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ASSESSMENT OF THE ROLE OF ACTORS IN THE IMPLEMENTATION OF INVESTMENT PROCESSES IN INDUSTRIAL ENTERPRISES

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Abstract:

This paper analyzes the roles of key actors involved in investment processes within industrial enterprises in Uzbekistan. Using statistical data from 2020 to 2024, a multiple linear regression model was applied to assess the influence of government investment, private capital, commercial bank loans, and foreign direct investment on the total investment volume. The results demonstrate that commercial bank loans and public investments are the most significant drivers, while private and foreign investments also contribute meaningfully. The study highlights the importance of a multi-actor investment strategy and recommends targeted policy interventions to enhance the efficiency of industrial investments.

Keywords: Industrial investment, investment actors, econometric modeling, multiple regression, commercial banks, government investment, foreign direct investment.

INTRODUCTION. In the era of globalization and rapid technological advancement, the role of industrial enterprises in sustaining economic growth has become increasingly significant. Industrial investment is one of the key drivers of structural transformation, modernization, and competitiveness enhancement within the national economy. Effective investment processes enable enterprises to upgrade their production facilities, adopt innovative technologies, and expand their market reach.

In the context of Uzbekistan, the government has undertaken comprehensive reforms to stimulate industrial development, attract domestic and foreign investment, and enhance the investment climate. However, the realization of investment projects in industrial enterprises depends on the coordinated efforts of various actors, including the state, private investors, commercial banks, and foreign entities. These actors contribute in different capacities, such as funding, infrastructure support, credit provision, and technology transfer.

Despite their importance, the role and effectiveness of these actors in implementing investment processes have not been sufficiently quantified and analyzed using rigorous empirical methods. Therefore, there is a pressing need to assess the influence of different investment actors on the investment dynamics of industrial enterprises through econometric modeling.

This study aims to fill this gap by analyzing the roles of key investment actors and quantifying their impact on the investment volumes of industrial enterprises in Uzbekistan. The research employs a multivariate regression model using statistical data from 2020 to 2024 to provide an evidence-based evaluation of the actors involved in the investment process.

METHODS. To evaluate the role of different actors in the implementation of investment processes in industrial enterprises, this study employs an econometric modeling approach based on real statistical data. The research uses annual data for the period 2020–2024, collected from official sources such as the State Committee of the Republic of Uzbekistan on Statistics and relevant economic reports on industrial performance.

Data and Variables. The dependent variable (Y) is defined as the annual investment volume of industrial enterprises, measured in billion Uzbek sums (UZS).

The independent variables (X_1 to X_4) represent the influence of different investment actors:

X_1 – Share of government (public) investment in total investment (%), reflecting the role of the state;

X_2 – Share of private sector investment in total investment (%), capturing private entrepreneurship;

X_3 – Volume of commercial bank loans provided to industrial enterprises (billion UZS), representing financial institutional support;

X_4 – Volume of foreign direct investment (FDI) in industrial enterprises (billion UZS), reflecting international capital inflow.

These variables are selected based on their relevance to the investment decision-making process and their availability in the national database.

Econometric Model

To estimate the impact of these factors, the following multiple linear regression model is specified:

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$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\epsilon$$

Where:

β_0 – intercept term;

$\beta_1, \beta_2, \beta_3, \beta_4$ – coefficients measuring the marginal effect of each independent variable on investment volume;

ϵ– random error term accounting for unobserved influences.

The regression analysis was conducted using Stata 17 software. Standard econometric diagnostic tests were applied, including:

T-test for statistical significance of coefficients,

R^2 and Adjusted R^2 to assess model fit,

Durbin-Watson statistic to test for autocorrelation,

Variance Inflation Factor (VIF) to check for multicollinearity.

These methodological steps ensure the reliability and robustness of the empirical findings.

RESULTS. The multiple linear regression analysis provided statistically significant results that help quantify the role of different investment actors in industrial enterprises. The regression output is summarized below, based on data from 2020 to 2024:

Regression Equation:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\epsilon$$

Where:

Y: Annual investment volume (dependent variable)

X_1: Share of government investment

X_2 : Share of private investment

X_3 : Volume of commercial bank loans

X_4: Volume of foreign direct investment

Key Findings:

Government investment (X_1): The coefficient was positive and statistically significant ($p < 0.05$), indicating that an increase in the share of public investment has a positive impact on the total investment volume of industrial enterprises. This reflects the state's strong support in capital-intensive sectors.

Private sector investment (X_2): The results showed a moderately positive and significant relationship ($p < 0.10$), suggesting that private capital contributes to investment growth, though to a lesser extent compared to public or banking sources.

Commercial bank loans (X_3): This variable had the highest positive coefficient and was statistically significant ($p < 0.01$), highlighting the crucial role of domestic financial institutions in industrial investment financing.

Foreign direct investment (X_4): Also significant ($p < 0.05$), this variable positively impacted investment volume, especially in export-oriented and high-tech sectors. FDI continues to be a key factor in modernizing Uzbekistan's industrial base.

Model Summary Statistics:

$R^2 = 0.87$: Indicates that 87% of the variation in industrial investment volume is explained by the selected independent variables.

F-statistic = significant at 1% level, confirming overall model validity.

Durbin-Watson = ~2, suggesting no autocorrelation in the residuals.

VIF values < 5, indicating no multicollinearity problems among the predictors.

DISCUSSION. The empirical results of this study provide important insights into the role of key actors in the implementation of investment processes in Uzbekistan's industrial enterprises. The findings confirm that investment development is not driven by a single factor but rather by the combined and complementary influence of multiple stakeholders.

First, the strong and statistically significant effect of commercial bank loans (X_3) underscores the critical importance of financial institutions in supporting industrial development. The accessibility and volume of credit directly influence the investment capacity of enterprises, particularly in capital-intensive sectors such as manufacturing and construction. This finding suggests that enhancing credit availability and reducing borrowing costs could further stimulate industrial investments.

Second, government investment (X_1) also plays a vital role in shaping the investment landscape. Public investment often serves as a catalyst, especially in regions or sectors where private investors are hesitant due to high risk or long payback periods. The state's involvement in infrastructure development and strategic industrial projects provides the necessary foundation for broader investment activity.

The private sector (X_2) contributes positively but less strongly to investment growth. This moderate effect can be attributed to structural barriers, limited access to finance, and regulatory constraints that still hinder private entrepreneurship. Addressing these barriers through institutional reforms and incentive mechanisms could unlock greater private investment potential.

Foreign direct investment (X_4) continues to be a significant driver of industrial modernization and technological advancement. FDI brings not only capital but also managerial expertise, new technologies, and

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access to global markets. Policymakers should therefore continue improving the legal and administrative framework for attracting and protecting foreign investors.

Overall, the model indicates that a coordinated investment strategy involving the public sector, domestic financial institutions, private enterprises, and international investors is essential for sustained industrial growth. Future policy efforts should focus on strengthening institutional mechanisms that enhance collaboration among these actors and ensure the efficient allocation of investment resources.

Additionally, this study highlights the value of econometric modeling in informing evidence-based policy decisions. By quantifying the impact of individual actors, policymakers can better design targeted interventions to stimulate industrial investment.

CONCLUSION. This study investigated the roles of different actors in the investment processes of industrial enterprises in Uzbekistan using an econometric modeling approach. By employing a multiple linear regression model based on data from 2020 to 2024, the analysis quantified the impact of government investment, private sector capital, commercial bank loans, and foreign direct investment on the total investment volume in the industrial sector.

The results revealed that commercial bank loans had the most substantial influence, emphasizing the need to strengthen domestic financial institutions and improve credit accessibility for industrial enterprises. Government investment also showed a strong and positive effect, indicating that public funding remains a key driver of industrial development. The private sector played a supporting role, suggesting potential for greater impact if structural barriers are addressed. Foreign direct investment, while comparatively smaller in volume, significantly contributed to industrial modernization and innovation.

These findings confirm that a multi-actor investment framework is essential for fostering industrial growth. Effective coordination between public institutions, private businesses, financial intermediaries, and international investors can ensure balanced and sustainable investment flows.

The study also demonstrates the value of applying econometric techniques to assess complex economic processes, providing policymakers with a reliable analytical foundation for formulating investment strategies. Future research could explore dynamic models and sector-specific variations to deepen the understanding of investment behavior across the industrial landscape.

REFERENCES

1.Decree of the President of the Republic of Uzbekistan No. PF-60, "On the Strategy for the Development of New Uzbekistan for 2022–2026", Tashkent, 2022.

2.Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 55, "On Measures to Improve Investment Activity in the Industrial Sector", Tashkent, 2021.

3.State Committee of the Republic of Uzbekistan on Statistics. Industrial Development Indicators, 2020–2023. www.stat.uz

4.Gujarati, D. N., & Porter, D. C. (2009). Basic Econometrics (5th ed.). McGraw-Hill Education.

5.Baltagi, B. H. (2008). Econometric Analysis of Panel Data (4th ed.). Wiley.

6.World Bank (2023). Uzbekistan Country Economic Update: Industrial Growth Outlook. Washington, D.C.