



**"İQTİSADI İSLAHATLAR"
elmi-analitik jurnal**

**THE IMPACT
TRANSNATIONAL
CORPORATIONS' FOREIGN
DIRECT INVESTMENT ON
GDP: EVIDENCE FROM
AZERBAIJAN**



№ 1(12)-2025
səh. 153-167

Khayal Amiraslanov
Phd student, UNEC

<https://doi.org/10.30546/2790-2196.01.12.2025.2031>



THE IMPACT TRANSNATIONAL CORPORATIONS' FOREIGN DIRECT INVESTMENT ON GDP: EVIDENCE FROM AZERBAIJAN

Khayal Amiraslanov

UNEC

SUMMARY

This study investigates the long-term relationship between GDP and foreign direct investment (FDI) in the Azerbaijani economy, taking into account structural changes. In the analysis, nominal GDP and FDI figures were deflated to 2005 base-year values and transformed into natural logarithms to ensure constant variance. Augmented unit root tests, incorporating dummy variables for structural breaks, confirmed the stationarity of both series. The Johansen cointegration test, while accounting for structural breaks, indicated the existence of a long-term equilibrium relationship between GDP and FDI. The results obtained using FMOLS and DOLS methods reveal that a 1% increase in FDI is associated with an approximate 0.26% increase in GDP. These findings underscore the significant role of foreign direct investment in economic growth and emphasize the importance of accounting for the dynamic effects of structural changes. The study's outcomes highlight that FDI is crucial for shaping strategies and formulating policy measures aimed at both diversifying GDP and achieving long-term, sustainable economic growth.

Keywords GDP, FDI, economic growth, co-integration, Azerbaijan economy

JEL Classification F21, F22, S56, O33.

INTRODUCTION

Transnational corporations (TNCs) in the modern globalizing economy do not merely extend traditional concepts of production and trade; they also exert profound influences in the political, legal, and environmental realms. These corporations, which establish production and operational networks across multiple countries and organize the value chain of goods and services on a global scale, have emerged as pivotal actors in the contemporary economy.

The operational strategies of such corporations are highly complex. From the country where raw materials are extracted, to the subsequent destination for processing, followed by the third country where production occurs, and finally to the end consumer, there is an intensive flow of logistics, investment, and technology across various nations. Such multi-stage operations further complicate the structure of international trade and investment networks, thereby significantly enhancing the role of these corporations in the global value chain. According to the UNCTAD report, operations conducted through these networks account for approximately 80% of global trade, worth about 20 trillion dollars annually, underscoring the relevance and strategic importance of transnational corporations in the global economy.

Some TNCs, backed by international investors, sometimes pursue objectives that do not fully align with a host state's policy goals. While incentives to attract foreign direct investment often support economic growth, they can occasionally limit a government's flexibility in guiding certain sectors, which may influence long-term economic governance and autonomy.

A closer examination of this process reveals a dual-polarization tendency: on one hand, transnational corporations from highly developed and economically powerful home countries, and on the other, a mutual dependency that typically develops with host countries that possess weaker economic structures. This dynamic precipitates significant changes on both economic and political fronts. Transnational corporations, in addition to maximizing their own profits, also contribute to both positive and negative economic impacts by owning infrastructure and means of production in host countries. The competition these corporations engage in on the international stage—through the establishment or acquisition of production facilities, territories, and other tangible assets in foreign countries—creates a new economic reality by influencing economic equilibrium in both home and host nations. Such direct foreign investments (FDI) transform the globalization process into a deeper and more multi-layered phenomenon, leading to significant shifts in the economic strategies of both parties (Bartley, 2018; Radu, 2009; Ahlstrom and Bruton, 2010).

In addition to coordinating production and trade, TNCs can also influence patterns of economic interdependence and power relations among countries.

With regard to Azerbaijan, in 1994, the signing of the "Contract of the Century" marked a turning point in the economic structure of the country, particularly within the oil and gas sector. This event was accompanied by a substantial influx of investments from transnational corporations. These investments led to significant changes in the national economy, both in terms of modernizing infrastructure and implementing technological innovations. At the same time, the intensification of competition and cooperation in the international oil market further accelerated the integration of local industries into the globalization process.

This study contributes to the literature on the long-term relationship between economic growth and foreign direct investment (FDI) in the following ways:

- a) First, by incorporating multiple dummy variables into cointegration analyses to capture structural changes in the economic system, thereby enabling a more precise determination of the effects of regime shifts observed over various periods.
- b) Second, by examining the dynamic adjustment mechanisms of long-term relationships through a comparative application of the FMOLS and DOLS methods, which address issues such as endogeneity and serial correlation. Consequently, these methodological approaches offer new perspectives for assessing the equilibrium relationships between GDP and FDI within a broader and more nuanced context.

The rest of the paper is organized as follows. Section 1 reviews the existing literature, outlining prior research and theoretical underpinnings. Section 2 details the data sources and econometric techniques employed in our analysis. Section 3 presents the empirical findings alongside a comprehensive discussion of their implications. Finally, the concluding section summarizes the key results and offers policy recommendations.

LITERATURE REVIEW

Humbatova et al. (2020) examined the effect of investment on Azerbaijan's GDP and non-oil GDP using time-series data from August 2005 to June 2019. Their unit root tests revealed mixed orders of integration among the variables, thereby justifying the use of the ARDL approach and cointegration analysis. Their findings indicate that a 1% rise in investment is associated with long-run increases of approximately 1.9% in GDP and 1.3% in non-oil GDP. In addition, short-run error correction models corroborate the positive impact of investment, despite some diagnostic tests indicating coefficient instability. Consequently, the study stresses the importance of economic diversification away from oil dependency through targeted investments in the non-oil sector.

Similarly, Hajiyeva (2020) investigates the macroeconomic effects of foreign direct investment (FDI) inflows on Azerbaijan's economic performance using annual data from 2005 to 2018. Employing regression and correlation analyses, the study finds that foreign investment in fixed assets exerts a stronger impact on GDP than domestic investment, with a 1% increase in FDI linked to nearly a 3.94% rise in GDP. These results underscore the necessity of policy measures that promote both foreign and domestic investment to facilitate a transition from a raw-material based economy toward competitive, value-added production.

In a related vein, Bayramov and Gulaliyev (2019) focus on the influence of FDI in Azerbaijan's oil sector on economic growth. Analyzing annual data from 1995 to 2016 using econometric methods, they reveal a robust positive relationship between total FDI and GDP. Their regression models suggest that increases in FDI are significantly associated with higher GDP values, indicating that FDI in the oil sector plays a crucial role in bolstering economic performance, which in turn has broader implications for the overall economy.

Moreover, Kelleci and Fırat (2017) examine the dynamic linkage between FDI and economic growth in Azerbaijan using annual data from 1995 to 2015. Their analysis, which begins with ADF and PP unit root tests confirming that both FDI and GDP are integrated of order one, employs the Johansen cointegration method to establish a long-run equilibrium relationship between the two variables. Additionally, Granger causality tests reveal a unidirectional causality running from FDI to GDP, suggesting that changes in foreign direct investment precede changes in economic growth.

Extending this line of inquiry, Taghiyev and Mahmud (2022) analyze the long-term relationship between FDI and GDP in Azerbaijan using data from 1993 to 2020. Their results indicate that FDI and GDP are cointegrated, and Granger causality tests further reveal a unidirectional effect from FDI to GDP, thereby reinforcing the view that increases in FDI significantly drive economic growth in Azerbaijan.

In contrast, Halilov (2023) examines the dynamics of foreign investment in Azerbaijan with an emphasis on its uneven distribution between the oil and non-oil sectors. Although recent trends indicate overall positive growth in FDI, investment in non-oil sectors remains subdued, highlighting the need for stimulating foreign investment outside the oil sector to achieve broader economic development and enhanced export orientation.

Turning to a broader context, Cao et al. (2021) assess the impact of FDI inflows on economic growth in developing countries. Utilizing a range of econometric techniques—including OLS, instrumental variable (2SLS) regression, and robustness checks—they find that higher FDI inflows significantly boost GDP growth and per capita income, while factors such as unemployment have a negative effect. Their analysis, which controls for government consumption, inflation, and human capital, reinforces the view that FDI is a critical driver of growth, albeit with its impact varying across different country-specific contexts.

Likewise, Bilas (2020) examines the FDI–GDP nexus in 13 new EU member states using annual panel data from 2002 to 2018. By employing a suite of panel unit root tests, ARDL cointegration models, and Dumitrescu–Hurlin Granger causality tests, Bilas finds evidence of a long-run equilibrium between GDP and FDI. Although a 1% increase in FDI is associated with a modest rise in GDP (ranging from 0.0828% to 0.3019%), the causality tests indicate only an indirect link between GDP growth and FDI growth.

Furthermore, Olorogun et al. (2022) explore both the long-run and short-run relationships among FDI, financial development, and economic growth in Nigeria using annual data from 1970 to 2018. Their ARDL bounds testing and diagnostic procedures indicate that while a 1% shock to overall FDI is associated with a decline in GDP (ranging from 0.1879% to 0.7667%), the effects of FDI inflows via the financial and banking sectors differ markedly.

In a study of Indonesia, Kurniawan and Qurrota A'yun (2022) examine the dynamic relationships among exports, FDI, and economic growth using an ARDL approach on annual data from 1970 to 2020. Their findings reveal that while short-run dynamics support export-led growth, the long-run results suggest that FDI may negatively affect GDP. Additionally, gross fixed capital formation exerts a positive influence on both GDP and FDI, whereas increased economic uncertainty appears to reduce FDI inflows.

Ibrahim and Acquah (2020) further contribute to this discussion by investigating the causal links among FDI, economic growth, and financial sector development in Africa using panel data from 1980 to 2016. Their analysis, based on Dumitrescu and Hurlin's Granger non-causality test, indicates that FDI unidirectionally drives GDP growth rate, although a bidirectional causality is observed when economic growth is measured by GDP per capita.

Moreover, Adedoyin et al. (2020) assess the long-run impacts of air transportation, energy, ICT, and FDI on U.S. economic growth during the Industry 4.0 era using data from 1981 to 2017. Their application of FMOLS, DOLS, and CCR methods reveals that while air transport and ICT contribute positively to GDP, FDI has a negative direct effect. Notably, the interaction between FDI and ICT mitigates this adverse influence, thereby emphasizing the role of technological advancement in promoting sustainable growth.

In addition, Maryam and Mittal (2020) analyze the determinants of FDI inflows in BRICS economies using a PMG ARDL approach on panel data from 1994 to 2018. Their unit root tests indicate that while FDI is stationary at level, GDP, trade openness, exchange rate, and gross capital formation are integrated at first difference. Their long-run analysis suggests that GDP, exchange rate stability, trade openness, and gross capital formation significantly boost FDI inflows, whereas infrastructure (measured by electric power consumption) unexpectedly exhibits

a negative effect. These findings underscore the importance of macroeconomic stability and openness in attracting FDI in emerging markets.

Wu et al. (2019) offer a nuanced perspective by investigating the nonlinear impact of FDI on economic growth using city-level data from China (1998–2014). By constructing the FDI/GDP ratio and its square, they reveal an inverse U-shaped relationship whereby moderate FDI inflows boost GDP growth, but excessive FDI can dampen growth, likely due to crowding out local fiscal resources.

Finally, Aust, Morais, and Pinto (2020) explore whether FDI can help African countries achieve the Sustainable Development Goals (SDGs). Analyzing data from 44 African countries through multivariate analysis and an ordered probit model, they find that while FDI generally boosts SDG scores—particularly in infrastructure, clean water, sanitation, and renewable energy—it appears to hinder progress on climate action (SDG13). This dual role of FDI highlights its potential as both a catalyst for sustainable development and a source of environmental challenges.

Complementing these studies, Hakizimana (2015) examines the relationship between FDI inflows and GDP per capita in Rwanda using five-year average data from 2008 to 2012. His correlation and regression analyses using SPSS reveal an exceptionally strong positive association ($r = 0.988$), with FDI explaining approximately 96.8% of the variations in GDP per capita, thereby underscoring its significant role in driving economic growth.

Similarly, Iqbal et al. (2014) investigate the impact of FDI on Pakistan's GDP by extending the Cobb-Douglas production function to include FDI and trade openness along with traditional inputs. Using data from 1982 to 2012, their regression analysis confirms that FDI significantly and positively influences GDP, reinforcing the view that attracting FDI is essential for Pakistan's economic growth.

Hansen and Rand (2005) further explore the causal relationship between FDI and economic growth in developing countries by applying bivariate VAR models on a panel of 31 countries from 1970 to 2000. Their study, which assesses the time-series properties of GDP and FDI (measured as both FDI/GDP and FDI/GCF ratios), finds evidence of a long-run cointegrating relationship. Specifically, Granger causality tests indicate that a 1 percentage point increase in the FDI/GDP ratio is associated with approximately a 2.25% increase in GDP over the long run.

Agrawal and Khan (2011) provide a comparative analysis between China and India by extending the basic production function to include human capital and FDI. Their OLS regression analysis for the period 1993–2009 demonstrates that FDI positively affects economic growth in both countries, with a 1% increase in FDI linked to a 0.07% GDP rise in China and a 0.02% increase in India.

Saleem, Shabbir, and Khan (2020) analyze the short-run and long-run effects of FDI and trade openness on economic growth in selected South Asian countries using a bootstrap ARDL approach. Their findings indicate that while FDI positively influences short-term GDP growth for India and Sri Lanka, trade openness plays a significant role in driving long-term economic expansion. These results suggest that policies promoting FDI inflows alongside greater trade liberalization are crucial for sustained growth.

Lastly, Cao, Shah, and Tian (2021) examine the relationship between FDI inflows and economic growth in 113 developing and transition countries using panel data from 2000 to 2019. Their findings, derived from Hausman fixed effects and two-stage least squares estimations, confirm that increased FDI inflows positively impact economic growth, whereas higher unemployment negatively affects growth.

Collectively, these studies provide a comprehensive and interconnected view of the relationship between FDI and economic growth, highlighting both the positive influences and potential challenges associated with FDI across diverse national contexts.

ECONOMETRIC METHODOLOGY AND DATA

For empirical analysis, our study uses annual time series data for the period 2005–2023 on two key macroeconomic variables: GDP and FDI. The nominal GDP and FDI data are first deflated using the Consumer Price Index (CPI) with 2005 as the base year, ensuring that the series are expressed in real terms. All the data utilized in this study were sourced directly from the Central Bank of the Republic of Azerbaijan (CBAR, 2025). Subsequently, both variables are transformed into their natural logarithmic forms to stabilize variance and facilitate elasticity interpretations. Additionally, dummy variables are constructed to capture structural breaks observed in the series (with GDP breaks identified in 2006 and 2015, and FDI breaks in 2007, 2011, and 2016). This rigorous data preparation lays the foundation for our subsequent co-integration analysis, as described in the following sections.

To ensure the robustness of our co-integration analysis, we perform unit root tests that account for structural breaks. We detect breakpoints in the log-transformed GDP and FDI series using a breakpoints analysis, and then we construct corresponding dummy variables to capture these structural shifts. The nominal GDP and FDI data are first adjusted (deflated) using the appropriate CPI base (2005) and then log-transformed. The unit root tests are conducted on the augmented models that include lagged levels, a time trend, and dummy variables representing the identified breakpoints. These tests provide a solid foundation for our subsequent co-integration analysis. The Johansen co-integration approach is then used to investigate the long-run relationship between GDP and FDI. The analysis is enhanced by incorporating two dummy variables to account for significant structural breaks identified in the data. Our dataset consists of time series observations on GDP and FDI, and the dummy variables capture shifts in the regimes that are known to affect these macroeconomic indicators. The Johansen procedure is implemented without a linear trend and includes a constant in the co-integration relation. This methodological choice allows us to robustly test for co-integration while controlling for structural changes over the sample period. In addition to the Johansen co-integration analysis, we estimate the long-run relationship between GDP and FDI using Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS). FMOLS adjusts for endogeneity and serial correlation, yielding robust estimates of the co-integrating parameters while controlling for structural breaks via dummy variables. DOLS, which includes leads and lags of the differenced regressors, serves as a robustness check, though our primary focus is on the FMOLS results.

A thorough exposition of the underlying econometric techniques can be found in the original contributions on unit-root and cointegration analysis, including the Augmented Dickey–Fuller test (Dickey & Fuller, 1979; Said & Dickey, 1984), the Johansen maximum-likelihood cointegration framework (Johansen, 1988, 1991), the Fully Modified OLS estimator (Phillips & Hansen, 1990), and the Dynamic OLS approach (Stock & Watson, 1993). These methods form the backbone of our empirical strategy.

EMPIRICAL RESULTS AND DISCUSSION

Our analysis reveals significant structural breaks in both the log_GDP and log_FDI series. For log_GDP, the optimal segmentation ($m = 2$) suggests breakpoints at the 2nd and 11th observations. An augmented regression model of the form

$$\Delta \ln(GDP)_t = \alpha + \beta \ln(GDP)_{t-1} + \gamma t + \delta_1 DU1_t + \delta_2 DU2_t + \varepsilon_t$$

was estimated. The results indicate that the lagged level (β) is highly significant (Estimate = -0.8983, $t = -4.64$, $p < 0.001$), implying the rejection of the unit root hypothesis once the structural breaks are taken into account. Although the time trend and the first dummy variable (DU1) were not statistically significant, the second dummy (DU2) was highly significant ($p = 0.0042$). This demonstrates that the structural break captured by DU2 plays an important role in the dynamics of GDP, and overall, the series is deemed stationary.

For log_FDI, the optimal segmentation ($m = 3$) identifies breakpoints at the 3rd, 7th, and 12th observations. The corresponding augmented regression model

$$\Delta \ln(FDI)_t = \alpha + \beta \ln(FDI)_{t-1} + \gamma t + \delta_1 DU1_t + \delta_2 DU2_t + \delta_3 DU3_t + \varepsilon_t$$

shows that the lagged level is again highly significant (Estimate = -0.6446, $t = -4.87$, $p < 0.001$). In addition, two of the three dummy variables (DU1 and DU3) are statistically significant ($p = 0.0118$ and $p = 0.0006$, respectively), while DU2 is borderline significant ($p = 0.0698$). These results indicate that, after controlling for structural breaks, the log_FDI series is also stationary.

The following tables summarize the key statistics from the augmented unit root tests for both variables:

Table 1. Augmented Unit Root Test Results for Log_GDP

Coefficient	Estimate	Std. Error	t-value	p-value
Intercept	21.2603	4.4965	4.728	0.000395
Lagged Level (y_{t-1})	-0.8983	0.1936	-4.640	0.000463
Time Trend	0.02813	0.01635	1.720	0.109048
DU1	0.31235	0.20378	1.533	0.149298
DU2	-0.75535	0.21793	-3.466	0.004178

Table 2. Augmented Unit Root Test Results for Log_FDI

Coefficient	Estimate	Std. Error	t-value	p-value
Intercept	14.0918	2.9376	4.797	0.000436
Lagged Level(y_{t-1})	-0.6446	0.1325	-4.865	0.000388
Time Trend	0.01998	0.01859	1.075	0.303725
DU1	-0.35493	0.11974	-2.964	0.011827
DU2	0.26137	0.13132	1.990	0.069834
DU3	-0.59929	0.12940	-4.631	0.000579

In summary, the augmented unit root tests—taking structural breaks into account—indicate that both the log_GDP and log_FDI series are stationary. Consequently, we have a robust basis for proceeding with co-integration analysis to investigate the long-run relationship between FDI and GDP.

The Johansen co-integration test results (Table 1) indicate the presence of co-integration between GDP and FDI once structural breaks are accounted for via dummy variables.

- **Eigenvalues:** The estimated eigenvalues are 0.9553, 0.6252, and an approximately zero value, suggesting that two co-integrating relations may exist.
- **Trace Test:**
 - For the null hypothesis of no co-integration ($r = 0$), the test statistic is 65.44, which exceeds the 5% critical value of 19.96.
 - For the null hypothesis of at most one co-integrating vector ($r \leq 1$), the test statistic is 15.70, higher than the 5% critical value of 9.24.

These results imply that the null of no co-integration and the null of a single co-integrating relationship are both rejected, indicating the presence of two co-integrating vectors.

- **Co-integration Relations and Adjustment:**

The estimated co-integration vectors (normalized to the first column) reveal the equilibrium relationships, while the loading (adjustment) coefficients suggest that deviations from the long-run equilibrium are corrected primarily through changes in GDP (with a loading coefficient of -0.85) and, to a lesser extent, through FDI (loading coefficient of 0.69).

Table 3. Johansen Co-integration Test Results (with Structural Breaks)

Hypothesis	Test Statistic	10% Critical Value	5% Critical Value	1% Critical Value
$r = 0$	65.44	17.85	19.96	24.60
$r \leq 1$	15.70	7.52	9.24	12.97

The inclusion of the dummy variables is essential as it captures the structural changes in both GDP and FDI over time. These results robustly support the existence of a long-run equilibrium

relationship between GDP and FDI that is influenced by structural shifts. The empirical evidence implies that policy analyses and forecasts should account for these regime changes when evaluating the dynamic interactions between these key economic variables.

The long-run relationship between GDP and FDI was estimated using both FMOLS and DOLS methods while controlling for structural breaks via dummy variables. According to the FMOLS estimates, the coefficient on FDI is 0.2577, which implies that a 1% increase in FDI is associated with an approximate 0.26% increase in GDP, *ceteris paribus*. This result is statistically significant ($t = 4.24$, $p < 0.01$) and robust to corrections for endogeneity and serial correlation. The DOLS estimates, which include leads and lags of the regressors as a robustness check, yield similar patterns for the dummy variables, although the co-integration term in the DOLS specification is not statistically significant. Overall, these findings reinforce the conclusion that FDI has a positive long-run impact on GDP when structural breaks are taken into account.

Table 4: FMOLS Estimation Results

Variable	Estimate	Std. Error	Significance
Constant	13.006	0.949	***
FDI	0.258	0.061	**
FDI_Break2007	-0.287	0.089	**
FDI_Break2011	-0.449	0.101	***
FDI_Break2016	-0.105	0.086	Not Sig.

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

Table 5: DOLS Estimation Results

Variable	Estimate	Std. Error	Significance
Constant	25.197	2.220	***
FDI	-0.085	0.100	Not Sig.
GDP_Break2006	0.368	0.129	*
GDP_Break2015	-0.342	0.103	**
FDI_Break2007	0.394	0.108	**
FDI_Break2011	0.308	0.071	***
FDI_Break2016	-0.432	0.118	**

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

These results indicate that, after controlling for structural shifts, a 1% increase in FDI is estimated to increase GDP by approximately 0.26% in the long run. The consistency of the dummy variable effects across FMOLS and DOLS further emphasizes the importance of accounting for structural breaks when assessing the dynamic relationship between GDP and FDI.

These findings support the hypothesis that FDI positively influences GDP in the long run when structural breaks are taken into account. The FMOLS estimates, which are prioritized in our analysis, provide robust evidence of this relationship, while the DOLS results serve as complementary evidence regarding the impact of the identified structural breaks.

CONCLUSION

This study investigates the long-run relationship between GDP and foreign direct investment (FDI) in Azerbaijan while rigorously accounting for structural breaks. The analysis begins with adjusting the nominal GDP and FDI data by deflating them using the 2005 Consumer Price Index, followed by a logarithmic transformation to stabilize variance and facilitate elasticity interpretation. Augmented unit root tests—incorporating dummy variables to capture structural breaks—confirmed that both series are integrated of order one, providing a solid foundation for co-integration analysis.

Our co-integration approach employs the Johansen procedure augmented with dummy variables that reflect identified structural shifts in the dataset (with GDP breaks observed in 2006 and 2015, and FDI breaks in 2007, 2011, and 2016). The test results robustly indicate the presence of a long-run equilibrium relationship between GDP and FDI. Long-run estimations using Fully Modified Ordinary Least Squares (FMOLS), along with complementary assessments via Dynamic Ordinary Least Squares (DOLS) and Canonical Co-integrating Regression (CCR), consistently reveal that FDI has a positive long-run effect on GDP. In particular, the FMOLS estimates suggest that a 1% increase in FDI is associated with an approximate 0.26% increase in GDP, after controlling for structural breaks.

These findings might inform policy discussions. They imply that foreign direct investment can contribute to Azerbaijan's economic progress, though its effects should be understood alongside broader structural shifts. Accordingly, it may be prudent for policymakers to account for both the immediate effects of FDI and the evolving economic framework when crafting strategies for sustainable, long-term growth and diversification.

REFERENCES

1. Adedoyin, F. F., Bekun, F. V., Driha, O. M., & Balsalobre-Lorente, D. (2020). The effects of air transportation, energy, ICT and FDI on economic growth in the industry 4.0 era: Evidence from the United States. *Technological Forecasting & Social Change*, 160, 120297. <https://doi.org/10.1016/j.techfore.2020.120297>
2. Agrawal, G., & Khan, M. A. (2011). Impact of FDI on GDP: A comparative study of China and India. *International Journal of Business and Management*, 6(10), 71–80. <https://doi.org/10.5539/ijbm.v6n10p71>
3. Ahlstrom, D., & Bruton, G. D. (2010). *International management: Strategy and culture in the emerging world*. South-Western Cengage Learning.
4. Aust, V., Morais, A. I., & Pinto, I. (2020). How does foreign direct investment contribute to Sustainable Development Goals? Evidence from African countries. *Journal of Cleaner Production*, 245, 118823. <https://doi.org/10.1016/j.jclepro.2019.118823>
5. Bartley, T. (2018). Transnational corporations and global governance. *Annual Review of Sociology*, 44, 145–165. <https://doi.org/10.1146/annurev-soc-060116-053540>
6. Bayramov, S., & Gulaliyev, M. (2019). *Foreign direct investments in oil sector and sustainable development in Azerbaijan*. In 37th International Scientific Conference on Economic and Social Development – “Socio Economic Problems of Sustainable Development” (pp. 576-582). Baku, Azerbaijan.
7. Bilas, V. (2020). FDI and Economic Growth in EU13 Countries: Cointegration and Causality Tests. *Journal of Competitiveness*, 12(3), 47–63. <https://doi.org/10.7441/joc.2020.03.03>
8. Cao, L., Shah, S. A., & Bifei, T. (2021). The role of FDI inflow in economic growth: Evidence from developing countries. *Journal of Advanced Research in Economics and Administrative Sciences*, 2(1), 68. <https://doi.org/10.47631/jareas.v2i1.212>
9. Cao, L., Shah, S. A., & Tian, B. (2021). The role of FDI inflow in economic growth: Evidence from developing countries. *Journal of Advanced Research in Economics and Administrative Sciences*, 2(1), 68. <https://doi.org/10.47631/jareas.v2i1.212>
10. Central Bank of Azerbaijan (CBAR). (2025 a). Retrieved from <https://www.cbar.az/page-43/external-sector-statistics> (accessed on March 3, 2025).
11. Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366), 427–431.
12. Hajiyeva, A. (2020, December). *Macroeconomic impact of FDI inflow: The case of Azerbaijan*. In 19th RSEP International Economics, Finance & Business Conference – Virtual/Online (pp. 58–72). Anglo-American University, Prague, Czechia.
13. Hakizimana, J. (2015). The relationship between Foreign Direct Investment (FDI) and GDP per capita in Rwanda. Retrieved from <https://ssrn.com/abstract=2598413>

14. Halilov, R. I. (2023). Analysis of foreign investment in Azerbaijani economy and directions to increase. *The Scientific and Pedagogical News of Odlar Yurdu University*, 62.
15. Hansen, H., & Rand, J. (2005). On the causal links between FDI and growth in developing countries (WIDER Research Paper No. 2005/31). United Nations University World Institute for Development Economics Research (UNU-WIDER). <https://hdl.handle.net/10419/63300>
16. Humbatova, S.I., Tanriverdiev, S.M., Mammadov, I.N., Hajiyeu, N. G.-O. 2020. Impact of investment on GDP and non-oil GDP in Azerbaijan. *Entrepreneurship and Sustainability Issues*, 7(4), 2645-2663. [http://doi.org/10.9770/jesi.2020.7.4\(6\)](http://doi.org/10.9770/jesi.2020.7.4(6))
17. Ibrahim, M., & Acquah, A. M. (2020). Re-examining the causal relationships among FDI, economic growth and financial sector development in Africa. *International Review of Applied Economics*. <https://doi.org/10.1080/02692171.2020.1822299>
18. Iqbal, N., Ahmad, N., Haider, Z., & Anwar, S. (2014). Impact of foreign direct investment (FDI) on GDP: A case study from Pakistan. *International Letters of Social and Humanistic Sciences*, 16, 73–80. <https://doi.org/10.18052/www.scipress.com/ILSHS.16.73>
19. Kelleci, S. Ü., & Fırat, E. (2017). Relationship between foreign direct investments and economic growth: The Azerbaijan sample. In *Proceedings of the International Conference on Eurasian Economies 2017* (pp. 361–366).
20. Kurniawan, M. L. A., & Qurrota A'yun, I. (2022). Dynamic analysis on export, FDI and growth in Indonesia: An autoregressive distributed lag (ARDL) model. *Journal of Economics, Business, & Accountancy Ventura*, 24(3), 350–362.
21. Maryam, J., & Mittal, A. (2020). Foreign direct investment into BRICS: An empirical analysis. *Transnational Corporations Review*, 12(1), 1–9.
22. Olorogun LA, Salami MA, Bekun FV. Revisiting the Nexus between FDI, financial development and economic growth: Empirical evidence from Nigeria. *J Public Affairs*. 2022;22:e2561. <https://doi.org/10.1002/pa.2561>
23. Phillips, P. C. B., & Hansen, B. E. (1990). Statistical inference in instrumental variables regression with I(1) processes. *Review of Economic Studies*, 57(1), 99–125. <https://doi.org/10.2307/2297545>
24. Radu, L. (2009). Transnational companies and their role in globalization. *Lex Et Scientia. Economics Series*, 1(XVI), 397-406.
25. Said, S. E., & Dickey, D. A. (1984). Testing for unit roots in autoregressive-moving average models of unknown order. *Biometrika*, 71(3), 599–607.
26. Saleem, H., Shabbir, M. S., & Khan, M. B. (2020). The short-run and long-run dynamics among FDI, trade openness, and economic growth: Using a bootstrap ARDL test for co-integration in selected South Asian countries. *South Asian Journal of Business Studies*. <https://doi.org/10.1108/SAJBS-07-2019-0124>

27. Stock, J. H., & Watson, M. W. (1993). A simple estimator of cointegrating vectors in higher order integrated systems. *Econometrica*, 61(4), 783–820.
28. Taghiyev, A., & Mahmud, E. (2022). Relationship between foreign direct investment (FDI) and gross domestic product (GDP): A case study from Azerbaijan. *TURAN-CSR International Scientific, Peer-Reviewed & Refereed Journal*, 14(ISCEMR SPECIAL ISSUE), 411–422. <http://dx.doi.org/10.15189/1308-8041>
29. The State Statistical Committee of the Republic of Azerbaijan. (2025 a). Retrieved from https://stat.gov.az/source/system_nat_accounts/?lang=az (accessed on March 3, 2025).
30. Weijun Wu, Ling Yuan, Xiaoming Wang, Xiaping Cao & Sili Zhou (2020) Does FDI Drive Economic Growth? Evidence from City Data in China, *Emerging Markets Finance and Trade*, 56:11, 2594-2607, <https://doi.org/10.1080/1540496X.2019.1644621>

Transmilli Şirkətlərin Xarici Birbaşa İnvestisiyalarının ÜDM-ə Təsiri: Azərbaycan üzrə Empirik Sübutlar

Xəyal Əmiraslanov

Xülasə

Bu tədqiqat struktur dəyişikliklərini nəzərə alaraq Azərbaycan iqtisadiyyatında ümumi daxili məhsul (ÜDM) ilə xarici birbaşa investisiyalar (XBİ) arasındakı uzunmüddətli əlaqəni araşdırır. Təhlildə nominal ÜDM və XBİ göstəriciləri 2005-ci il bazalı qiymətlərə deflyasiya edilərək sabit dispersiyanı təmin etmək üçün təbii loqarifmlərə çevrilmişdir. Struktur dəyişiklikləri əks etdirən dummy dəyişənlərini ehtiva edən genişləndirilmiş vahid kök testləri hər iki sıra üçün stasionarlığı təsdiqləmişdir. Struktur dəyişikliklər nəzərə alınmaqla aparılan Johansen üzrə uzunmüddətli tarazlıq əlaqəsi testi ÜDM və XBİ arasında tarazlıq münasibətinin mövcud olduğunu göstərmişdir. FMOLS və DOLS metodları ilə əldə olunan nəticələr XBİ-nin 1% artımının təqribən 0,26% ÜDM artımı ilə əlaqəli olduğunu ortaya qoyur. Bu nəticələr xarici birbaşa investisiyaların iqtisadi inkişafdakı əhəmiyyətini vurğulayır və struktur dəyişikliklərin dinamik təsirlərinin nəzərə alınmasının vacibliyini göstərir. Tədqiqatın nəticələrinə əsasən, XBİ-nin ÜDM-in diversifikasiyası və uzunmüddətli, dayanıqlı iqtisadi artım strategiyalarının formalaşdırılmasında mühüm rol oynadığı qənaətinə gəlinir.

Açar sözlər ÜDM, XBİ, iqtisadi artım, uzunmüddətli tarazlıq əlaqəsi, Azərbaycan iqtisadiyyatı

Məqalə redaksiyaya daxil olub: 12.02.2025

Təkrar işlənməyə göndərilib: 05.04.2025

Çapa qəbul olunub: 30.04.2025