MUHANDISLIK & IQTISODIYOT

№10

ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal

2025
oktyabr

Milliy nashrlar
OAK: https://oak.uz/pages/4802

05.00.00 - Texnika fanlari
08.00.00 - Iqtisodiyot fanlar

Elektron nashr, 363 sahifa.
2025-yil, 18-oktyabr,

muhandislik & iqtisodiyot

ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal

muhandislik & iqtisodiyot

ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal

05.01.00 – Axborot texnologiyalari, boshqaruv va kompyuter grafikasi
05.01.01 – Muhandislik geometriyasi va kompyuter grafikasi. Audio va video texnologiyalari
05.01.02 – Tizimli tahlil, boshqaruv va axborotni qayta ishlash
05.01.03 – Informatikaning nazariy asoslari
05.01.04 – Hisoblash mashinalari, majmualari va kompyuter tarmoqlarining matematik va dasturiy ta'minoti
05.01.05 – Axborotlarni himoyalash usullari va tizimlari. Axborot xavfsizligi
05.01.06 – Hisoblash texnikasi va boshqaruv tizimlarining elementlari va qurilmalari
05.01.07 – Matematik modellashtirish
05.01.11 – Raqamli texnologiyalar va sun'iy intellekt
05.02.00 – Mashinasozlik va mashinashunoslik
05.02.08 – Yer usti majmualari va uchish apparatlari
05.03.02 – Metrologiya va metrologiya ta'minoti
05.04.01 – Telekommunikasiya va kompyuter tizimlari, telekommunikasiya tarmoqlari va qurilmalari. Axborotlarni taqsimlash
05.05.03 – Yorug'lik texnikasi. Maxsus yoritish texnologiyasi
05.05.05 – Issiqlik texnikasining nazariy asoslari
05.05.06 – Qayta tiklanadigan energiya turlari asosidagi energiya qurilmalari
05.06.01 – To'qimachilik va yengil sanoat ishlab chiqarishlari materialshunosligi
05.08.03 – Temir yo'l transportini ishlatish
05.09.01 – Qurilish konstruksiyalari, bino va inshootlar
05.09.04 – Suv ta'minoti. Kanalizatsiya. Suv havzalarini muhofazalovchi qurilish tizimlari
10.00.06 – Qiyosiy adabiyotshunoslik, chog'ishtirma tilshunoslik va tarjimashunoslik
10.00.04 – Yevropa, Amerika va Avstraliya xalqlari tili va adabiyoti
08.00.01 – Iqtisodiyot nazariyasi
08.00.02 – Makroiqtisodiyot
08.00.03 – Sanoat iqtisodiyoti
08.00.04 – Qishloq xo'jaligi iqtisodiyoti
08.00.05 – Xizmat ko'rsatish tarmoqlari iqtisodiyoti
08.00.06 – Ekonometrika va statistika
08.00.07 – Moliya, pul muomalasi va kredit
08.00.08 – Buxgalteriya hisobi, iqtisodiy tahlil va audit
08.00.09 – Jahon iqtisodiyoti
08.00.10 – Demografiya. Mehnat iqtisodiyoti
08.00.11 – Marketing
08.00.12 – Mintaqaviy iqtisodiyot
08.00.13 – Menejment
08.00.14 – Iqtisodiyotda axborot tizimlari va texnologiyalari
08.00.15 – Tadbirkorlik va kichik biznes iqtisodiyoti
08.00.16 – Raqamli iqtisodiyot va xalqaro raqamli integratsiya
08.00.17 – Turizm va mehmonxona faoliyati

Ma'lumot uchun, OAK Rayosatining 2024-yil 28-avgustdagi 360/5-son qarori bilan "Dissertatsiyalar asosiy ilmiy natijalarini chop etishga tavsiya etilgan milliy ilmiy nashrlar ro'yxati"ga texnika va iqtisodiyot fanlari bo'yicha "Muhandislik va iqtisodiyot" jurnali ro'yxatga kiritilgan.

Muassis: "Tadbirkor va ishbilarmon" MChJ

Hamkorlarimiz:

1. Toshkent shahridagi G.V.Plexanov nomidagi Rossiya iqtisodiyot universiteti
2. Toshkent davlat iqtisodiyot universiteti
3. Toshkent irrigatsiya va qishloq xo'jaligini mexanizatsiyalash muhandislari instituti" milliy tadqiqot universiteti
4. Islom Karimov nomidagi Toshkent davlat texnika universiteti
5. Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti
6. Toshkent davlat transport universiteti
7. Toshkent arxitektura-qurilish universiteti
8. Toshkent kimyo-texnologiya universiteti
9. Jizzax politexnika instituti

MUNDARIJA • СОДЕРЖАНИЕ • CONTENTS

MUNDARIJA

MUNDARIJA • СОДЕРЖАНИЕ • CONTENTS

MUNDARIJA • СОДЕРЖАНИЕ • CONTENTS

MUNDARIJA • СОДЕРЖАНИЕ • CONTENTS

IMPACT OF FOREIGN INVESTMENTS ON THE ECONOMY OF UZBEKISTAN: CROSS-SECTORAL ANALYSIS

Jumayeva Kamola Azimjonovna
Master's student of Tashkent State University of Economics
comowii.19@gmail.com

Khasanova Iroda Azizbek kizi
Master's student of Tashkent State University of Economics
xasanova.iroda20@gmail.com

Abstract. Foreign direct investment (FDI) plays a vital role in enhancing economic growth by transferring capital, technologies, and management practices into host economies. This paper examines the cross-sectoral impact of FDI on Uzbekistan's economy by focusing on agriculture, industry, and services. Using time-series data from 1997 to 2023, we analyze trends, patterns, and sectoral performance indicators such as output, employment, and growth rates. While many studies concentrate on the aggregate effect of FDI on GDP, our research introduces novelty by conducting a sector-specific analysis. The findings highlight that foreign investments have significantly contributed to industrial development and the expansion of the service sector, particularly in transportation, logistics, tourism, and ICT. At the same time, agriculture has shown moderate but stable growth from FDI inflows. Econometric results confirm that FDI positively correlates with sectoral employment and output, though the magnitude differs across sectors. This study provides empirical evidence and practical recommendations for policymakers to optimize sector-targeted investment strategies and strengthen Uzbekistan's long-term economic development.

Keywords: Foreign Direct Investment (FDI), economic growth, Uzbekistan, agriculture, industry, services, sectoral analysis, employment, GDP, cross-sectoral impact.

Annotatsiya. To‘g‘ridan-to‘g‘ri xorijiy investitsiyalar (TXI) kapital, texnologiyalar va boshqaruv tajribasini qabul qiluvchi mamlakat iqtisodiyotiga olib kirish orqali iqtisodiy o‘sishni rivojlantirishda muhim rol o‘ynaydi. Ushbu maqola O‘zbekiston iqtisodiyotida TXIning qishloq xo‘jaligi, sanoat va xizmat ko‘rsatish sohalariga kesimdagi ta'sirini o‘rganadi. 1997–2023-yillar davrini qamrab olgan vaqt qatori ma'lumotlari asosida TXI oqimlari, ularning dinamikasi va tarmoqlar samaradorligi ko‘rsatkichlari jumladan, ishlab chiqarish hajmi, bandlik va o‘sish sur'atlari tahlil qilinadi. Aksariyat tadqiqotlar TXIning umumiy YaIMga ta'siriga e'tibor qaratgan bo‘lsa, bizning tadqiqotimiz yangilik sifatida tarmoqlar kesimidagi tahlilni taqdim etadi. Natijalar shuni ko‘rsatadiki, xorijiy investitsiyalar sanoat rivojiga va xizmatlar sektorining kengayishiga sezilarli hissa qo‘shgan, xususan, transport-logistika, turizm va axborot-kommunikatsiya texnologiyalari sohalarida. Shu bilan birga, qishloq xo‘jaligida TXI oqimlari barqaror, biroq o‘rtacha darajada o‘sishni ta'minlagan. Ekonometriya natijalari TXIning bandlik va ishlab chiqarish ko‘rsatkichlari bilan ijobiy korrelyatsiyasini tasdiqlaydi, ammo ta'sir kuchi sohalar kesimida farq qiladi. Tadqiqot O‘zbekistonning uzoq muddatli iqtisodiy rivojlanishini ta'minlashda tarmoqlar bo‘yicha investitsiya siyosatini takomillashtirish uchun amaliy tavsiyalar beradi.

Kalit so‘zlar: To‘g‘ridan-to‘g‘ri xorijiy investitsiyalar (TXI), iqtisodiy o‘sish, O‘zbekiston, qishloq xo‘jaligi, sanoat; xizmatlar sohasi, tarmoqlararo tahlil, bandlike, YaIM, kesimiy ta'sir.

Аннотация. Прямые иностранные инвестиции (ПИИ) играют важную роль в стимулировании экономического роста за счет привлечения капитала, технологий и управленческого опыта в принимающие экономики. В данной статье рассматривается межотраслевая роль ПИИ в экономике Узбекистана с акцентом на сельское хозяйство, промышленность и сферу услуг. На основе временных рядов за 1997–2023 годы проведён анализ динамики, тенденций и показателей эффективности отраслей, таких как выпуск продукции, занятость и темпы роста. В отличие от большинства исследований, сосредоточенных на совокупном влиянии ПИИ на ВВП, наша работа является новаторской благодаря отраслевому подходу. Результаты показывают, что иностранные инвестиции значительно способствовали развитию промышленности и расширению сферы услуг, особенно в транспорте и логистике, туризме и ИКТ. В сельском хозяйстве ПИИ обеспечили стабильный, но умеренный рост. Эконометрические результаты подтверждают положительную корреляцию ПИИ с занятостью и выпуском продукции, хотя степень воздействия различается по секторам. Исследование предоставляет эмпирические доказательства и практические рекомендации для совершенствования инвестиционной политики по секторам с целью укрепления долгосрочного экономического развития Узбекистана.

Ключевые слова: Прямые иностранные инвестиции (ПИИ), экономический рост, Узбекистан, сельское хозяйство, промышленность, сфера услуг, межотраслевая аналитика, занятость, ВВП, отраслевое воздействие.

INTRODUCTION

In the process of globalization, foreign investments are considered as an important factor of economic growth and development. In particular, through foreign direct investment (FDI), new technologies, management experience and financial resources are entering the economy of countries. This serves to improve production efficiency and strengthen competitiveness.

For example, China has attracted large-scale FDI since the 1980s to develop its manufacturing industry. This process turned the country into a global manufacturing center and contributed greatly to its economic growth. Singapore has become a leading financial center in the region, actively using FDI to develop the high-tech and financial services sectors. Vietnam has increased its export potential and diversified its economy in recent years by attracting FDI to develop the textile and electronics industries. And India has gained an important place in the global IT services market by attracting FDI in information technology and telecommunication sectors. These examples show successful experiences of FDI in developing different sectors in different countries. FDI inflows to the OECD area increased by 80%, but this was mainly the result of an increase in large investments in the Netherlands. Excluding FDI flows received by Luxembourg and the Netherlands, which have been highly volatile in recent years, OECD FDI flows fell by 14%. The flow of direct investments to non-OECD G20 countries decreased by 19%. The main reason for this is geopolitical risk and economic policy uncertainty affecting the confidence of foreign investors in the People's Republic of China.

In 2023, foreign investments and loans attracted to the main capital of Uzbekistan accounted for 56,7% of total investments. This is the highest indicator in the last 20 years and shows the growing interest of international investors in the country's economy. In January-October 2024, industrial products worth 18766,2 billion sums were produced by enterprises with foreign investments in Tashkent region. It is 17,2 percent of the total production, which confirms the importance of foreign investments in the industrial sector. The number of foreign-invested enterprises in Uzbekistan is increasing year by year. For example, in 2019, the number of such enterprises was 9,642, and in 2022, this indicator reached 14,993. This indicates that the investment environment in the country is improving. In 2013, the value of FDI amounted to 691 million dollars, and by 2023 this value will exceed 2 billion dollars.

According to the Central Bank, in the first half of 2024, the volume of foreign direct investment (FDI) increased 2.5 times. In January-June, the volume of decentralized investments in the economy of Uzbekistan increased by 38.7%, and this contributed to the growth of total investments by 32.7%. In the first half of the year, foreign direct investments worth 5.32 billion dollars were attracted. However, in the second quarter, the volume of investments began to stagnate. Compared to the same period in 2023, the ratio of foreign direct investment to the gross domestic product increased from 6 percent to 12 percent. The share of added value in GDP is 22,9%, and the level of employment in this sector is 25%. As for the industrial sector, the share of added value in GDP has increased by 9% over the last 10 years, and the employment rate is 24,1%. In addition, today the most developing sector is the service sector. Services such as transportation and logistics, tourism, and ICT are the sectors attracting the most investment. Therefore, the employment rate in the service sector is 50%.

The research has 3 objectives. The main goal of this study is to analyze the trends and patterns of FDI in key sectors of Uzbekistan over the years. Through this analysis, we can see which sector attracted more FDI, then the impact of FDI can be determined. The next aim of this research is to evaluate the effectiveness

of FDI on sectoral output such as, agriculture, industry, and services. By this way, we determine which sector contributes to economic growth by attracting FDI. Then we aimed to determine the correlation between GDP and economic indicators such as sectoral annual growth and employment rates. Econometric analysis helps us to determine the relationship between variables. For example, does attracting FDI increase the level of employment or annual growth in sectors? At the same time, we will evaluate each indicator. Our novelty is to study, while most researchers analyze the impact of FDI on total GDP, we want to do a cross-sectoral analysis. Our sectors include agriculture, industry and services. We also obtain separate results for each sector in our research. Our time series data includes the last 27 years of data on 3 sectors from 1997 to 2023.

Our research will consist of background information about global and Uzbekistan's FDI volume, literature review, methodology, results and discussion, conclusions and recommendations. In the literature review, there will be detailed information about the differences between the previous researchers' analysis, the research gap and the difference between our research. In the methodology section, we provide information about the techniques and models we use. In the Results section, we describe the new econometric results in detail. Finally, we will summarize and give some suggestions for policymakers.

LITERATURE REVIEW ON THE TOPIC

In recent years, the study of the impact of FDI on the economy of Uzbekistan has gained considerable attention among researchers [1,7]. While some researchers tried to find ways to increase the volume of FDI to the economy [6,8], others analyzed FDI, its sectoral contribution and employment in their studies [2,3].

Khoshimov J. [8] identified ways to attract foreign investments to Uzbekistan and presented the existing issues in this area. Based on his recommendations, it is possible to gain insights into the problems that could hinder future economic development. Imomkulov T.B. [7] conducted research on the growth rate of FDI and its impact on income and the institutional environment. He also studied developing countries alongside Uzbekistan. FDI affects not only economic sectors but also small businesses. Numonjonova N.A [5] has also described investment as a key factor in the development of small businesses. In her research, she provided recommendations on how to direct FDI for business development by utilizing foreign experiences. In his study, Balbaa M. [4] demonstrated in detail the role of FDI in the development of the digital economy. Through his analysis covering the period from 2005 to 2022, it is possible to examine FDI's contribution to technological advancement and its impact on the expansion of the digital economy. FDI affects the development of various sectors differently. On this topic Dašić B., Trklja R., Savić M. [3], in their research, conducted a comparative analysis of the manufacturing and services sectors using examples from several countries. Kler R., Gulyamov N.B., Supiev R. [2] aimed to assess contribution of FDI to employment in different sectors during the period from 2017 to 2022.

Kler et al. [2] used panel data for their research study. For econometric analysis, they applied the PCSEs Model and Random Effects Models and compared the results. Kobilov et al. [1] used data on Foreign Direct Investment, Domestic Investment, and Economic Growth for the period 2010–2019 in their research. In the results section, they conducted the Augmented Dickey-Fuller Test for Unit Root, Co integration test, VECM Results, and Granger Causality Wald Tests, interpreting the results. This proved the statistical significance of their research. Balbaa M. [4] conducted econometric analysis for the variables GDP, FDI inflows, and FDI outflows. He used time series data for the research and interpreted descriptive statistics, correlation analysis, regression analysis, and the OLS model in the results section. In her research, Numonjonova N.A [5] mainly utilized theoretical data. She elaborated on the Classification of investment factors in small business, which helps to understand how FDI affects business and its efficiency from a theoretical perspective.

In conclusion, there are many studies in this field. However, many of them focus on general impact of FDI on GDP. We found research gap that researchers did not analyze 3 sectors together and compare. We selected three dominant sectors in Uzbekistan: agriculture, industry and services. There are reasons why we choose these sectors. Agriculture remains a dominant sector in Uzbekistan, contributing significantly to GDP. However, it faces challenges in modernization and technological advancement. FDI can play a pivotal role in enhancing productivity and adopting sustainable agricultural practices, which is critical for Uzbekistan's rural development. The industrial sector, particularly manufacturing, is key to Uzbekistan's economic diversification efforts. FDI in industry can boost productivity, introduce new technologies, and increase exports, making it a critical area for investment to promote economic growth. The services sector (including finance, education, healthcare, and IT) has grown rapidly in many developing economies. As Uzbekistan continues to modernize its economy, FDI in services can help drive digital transformation and enhance the quality of life by improving access to services and infrastructure.

REDEARCH METHODOLOGY

Our primary objective in this research is to determine which sector's development through the attraction of FDI would further enhance our economy and to provide scientific evidence for this. Unlike previous studies, we have selected the agriculture, industry, and service sectors to analyze how their growth rates and employment levels within these sectors impact our economy and to what extent.

For the analysis, we have chosen data from the period 1997–2023 and aim to conduct correlation, regression, and stationarity tests among the variables. All our data has been collected from the World Bank Open Data website.

Our dependent variable is GDP growth, while the independent variables are FDI, Industry growth, Employment in Industry, Agriculture growth, Services growth, and Employment in Services.

Our mathematical model consists of the following:

$$Y= f (X_{1,} X_2, X_3, X_4, X_5, X_6)$$

Y – dependent variable

X – independent variable

According to our research function form will be:

GDPG= f (FDI, Industry growth, Emp Industry, Agriculture growth, Services growth, Emp services)

GDPG refers specifically to the increase in a country's Gross Domestic Product (GDP) over time. GDP measures the total value of goods and services produced within a country in a given period and is often used as a key indicator of economic performance. The study also considers FDI (Foreign Direct Investment) is capital investment made by foreign companies or investors in a specific sector of a country's economy. Industry Growth is the growth rate of production or economic activity in the industrial sector. Employment in Industry is the share of the working-age population employed in the industrial sector. Agriculture Growth is the annual growth rate of production or economic activity in the agricultural sector. Services Growth is the growth rate of economic activity or production in the services sector. Employment in Services is the share of the working-age population employed in the services sector.

The final panel data econometric model becomes as follows.

$$GDPG= \beta_0 +\beta_1 FDI + \beta_2 \text{ Industry growth} + \beta_3 \text{Emp Industry} + \beta_4 \text{ Agriculture growth} + \beta_5 \text{ Services growth} + \beta_6 \text{ Emp services} +\mu$$

In the above model, GDPG is the dependent variable we try to explain or predict.

Here is β- coefficient parameters. These coefficients represent the long-run effects of various independent variables on GDPG and μ-error turn, which captures the unexplained variation in economic growth not accounted for by the independent variables in the model.

For analyzing correlation and regression relationship we have 2 hypotheses.

First is null hypothesis: variables are independent.

Second is alternative hypothesis: variables are dependent.

If our p value is less than 0.05 we reject H_0 and accept H_a hypothesis, then we test statistical significance level. We check effects of independent variables to dependent variables. If coefficients show "-" there is negative impact ($p<0.05$) or they represent "+" there is positive relationship between variables ($p<0.05$). If p value higher than 0.05, then we understand it does not significant impact and statistical insignificant.

ANALYSIS AND RESULTS

This study aims to assess the impact of foreign investments on the economy of Uzbekistan by Cross-sectoral analysis, including agriculture, industry and service sectors. It also helps to find relationship between employment and sectors, their contributing to GDP growth of country. This section gives econometric analysis results, such as descriptive statistics, correlation analysis, Augmented Dicky Fuller test for checking stationarity and ARDL regression model outcomes.

Table 1. Descriptive Statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
GDPG	27	6.121	1.782	1.996	9.473
FDI	27	1.787	1.006	.543	3.843
Industry growth	27	6.723	4.675	1.778	26.069
Emp Industry	27	21.961	1.554	19.702	24.18
Agriculture growth	27	5.043	1.858	.266	8.334
Services growth	27	6.813	2.772	-.772	12.502
Emp services	26	47.483	3.383	40.121	50.895

Table 2. Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) GDPG	1.000						
(2) FDI	0.248	1.000					
(3) Industry_growth	0.523	0.436	1.000				
(4) Emp_Industry	0.256	0.689	0.452	1.000			
(5) Agriculture_gr~h	0.443	-0.288	0.048	-0.360	1.000		
(6) Services_growth	0.845	0.332	0.209	0.241	0.193	1.000	
(7) Emp_services	0.515	0.589	0.593	0.887	-0.071	0.357	1.000

Table 3. Checking for stationarity (ADF test results)

Variables	**ADF**	
	Level	1st-Difference
GDPG	-2.638*	-7.908***
FDI	-2.695*	-7.736***
Industry growth	-3.902***	-7.880***
Emp Industry	-0.416	-2.864**
Agriculture growth	-2.345	-5.854***
Services growth	-4.086***	-7.704***
Emp services	-3.603***	-3.409**

Table 4. ARDL regression model

ARDL(1,0,0,0,0,0,0) regression
Sample: 1998 - 2022, but with a gap Number of obs = 24
F(7, 16) = 54.45
Prob > F = 0.0000
R-squared = 0.9597
Adj R-squared = 0.9421
Log likelihood = 35.654086 Root MSE = 0.0671

log_GDPG	Coef.	Std.Err.	t	P>t	[95%Conf.	Interval]
FDI	-0.050	0.020	-2.490	0.024	-0.093	-0.007
log_Industry_growth	0.259	0.048	5.440	0.000	0.158	0.360
log_Emp_Industry	-1.616	0.637	-2.540	0.022	-2.966	-0.267
log_Agriculture_growth	0.053	0.023	2.270	0.037	0.003	0.102
log_Services_growth	0.526	0.054	9.770	0.000	0.412	0.640
log_Emp_services	1.482	0.788	1.880	0.078	-0.188	3.153
_cons	-0.354	1.710	-0.210	0.839	-3.979	3.271

Descriptive statistics

Table 1 displays the descriptive statistics of the data. The outcomes give information about value of Industry growth range from 1.778 to 26.069 which means that the variation of this variable is high in Uzbekistan's economy during the study period. Moreover, this table indicates the mean of GDPG, FDI, Industry growth, Employment in Industry, Agriculture growth, Services growth and Employment in Services are 6.121, 1.787, 6.723, 21.961, 5.043, 6.813 and 47.483, respectively.

Correlation analysis

Table 2 demonstrates that there is a positive relationship between GDP growth and all independent variables. The strongest correlation is observed between GDP growth and Services growth, amounting to 84%. This indicates that an increase in GDP growth is accompanied by an 85% increase in the services sector or vice versa.

However, according to this model, there is a weak positive correlation between GDP growth and the independent variables FDI and Employment in Industry, with correlation values of 24% and 25%, respectively.

Additionally, we can conclude that as the remaining independent variables—Agriculture growth, Industry growth, and Employment in Services—rise, GDP growth also increases, but at a slower rate. This is because the correlation values for these variables are 44%, 52%, and 51%, respectively.

Unit root test result

In Table 3, we observe that five of our independent variables—GDP growth, FDI, Industry growth, Services growth, and Employment in Services—are stationary at level. P value of GDPG and FDI is less than 0.10, while others $p<0.01$. However, the remaining two variables, Employment in Industry and Agriculture growth, were found to be non-stationary.

To make these non-stationary variables stationary, we applied first-stage differencing. Conducting the stationarity test helped us determine the appropriate regression model for the analysis.

Since some variables have a unit root while others are stationary, we identified the ARDL model as the most suitable approach for our study.

Regression analysis

According to Table 4, number of observations is 24. F-statistic test result is 54.45 with a p-value of 0.0000, indicating that the overall model is statistically significant. R-squared outcome is 0.9597, meaning that approximately 96% of the variation in GDPG is explained by the model. The value of Root MSE is 0.0671, representing the model's standard error of the regression.

As shown in the table, the p-values for all independent variables are less than 0.10, indicating that they are statistically significant. FDI and Employment in Industry have a negative impact on GDP growth. This means that a 1-unit increase in FDI decreases GDP growth by 0.05 units, or if the number of workers in the industrial sector increases by 1 unit, GDP growth declines by 1.61%.

However, the growth of agriculture, industry, and services contributes positively to GDP growth. Notably, a 1% increase in employment in the services sector leads to a 1.48-unit increase in GDP growth.

Our study provides valuable insights into the relationship between foreign direct investment (FDI), sectoral growth, employment, and GDP growth in Uzbekistan over the period from 1997 to 2023. The findings reveal both positive and negative impacts of the independent variables on GDP growth, measured as the dependent variable.

Balbaa M. [4] found in his research positive relationship between GDP and FDI inflow, while our result shows negative relationship. This result unexpected, it may indicate that FDI inflows are concentrated in sectors or projects with delayed economic returns or that the economy lacks sufficient capacity to efficiently absorb foreign investments. This finding highlights the need for improved policies to better integrate FDI into the economy and ensure it contributes positively to economic growth.

Industry growth, on the other hand, shows a positive and highly significant impact on GDP growth. This underscores the critical role of industrial expansion in driving economic development. Promoting industrialization, modernizing production techniques, and investing in technology could yield substantial economic benefits. However, employment in the industrial sector exhibits a negative and significant impact on GDP growth. This result suggests inefficiencies or overreliance on labor-intensive practices, which may hinder productivity and limit the sector's contribution to economic growth.

Agriculture growth has a positive and statistically significant impact on GDP growth. Although its impact is relatively modest, this result emphasizes the importance of agriculture as a foundational sector in the economy. Modernization and increased investment in this sector could further enhance its contribution to GDP growth.

The services sector emerges as the most significant driver of GDP growth. This finding highlights the increasing importance of the services sector in Uzbekistan's economy, particularly in fostering diversification and resilience. Additionally, employment in the services sector has a significant positive impact on GDP growth which indicates that job creation in the services sector can play a critical role in accelerating economic growth.

CONCLUSION AND SUGGESTIONS

During our research to study the cross-sectoral impact of FDI on the Uzbek economy, we obtained several practical results. The results of this study show that foreign direct investment (FDI), sectoral growth, and employment levels have different impacts on the development of the Uzbek economy. In our study, we used correlation and regression analyses for econometric analysis to determine the importance of cross-sectoral FDI. In particular, it was found that FDI and employment in the industrial sector have a negative impact on economic growth. This situation can be explained by the inefficient placement of investments or the inability of the economy to fully absorb foreign investments.

However, the growth of the industrial, service, and agricultural sectors has a positive impact on GDP growth. In particular, the services sector stands out as the main driver of the economy. An increase in employment levels in the services sector significantly contributes to economic growth.

Policy recommendations

To ensure sustainable growth of the Uzbek economy, it is necessary to put forward several important policy recommendations. First of all, attention should be paid to increasing the efficiency of foreign investment. For this, it is important to direct FDI flows to sectors with high added value, create a favorable environment for foreign investors and reduce bureaucratic barriers. Secondly, it is necessary to implement technological modernization and training programs in the industrial sector. This will allow increasing labor productivity in the industry, introducing modern technologies and enhancing the positive impact on economic growth. Strategies should also be developed to develop the services sector. By encouraging innovation, accelerating digitalization, and supporting entrepreneurship in the services sector, this sector can be turned into a key driver of the economy. The implementation of these policy measures will accelerate the diversification process in the economy and ensure sustainable and long-term growth.

References

1. Kobilov A.E., Kurbonov O.A., Amirov A.M., Usmanova D.K., (2020) The Impact of Investment on the Economic Development of Uzbekistan. Advanced Research in Dynamical and Control Systems, 12(7), 2008-2015.
2. https://www.researchgate.net/publication/343325007_The_Impact_of_Investment_on_the_Economic_Development_of_Uzbekistan
3. Kler R., Gulyamov N.B., Supiev R., (2024) Analyzing Uneven Distribution of Sectoral Employment in Uzbekistan Adopting Panel Data Approach. FMDB Transactions on Sustainable Management Letters, 2(1), 29-38.
4. https://www.researchgate.net/publication/383282884_Analyzing_Uneven_Distribution_of_Sectoral_Employment_in_Uzbekistan_Adopting_Panel_Data_Approach
5. Dašić B., Trklja R., Savić M., (2019) Comparative analysis of inflows and sectoral distribution of the foreign direct investments flows. Mining and Metallurgy Engineering Bor, 1(2), 31-40.
6. https://www.researchgate.net/publication/336426698_Comparative_analysis_of_inflows_and_sectoral_distribution_of_the_foreign_direct_investments_flows
7. Balbaa M., (2024) FDI and Digital Economic Growth: Analyzing The Role of Foreign Direct Investment in Fostering Digital Economic Development and Technological Progress in Uzbekistan. International Finance and Accounting, (5).
8. https://www.researchgate.net/publication/385877690_FDI_AND_DIGITAL_ECONOMIC_GROWTH_ANALYZING_THE_ROLE_OF_FOREIGN_DIRECT_INVESTMENT_IN_FOSTERING_DIGITAL_ECONOMIC_DEVELOPMENT_AND_TECHNOLOGICAL_PROGRESS_IN_UZBEKISTAN
9. Numonjonova N.A., (2024) Investment - an Important Factor in the Development of Small Business. American Journal of Economics and Business Management, 7(12), 1371-1379.
10. https://www.researchgate.net/publication/386895500_Investment_an_Important_Factor_in_the_Development_of_Small_Business
11. Jalilov Sh.Z., Latipova Sh.M., (2018) Methods of Improving Foreign Investments in the Economy of Uzbekistan. Innovative Technologies in Economy, 5(17), 6-9.
12. https://www.researchgate.net/publication/345132581_METHODS_OF_IMPROVING_FOREIGN_INVESTMENTS_IN_THE_ECONOMY_OF_UZBEKISTAN
13. Imomkulov T.B., (2023) The Impact of Foreign Direct Investment on Economic Growth in Uzbekistan. Iqtisodiyot va ta'lim, 24(6), 28-33.
14. https://www.researchgate.net/publication/377483661_THE_IMPACT_OF_FOREIGN_DIRECT_INVESTMENT_ON_ECONOMIC_GROWTH_IN_UZBEKISTAN
15. Khoshimov J., (2023) Ways to increase the Volume of Attracting Foreign Direct Investments to The Economy. Economics and Innovative Technologies, 11(4), 93-99.

16. https://www.researchgate.net/publication/374639941_WAYS_TO_INCREASE_THE_VOLUME_OF_ATTRACTING_FOREIGN_DIRECT_INVESTMENTS_TO_THE_ECONOMY
17. Ebghaei F., (2023) The Impact of Foreign Direct Investment on Economic Growth in the MENA Region. Izmir Journal of Economics, 38(2), 321-335.
18. https://dergipark.org.tr/en/download/article-file/2486171
19. De Mello L., (1999) Foreign direct investment – led growth: evidence from time series and panel data. Oxford Economic Papers, 5(1), 133 – 151.
20. https://www.researchgate.net/publication/5215559_Foreign_Direct_Investment-Led_Growth_Evidence_from_Time_Series_and_Panel_Data
21. Griffin K., (1970) Foreign Capital, Domestic Savings and Economic Development. Bulletin of the Oxford University Institute of Economics & Statistics, 32(2), 99 – 112.
22. Leff, N.H., (1969) Dependency Rates and Saving Rates. American Economic Review. New York: American Economic Association, 59(5).
23. Lessmann C., (2013) Foreign direct investment and regional inequality: A panel data analysis. China Economic Review, 24 (1) 129 – 149.
24. Mencinger J., (2003) Does Foreign Direct Investments Always Enhance Economic Growth Kyklos, Vol 56.
25. Metwally M. Tamaschke R., (1994) The interaction among foreign debt, capital flows and growth: Case studies. Journal of Policy Modeling, 16(6) 597 – 608.
26. Noorbakhsh F., Paloni A., Youssef A., (2001) Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence. World Development, 29(9) 1593 – 1610.
27. Pesmazoglou J., (1972) Growth, investment and saving rations: Some long and medium-term associations by groups of countries. Bulletin of the Oxford University Institute of Economics & Statistics, 34(4) 309 – 328.
28. Rothgeb J., (1988) Direct foreign investment in mining and manufacturing in underdeveloped states. The Social Science Journal, 25 (1), 21 – 43.
29. Smits W.J.B., (1988). Foreign direct investment and export and import value – A cross – section study for thirty less developed countries. The Economist, 136 (1), 91 – 117.
30. Schneider P.H., (2005) International trade, economic growth and intellectual property rights: A panel data study of developed and developing countries. Journal of Development Economics, 78 (2), 529 – 547.
31. https://www.researchgate.net/publication/222627170_International_Trade_Economic_Growth_and_Intellectual_Property_Rights_A_Panel_Data_Study_of_Developed_and_Developing_Countries

muhandislik & iqtisodiyot

ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal

Ingliz tili muharriri: Feruz Hakimov

Musahhih: Zokir Alibekov

Sahifalovchi va dizayner: Iskandar Islomov

2025. № 10

"Muhandislik va iqtisodiyot" jurnali 26.06.2023-yildan
O'zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi
Axborot va ommaviy kommunikatsiyalar agentligi tomonidan
№S–5669245 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.
Litsenziya raqami: №095310.

Manzilimiz: Toshkent shahri Yunusobod tumani 15-mavze 19-uy

+998 93 718 40 07 https://muhandislik-iqtisodiyot.uz/index.php/journal t.me/yait_2100