



ASSESSING THE IMPACT OF FOREIGN DIRECT INVESTMENT ON UZBEKISTAN'S ECONOMIC DEVELOPMENT: AN EMPIRICAL ANALYSIS (2004–2023)

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Abstract

This study aims to empirically examine the short-term and long-term relationships of factors influencing the economic development of the Republic of Uzbekistan. The focus is on analyzing both the positive and negative aspects of foreign direct investment (FDI) in Uzbekistan's economy. To achieve this objective, factors related to the country's economic potential and traditional economy from 2004 to 2023 were selected for analysis. A quantitative research approach was employed, utilizing econometric modeling techniques. Specifically, Ordinary Least Squares (OLS) and Vector Autoregression (VAR) models were applied effectively to time series data. By implementing policy measures in tax incentives and infrastructure development, Uzbekistan can enhance its investment climate, increase FDI inflows, and promote sustainable economic growth.

Key words: investment, foreign direct investment, economic growth, Uzbekistan, society, economy, strategy

1. Introduction

The acceleration of the processes of globalization in the world requires increasing the possibility of attracting direct foreign investments in the economy of countries. "Foreign direct investment is one of the main factors in the development of the country's economy" [1]. According to the UN report on international investment, "The global flow of foreign direct investment in 2024 amounted to 26 billion US dollars, which is 1.7 times more than in 2023" for Uzbekistan" [2]. However, three-fourths of the increase is mainly made up of transport, natural resources, and energy. In such conditions, the importance of determining priority directions for increasing the flow of direct foreign investments to our national economy is increasing. Effective use of production areas and facilities of state-owned and state-owned economic companies in attracting foreign direct investment in scientific research of countries of the world, creation of favorable conditions for active investment attraction, special attention is paid to issues of further support of new competitive productions and development of small enterprises. Its role in the development of the economy of Uzbekistan is extremely important. In the national economy, profit is one of the

main problems of attracting investment, and distribution is their proper problem. "Complete registration of investments of the Republic of Uzbekistan, further improvement of the investment environment, quality production of annual investment programs, economic and financial institutions, legal documents of financial institutions, capital foreign companies, which are convenient for attracting investments." cooperation with banking structures, attracting foreign investments, controlling their increase" [3]. For foreign companies, Uzbekistan is a promising, talented country with good economic and structural conditions, and it is also known for the quality of the education system and attention to innovation. The interest of such non-public organizations and the fact that they have a database for foreign investments are expected to increase and develop investments in the future.

2. Literature Review

Economic growth and factors affecting it have always been interrelated. The concept of foreign direct investment has been given different definitions by local and foreign scientists. For this reason, many scientists have conducted research and studies on this topic. Simon Kuznets (1946) in his book "National Income" describes the issues related to ensuring the country's well-being by gross domestic product per capita. Russian-American development economist and statistician Simon Kuznets was awarded the Nobel Memorial Prize in Economics in 1971 for his research on economic growth. He defined the standard of national income accounting, which made it possible to calculate the first accurate estimates of the gross national product [4]. Arthur Okun (1962), one of the famous scientists who learned to calculate unemployment, wrote Okun's law in his book "Potential GDP: Its Measurement and Significance" that a 1% increase in unemployment leads to a 2% decrease in GDP [5]. For unemployment, Robert Lucas (1976) emphasized other factors, such as productivity. In his 1976 Econometric Policy Evaluation: Growth was more important to economic growth [6]. Robert argued against Okun's Law, which states that there is a negative relationship between unemployment and economic growth. As a result, there are different opinions about the relationship between indicators and economic growth. According to the Law of the Republic of Uzbekistan (2019) "On Investment and Investment Activities", direct foreign investment is the foreign investor's own funds without government guarantees and under risky conditions. or investments at the expense of loan funds [7]. According to A.Sh. Bekmurodov (2012), direct foreign investment is the direct export of capital that gives the investor the right to control the enterprise, and thus the main parent company of the enterprise. becomes a foreign subsidiary [8]. B.A. Vakhobov (2010) says that foreign direct investments are long-term investments that allow the investor to have effective control over economic activity, at least 10% of the company's share or shareholders' capital. points out [9]. A.S. Azizov (2021) emphasizes that the term foreign direct investment should be understood as an investment in a foreign enterprise by providing partial or complete control over economic activity [10]. According to A.A. Sotvoldiyev (2019), direct foreign investments in various objects, for the financing of socio-economic projects, with the aim of obtaining economic benefits and social benefits, on the basis of risk to the country or to another foreign country. defined as long-term capital investments made without guarantee [11]. In addition, according to the New Uzbekistan Development Strategy for 2022-2026, the government aims to attract about 70 billion dollars of foreign investment over five years, which indicates commitment to institutional reforms and infrastructure improvement K. Husnitdinovna K.I (2024) [12]. At the same time,

the effective regulation of innovative projects and the establishment of state support mechanisms, such as grant programs and tax incentives - ensure that investors reduce risk and thus increase their willingness to invest Shevchenko S (2023) [13]. By solving these important areas, Uzbekistan can significantly increase its attractiveness for foreign investments

3. Methodology

3.1 Theoretical framework

This study consists of determining the factors affecting the inflow of direct foreign investments into Uzbekistan and formulating scientific conclusions and proposals aimed at increasing the flow of direct foreign investments. The Eclectic Paradigm, also known as the Ownership, Location, Internalization (OLI) model or the OLI framework, is how companies can try to determine whether attracting foreign direct investment is worthwhile. It is a three-tier evaluation system. This paradigm assumes that institutions will avoid transactions in the open market if the cost of performing the same actions domestically or in-house is lower. It is based on internalization theory and was first explained in 1979 by scientist John H. Dunning. To achieve this goal, he chose a quantitative approach. A more specific quantitative approach involves the use of a multivariate time series model. Foreign direct investment (this is the dependent variable) and the macroeconomic variables that affect it (that is, our independent variables) Export, Taxes, Unemployment, Industry, GDP per capita, and Inflation rates are calculated. The annual statistical indicator of foreign direct investments from 2004 to 2023 was analyzed by econometric modeling.

The data collected for the empirical research was used from the World Bank page on the world countries page and the set of statistical indicators for the Republic of Uzbekistan. Foreign direct investments were chosen as the dependent variable. The reason for this is that foreign direct investments are based on the World Bank's methodology of dividing countries into high-, middle- and low-income countries according to their economic development. Accordingly, this variable was selected as the outcome factor. The reason for choosing them as independent variables is that, as we know from theories, industry and unemployment are directly related to each other, so we took these factors. If industries stop working, unemployment will increase and have a strong impact on the economy, if unemployment rises, it will have a strong impact on GDP (per capita), and as unemployment rises, income will also decrease. This, in turn, will negatively impact exports. Based on these correlations, we identified the relevant factors. Stata 18, a widely used econometric software for time series analysis, played a crucial role in our study. It was utilized to examine the short- and long-term relationships between dependent and independent variables using OLS (Ordinary Least Squares) and VAR (Vector Autoregression) models.

3.2. Empirical framework

In this study, factor analysis was used to identify the hidden factors affecting Foreign Direct Investment of Uzbekistan. The data covers from 2004 to 2023. The data was collected from the World Bank, National Statistic Agency, Stata.uz, Trading Economics and others. The data collection consists of 7 factors based on 20 years of data representing various aspects of Uzbekistan's FDI, including Inflation, GDP, Unemployment, Export, Taxes and Industry.

Table 1

Variable name	Conventional designation	Variable type	Description
FDI	FDI	Dependent	Annual FDI flows rate
Inflation	lnInflation	Independent	Annual inflation rates
GDP	lnGDP	Independent	Annual GDP rates
Unemployment	lnUnemployment	Independent	Annual import volume figure
Export	lnExport	Independent	Annual export volume figure
Taxes	lnTaxes	Independent	Annual taxes rates
Industry	lnIndustry	Independent	Annual industry rates

H1o: There is no correlation between FDI and inflation

H1a: There is a correlation between FDI and inflation

H2o: There is no correlation between FDI and GDP

H2a: There is a correlation between FDI and GDP

H3o: There is no correlation between FDI and Unemployment

H3a: There is a correlation between FDI and Unemployment

H4o: There is no correlation between FDI and Export

H4a: There is a correlation between FDI and Export

H5o: There is no correlation between FDI and Taxes

H5a: There is a correlation between FDI and Taxes

H6o: There is no correlation between FDI and Industry

H6a: There is a correlation between FDI and Industry

Ho ~ is our null hypothesis and Ha ~ is our alternative hypothesis

The following models were used to study the relationship between Uzbekistan's direct foreign investments (FDI) and factors.

Linear log-log models

$$\ln(\text{FDI}) = \beta_0 + \beta_1 \ln(\text{Inflation}) + \beta_2 \ln(\text{GDP}) + \beta_3 \ln(\text{Unemployment}) + \beta_4 \ln(\text{Taxes}) + \beta_5 \ln(\text{Export}) + \beta_6 \ln(\text{Industry}) + \epsilon_i \quad (1)$$

β_0 - is a regression model constant (intercept).

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ - coefficients representing the impact of each predictor on FDI

ϵ - is the error term.

The VAR model specification is given as follows:

$$Y_t = \alpha + \beta_1 Y_{t-1} + \beta_2 Y_{t-2} + \dots + \beta_p Y_{t-p} + \epsilon_i \quad (2)$$

Here, α is the intercept, a constant, and $\beta_1, \beta_2,$ and β are the lag coefficients of Y to β . The order “p” means that Y is used up to p-lags, and these are the predictors in Eq. $\epsilon_{\{t\}}$ is the error term, taken as white noise.

For the stationarity test, the OLS model is usually used based on the Dickey-Fuller test (ADF - Augmented Dickey-Fuller test). This test is used to determine whether the data in a time series is stationary or not. The general equation for the ADF test used in the OLS model is:

$$\Delta Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-i} + \epsilon_t \quad (3)$$

The hypothesis of the ADF test is expressed as follows:

Ho ~ null hypothesis the series is not stationary ($\gamma=0$)

Ha ~ alternative hypothesis, the series is stationary ($\gamma < 0$)

Also, before forecasting the model, we evaluate our model based on the 6 Gauss-Markov conditions. Including checking our model to satisfy the requirement of the central limit theory in terms of the number of observations, heteroskedasticity, autocorrelation, normal distribution of residuals.

4. Results and Discussions

For this study, we relied on secondary data from sources such as the official website of the World Bank to collect information about the independent and dependent variables. Data are collected from 2004 to 2023, with FDI, inflation, GDP, unemployment, exports, taxes, and industry as dependent variables as independent variables. The study used annual time series data.

Table 2

The value of foreign direct investment (FDI) and the value of each factor

Year	Inflation	GDP	Unemployment	Export	Taxes	Industry	FDI
2004	15,918274 27	1,2261E+13	8,126	82,2828 6		2,7349E+1 2	
2005	21,430866 56	1,59234E+13	7,074	81,4436 3		4,142E+12	2,13E+08
2006	23,465808 29	2,11249E+13	6,026	79,4278 4		5,6696E+1 2	2,07E+08
2007	21,897099 93	2,819E+13	4,99	103,581 1		7,5726E+1 2	6,68E+08
2008	26,791584 98	3,89698E+13	4,89	109,700 8		1,13266E+ 13	5,48E+08
2009	17,261565 13	4,93756E+13	5,04	134,327 8		1,49868E+ 13	6,13E+08
2010	39,368643 88	7,89366E+13	5,36	115,365		1,67579E+ 13	1,66E+09
2011	21,626509 94	1,03233E+14	4,96	102,806 7	1,11605E +13	2,04173E+ 13	1,62E+09
2012	15,398794 7	1,2759E+14	4,87	96,6468 9	1,49814E +13	2,60641E+ 13	7,44E+08
2013	11,987891 48	1,53311E+14	4,86	106,819 6	1,91747E +13	3,26469E+ 13	6,92E+08
2014	14,024917 63	1,86829E+14	5,09	106,272 5	2,30194E +13	4,12349E+ 13	8,09E+08
2015	10,500699 52	2,21351E+14	5,15	100	2,80048E +13	4,98492E+ 13	1,04E+09
2016	8,9303684 91	2,55422E+14	5,16	98,2405 4	3,19506E +13	5,85459E+ 13	1,66E+09
2017	19,061814 71	3,17476E+14	5,83	101,657 4	3,30192E +13	7,4799E+1 3	1,8E+09
2018	26,922395 38	4,26641E+14	5,391	100,215 2	5,49334E +13	1,16225E+ 14	6,25E+08
2019	17,814851 1	5,32713E+14	4,945	135,752 4	6,66934E +13	1,64636E+ 14	2,32E+09
2020	11,442424 83	6,05515E+14	5,293	123,142 2	8,94842E +13	1,8761E+1 4	1,73E+09
2021	13,543901 13	7,38425E+14	5,345	77,9650 6	1,0963E+ 14	2,32536E+ 14	2,28E+09
2022	14,908993 61	8,96618E+14	4,535			2,80058E+ 14	2,65E+09
2023	12,233076 78	1,06657E+15	4,526			3,25378E+ 14	2,14E+09

Since our study is based on multivariate time series, we first analyze the variables to determine whether they are stationary or not using the Dickey-Fuller test.

Test statistic	Dickey–Fuller critical value			
	1%	5%	10%	
Z(t)	-2.899	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.0455

In above we can see that FDIs coming to Uzbekistan passed the Dickey-Fuller test. The resulting Z(t) test value is "-2.899", which is less than the critical values of -3.750, -3.000, and -2.630 for the 1%, 5%, and 10% levels, respectively. The statistical test value is only 5% of the critical value since it is small, it indicates the existence of stationarity, which satisfies the criterion requirement of the Dickey-Fuller test. This value is less than 0.05, so H_0 is rejected at the 5% level, meaning the time series is stationary. Furthermore, the p-value of 0.0455 indicates the presence of stationary with a low value.

The econometric formula of regression and correlation representing factors affecting FDI is as follows:

$$\ln FDI_i = \beta_0 + \beta_1 \ln Inflation + \beta_2 \ln GDP + \beta_3 \ln Unemployment_i + \beta_4 \ln Export_i + \beta_5 \ln Taxes_i + \beta_6 \ln Insustry_i + \varepsilon_i \quad (4)$$

Since the indicators for the dependent factor and independent factors are separate when creating the basic econometric model for regression and correlation, we transform them into natural logarithms and simplify to the basic econometric formula for regression and correlation:

Table 3

Correlation analysis: Pairwise correlations							
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) lnFDI	1.000						
(2) lnIndustry	0.806* (0.000)	1.000					
(3) lnTaxes	0.482 (0.134)	0.995* (0.000)	1.000				
(4) lnExport	0.392 (0.120)	0.341 (0.166)	0.048 (0.889)	1.000			
(5) lnUnemployment	-0.566* (0.011)	-0.605* (0.005)	0.467 (0.147)	-0.601* (0.008)	1.000		
(6) lnGDP	0.823* (0.000)	0.994* (0.000)	0.994* (0.000)	0.328 (0.185)	-0.609* (0.004)	1.000	
(7) lnInflation	-0.338 (0.157)	-0.438 (0.054)	-0.067 (0.845)	0.034 (0.895)	0.187 (0.431)	-0.452* (0.045)	1.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Variables strongly related to lnFDI are lnIndustry (0.806) and lnGDP (0.823). A negative but statistically significant association for lnFDI is lnUnemployment (-0.566). Association between lnIndustry and lnGDP very high ($r = 0.994$). The lnInflation variable is

not statistically significantly correlated with most other variables, but the negative correlation with lnIndustry (-0.438) and lnGDP (-0.452) is significant.

According to table 4, 90.6% of the variance of the dependent variable is explained by the independent variables. Since the Prob > F value is 0.046, the model is completely statistically significant (at the 5% level). Inflation, industry, tax and export have a statistically significant effect on foreign direct investment (FDI) and these are inflation 0.01 ($p < 0.05$), industry 0.018 ($p < 0.05$), export 0.037 ($p < 0.05$) but negative is taxes, its indicator is 0.009, and an increase in taxes significantly reduces foreign investment. This indicates a strong negative correlation ($p < 0.01$). Gross Domestic Product (lnGDP) is only significant at the 10% level. The unemployment rate (lnUnemployment) is not statistically significant. The statistical explanatory power of the model is high ($R^2 = 90.6\%$). In order to stimulate foreign investments, it is important to reduce inflation and taxes, effectively manage exports, and develop the industrial sector.

Table 4

Linear regression							
InFDI	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
lnInflation	-2.028	.441	-4.60	.01	-3.251	-.804	**
lnGDP	-18.008	6.611	-2.72	.053	-36.365	.348	*
lnUnemployment	7.625	4.098	1.86	.136	-3.752	19.002	
lnExport	-2.485	.807	-3.08	.037	-4.726	-.244	**
lnTaxes	-8.397	1.785	-4.70	.009	-13.352	-3.441	***
lnIndustry	21.792	5.627	3.87	.018	6.168	37.415	**
Constant	192.002	54.58	3.52	.024	40.462	343.541	**
Mean dependent var		20.949	SD dependent var			0.495	
R-squared		0.906	Number of obs			11	
F-test		6.445	Prob > F			0.046	
Akaike crit. (AIC)		2.656	Bayesian crit. (BIC)			5.441	

*** $p < .01$, ** $p < .05$, * $p < .1$

After calculating the correlation and regression, a graph matrix was used to show the relationships between each variable and provide a visual representation of the relationship and distribution between variables.

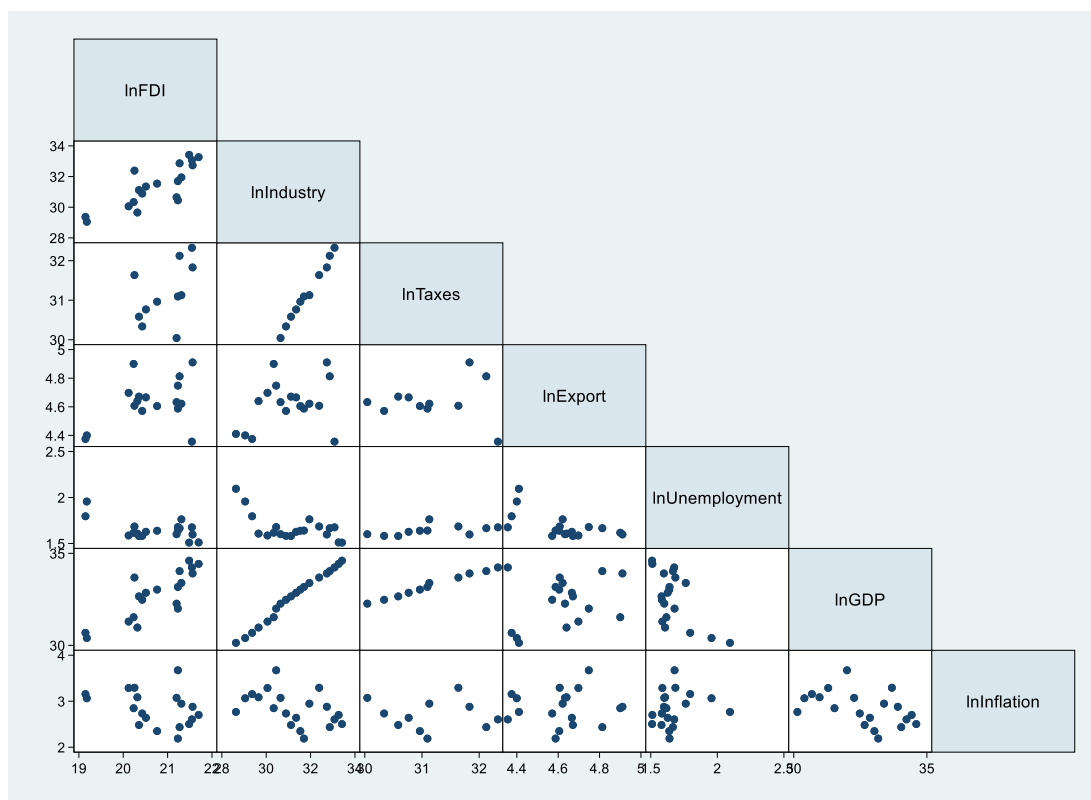


Figure 1. Graph matrix in half version

LnFDI and LnIndustry have an intermediate level of linkage. Strong and direct correlations are found in LnIndustry and LnTaxes, LnIndustry and LnGDP. Ln Inflation and LnExport are insignificantly correlated with other factors as seen. However, you can see that LnGDP and LnUnemployment are partially correlated with other factors as well.

After the econometric model is developed, the next step is to perform a diagnostic analysis to check its reliability before forecasting. This analysis involves evaluating the model's compliance with the Gaussian Markov conditions commonly used in the field. A prerequisite is that our observations must be at least above 18. Since our observations are 20 years old, the Gaussian Markov satisfies the first condition. Unfortunately, according to the second condition of Gauss Markov, the empirical value of the model should be equal or close to the theoretical value of the model, but in fact, the number of our observations was less than 30, so the second condition was not satisfied.

According to Gaussian Markov condition 3, the residual must be unconnected to the model. If there is a connection, it is called a heteroscedastic condition. There are 3 different ways to check this, they are test method, correlation table and graphical method. We used the Breusch-Pagan and White tests to estimate our model for condition 3.

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Assumption: Normal error terms

Variable: Fitted values of LnFDI

H0: Constant variance

$$\chi^2(1) = 0.17$$

$$\text{Prob} > \chi^2 = 0.6806$$

The results show that H₀ (null hypothesis): Assuming the error variance is constant (homoscedastic), the P-value 0.6806 > 0.05

Since $0.6806 > 0.05$, there is insufficient reason to reject the null hypothesis. This means that the variance of the Errors is constant (no heteroscedasticity), the assumption of homoscedasticity is not violated in the model, the results of this test show that the regression model is not heteroscedastic, and we can continue to get reliable results from the model. Furthermore, our next step involves testing our model using the White test. This test, like the previously mentioned Breusch-Pagan test, requires a p-value greater than 0.05. The full IM-test results are consistent with White's test and confirm the absence of heteroskedasticity. Chi2 for model fit (5.060, df=6df = 6df=6): This part checks whether the model is correctly fitted. The P-value is $0.536 > 0.050.536 > 0.050.536 > 0.05$, which means that the model is fitted. Chi2 for identification (0.050, df=1df = 1df=1): This part checks whether any special form of heteroscedasticity is detected. P-value $0.825 > 0.050.825 > 0.050.825 > 0.05$, which means that there is no reason to reject the null hypothesis shows. General test (16.110, df=17df = 17df=17): The p-value of this part is $0.516 > 0.050.516 > 0.050.516 > 0.05$, which also shows the absence of heteroscedasticity White's test: P-value $0.3575 > 0.050.3575 > 0.050.3575 > 0.05$, which means accepting the null hypothesis. The variance of errors is constant. IM-test results: All components reject heteroskedasticity. The model is adaptive and the variance of the errors does not depend on the value of the variables.

Table 6

White's test		
White's test	df	p
H0: Homoskedasticity		
Ha: Unrestricted heteroskedasticity		
chi2(10) = 11.00		
Prob > chi2 = 0.3575		
Cameron & Trivedi's decomposition of IM-test		
chi2		
11.000	10	0.357
5.060	6	0.536
0.050	1	0.825
16.110	17	0.516

According to the fourth condition of Gaussian Markov, the residuals of the model should not have autocorrelation problems. There are three different ways to test this situation: the graphical method, autocorrelation tables, and the Durbin-Watson and Breusch-Godfrey tests. We used Durbin-Watson and Breusch-Godfrey tests to test our model. According to the requirements of the Durbin-Watson test, its difficulty should be close to 2. If the value of the test is close to 2 to 4, there is no autocorrelation. After running the Durbin-Watson test on our model, we obtained a result of 2.41031, indicating that there is no autocorrelation. This is a good sign because the lack of correlation between the errors increases the reliability of the regression model. Our next step involves testing for autocorrelation problems in the residuals using the Breusch-Godfrey test.

Table 7

Breusch-Godfrey LM test for autocorrelation		
Breusch-Godfrey LM test for autocorrelation chi2	Df	Prob>Chi2
2.542	1	0.111

H0: no serial correlation

From Table 7, we can conclude that according to the result of the Breusch-Godfrey test, no cases of autocorrelation were found among our residuals (Ho = hypothesis is accepted). Because R-square is greater than ($p=0.111>0.05$). This shows that there is no correlation between the residuals. We test our model on the normal distribution of residuals according to the fifth condition of Gaussian Markov. For this, we first use the Shapiro-Wilk test.

Table 8

Shapiro – Wilk test

Shapiro-Wilk W test for normal data

Variable	Obs	W	V	z	Prob>z
myResiduals	11	0.924	1.228	0.372	0.355

When we tried the Shapiro-Wilk test, we got a result of 0.355. This result satisfies the fifth condition of Gaussian Markov since $p > 0.05$.

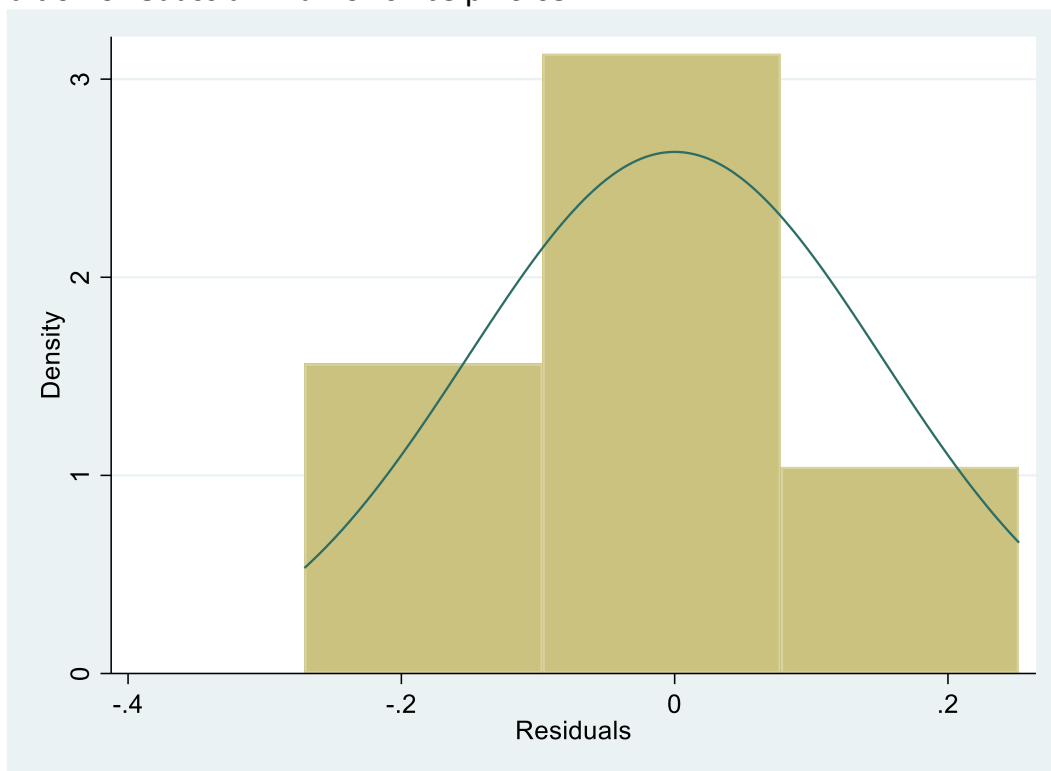


Figure 2. Test for normal distribution of residuals.

From the graph above, our residuals have a normal distribution according to the Shapiro-Wilk test and the Skewness and Kurtosis tests for the normal distribution of the residuals. According to the last condition of Gaussian Markov, independent variables should

not affect each other. We can evaluate the OLS (Ordinary least squared) model as good only if the independent variables have no influence on each other.

Table 9

VIF test		
Variables	VIF	1/VIF
LnUnemployment	8.54	0.117
LnInflation	3.706	0.270
LnExport	2.221	0.450
Mean VIF	4.82	

Our VIF test shows that our independent variables did not influence each other. That is, according to the criterion of the VIF test, VIF should be less than 10 ($VIF < 10$), and the value of our independent variables is less than 10. We can see that our model passed this condition.

Projections for selected dependent and independent variables from 2004 to 2023 are presented in Table 10. The article aims to shed light on the influence of various factors on direct foreign investments of Uzbekistan in 2004-2023. The main focus was on determining which factors help and which ones lead to a decrease in foreign direct investment. To achieve this, we used the methodology of the World Bank to determine the level of development of the country based on direct foreign investments. We assumed that Uzbekistan has moved from a low-income country to a middle-income country due to certain factors. To test this hypothesis, we analyzed the long-term and short-term development of these factors using multifactorial time series, including log-log model, VAR model and ARDL model. The reliability of the results was tested using Gauss-Marx in five conditions and all models passed the estimation tests.

The results presented in Table 10 indicate the presence of Granger causality, meaning that the excluded variables (Excluded = ALL) collectively have a statistically significant influence on lnFDI. This suggests that the past values of these variables are valuable in forecasting the current value of lnFDI. The null hypothesis (H_0) assumes that the excluded variables do not serve as Granger causes of the endogenous variable. However, with $p=0.027$ (where $p<0.05$), the null hypothesis is rejected.

Table 10

Granger causality Wald tests					
Equation	Excluded	chi2	df	Prob>Chi	
					2
—	ALL	7.221	2	0.027	

Our analysis, employing a multifactor time series model, revealed that variables such as inflation (lnInflation), GDP (lnGDP), exports (lnExport), unemployment (lnUnemployment), industry (lnIndustry), and taxes (lnTax) significantly influence the inflow of foreign direct investment (lnFDI) into Uzbekistan.

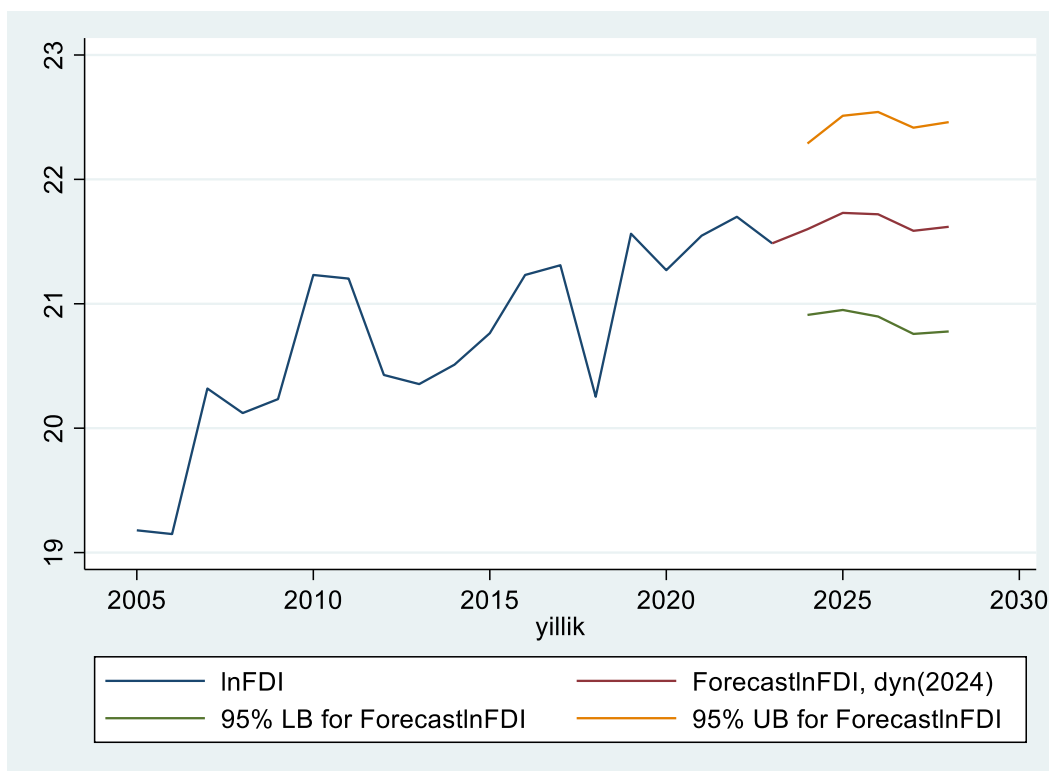


Figure 3. Forecasting and Linear graph results

The results of the analysis show that the given factors have a significant impact on foreign direct investment, in particular, on Uzbekistan, both positively and negatively. Moreover, it is a two-way interaction between deepening FDI and a country's FDI. Based on this, there is a positive correlation between factors such as inflation, exports, unemployment and FDI. At the same time, the relationship between GDP, industry and taxes is negatively affected. The findings show that increasing inflation, exports and GDP can help Uzbekistan achieve its goal of increasing revenues. Our research confirmed the hypothesis that private factors have a positive effect on foreign direct investment in Uzbekistan, and other factors have a negative effect. Therefore, it is appropriate to pay attention to the development of factors that have a positive effect on increasing the income of the country's population. However, one should not forget to pay attention to the negative aspects, for example, the decline in unemployment and the level of industry will also lead to significant changes in the economy in a positive direction.

5. Conclusion

To complete our study, our variable FDI (FDI) is the five independent variables in the above two models, namely OLS (Ordinary Least Square) and VAR models. We studied the long- and short-run effects of GDP, inflation, unemployment, exports, industry, and taxes. For the long-run OLS (Ordinary Least Square) model, we used a short-run VAR model. Based on their results, we gave a 5-year forecast. According to our main hypothesis, taxes and unemployment have a direct effect on FDI. We would like to suggest to the government that in order to increase foreign investments, we have come to the conclusion that it is necessary to create opportunities for investors and exempt investors from certain taxes.

Policy Recommendations:

Tax Incentives for Investors – To enhance FDI inflows, the government should consider introducing targeted tax exemptions or reductions for foreign investors,

particularly in key industries that contribute to economic diversification and long-term growth.

Simplified Investment Procedures – Streamlining bureaucratic procedures, reducing administrative barriers, and providing a transparent regulatory environment will improve investor confidence and attract more foreign capital.

Labor Market Reforms – Addressing high unemployment through skill development programs and workforce training will create a more competitive labor market, making Uzbekistan a more attractive destination for investment.

Infrastructure Development – Improving infrastructure, including transportation, logistics, and digital connectivity, will facilitate smoother business operations and increase the country's appeal to foreign investors.

Strengthening Legal Protections – Ensuring the protection of investors' rights, enforcing contracts, and maintaining a stable legal framework will provide a secure investment climate and foster long-term economic partnerships.

By implementing these policy measures, Uzbekistan can enhance its investment climate, increase FDI inflows, and promote sustainable economic growth.

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