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The Role of Economic Freedom and Development Aid in Attracting Foreign Direct Investment in Uzbekistan

Gulrukh Abdullaeva[1], Oygul Turlibekova[2], Shakhzoda Khasanova[2], Bibisora Sadibekova[2]

[1]Business School of Hohai University, Nanjing, China
[2]Department of Economics and Management, Tashkent State University of Oriental Studies, Tashkent, Uzbekistan
Email: gulrukhabdullaeva.uza@mail.ru, o.i.turlibekova@gmail.com, Sshakhzoda@yahoo.com, bibisha@mail.ru

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Abstract

The aim of this study is to investigate the effect of economic freedom on foreign direct investment in Uzbekistan. In order to examine this relation, we constructed a composite index of 10 economic freedom indicators using principal component analysis, as well as a panel data on provincial level that span twelve years of observations. The empirical outcomes reveal that economic freedom has significant and positive impact in attracting foreign capital. Moreover, official development assistance positively moderates the relationship between economic freedom and FDI. We find evidence suggesting that foreign direct investment inflows increase provided that institutions and government policies ensure the efficient exercise of private property rights. Apart from the index of economic freedom, the findings support the importance of macroeconomic indicators in attracting foreign investment.

Keywords

Economic Freedom, Foreign Direct Investment, Aid, System GMM, Uzbekistan

1. Introduction

Institutional quality is a critical factor in attracting FDI, as it creates a stable, transparent, and predictable environment for foreign investors. Countries with strong institutions are better positioned to attract and retain FDI, which in turn drives economic growth and development. While other factors like market size and natural resources also matter, improving institutional quality remains a key strategy for enhancing a country's attractiveness to foreign investors.

This study looks into the role of institutions of economic freedom on FDI attraction in Uzbekistan using 10 components of the Index of Economic Freedom (EF) provided by the Heritage Foundation. This American thinktank defines economic freedom as "the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself". In a free economy, MNEs have more freedom to import desired materials, equipment, capital, or even the labor; and export their production. Thus, it is expected that the MNEs will enjoy and benefit more when the economic freedom is higher (Kazemi & Azman-Saini, 2017).

Unlike to prior literature that investigated the economic freedom—FDI nexus in larger samples like continents or regions (Moussa et al., 2016; Singh & Gal, 2020; Nasih Tag & Degirmen, 2022; Ahmad et al., 2023) our study pursues the analysis with small post-Soviet country which was often neglected mostly due to data scarcity. Moreover, the government of Uzbekistan has recently activated the process of transition to market economy and opening up to foreign capital which make economic freedom more relevant than ever. Thus, this study's empirical findings will be relevant for countries with transition economies. In addition, several policy recommendations for the government of Uzbekistan will be provided in order to further boost its investment attractiveness.

The remainder of the study proceeds as follows: Section 2 reviews the literature and provides the research hypotheses. The research design comprising the data and variables' descriptions are presented in Section 3, while Section 4 reports about empirical analysis and results, and section 5 concludes.

2. Uzbekistan's Reforms within Institutional Framework

Uzbekistan is undergoing deep institutional reforms under National Development Strategy 2022-2026, with its overarching goals to become upper-middle-income country by 2030 and halve poverty rate by 2026. The Development Strategy of the New Uzbekistan aims to achieve 100 goals within the seven priority areas of development for the next five years. These goals comprise everything from e-government services and improved judicial oversight to energy efficiency and environmental protection.

Economic stability has been the foundation for Uzbekistan's success in recent years, and it remains a key tenant of the new development strategy. No institution plays a more important role in this regard than the Central Bank of Uzbekistan (CBU). In collaboration with other central banks and international financial institutions, the CBU has built capacity and expertise across analysis, forecasting and monetary operations. Regular policy rate reviews are conducted with clarity and transparency. The bank's success in combining regulatory support and price stability during the pandemic helped ensure a strong recovery. Throughout the turbulence of 2022, the CBU has carefully balanced the need to keep inflation on a downward trend without unduly impacting economic activity. Under the new development strategy, the CBU will aim to bring inflation down to 5%, and has

no shortage of planned improvements for monetary policy.

Since 2017, the government of Uzbekistan implemented key reforms allowing for the liberalization of the foreign exchange, efficiency enhancing improvements to business establishment procedures including through digitalization and streamlining, and improved access to information by publishing many laws, regulations, and Presidential and Cabinet of Minister decrees and resolutions online in a dedicated site. In 2019, Uzbekistan adopted a new Investment Law and improved the institutional structure for investment promotion by providing the Ministry of Investment, Industry and Trade with the mandate for investment policy, and restructuring the Uzbekistan Investment Promotion Agency (UzIPA).

The government puts a special emphasis on the country's position in well-known international rankings that create the overall image of the condition of state's institutions. For instance, there is a special state body created for such purpose called Republican Council for Working with International Ratings and Indices. The Council operates on the basis of the presidential resolution "On measures to ensure the harmony of scientific potential and practical activity in working with international ratings and indices". According to the statistics provided by the Council, in 2022 the country's position in 16 priority ratings has experienced an increase.

The Heritage Foundation that runs the Index of economic freedom scored Uzbekistan 55.9 points in 2024 making its economy 103rd freest in the world rank and 20th in the Asia-Pacific region. In recent years Uzbekistan has been practicing policies of larger freedom with greater openness and modernization that contributed to the better image within the Index.

3. Literature Review and Hypotheses Development

The empirical literature on the relationship between institutional quality and FDI provides mixed findings and highlights the importance of considering different factors and contexts. In this section, I first review the literature on the various channels through which institutions may affect FDI in general. Next, I will discuss the previous studies on the impact of development aid on FDI and institutional quality. I then develop the hypotheses for empirical investigation.

Former research revealed that institutions affect FDI through property rights protection, reduction of transaction costs and barriers to competition. Strong institutions limit the executive's power to exploit the private investment (domestic or foreign) and assure that in the long term the property rights of the foreign investor will be respected or guaranteed. According to Huang (2022), strong property rights institutions help enforce contracts between the government and private entities and constrain a government's arbitrary behavior and expropriation activities. The threat of expropriation lowers firms' expected returns from investments. Thus, lowering firms' expropriation risk by strengthening property rights protection should increase MNE's willingness to invest.

Property rights protection is especially important to private (foreign) firms be-

cause they are subject to higher expropriation risk than publicly traded ones. Indeed, local governments are less likely to expropriate from publicly listed firms due to their greater visibility and deeper connections to the government. Another research findings (Akhtaruzzaman et al., 2017) point to the fact that the risk of expropriation has a much larger impact on FDI than other dimensions of institutional quality commonly considered in the empirical FDI literature. This perspective finds additional support in survey data collected by the World Bank's Multilateral Investment Guarantee Agency (MIGA), which suggest that expropriation is the most important factor among a large set of risk factors thought to affect multinational enterprises' choices of location.

Along with protection of property rights, efficient institutions lower the transaction costs that arise throughout the operation of foreign firms. Transaction costs, according to Coase (1960), are mainly made up of information acquisition costs and negotiation costs. A foreign investor might face additional costs while drawing up contracts, which is related to the cost of research and information, or the cost of signing contracts, which is related to negotiation and decision-making costs as well as the costs which arise during monitoring and enforcing the contracts.

The imposed transaction costs are higher in a host country, where there are many state regulations, burdening taxation, legislative instability, and corruption. Thus, phenomena such as institutional frailty, corruption, and state captivity define the way in which the real institutional arrangement imposes significant transaction costs that affect MNE's operation.

At the same time, well-structured institutions usually have mature market competition mechanisms, and this dynamic competitive environment creates a kind of "competitive assimilation" pressure on foreign firms, forcing them to continuously upgrade their technological and innovation capabilities in order to survive and develop in the local market competition. Barriers to competition benefit some firms but deny opportunities and increase costs to other firms and to consumers. According to World Bank (2005), governments influence barriers to competition more directly through their regulation of market entry and exit and their response to anticompetitive behavior by foreign firms.

Overall, the above paragraphs discussed the main channels of institutional impact on FDI inflows in case they are strong and of high quality. Stemming from these, one can assume that weak institutions lead to opposite effects including: poor market functioning, and the emergence of phenomena such as rent-seeking and corruption, as well as the lack of an economic environment conducive to business operations, all of which can increase the transaction costs of firms; judicial and regulatory system ineffectiveness may increase the risk of expropriation and limit the availability of resources and public goods; and low quality human capital impedes investment. Accordingly, Hypothesis 1 is proposed:

H_{1a}: *There is a significant positive impact of institutional quality on FDI in Uzbekistan*

H_{1b}: *There is a significant negative impact of institutional quality on FDI in Uzbekistan*

H_{1c}: There is an insignificant impact of institutional quality on FDI in Uzbekistan

There is limited research that investigated the moderating effect of official development assistance on the relationship between institutional quality and FDI (Fon & Alon, 2022), therefore the preceding paragraphs will discuss the impact of ODA on institutional quality and FDI separately.

A large body of research has attempted to provide some insight as to why aid is or not especially effective in recipient countries. Some of this research has explored the roles of recipient's policy and institutional quality (Collier & Dollar 2002); institutional quality alone (Burnside & Dollar 2004), civil conflict and war (Collier & Hoeffler, 2002).

Clemens et al. (2004) found that aid is most effective in those countries with strong policies and institutions. Their research prompted some major donor agencies and multilateral institutions to be more selective with their aid allocations and to allocate larger shares to countries with supposedly stronger policies and institutions, where it will presumably have a bigger impact on development and economic growth.

Literature on the influence of ODA on FDI is relatively novel, beginning with Karakaplan et al. (2005). Authors' findings revealed that good governance and financial market development significantly improves the impact of aid on subsequent flows of FDI. Later, Kang et al. (2011) researched Korea's foreign aid patterns and the analysis based on the FDI gravity model and panel dynamic system GMM estimation showed that only aids from Korea and Japan create more inflow of FDI into their respective recipient developing countries. Such a vanguard effect was also present in studies by Ono and Sekiyama (2022), Kimura and Todo (2010), as well as Nishitateno (2023).

Selaya and Sunesen (2012) tested the data for 186 developing countries from 1970 to 2001 and concluded that there is no clear relationship with ODA and FDI. However, they noted that ODA attracts FDI when it is used for infrastructure and human capital. They also insisted that ODA crowds out FDI when ODA is a transfer of physical capital. Liao et al. (2020) analyzed a sample of Belt and Road countries until 2017. This analysis found that aid for complementary sectors promotes FDI, while physical capital aid crowds out FDI. They also confirmed that that the effects of total aid on FDI are significantly negative. By contrast, in special circumstances such as post-conflict, ODA has been shown to promote FDI. Garriga and Phillips (2014) analyzed post-conflict countries from 1973 to 2008. They found that ODA attracts FDI to post-conflict countries while the ODA from the US is negatively correlated with FDI.

Stemming from both positive and disadvantageous effects of aid on recipient countries' economies as a whole, following hypotheses are put forward:

H_{2a}: ODA positively moderates the relationship between institutional quality and FDI in Uzbekistan

H_{2b}: ODA negatively moderates the relationship between institutional quality and FDI in Uzbekistan

4. Research Design

The conceptual model given in Figure 1 examines the overall impact of a country's institutional quality on FDI. Then it tests the moderating effect of ODA on the relationship between the quality of institutions and FDI.

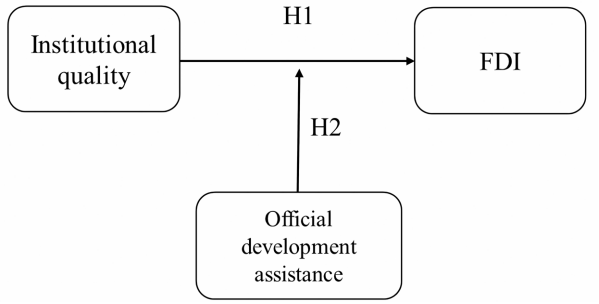

Figure 1. Conceptual model.

4.1. Dependent Variable

As the dependent variable in the regressions, the natural log of FDI net inflows in current US dollars is employed. The study applied FDI inflows received by 14 regions of Uzbekistan during 12-year period. The data were derived from the Statistics Agency of Uzbekistan.

4.2. Independent Variable

The independent variable is institutional quality (INST). Institutions are multifaceted, and the overlap between the political and economic facets makes measuring institutional quality challenging (Acemoglu et al., 2002). Therefore, problems arise when a single governance factor is used to measure such a broad aspect of a country (Wheeler & Mody, 1992). Research has shown that when deciding on whether to enter a foreign market, MNEs are more likely to take into consideration a combination of several institutional factors of the host location, rather than a single factor, such as enforcement of the rule of law or control of corruption (Pajunen, 2008).

The study constructed a composite index of 10 components of the Index of Economic Freedom using first order principal component method. Each component is graded on a scale from o to 100, including government integrity, labour freedom, property rights, tax burden, trade freedom, government spending, business freedom, investment freedom, monetary freedom and financial freedom. Scores on these 10 components of economic freedom are calculated from a number of sub-variables and then equally weighted and averaged to produce an overall economic freedom score for each economy. The study employed 10 out of 12 economic freedom components as the data on 2 components were not available for the research period.

4.3. Control Variables

In order to enhance the validity of the test as much as possible, this study con-

trolled for several market factors that determine the host country's attractiveness toward FDI. They include GDP, inflation rate, population growth rate, mobile cellular subscription numbers, the percentage of population ages 25 and over that completed lower secondary education, as well as total natural resources rents as a percentage of GDP of the host country.

The level of economic development of the host country (GDP) best reflects the future business and investment potential of enterprises in the host country. The higher the level of economic development of the host country, the larger the market size and consumption capacity, and the more stable the market environment, the greater the incentive for multinational enterprises. Therefore, GDP is chosen as an explanatory variable and the data are obtained from the World Bank. GDP (log) was measured as the natural log of the host country's annual gross domestic product in current US dollars. The study expects a positive relationship between FDI inflows and GDP.

The research also opted for population growth rate (POP) and the percentage of population aged 25 and over with lower secondary education (EDU) to control for the host country's available human capital which plays a crucial role in determining FDI inflows (Borensztein et al., 1998). Educational attainment is closely related to the skills and competencies of a country's population, and could be seen as a proxy of both the quantitative and qualitative aspects of the stock of human capital. On the one hand high population growth may signal about huge consumer market and is favorable for horizontal FDI, on the other hand the excessive population growth burdens the available infrastructure. The rapid population growth raises alarming economic issues such as high unemployment, lack of infrastructure and restricting the government from providing basic facilities such as health and education to the fast-growing population (Musambachime, 1990). It may further result in low-quality human capital, dissuading investors from investing in the country. Data on both variables were obtained from WDI. The thesis expects POP variable to effect FDI negatively, while EDU influence inward investment flows positively.

Previous research suggests that GDP deflator (INF) as a proxy for macroeconomic policy distortions which deters future investment into the country. Data on inflation came from the WDI. The study expects a negative relationship between FDI and host-country inflation rates.

The presence of a high-quality physical infrastructure can impact the FDI location decisions of MNEs (Wheeler & Mody, 1992). Thus, the study controlled for the impact of the physical infrastructure by including mobile cellular subscriptions (MOB), measured by the number of a country's mobile cellular subscriptions per 100 people. The data was derived from the World Bank. I expect a positive relationship between MOB and the dependent variable.

Uzbekistan possesses substantial reserves of natural gas, oil, gold and coal. The extant literature has long emphasized the importance of natural resources in the FDI location decisions of MNEs (Irandoust, 2022). Therefore, we included the total natural resources rents variable which is the sum of oil rents, natural gas

rents, coal rents (hard and soft), mineral rents, and forest rents (NR). Data on this variable also comes from WDI. In line with several studies, we share the opinion that in developing countries the abundance of natural resources weakens the available institutions and increase the economic costs deterring investment (Chiyaba & Singleton, 2023; Asiedu, 2006). Thus, we expect a negative sign.

4.4. Moderating Variable

The study analyses whether official development assistance weakens or strengthens the impact of institutional quality on FDI inflows in Uzbekistan. The data on ODA was taken from the World Bank. It should be mentioned that net official development assistance includes loans with a grant element of at least 25 percent. Table 1 provides a summary description of the variables and data sources.

Table 1. Summary description of the variables and data sources.

Variable type	Label	Meaning	Source
Dependent	FDI	FDI net inflows at regional (provincial) level in Uzbekistan	Statistics Agency of Uzbekistan
Independent	INST	A composite index of 10 economic freedom indicators using first order principal component method	The Heritage Foundation
Control	GDP	The natural log of annual gross domestic product at current US dollars	World Development Indicators
	INF	The rate of price change in the economy	World Development Indicators
	NR	Total natural resources rents as a percentage of GDP	World Development Indicators
	POP	Annual population growth rate	World Development Indicators
	MOB	The number of mobile cellular subscriptions.	World Development Indicators
	EDU	The percentage of population ages 25+ that completed lower secondary education	World Development Indicators
Moderating	ODA	Net official development assistance	World Development Indicators

5. Empirical Analysis and Results

The sample covers FDI inflows received by 14 regions (provinces) of Uzbekistan between 2012 and 2023. In the estimation approach and in the choice of control variables, the study closely follows Busse and Hefeker (2007), as well as Fon and Alon (2022).

$$\mathrm{LnFDI}_{it} = \beta_0 + \beta_1 \mathrm{INST}_{it} + \beta_2 \mathrm{Controls}_{it} + \tau_t + \varepsilon_{it}$$

Here LnFDI_{it} is defined as inward FDI flows in region i and year t; INST_{it} indicates the institutional quality and $\mathrm{Controls}_{it}$ denotes the set of six control variables; τ_t is a year fixed-effects and ε_{it} is a stochastic error term.

To test the moderating effect of ODA, we need to have the following equation including the interaction between INST and ODA:

$$\mathrm{LnFDI}_{it} = \beta_0 + \beta_1 \mathrm{INST}_{it} + \beta_2 \mathrm{ODA}_{it} + \beta_3 \mathrm{INST}_{it} \times \mathrm{ODA}_{it} + \beta_2 \mathrm{Controls}_{it} + \tau_t + \varepsilon_{it}$$

Descriptive statistics for all our variables used in the sample are reported in Table 2, displaying the mean, standard deviation and minimum and maximum values.

Table 2. Descriptive statistics of variables.

Variables	Mean	SD	Min	Max	N
FDI (log)	17.936	0.86	16.126	19.956	168
INST	0.679	1.547	−1.621	1.816	168
GDP (log)	24.994	0.166	24.691	25.232	168
INF	14.735	4.627	8.933	26.922	168
NR	12.129	4.397	6.783	20.465	168
POP	1.799	0.191	1.472	2.121	168
EDU	91.293	2.175	86.056	99.9	168
MOB	2.779	0.658	2.037	3.754	168

In order to check for the existence of multicollinearity between the variables in the sample, the variance inflation factor (VIF) test was conducted. The VIF estimates the influence of multicollinearity on the variance of coefficients in estimated regression model. A VIF > 10 indicates multicollinearity.

Table 3 above shows that the VIF outcomes of all the variables is lower than 10, and the average VIF value is 2.59, which indicates that there is no significant correlation between the variables, so the possibility of multicollinearity interference between the variables can be ruled out.

Table 3. Multicollinearity (VIF) test.

Variable	VIF	1/VIF
LnGDP	4.82	0.207
POP	3.68	0.271
INST	2.78	0.359
INF	1.85	0.549
MOB	1.84	0.543
NR	1.63	0.624
EDU	1.58	0.619
Mean VIF	2.59	

First, the econometric estimation began with utilizing pooled OLS regression. However, based on the result of Breusch-Pegan Lagrange Multiplier test, which recommended the applicability of the RE model over pooled OLS, the latter method was found as not applicable. Further step was to employ Hausman test in order to decide between fixed effect and random effect models. A significant chi-square (χ^2) rejected the null hypothesis in support for fixed effect model to be appropriate for the study (see Model 1 in Table 4, Table 5).

In the empirical estimations Huber-White's robust standard error (White, 1980) was applied to make the variance in the regression models constant and solve the heteroscedasticity issue. We do this by including the "robust" command when carrying out each regression model in STATA. Moreover, to ensure a normal distribution, we performed a log-transformation of the dependent variable.

Next, the interaction term was generated by multiplying the independent and moderating variables. Model 2 in Table 4 demonstrates the results for effects of the moderating variable on INST and FDI nexus. The results show that the coefficient of the interaction term between host country institutional quality and development assistance is significantly positive ($\beta = 0.746$, $p < 0.01$), which indicates that there is a positive moderating effect of ODA on the relationship between host country institutional quality and FDI inflows. This implies that the significance of the institutional quality in attracting FDI increases as more ODA is provided to Uzbekistan, indicating that ODA strengthens the positive impact of institutions on FDI, which is consistent with H_{2a}.

Table 4. The impact of institutional quality on FDI in Uzbekistan and the moderating effect of aid.

Variables	[1] LnFDI	[2] LnFDI
INST	0.423*** (0.041)	0.100*** (0.013)
ODA		−1.434*** (0.211)
INST × ODA		0.746*** (0.475)
lnGDP	5.203*** (1.015)	−0.590 (0.460)
INF	0.293*** (0.052)	0.027*** (0.005)
NR	−0.120 (0.021)	−0.050*** (0.008)
POP	−0.326 (0.909)	1.546** (0.371)
EDU	0.050*** (0.059)	0.009 (0.016)
MOB	3.290*** (0.482)	−1.235** (0.904)
Const	−11.8*** (5.328)	23.23*** (1.219)
adj.R2	0.274	0.861
VIF	2.59	3.42
Year FE	YES	Yes
N	165	168

Note: Heteroscedasticity robust standard errors are in parentheses; *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Regarding the control variables, GDP is positive and also statistically significant at 1% level. Normally, higher GDP is a reflection of large market size and higher production that positively affects foreign investors. Meanwhile, contrary to expectations, inflation has positive and significant at 1% impact on FDI. This might be because of the fact that inflation in Uzbekistan did not exceed a certain threshold level and remained low compared to other developing countries. The result is consistent with the findings of Obiamaka et al., (2011), Mason and Vracheva (2017). Population growth variable (POP) is negatively and insignificantly related with the dependent variable FDI inflow. Uzbekistan has the biggest population number in Central Asia region as well as the highest percentage of working age population. The country struggles with insufficient number of universities and low admission rate to higher education institutions which is a serious reason to lack a highly skilled workforce. This fact deters investment.

Total natural resources rents variable (NR) is negative and insignificant. Natural resource abundance can disadvantage the growth in other sectors of the economy in the light of weak institutions that usually trigger corruption among the natural resources owners. As a result, there will be barriers to entry for new investors due to high costs attached to FDI (Bénassy-Quéré et al., 2007; Wei, 2000). As expected, mobile cellular subscriptions variable (MOB) has positive and significant impact at 1% level on FDI. High quality infrastructure and communication systems available in the host country significantly increases the flow of foreign investment as they reduce the operation costs of MNE's.

5.1. Endogeneity Test

Regression analysis conclusions may be biased from the true results due to endogeneity issues. Usually, researchers focus on the bias brought by endogeneity stemming from three main areas: omitted variable problems, measurement errors, and the presence of endogenous variables. In conjunction with previous research, this study attempts to reduce the impact of these issues by applying two-step systematic GMM method proposed by Arellano and Bover (1995), Blundell and Bond (1998). It constructs a structure using two equations, one of which is differenced and the other remains in level. The study also addresses the potential endogeneity of ODA as its allocation could be influenced by factors that also affect FDI, creating a simultaneity bias.

Table 5 reports the estimation results for systematic GMM method. The value of AR (1) and AR (2) is 0.001 and 0.184 respectively, implies that there exists the first-order autocorrelation but does not second-order autocorrelation. Hansen test of overidentifying restriction is tested to determine the validity of the instrumental variables and the findings prove that they are greater than 5% level of significance.

The institutional quality influences FDI inflow significantly in a positive way at a 1% significant level. The coefficient (0.676) implies one unit improvement in institutional quality will increase the net FDI inflow by 0.67% on average.

Table 5. Systematic GMM regression results.

	LnFDI
L.LnFDI	0.424***
	(0.040)
INST	0.523***
	(0.173)
ODA	0.319**
	(0.021)
LnGDP	0.048***
	(0.903)
INF	0.154***
	(0.016)
NR	−0.024**
	(0.011)
POP	−1.185
	(1.350)
EDU	1.145***
	(8.423)
MOB	0.332
	(0.264)
Const	29.853***
	(10.26)
Year FE	YES
N	154
Instruments	10
AR(1)	0.001
AR(2)	0.184
Hansen	0.247
Sargan	0.043

Note: Robust standard errors are in parentheses; *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

5.2. Robustness Checks

In order to verify the robustness and credibility of the empirical results, additional tests using alternative measure of the quality of institutions were conducted. This time the composite index of six World Governance Indicators (WGI) was constructed by extracting the first principal component through principal component analysis (PCA). WGI six dimensions of governance include voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption.

Models 1 and 2 in Table 6 show the estimation results with alternative institutional quality index and the interaction term with development aid respectively. The results indicate that the correlation coefficient between the quality of the host country institutions (WGI) and the foreign investment flows is 0.088, and it is significantly positive at 1% level. Above outcomes indicate that the model has

good robustness.

Table 6. The impact of institutional quality on FDI and the moderating effect of ODA using WGI index.

Variables	[1] LnFDI	[2] LnFDI
WGI	0.088*** (0.014)	0.134*** (0.022)
ODA		0.285 (0.211)
INST × ODA		0.589** (0.220)
lnGDP	3.449*** (0.675)	1.619** (0.733)
INF	0.099*** (0.015)	0.073*** (0.017)
NR	−0.062*** (0.011)	−0.062*** (0.013)
POP	−2.863 (1.632)	−0.081 (0.820)
EDU	0.029 (0.034)	0.013* (0.035)
MOB	1.471* (0.532)	−1.422* (0.904)
Const	−38.9*** (13.76)	−25.94*** (10.21)
adj.R2	0.247	0.271
Year FE	YES	Yes
N	168	168

Note: Heteroscedasticity robust standard errors are in parentheses; *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Interacting with WGI official development assistance (ODA) variable has positive moderating effect on FDI inflows with coefficient of 0.589 at 5% significance level. These results are in line with the main findings.

6. Research Conclusion

Building on the North's Institutional framework that the host country's institutional quality affects profitability and institutionally strong nations can attract more foreign investors by offering high returns, the study empirically examines the impact of institutional quality on FDI inflows in Uzbekistan over the twelve-year period by focusing on composite economic freedom index. In addition, the moderating effect of official development assistance on the relationship between host country institutional quality and FDI inflows are also examined. The following conclusions are obtained through the theoretical and empirical analysis.

First, research revealed that the government of Uzbekistan is undertaking key policy transformation measures on the way of capacity building of institutions

which is already giving its fruits.

Second, the adoption of fixed effect and system GMM methods and controlling for host country's GDP, population growth rate, mobile cellular subscriptions, lower secondary education attainment rate, inflation level and natural resources rents, revealed that the institutional quality of the host country has a positive and significant impact on FDI inflows. This is because high-quality institutions not only provide a stable and dynamic business and investment environment for MNE subsidiaries, but also provide abundant resources and reduce the degree of uncertainty and transaction costs in the conduct of investment activities.

Last but not least, official development assistance reinforces the positive impact of institutional quality on foreign investment inflows. Aid which is channelled to improve the available infrastructure of recipient country enhances the operation of foreign and local enterprises by reducing certain costs. Moreover, ODA acts as a catalyst for the mobilization of private sector resources and investment. One should take into account that the aid effectiveness requires the availability of strong institutions so together attract more foreign investment flows.

6.1. Policy Recommendations

In Uzbekistan, it is necessary to develop a solid-state investment strategy that covers a variety of financial and business decisions that determine the volume, structure and directions of investments in various sectors and sectors of the economy. It is necessary to create equal conditions for all market participants and reduce administrative barriers, which contributes to strengthening market competition and stimulates the development of small and medium-sized businesses. Reducing the time spent on the preparatory stages of investment projects, including the development of necessary documentation, and reducing the number of unreasonable payments and bureaucratic procedures that investors make.

The legislative framework should be supplemented by a system of benefits and guarantees for foreign investors. These benefits should be applied purposefully, taking into account the goals of stimulating investment and the prospects for the development of specific sectors of the economy.

With regard to the protection of investors' rights, it is desirable to develop a unified mechanism for determining the amount of damage caused, for example, by fraud and embezzlement, as well as unfair competition.

Moreover, the government of Uzbekistan should enhance the effectiveness of current regulations on labour safety, human rights, and child labor. Strengthening the contract enforcement and decreasing the risk of expropriation within the country will certainly encourage investment in the future.

6.2. Limitations

This study has several limitations. To begin with, we used only 10 indicators of the Index of economic freedom, and future research may analyze other components and indices. Additionally, sector-based investigation as well as on different

forms and characteristics of FDI will give a comprehensive view of a country's business and investment climate.

The study relies on strongly balanced panel data spanning from 2012 to 2023. While this timeframe provides valuable insights, a longer time series could offer a more comprehensive understanding of the long-term trends and dynamics influencing institutional quality on FDI in Uzbekistan.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Acemoglu, D., Johnson, S., & Robinson, J. A. (2002). Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution. *The Quarterly Journal of Economics, 117,* 1231-1294. https://doi.org/10.1162/003355302320935025

Ahmad, A., Rafique, M., & Ilyas, M. (2023). Investigating the Impact of Economic Freedom on Foreign Direct Investment in Pakistan. *Journal of Development and Social Sciences, 4,* 756-767. https://doi.org/10.47205/jdss.2023(4-ii)66

Akhtaruzzaman, M., Berg, N., & Hajzler, C. (2017). Expropriation Risk and FDI in Developing Countries: Does Return of Capital Dominate Return on Capital? *European Journal of Political Economy, 49,* 84-107. https://doi.org/10.1016/j.ejpoleco.2017.01.001

Arellano, M., & Bover, O. (1995). Another Look at the Instrumental Variable Estimation of Error-Components Models. *Journal of Econometrics, 68,* 29-51. https://doi.org/10.1016/0304-4076(94)01642-d

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *The World Economy, 29,* 63-77. https://doi.org/10.1111/j.1467-9701.2006.00758.x

Bénassy-Quéré, A., Coupet, M., & Mayer, T. (2007). Institutional Determinants of Foreign Direct Investment. *The World Economy, 30,* 764-782. https://doi.org/10.1111/j.1467-9701.2007.01022.x

Blundell, R., & Bond, S. (1998). Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics, 87,* 115-143. https://doi.org/10.1016/s0304-4076(98)00009-8

Borensztein, E., De Gregorio, J., & Lee, J. (1998). How Does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics, 45,* 115-135. https://doi.org/10.1016/s0022-1996(97)00033-0

Burnside, C., & Dollar, D. (2004). Aid, Policies, and Growth: Reply. *American Economic Review, 94,* 781-784. https://doi.org/10.1257/0002828041464524

Busse, M., & Hefeker, C. (2007). Political Risk, Institutions and Foreign Direct Investment. *European Journal of Political Economy, 23,* 397-415. https://doi.org/10.1016/j.ejpoleco.2006.02.003

Chiyaba, G., & Singleton, C. (2023). Do Natural Resources and foreign Direct Investment Tend to Erode or Support the Development of National Institutions? *The World Economy, 47,* 1117-1146. https://doi.org/10.1111/twec.13447

Clemens, M. A., Radelet, S., & Bhavnani, R. (2004). Counting Chickens When They Hatch: The Short-Term Effect of Aid on Growth. *SSRN Electronic Journal, 122*, 590-617. https://doi.org/10.2139/ssrn.567241

Collier, P., & Dollar, D. (2002). Aid Allocation and Poverty Reduction. *European Economic Review, 46,* 1475-1500. https://doi.org/10.1016/s0014-2921(01)00187-8

Collier, P., & Hoeffler, A. (2002). On the Incidence of Civil War in Africa. *Journal of Conflict Resolution, 46,* 13-28. https://doi.org/10.1177/0022002702046001002

Fon, R., & Alon, I. (2022). Governance, Foreign Aid, and Chinese Foreign Direct Investment. *Thunderbird International Business Review, 64,* 179-201. https://doi.org/10.1002/tie.22257

Garriga, A. C., & Phillips, B. J. (2014). Foreign Aid as a Signal to Investors: Predicting FDI in Post-Conflict Countries. *Journal of Conflict Resolution, 58,* 280-306. https://doi.org/10.1177/0022002712467937

Irandoust, M. (2022). FDI and Natural Resource Rents: Evidence from Eight Post-Communist Countries. *Journal of Economic Development, 47,* 67-77.

Kang, S. J., Lee, H., & Park, B. (2011) Does Korea follow Japan in Foreign Aid? Relationships between Aid and Foreign Investment. *World Economy, 23,* 19-27. https://doi.org/10.1016/j.japwor.2010.06.001

Karakaplan, U., Neyapti, B., & Sayek, S. (2005). *Aid and Foreign Direct Investment: International Evidence.* Turkish Economic Association.

Kazemi, M., & Azman-Saini, W. N. W. (2017). Foreign Direct Investment, Economic Freedom and Democracy. *International Journal of Economics and Management, 11,* 1-15.

Kimura, H., & Todo, Y. (2010). Is Foreign Aid a Vanguard of Foreign Direct Investment? A Gravity-Equation Approach. *World Development, 38,* 482-497. https://doi.org/10.1016/j.worlddev.2009.10.005

Liao, H., Chi, Y., & Zhang, J. (2020). Impact of International Development Aid on FDI along the Belt and Road. *China Economic Review, 61,* 101448. https://doi.org/10.1016/j.chieco.2020.101448

Mason, R. L., & Vracheva, V. (2017). The Impact of Inflation Targeting on Attracting Foreign Direct Investment. *Journal of Applied Business and Economics, 19,* 79-94.

Moussa, M., Çaha, H., & Karagöz, M. (2016). Review of Economic Freedom Impact on FDI: New Evidence from Fragile and Conflict Countries. *Procedia Economics and Finance, 38,* 163-173. https://doi.org/10.1016/s2212-5671(16)30187-3

Musambachime, M. (1990). The Impact of Rapid Population Growth and Economic Decline on the Quality of Education: The Case of Zambia. *Review of African Political Economy, 17,* 81-92. https://doi.org/10.1080/03056249008703863

Nasih Tag, M., & Degirmen, S. (2022). Economic Freedom and Foreign Direct Investment: Are They Related? *Economic Analysis and Policy, 73,* 737-752. https://doi.org/10.1016/j.eap.2021.12.020

Nishitateno, S. (2023). Does Official Development Assistance Benefit the Donor Economy? New Evidence from Japanese Overseas Infrastructure Projects. *International Tax and Public Finance, 31,* 1037-1065. https://doi.org/10.1007/s10797-023-09788-8

Obiamaka, P. E., Onwumere, U. J., & Okpara, G. C. (2011). Foreign Direct Investment and Economic Growth in Nigeria: A Granger Causality Test. *International Journal of Current Research, 3,* 225-232.

Ono, S., & Sekiyama, T. (2022). Re-examining the Effects of Official Development Assistance on Foreign Direct Investment Applying the VAR Model. *Economies, 10,* Article 236. https://doi.org/10.3390/economies10100236

Pajunen, K. (2008). Institutions and Inflows of Foreign Direct Investment: A Fuzzy-Set Analysis. *Journal of International Business Studies, 39,* 652-669. https://doi.org/10.1057/palgrave.jibs.8400371

Selaya, P., & Sunesen, E. R. (2012) Does Foreign Aid Increase Foreign Direct Investment? *World Development, 40,* 2155-2176. https://doi.org/10.1016/j.worlddev.2012.06.001

Singh, D., & Gal, Z. (2020). Economic Freedom and Its Impact on Foreign Direct Investment: Global Overview. *Review of Economic Perspectives, 20,* 73-90. https://doi.org/10.2478/revecp-2020-0004

Wei, S. (2000). How Taxing Is Corruption on International Investors? *Review of Economics and Statistics, 82,* 1-11. https://doi.org/10.1162/003465300558533

Wheeler, D., & Mody, A. (1992). International Investment Location Decisions: The Case of U.S. Firms. *Journal of International Economics, 33,* 57-76. https://doi.org/10.1016/0022-1996(92)90050-t

White, H. (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity. *Econometrica, 48,* 817-838. https://doi.org/10.2307/1912934

World Bank (2005). *A Better Investment Climate for Everyone. World Development Report.* https://documents1.worldbank.org/curated/en/554071468182337250/pdf/288290WDR00PUB0r0investment0climate.pdf