

ANALYSIS OF FACTORS INFLUENCING THE VOLUME OF FOREIGN DIRECT INVESTMENTS IN THE REPUBLIC OF UZBEKISTAN: CORRELATION ANALYSIS

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Abstract

This article aims to identify the factors affecting the volume of foreign direct investment in the Republic of Uzbekistan, and to conduct a statistical and econometric analysis of them. When analyzing the results of the study, the volume of investments in fixed capital, the number of beds in commissioned hospitals, the volume of construction work, the volume of imports and exports of total goods, the volume of industrial production, the total volume of agricultural products, and the total volume of pollutants emitted into the atmosphere were selected as influencing factors. As a result of the analysis, the volume of construction work and the volume of industrial production were identified as factors that strongly affect the volume of FDI in the Republic of Uzbekistan.

Keywords: FDI, economic growth, GDP, VAR method

Introduction

The topic of analyzing the factors influencing the volume of direct investments in the Republic of Uzbekistan is of great importance in the country's economic development and global economic integration processes. Uzbekistan, with its rich natural resources, strategic geographical location and economic reforms, has great potential to attract foreign investment. Direct investments (FDI) play an important role in increasing the country's economic stability, creating new jobs and implementing technological innovations. The relevance of this topic can also be understood from the Decree of the President of the Republic of Uzbekistan No. PQ-4563 dated January 9, 2020 "On measures to implement the Investment Program of the Republic of Uzbekistan for 2020-2022"¹. This study analyzes the main factors affecting the volume of FDI inflows into Uzbekistan, including economic reforms, infrastructure development, and international relations. It also examines the risks and opportunities that are important to foreign investors in their

¹ Resolution of the President of the Republic of Uzbekistan Sh. Mirziyoyev dated January 9, 2020, No. 4563 "On measures to implement the Investment Program of the Republic of Uzbekistan for 2020-2022". Tashkent -2020.

decision-making process. The results of this analysis are expected to help improve Uzbekistan's investment climate and develop future economic strategies.

Literature review

A 2021 article titled “Foreign direct investment, economic growth and employment: VAR method for Uzbekistan” published in the Journal of Contemporary Economics examined the relationship between foreign direct investment (FDI), economic growth and employment in Uzbekistan². The authors used a Vector Autoregression (VAR) model to analyze this relationship over a period of time.

The study uses the VAR model, which is a statistical model used to identify linear relationships between multiple time series. This approach allows us to analyze how changes in one variable affect others over time. The study focuses on key variables in the Uzbek economy, including foreign direct investment (FDI) flows, GDP growth rates, and employment levels.

In their analysis, the authors present several key statistical conclusions:

- Foreign Direct Investment (FDI) Inflows: According to the study, Uzbekistan has experienced a significant increase in foreign direct investment inflows from approximately US\$1 billion in 2010 to approximately US\$4 billion by 2020. This indicates a compound annual growth rate (CAGR) of approximately 15.5%.
- GDP Growth Rate: During the same period, Uzbekistan's gross domestic product (GDP) growth rate averaged 5.5% per year, with peaks of up to 7.4% in some years. This high growth was largely driven by increased investment and structural reforms.
- Employment levels: Employment levels were positively correlated with FDI. In particular, jobs in sectors that attracted high levels of FDI increased by an average of 10% per year, significantly different from sectors that attracted low levels of investment.

The article "Development Strategies for Attracting Foreign Direct Investment to Uzbekistan", published in The Journal of Economics, Marketing and Management, discusses various strategies aimed at increasing Uzbekistan's attractiveness for investment. The study emphasizes the important role of foreign direct investment in economic growth, technological progress, and job creation in the country³.

²Rakhmatillo, E., Anvar, K., & Sukhrob, M. (2021). Foreign direct investment, economic growth and employment: var method for uzbekistan. *Journal of Contemporary Issues in Business and Government*, 27(02).

³ JEONG, J. Y., Sun Mi, K. I. M., Changho, C. H. O. I., Ji Young, H. A. N., Yong Geun, K. I. M., & KARIMOV, M. (2023). Development strategies for attracting foreign direct investment in Uzbekistan. *The Journal of Economics*,

The article presents several key statistics that reflect the state of foreign direct investment (FDI) in Uzbekistan and the potential impact of the proposed strategies. For example, it is noted that in 2021, Uzbekistan's FDI inflows reached approximately US\$2.5 billion, a 30% increase compared to the previous year. This growth was driven by reforms aimed at improving the business environment, including tax incentives and regulatory simplification. The article also notes that the energy, telecommunications and agricultural sectors attracted more than 60% of total FDI during this period. In addition, according to a survey of foreign investors, 75% of respondents indicated political stability as an important factor in making investment decisions, while 65% considered infrastructure development as one of the main factors influencing their decision to invest in Uzbekistan.

The article “The Importance of Foreign Direct Investment in Promoting Economic Growth and Green Development in Uzbekistan,” published in *Cyber Leninka* in 2024, discusses the impact of foreign direct investment (FDI) on Uzbekistan’s economic growth and its compatibility with green development initiatives. The study emphasizes that FDI is important as a key driver of economic transformation for developing countries, including Uzbekistan. It also notes that the country is implementing large-scale reforms aimed at attracting foreign investment⁴.

The statistics presented in the article highlight several important aspects related to the impact of foreign direct investment (FDI) on the Uzbek economy. As of 2023, the volume of FDI inflows into Uzbekistan has increased significantly, reaching an estimated US\$5 billion, which represents a 15% increase compared to the previous year. This capital inflow contributed to a 6.2% increase in the country's gross domestic product (GDP), with investments mainly focused on renewable energy and infrastructure development playing a leading role. The article also notes that labor productivity in sectors with FDI has increased by an average of 20%, which is significantly higher than in sectors without FDI. In addition, it is noted that "green" investment projects financed by foreign investors accounted for about 30% of the total FDI volume, which indicates that the country is paying great attention to the principles of sustainable development.

Methodology

In the methodology of our research, based on the analysis of factors affecting the volume of foreign direct investment in our country, we actively used several

Marketing and Management, 11(5), 57-67.

⁴ Mukhammedova, A. (2024). THE ROLE OF FOREIGN DIRECT INVESTMENT IN FOSTERING ECONOMIC GROWTH AND GREEN DEVELOPMENT IN UZBEKISTAN. *Science and innovation*, 3(A10), 135-139.

research methods, in particular, comparative and comparative analysis, induction-deduction, as well as empirical research methods. Also, a number of factors affecting the change in the volume of FDI are selected and a correlation analysis is carried out between them using the STATA application program.

In particular, our main goal in using comparative analysis and induction-deduction research methods to shed light on the topic of analyzing factors affecting the volume of FDI is to obtain a general understanding of FDI entering our country, ensure the rigor and accuracy of the research, and analyze statistical data and draw conclusions by inferring general principles from specific observations (induction) or drawing specific conclusions from general principles (deduction).

Analysis and results

Foreign investment and foreign direct investment (FDI) increased significantly in Uzbekistan between 2016 and 2023 as a result of economic reforms and an improved investment climate. In 2016, total foreign investment amounted to approximately US\$3.6 billion, of which FDI accounted for approximately US\$1.6 billion. The government has initiated various reforms aimed at liberalizing the economy, improving the business environment, and attracting foreign capital. By 2019, these efforts were beginning to bear fruit, with total foreign investment reaching approximately \$3.2 billion, with FDI reaching approximately \$2.3 billion. Despite the global economic challenges of the COVID-19 pandemic in 2020, this growth continued, with total foreign investment reaching \$4.2 billion, with FDI reaching approximately \$1.7 billion. (Figure 1)

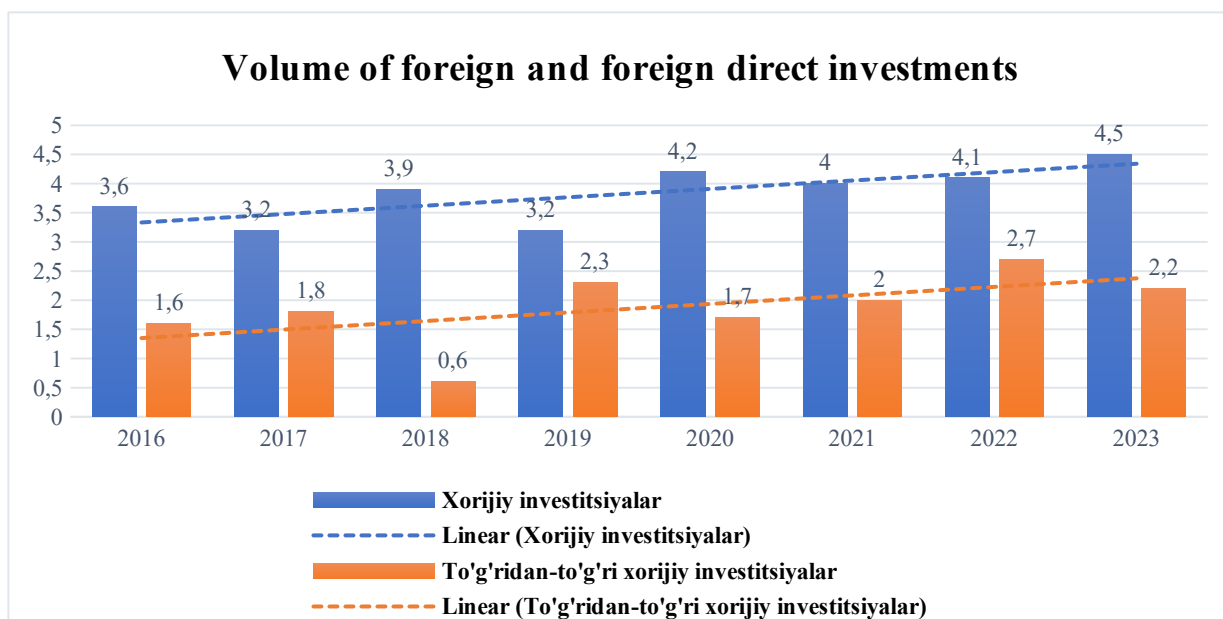


Figure 1. Volume of foreign investments and foreign direct investments in Uzbekistan in 2016-2023 (billion dollars)⁵

Uzbekistan's investment climate has improved further since the pandemic. In 2021, total foreign investment amounted to about \$4 billion, of which FDI amounted to about \$2.3 billion. The government's focus on sectors such as energy, infrastructure, and agriculture has attracted significant interest from international investors. By 2022, total foreign investment had reached \$4.1 billion, with FDI amounting to about \$2.7 billion. According to preliminary estimates at the beginning of 2023, total foreign investment exceeded \$4.5 billion, with FDI amounting to about \$2.2 billion. This significant growth reflects Uzbekistan's strategic initiatives to play a key role in the economic development of Central Asia.

As of 2025, Uzbekistan is actively working to attract foreign direct investment (FDI) as part of a wide-ranging economic reform aimed at modernizing its economy and increasing its competitiveness. The share of direct investment in total fixed capital investments in Uzbekistan has been showing a positive growth trend in recent years. According to the Statistics Committee of the Republic of Uzbekistan, in 2023, direct investment accounted for approximately 42.6 percent of total fixed capital investments. This indicator reflects the government's commitment to creating a favorable investment climate through various incentive measures, such as tax incentives and simplified regulatory processes. (Figure 2)

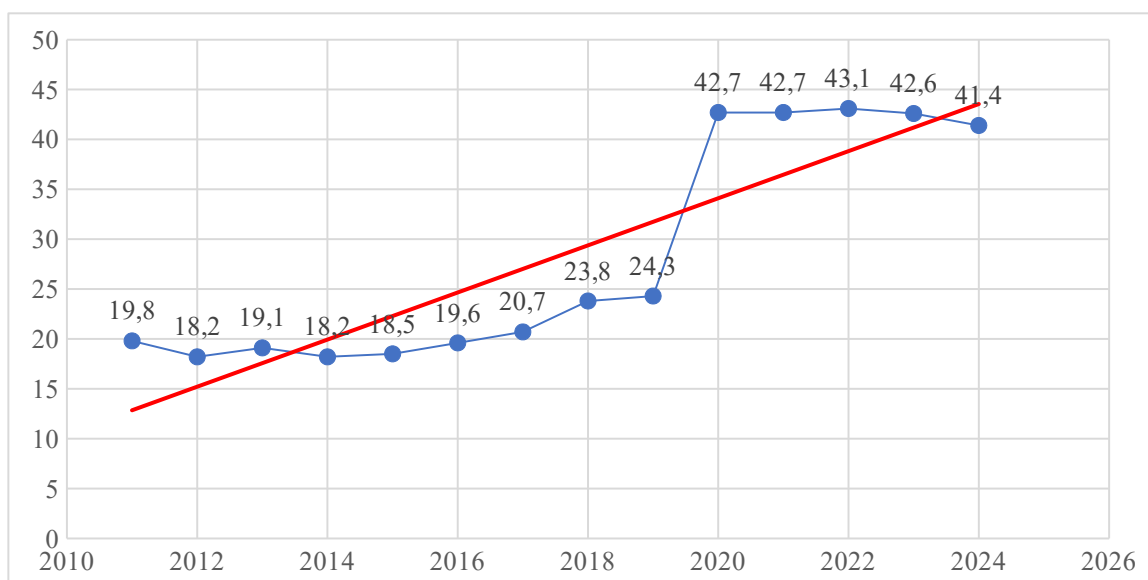


Figure 2. Share of direct investment in fixed capital investments (in percent).

⁵ Khoshimov, J. (2023). Ways to increase the volume of foreign direct investment in the economy. *Economics and Innovative Technologies*, 11(4), 93-99.

The increase in the share of direct investment indicates growing investor confidence in Uzbekistan's economic potential. The government has implemented important reforms, such as privatization initiatives and infrastructure improvements, which have further encouraged foreign participation. As a result, large amounts of foreign direct investment have flowed into sectors such as energy, telecommunications, and agriculture. The share of direct investment is expected to increase in the future as Uzbekistan further improves its investment system and becomes more integrated with global markets. According to forecasts, this share may be around 45% by 2025, which is the result of efforts to diversify the economy and attract sustainable investments.

Correlation analysis between factors influencing the volume of foreign direct investments in the Republic of Uzbekistan

In this section, using the STATA application program, a correlation analysis is performed between the factors affecting the volume of foreign direct investments in the Republic of Uzbekistan in 2010-2023. To obtain general information about the main hypothesis of our study and the factors affecting it, we use the “describe” command of the STATA application program.

The following sectors were selected as factors influencing the volume of inward FDI (Y-base hypothesis, x_n -influencing factors):

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. desc
```

Contains data

obs:	14
vars:	9
size:	588

variable name	storage type	display format	value label	variable label
y	double	%8.0g		Kiritilgan to'g'ridan-to'g'ri xorijiy investitsiyalar hajmi (trln.so'm)
x1	float	%8.0g		Asosiy kapitalga investitsiyalar hajmi (mlrd.so'm)
x2	int	%8.0g		Ishga tushirilgan kasalxonalarda yotoqlar soni (birlikda)
x3	float	%8.0g		Qurilish ishlari hajmi (mlrd.so'm)
x4	float	%8.0g		Tovarlar eksporti hajmi (mlrd.so'm)
x5	float	%8.0g		Tovarlar importi hajmi (mlrd.so'm)
x6	float	%8.0g		Sanoat mahsulotlari ishlab chiqarish hajmi (mlrd.so'm)
x7	double	%8.0g		Qishloq xo'jaligi mahsulotlari umumiy hajmi (mlrd.so'm)
x8	float	%8.0g		Atmosferaga chiqarilgan ifloslantiruvchi moddalar (ming tonna)

Figure 3. Selected factors influencing the volume of foreign direct investment in Uzbekistan⁶.

According to it (Figure 3), the total number of observations in our study is 14, the number of variables is 9, and the total volume of statistical data is 588 units.

⁶ Created by the author using the STATA application program

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pwcorr Y x1 x2 x3 x4 x5 x6 x7 x8, sig

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	Y	x1	x2	x3	x4	x5	x6
Y	1.0000						
x1	0.6891 0.0064	1.0000					
x2	-0.4865 0.0777	-0.4022 0.1540	1.0000				
x3	0.7020 0.0051	0.9909 0.0000	-0.3928 0.1647	1.0000			
x4	0.6277 0.0162	0.8418 0.0002	-0.5949 0.0248	0.8192 0.0003	1.0000		
x5	0.6165 0.0189	0.9777 0.0000	-0.3755 0.1858	0.9718 0.0000	0.8849 0.0000	1.0000	
x6	0.6940 0.0059	0.9944 0.0000	-0.4088 0.1466	0.9988 0.0000	0.8354 0.0002	0.9796 0.0000	1.0000
x7	0.6765 0.0079	0.9870 0.0000	-0.3626 0.2027	0.9930 0.0000	0.7733 0.0012	0.9613 0.0000	0.9925 0.0000
x8	-0.2015 0.4897	-0.1268 0.6658	0.7892 0.0008	-0.1127 0.7013	-0.4277 0.1271	-0.1434 0.6247	-0.1324 0.6517

Figure 4. Correlation analysis between the volume of foreign direct investment in Uzbekistan and selected influencing factors⁷.

As a result of the above correlation analysis, we can see (Figure 4) that some of the selected factors influencing the volume of foreign direct investment in the Republic of Uzbekistan have a relatively strong relationship. For example, we can see that there is a direct and relatively strong relationship (there is a correlation of 68%) between the volume of foreign direct investment inflows and the volume of investments in fixed capital. We can also see that the number of beds in operational hospitals has an inverse and medium correlation (-48%), the volume of construction work has a positive and strong correlation (70.6%), the volume of exports of goods has a positive and relatively strong correlation (62%), the volume of imports of all goods has a positive and relatively strong correlation (61.3%), the volume of industrial production has a positive and relatively strong correlation (69%), the total volume of agricultural products has a positive and relatively strong correlation (67%), and the total volume of emissions into the atmosphere has a weak and inverse correlation (-20%).

⁷Created by the author using the STATA software.

Conclusion

The results of the correlation analysis of factors affecting the volume of foreign direct investments in the Republic of Uzbekistan showed that there is a strong correlation between investments in fixed capital, the volume of construction work, exports and imports of goods, the volume of industrial production and the total volume of agricultural products. These factors, interacting with each other, enhance the process of attracting foreign investment. For example, an increase in the volume of investments in fixed capital stimulates activity in the construction sector, leads to the creation of new facilities and infrastructure, which in turn has a positive effect on other sectors of the economy. Also, the growth of exports and imports of goods expands international trade relations and makes Uzbekistan attractive to foreign investors. As a result, these factors together serve to increase the volume of foreign direct investments and ensure the economic stability of the country.

Analysis of the literature used

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