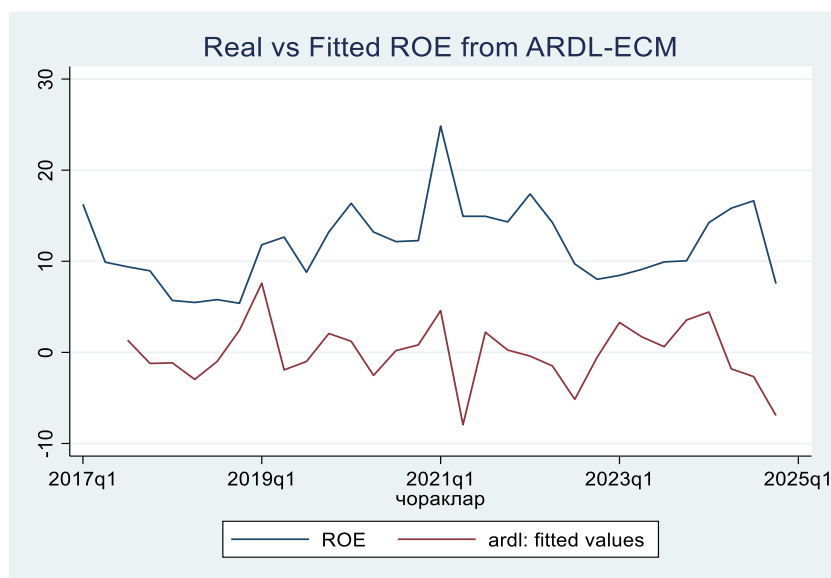
It can be seen that the indicators of monetary policy in the short term are as follows.

First, the Central Bank's refinancing rate has a fairly proportional effect, which suggests that the refinancing rate does not cause shocks to the return on capital.

Second, there is a negative impact on the volume of currencies traded in the foreign exchange market, which indicates the risk of creating a shock.

Third, it is no exaggeration to say that inflation can also have a positive impact in the short term, representing the possibility of creating a bubble in capital returns.

We have attempted to construct the re-formulated values of the return on equity based on the ARDL model reformulated in EC (Error Correction Term) format. We have re-formed the return on equity in the adapted model presented in Figure 1.



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Fig. 1. Real and adjusted values of the return on equity of Uzsanoat-Strulilish Bank based on the ARDL model reformulated in EC (Error Correction Term) format

Figure 1 shows that the projected or adjusted return on equity indicators are consistently represented by smaller values. It should be noted that while the real return on equity has declined and stagnated in the post-pandemic period, the adjusted value shows a sharper trend in this period. Overall, it can be seen that the return on equity is experiencing stable fluctuations under the influence of monetary policy indicators.

Continuing our research, we will try to assess the impact of indicators related to the interest rate policy of banks, such as the interest rate on short-term deposits in soums, the interest rate on long-term deposits in soums, the interest rate on short-term loans in soums, and the interest rate on long-term loans in soums, on the profitability of bank capital.

We reformulate the ARDL model based on the lags (1 0 0 0 0) ec1 conditions and as a result we obtain the model parameters presented in Table 2.3. Considering the statistical significance of this model, the model capacity and error balance (AIC, BIC) indicators are 170.8 and 179.4, respectively, we can accept our model.

It is also noted that the variance of the selected bank interest rate policy indicators explaining the profitability of bank capital is 44.5 percent, which indicates that there are sufficient grounds to accept this model for analysis.

Using the data in Table 3, it is possible to systematize the long-term and short-term effects of bank interest rate policy indicators.

In the model data compiled in Table 3, we see that the factors on interest rate policy are on deposits and loans. In general, we can see that deposit policy interest rates do not have a statistically significant effect. We observe that credit policy interest rates have some effects.

Table 3. The impact of bank interest rate policy indicators on bank capital return ARDL model. Akaike's information criterion and Bayesian information criterion

| Model | N | ll(null) | ll(model) | df | AIC | BIC |
|-------|----|----------|-----------|----|----------|----------|
| . | 31 | . | -79.42547 | 6 | 170.8509 | 179.4549 |

| | | | | |
|----------------|-----------------|------------------------|---|--------|
| Sample: | 2017q2 - 2024q4 | Number of observations | = | 31 |
| Root MSE | 3.4929 | R-squared | = | 0.4453 |
| Log likelihood | = - 79.42547 | Adj R-squared | = | 0.3344 |

| D.ROE | Coefficient | Std. err. | t | P>t | [95% confidence. | interval] |
|-------------------------|-------------|-----------|-------|-------|------------------|-----------|
| ADJ (Adjustment) | | | | | | |
| ROE L1. | -.6064262 | .1645309 | -3.69 | 0.001 | -.945284 | -.2675685 |
| Long run | | | | | | |
| soumshort deposit L1. | .7639595 | .9843075 | 0.78 | 0.445 | -1.26326 | 2.791179 |
| so'muzakdeposit L1. | .2749267 | .6815291 | 0.40 | 0.690 | -1.128709 | 1.678562 |
| soumshort-term loan L1. | 2.693139 | 1.387114 | 1.94 | 0.064 | -.1636761 | 5.549955 |
| so'muzakredit L1. | -2.500807 | 1.279892 | -1.95 | 0.062 | -5.136794 | .135179 |
| Short run | | | | | | |
| soumshort deposit D1. | .4632851 | .5999608 | 0.77 | 0.447 | -.7723572 | 1.698927 |
| somuzaqdeposit D1. | .1667228 | .4227127 | 0.39 | 0.697 | -.7038703 | 1.037316 |
| soumshort-term loan D1. | 1.63319 | .7264899 | 2.25 | 0.034 | .1369564 | 3.129424 |
| so'muzakredit D1. | -1.516555 | .7516069 | -2.02 | 0.054 | -3.064519 | .0314081 |
| _cons | -5.635641 | 9.154234 | -0.62 | 0.544 | -24.48914 | 13.21786 |

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In conclusion, it can be seen that the short-term lending interest rate serves to increase the profitability of bank capital. In this, it can be seen that banks are achieving higher efficiency from high interest rates. It can also be seen that the positive effect of inflation in the short term is also encouraging this situation.

We observe that the interest rate on loans has an inverse proportional effect in the long run. This indicates that banks' long-term lending does not increase their return on capital. It also reflects that the long-term negative impact of inflation also retains its importance in this process.

Table 4. Results of the cointegration test between international currency flows and policy indicators

| Johansen tests for cointegration | | | |
|----------------------------------|-----------------|------------------------|----|
| Trend: | Constant | Number of observations | 31 |
| Sample: | 2017q2 - 2024q4 | Number of lags | 1 |

| Maximum rank | Params | L.L. | Eigenvalue | Trace statistics | Critical value 5% |
|--------------|--------|------------|------------|------------------|-------------------|
| 0 | 7 | -1526.0776 | . | 150.3344 | 124.24 |
| 1 | 20 | -1497.1449 | 0.84536 | 92.4689* | 94.15 |
| 2 | 31 | -1479.9342 | 0.67056 | 58.0477 | 68.52 |
| 3 | 40 | -1466.626 | 0.57624 | 31.4312 | 47.21 |
| 4 | 47 | -1458.9654 | 0.38996 | 16.1099 | 29.68 |
| 5 | 52 | -1452.1105 | 0.35741 | 2.4003 | 15.41 |
| 6 | 55 | -1450.9165 | 0.07414 | 0.0122 | 3.76 |
| 7 | 56 | -1450.9104 | 0.00039 | | |

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Continuing our analysis, we will focus on assessing the impact of fiscal-monetary indicators on bank return on equity. In the previous paragraph of our research, when checking the stationarity of these indicators, it turns out that all selected monetary-fiscal indicators are non-stationary (see Table 2.1). Therefore, based on this situation, we choose the VECM (Vector Error Correction Model) model. Using the capabilities of this model, we will be able to analyze the trends of short-term and long-term impact.

Now we will perform the next test. In this case, we will determine the cointegration between the variables by performing the Johansen cointegration test. As a result, we will have the results presented in Table 4 below. rank(1) indicates that the conditions for statistical significance are met due to the presence of 1 cointegration equation.

Table 5. Monetary and fiscal indicators affecting the profitability of Uzsanoat-Strulilish Bank capital VECM model

| | | | |
|----------------|-----------------|------------------------|----------|
| Sample: | 2017q2 - 2024q4 | Number of observations | 31 |
| | | AIC | 97.88031 |
| Log likelihood | -1497.145 | HQIC | 98.18189 |
| Det(Sigma_ml) | 2.09e+33 | SBIC | 98.80547 |

| Equation | Parmesan | RMSE | R-square | chi2 | P>chi2 |
|--------------------|----------|---------|----------|----------|--------|
| D_ROE | 2 | 4.1378 | 0.1010 | 3.258729 | 0.1961 |
| D_goldcurrency~v | 2 | 1066.48 | 0.4710 | 25.81833 | 0.0000 |
| D_externalbalance | 2 | 2776.57 | 0.4063 | 19.85001 | 0.0000 |
| D_tashqiqarz | 2 | 916,765 | 0.5458 | 34.84583 | 0.0000 |
| D_xorijinvestsum | 2 | 17637.4 | 0.3763 | 17.49881 | 0.0002 |
| Foreign investment | 2 | 1684.06 | 0.1075 | 3.494054 | 0.1743 |
| D_budget deficit | 2 | .716323 | 0.1200 | 3.955322 | 0.1384 |

| Johansen normalization restriction imposed | | | | | | |
|--|-------------|-----------|-------|-------|------------------|-----------|
| beta | Coefficient | Std. err. | z | P>z | [95% confidence. | interval] |
| _cel | | | | | | |
| ROE | 1 | . | . | . | . | . |
| goldcurrencyreserve | -.0022522 | .0006213 | -3.62 | 0.000 | -.0034699 | -.0010344 |
| external balance | .0030876 | .0004403 | 7.01 | 0.000 | .0022247 | .0039505 |
| external debt | .0013536 | .0002667 | 5.08 | 0.000 | .000831 | .0018762 |
| foreign investment sum | -.0002175 | .0000967 | -2.25 | 0.025 | -.0004071 | -.000028 |
| foreigninvestdollar | .0047008 | .0009472 | 4.96 | 0.000 | .0028442 | .0065574 |
| budget deficit | -1.835288 | 1.2388 | -1.48 | 0.138 | -4.263291 | .5927156 |
| _cons | 40.37609 | . | . | . | . | . |

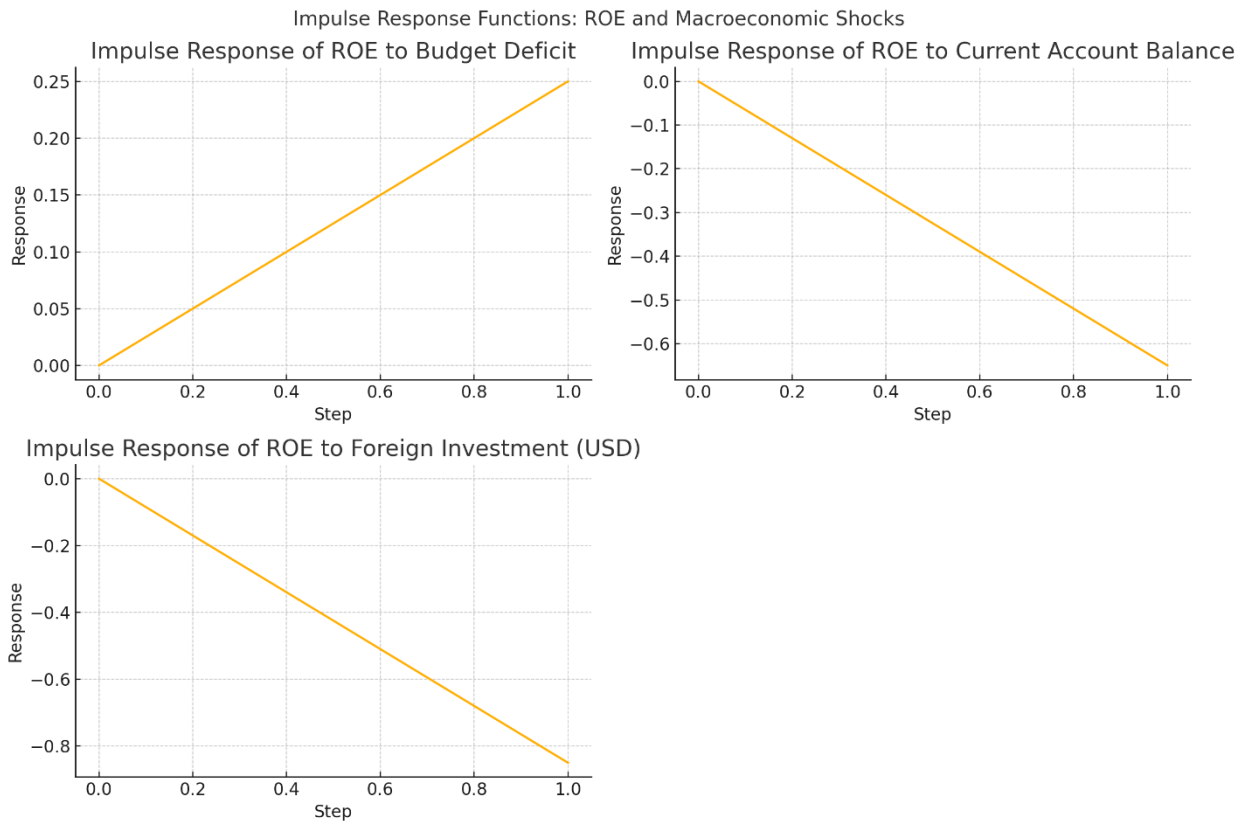
| | Coefficient | Std. err. | z | P>z | [95% confidence. | interval] |
|------------------------------|-------------|-----------|-------|-------|------------------|-----------|
| D ROYe / _cel | | | | | | |
| L1. | -.1271968 | .0720573 | -1.77 | 0.078 | -.2684265 | .0140329 |
| _cons | .2290601 | .7973214 | 0.29 | 0.774 | -1.333661 | 1.791781 |
| D_goldcurrencyreserve / _cel | | | | | | |
| L1. | 83.57465 | 18.57209 | 4.50 | 0.000 | 47.17402 | 119.9753 |
| _cons | 117,004 | 205,502 | 0.57 | 0.569 | -285.7726 | 519.7806 |
| D_external balance / _cel | | | | | | |
| L1. | -212.7854 | 48.35223 | -4.40 | 0.000 | -307.5541 | -118.0168 |
| _cons | 506.1288 | 535.0223 | 0.95 | 0.344 | -542.4956 | 1554.753 |
| D_tashqiqkarz / _cel | | | | | | |
| L1. | 15.53222 | 15.96491 | 0.97 | 0.331 | -15.75842 | 46.82287 |
| _cons | 896.4207 | 176.6533 | 5.07 | 0.000 | 550.1865 | 1242.655 |
| D_xorijinvestsum / _cel | | | | | | |
| L1. | 40.89084 | 29.32685 | 1.39 | 0.163 | -16.58873 | 98.37042 |
| _cons | 62.98529 | 3398.591 | 0.02 | 0.985 | -6598.131 | 6724.102 |
| D_foreigninvestdollar / _cel | | | | | | |
| L1. | 40.89084 | 29.32685 | 1.39 | 0.163 | -16.58873 | 98.37042 |
| _cons | 212.6598 | 324.5046 | 0.66 | 0.512 | -423.3575 | 848.6772 |
| D_budget deficit / _cel | | | | | | |
| L1. | -.021603 | .0124743 | -1.73 | 0.083 | -.0460523 | .0028462 |
| _cons | -.0392165 | .1380298 | -0.28 | 0.776 | -.30975 | .2313169 |

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As can be seen from the data in Table 5, long-term relationships can be identified as a result of the Johansen normalization restriction imposed analysis. According to it, the following scientific conclusions can be drawn.

First, we see that as the gold foreign exchange reserve increases, the profitability of bank capital decreases. This clearly reflects the connection with our previous analysis, which implies that the Central Bank purchases currency in the foreign exchange market and commercial banks sell currency.

Secondly, it can be seen that a positive balance of foreign trade, an increase in external debt, an increase in foreign investments, etc. lead to an increase in the return on bank capital. This can be expressed in the fact that commercial banks sell less currency in the foreign exchange market, thereby preserving their foreign exchange reserves. Thirdly, it should be noted that the conversion of foreign currencies into soums also negatively affects the bank's return on capital.



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Figure 2. Impulse Response Function analysis based on the VECM model of monetary and fiscal indicators affecting the return on equity of Uzsanoat-Strulilish Bank

In our view, it is advisable for commercial banks to manage their return on equity (ROE) effectively by incorporating the influence of external financing conditions and international currency flows into their strategic decision-making. These external factors play a critical role in shaping the bank's capital efficiency and overall financial performance.

To this end, we conduct an Impulse Response Function (IRF) analysis based on the Vector Error Correction Model (VECM) framework. This allows us to evaluate the short-term dynamic responses of bank return on equity to monetary and fiscal shocks. Specifically, we aim to identify how indicators such as the budget deficit, current account balance, and foreign investment inflows influence ROE following a structural innovation or shock.

The empirical results of this analysis are presented in Figure 2, which illustrates the short-run responses of ROE to shocks in each of these macroeconomic variables. The findings contribute to a better understanding of the interaction between macroeconomic policy factors and banking sector profitability, providing a foundation for more resilient capital management strategies.

Conclusion

Based on the conducted analysis, the following scientific conclusions have been formulated:

1. **Budget Deficit Impact:** The analysis reveals that the budget deficit does not exert a significant impact on the return on equity (ROE) of banks. This is attributed to the fact that the sources of financing the budget deficit such as government borrowing or fiscal injections are not directly linked to the internal mechanisms determining banks' capital profitability.
2. **Foreign Trade Balance Shock:** A positive shock to the foreign trade balance—such as a sudden surge in exports has a negative short-term effect on ROE. This finding underscores the importance of currency risk management arising from export-related transactions. Furthermore, this trend may be amplified by liquidity pressures associated with import-related expenditures, indicating a mismatch between capital inflow and operational outflow cycles.
3. **Foreign Investment Shock:** The IRF analysis also indicates that foreign investment shocks lead to a short-term decline in ROE. This outcome may reflect the inefficient allocation of foreign investments, where capital is directed towards debt financing or passive infrastructure projects rather than into revenue-generating banking activities.

In light of these findings, we conclude that enhancing the financial security of banks is closely tied to the effective management of capital profitability. In this regard, it is crucial to adopt a comprehensive analytical approach that incorporates: Macroeconomic trends; Bank interest rate policies; The structure and direction of currency flows. These factors should form the foundation of capital management strategies aimed at ensuring sustainable profitability and resilience in the banking sector.

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