

## Foreign Direct Investment and Economic Growth in Uzbekistan: A Quantitative Correlational Study

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**Abstract:** The purpose of this quantitative correlational research study was to examine the relationship between FDI and economic growth in Uzbekistan from 2000 to 2022. Archival data were collected from the World Bank for FDI net inflows as a percentage of GDP and GDP per capita growth as an annual percentage for Uzbekistan from 2000 to 2022. A Pearson correlation was used to determine the relationship among FDI, the predictor variable, and economic growth, the criterion variable. Results show that there was no correlation between FDI and economic growth for Uzbekistan from 2000 to 2022. There was a weak correlation between the factors. The statistical tests yielded data that supported the null hypothesis. Future research should segregate the data from the many areas of FDI, such as technology, entertainment, manufacturing, and natural resources, to better understand the nature of the relationship between FDI and economic growth.

**Key words:** Foreign direct investments, Uzbekistan, economic growth, GDP.

### Introduction

Foreign Direct Investment (FDI) has become a crucial element in the economic transformation of Uzbekistan, particularly in the wake of the country's recent reforms aimed at liberalizing its economy and integrating into the global market. As Uzbekistan seeks to diversify its economy and enhance its competitiveness, understanding the relationship between FDI and economic growth has gained significant importance. This quantitative correlational study aims to explore this relationship in detail, analyzing data from 2000 to 2022 to uncover the dynamics at play. The importance of innovation as a primary driver of economic progress and development has been widely recognized by policymakers. Most national governments worldwide consider innovation performance critical to competitiveness and national progress. According to the United Nations' 2030 Agenda for Sustainable Development, private business investment and innovation are the primary drivers of productivity, holistic economic growth, and job creation (Dempere et al., 2023). In recent years, intensive, qualitatively new structural and deep market reforms have been taking place in the economy of Uzbekistan, the priorities of the country's socio-economic development are being fundamentally revised, and new, practical drivers of economic growth, which have the power to actually move the economy, are being introduced (Bakhtiyarovich, 2023). Technology diffusion plays a central role in the process of economic development. In contrast to the traditional growth framework, where technological change was left as an unexplained residual, the recent growth literature has highlighted the dependence of growth rates on the state of domestic technology relative to that of the rest of the world (Borensztein et al., 1998). This article will delve into the quantitative analysis of FDI inflows and their correlation with economic growth indicators in Uzbekistan. By employing robust statistical methods, the study seeks to provide valuable insights into how FDI can be leveraged to bolster economic performance and inform policymakers about the necessary steps to create a more conducive environment for foreign investment. Ultimately, this research aims to contribute to the broader understanding of the role of FDI in shaping the economic landscape of Uzbekistan and its potential for future growth.

## Literature review

Globalization and the strengthening of connections between economies gained momentum at the end of the 20th century and have been important phenomena since then. A relevant aspect of globalization is the movement of capital across borders. Foreign direct investment (FDI) started to increase noticeably in the 1990s, and, despite obvious fluctuations in its value, has remained a relevant issue since then (Tökés, 2024). Developing countries struggle toward economic growth and pursue agendas for development that aim to attract foreign direct investment (FDI) as an efficient pathway to achieve transfer technology, managerial skills, and access to global markets (Gajadhar, 2018). Numerous studies have found a positive correlation between various logistics performance indicators, such as infrastructure quality, logistics costs, and reliability, and FDI flows at the country level. Efficient and reliable logistics networks reduce the costs and risks associated with serving foreign markets, making a location more attractive for foreign investors. Conversely, poor logistics can deter FDI by increasing the operating expenses and supply chain challenges faced by multinational firms (Frank & Mohamed, 2024). The World Trade Organization (WTO) has also made the following definition of FDI: Foreign direct investment is made when an investor from a country (called the investor country) acquires investment assets in order to invest at another country (the host country that attracts investment) along with the right to manage the property. Direct management is a sign to distinguish FDI from other financial instruments such as securities and credit (Anh et al., 2019). Foreign Direct Investment (FDI) serves as a cornerstone in the advancement of the Malaysian economy, particularly in the sphere of international business. It plays a multifaceted role, acting not only as a primary source of the indispensable financing required for economic growth but also as a vital stimulant for export augmentation. Furthermore, FDI facilitates the transfer of cutting-edge technologies and management practices from developed to emerging markets, enhancing the competitive edge of the local industries. It is also instrumental in generating new employment opportunities, thereby contributing to the overall economic prosperity and reduction of unemployment rates within the country. In addition, FDI helps in the diversification of the Malaysian economy, reducing its dependence on traditional sectors and encouraging the growth of new industries (Kok, 2018). The economies of the countries of the Central Asian (CA) subregion, which are the former republics of the Union of Soviet Socialist Republics, depend on many factors, such as: tension in world trade, crises and social unrest in the world and in the region, slowdown in economic growth in countries – trading partners and key investors. At the same time, the countries of the Central Asian subregion have competitive advantages and have significant investment potential due to the wealth of natural resources; the proximity of Russia and China as significant capital markets, export-import of goods and labour; location on the Great Silk Road, etc (Nurasheva et al., 2024). FDI can be made in a variety of ways, including a controlling interest in a foreign company, establishing a new business in a foreign country, merging, or acquiring with a foreign company, purchasing real estate or other tangible assets in a foreign country. FDI is important for both the investing and host countries. For the investing country, FDI can provide access to new markets, resources, and technologies and can also help to diversify the investing country's economy and increase its exports. For the host country, FDI can provide access to capital, technology, and management expertise. It can also help to create jobs and boost economic growth (Singh & Hoque, 2024). A long-run asymmetric link between FDI, trade, and energy usage was also accessed in previous studies. Previous studies reported that FDI upturns energy consumption in host economies. Renewable energy use, FDI, and trade openness all contribute to economic development. However, the long-term relationship between globalization, economic growth, and renewable electricity has not been well established by previous scholars. Therefore, this study seeks to determine the relationship between globalization, economic growth, FDI, and renewable electricity consumption, not only in the short run but also in the long term. This will help decision-makers have a strong understanding of core relationships and facilitate long – and short–term strategic decision-making (Tariq et al., 2023).

## Methodology

Research methodologies include quantitative, qualitative, and mixed methods for data collection, analysis, interpretation, and reporting. Quantitative research examines measurable variables. Quantitative research generates numerical data based on theories about dependent and independent variables. A research design, which provides credibility, usefulness, and practicality to the study, is employed alongside the methodology and is formed of three unique pieces - a plan, a structure, and a strategy - that are used to conduct the study (Bickman & Rog, 2008).

## Results and discussions

The research question and hypotheses were posed to determine if a relationship existed between FDI and economic growth in Uzbekistan from 2000 to 2022. To answer the research question and prove the hypotheses, a Pearson correlation was chosen as the suitable statistical procedure and STATA version 15.0 (Stata Corp, College Station, TX) was used as the statistical tool. Pearson's correlation was more appropriate than Spearman's rho as the variables were continuous. There were no missing data for FDI, the predictor variable, or economic growth, the criterion variable, from 2000 to 2022. Descriptive data for the minimum, maximum, mean, range, and standard deviation were calculated. The purpose of this quantitative correlational study was to examine the relationship between FDI and economic growth in Uzbekistan from 2000 to 2022.

### Tests for Linearity

It was established that the dataset satisfied the requirements of a bivariate normal distribution due to a linear relationship between the variables. Q-Q plots (Figures 1 and 2) demonstrated a linear relationship based on the curvature of the points for each variable. Typically, points on a Q-Q plot align with the straight line. The Q-Q graphical format showed a normal distribution of data.

**Figure 1**

Normal Q-Q Plot of FDI

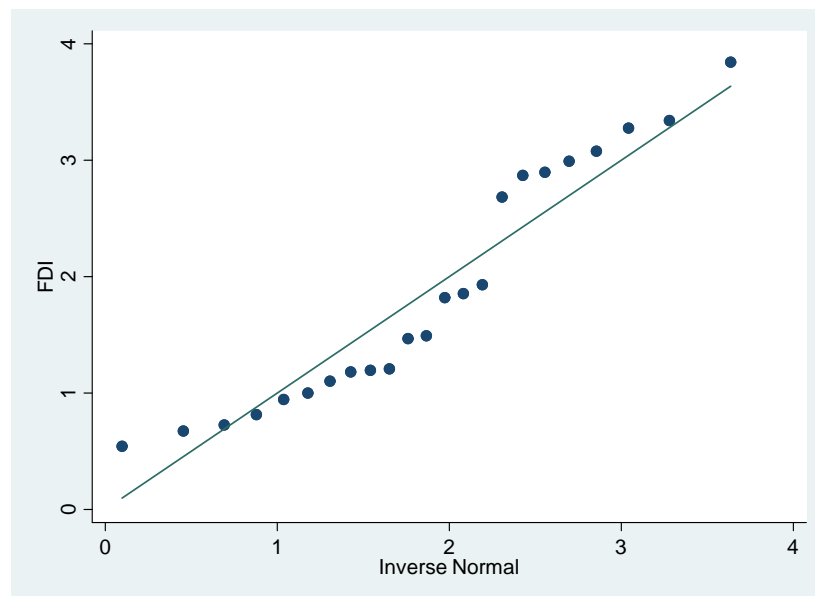
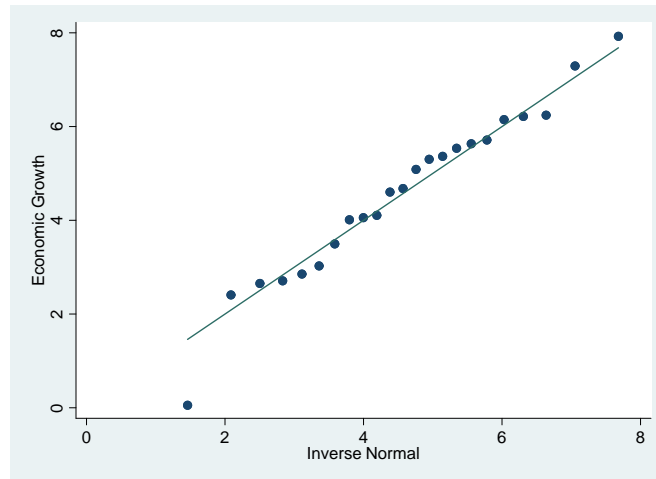


Figure 2

Normal Q-Q Plot of Economic Growth



Normality of Data and Outliers

FDI and economic growth were analyzed for normality and outliers using Shapiro-Wilk test, histograms, and box plots. As we know the Shapiro-Wilk test is statistical test used to check whether the considered data is normally distributed data or not. **Table 1** shows the results that economic growth (p) - value is 0.78745, which is much greater than the common significance level 0.05. this means that the data for economic growth is normally distributed. The second variable FDI shows that (p) – value is 0.03186, which is less than the common significance level of 0.05. this means that we reject the null hypothesis, indicating that the data for FDI does not follow a normal distribution.

Table 1

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
EconomicGr~h	23	0.97417	0.676	-0.798	0.78745
FDI	23	0.90485	2.489	1.854	0.03186

Histograms visualize data distribution by showing numbers versus frequency of occurrence. A normal distribution can be represented by a histogram, which shows the normal curve.

The mean and standard deviation of each variable is found in Table 2. For Economic Growth, the mean value was 4.57 and standard deviation was 1.796. This indicated that the data were relatively distributed near the mean value. For FDI, the mean value was 1.867 and the standard deviation was 1.022. This indicated that the data were also relatively distributed near the mean value. The descriptive statistics also indicated that both variables had 23 valid observations. Therefore, there were no missing values within the datasets for both variables

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Economic Growth	23	4.57	1.796	.054	7.926
FDI	23	1.867	1.022	.543	3.843

Pearson's correlation coefficient is a statistical measure that quantifies the strength and direction of the linear relationship between two continuous variables. It is denoted as *r* and can take values ranging from -1 to +1.

**Range of Values:**

- +1: Indicates a perfect positive linear relationship, meaning that as one variable increases, the other variable also increases;
- -1: Indicates a perfect negative linear relationship, meaning that as one variable increases, the other variable decreases;
- 0: Indicates no linear relationship between the two variables.

The Pearson correlation coefficient between FDI and economic growth was  $r = 0.002$  (Table 3). This indicated that FDI and economic growth had a statistically small or weak relationship.

**Table 3. Matrix of correlations**

Variables	(1)	(2)
(1) FDI	1.000	
(2) Economic Growth	0.002	1.000

**Conclusion**

The purpose of this study was to examine the relationship between FDI and economic growth in Uzbekistan from 2000 to 2022 using a quantitative correlational approach. The purpose of this study was to use a quantitative correlational technique to investigate the relationship between foreign direct investment and economic growth in Uzbekistan from 2000 to 2022. The Pearson correlation data validated this hypothesis, showing that there was no association between FDI and economic growth in Uzbekistan from 2000 to 2022. The statistical strength of the relationship between the variables was weak as  $r$  was 0.002. Leaders and investors can better understand the impact of FDI on economic growth by analyzing a country at a micro-level. Leaders can use this insight to diversify economic and financial systems and preserve investments appropriate to a single country, rather than depending on one-size-fits-all foreign direct investment rules.

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