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A COMPREHENSIVE ANALYSIS OF THE DRIVERS AND ASSESSMENT METHODS OF FOREIGN DIRECT INVESTMENT ATTRACTION

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Abstract:

This study offers a comprehensive assessment of the macroeconomic, institutional, infrastructure, market, and geopolitical factors that shape the attraction of foreign direct investment (FDI). Applying System-GMM, AHP, TOPSIS, and DEA techniques, we examine 40 indicators for 20 countries over 2015-2024. The findings highlight the decisive contribution of institutional quality and infrastructure, while underscoring the adverse effects of inflation and geopolitical uncertainty. Using Uzbekistan as a case study, we demonstrate that enhancing resource efficiency by 16 percent and expanding "green" energy capacity could significantly boost high-value FDI inflows.

Keywords: FDI, institutional quality, macroeconomic stability, infrastructure, AHP, TOPSIS, DEA, System-GMM, market size, inflation, geopolitical risk, R&D, ESG, logistics, Uzbekistan

INTRODUCTION

Foreign direct investment (FDI) represents a strategic form of capital that plays a pivotal role in ensuring the long-term growth and structural transformation of national economies. Beyond the provision of financial resources, FDI facilitates the transfer of advanced technologies, modern management practices, higher human capital standards, and access to global value chains. According to UNCTAD, global FDI inflows are projected to reach approximately USD 1.3 trillion by 2025. However, a growing array of external shocks—ranging from geopolitical instability and disruptions in global supply chains to ideologically driven protectionist policies—are reshaping the volume and direction of cross-border capital movements (Kearney, 2025).

In such a complex and volatile global landscape, national governments are compelled to redefine their competitive advantages in attracting FDI. This requires a systematic identification and prioritization of the key determinants that influence FDI inflows. Scholarly literature classifies these determinants into several interrelated categories: macroeconomic (e.g., growth rate, inflation, currency stability), market-related (e.g., market size, consumer demand), institutional (e.g., rule of law, property rights, corruption levels), technological-innovative (e.g., R&D expenditure, innovation ecosystem), infrastructural (e.g., logistics, digital infrastructure), and geopolitical (e.g., political stability, international alignment) (Dunning, 1993; OECD, 2024).

However, empirical evidence suggests that these factors do not operate in isolation; rather, they are deeply interdependent and dynamic in nature. For instance, policies aimed at reducing inflation are unlikely to be effective without institutional safeguards such as an independent central bank. Similarly, efforts to enhance national innovation capacity may yield limited economic returns in the absence of adequate digital infrastructure. Therefore, a comprehensive and integrative approach is required to assess the determinants of FDI with methodological rigor and reliability. This necessitates the application of multi-criteria decision analysis (MCDA) techniques.

This paper seeks to (i) systematize the multidimensional drivers influencing FDI inflows from a theoretical perspective, and (ii) propose a robust methodological framework for their empirical evaluation. In particular, we employ a hybrid model combining the Analytic Hierarchy Process (AHP), the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS), and Data Envelopment Analysis (DEA). This integrated approach enables the assessment of FDI attraction potential across countries and regions, assigns weighted significance to various determinants, and supports the formulation of targeted policy reforms. Accordingly, the study holds practical relevance for policymakers, investment strategists, and development experts seeking to enhance national FDI competitiveness.

LITERATURE REVIEW.

The scholarly investigation of foreign direct investment (FDI) determinants dates back to the 1970s, initially shaped by monetary theories and subsequently systematized through the ownership-location-internalization (OLI) paradigm developed by John Dunning in 1977 and further refined in 1993. This framework sought to explain FDI decisions by

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integrating ownership-specific advantages of the investing firm, locational benefits in the host country, and the rationale for internalizing operations rather than relying on external markets.

In subsequent decades, the rise of the institutional economics school significantly expanded the analytical scope of FDI determinants by emphasizing the importance of the legal environment, corruption levels, and rule of law. Notably, the institutional theory developed by Douglass North in the 1990s highlighted the critical role of property rights and both formal and informal institutions. Recent empirical studies, including those employing system-GMM estimation techniques, have provided robust evidence of a strong correlation between institutional quality and FDI inflows (Mistura & Roulet, 2022).

In parallel, global reports and indices have increasingly sought to quantify the drivers of international investment flows. For instance, Kearney's FDI Confidence Index indicates that macroeconomic stability, market size, and political-legal risk explain up to 73% of investment decisions (Kearney, 2025). Similarly, the OECD's FDI Quality Indicators provide a multidimensional assessment of FDI by incorporating its contributions to innovation, gender equality, and economic decarbonization (OECD, 2024).

Empirical observations also confirm that FDI is influenced by a combination of macroeconomic variables such as GDP growth, inflation, market size, trade openness, and the availability of natural resources. A 2024 study published in *PLOS ONE* found that inflation uncertainty and exchange rate volatility can reduce FDI inflows by 0.3–0.5 percentage points. An article in *MDPI* revealed a substitution effect between institutional quality and resource endowments, suggesting that in countries with high levels of corruption, resource abundance can paradoxically undermine the effectiveness of FDI and diminish capital inflows.

From a methodological perspective, the field has witnessed a diversification in research techniques. Gravity models, ARDL and PMG estimations based on panel data, and various multi-criteria decision-making (MCDM) methods—such as AHP, TOPSIS, Grey-TOPSIS, and PROMETHEE—are increasingly used. These techniques are valuable for integrating expert judgments with objective data, thereby enhancing the robustness and reliability of findings.

In summary, the review of existing literature suggests that FDI determinants should not be analyzed in isolation, but rather in their interdependent and often nonlinear relationships. While institutional quality and macroeconomic stability constitute the foundational pillars of a favorable investment climate, factors such as infrastructure, human capital, and innovation capacity serve as differentiating advantages that can significantly amplify a country's attractiveness to foreign investors.

RESEARCH METHODOLOGY.

To comprehensively examine the determinants influencing foreign direct investment (FDI) inflows, this study employs a multi-stage, integrated methodological framework. The analysis incorporates over 40 normalized indicators, including the Logistics Performance Index (LPI), Corruption Perceptions Index (CPI), and Research and Development Intensity (R&D intensity), among others. All indicators were standardized to ensure cross-country comparability and temporal consistency across the 2015–2024 period.

To enhance the robustness of the results and assess the potential influence of exogenous shocks, a sensitivity analysis was conducted. Specifically, a Random Forest algorithm was applied to identify and model the primary sources of risk and quantify their relative impact on the investment climate. This machine learning-based approach allowed for nonlinear interactions among variables and contributed to a more accurate prediction of FDI responsiveness under varying macroeconomic and institutional conditions.

The comprehensive nature of this methodological design ensures that both structural (long-term) and situational (short-term) factors are incorporated, enabling a nuanced understanding of FDI dynamics across countries and regions.

ANALYSIS AND RESULTS.

The challenge of attracting foreign direct investment (FDI) remains strategically significant, particularly for developing economies. In the face of growing uncertainty in the global investment environment—driven by geopolitical tensions, financial market volatility, and rising external risks—the patterns and intensity of cross-border capital flows are becoming increasingly unstable. As a result, macroeconomic indicators have gained renewed relevance as critical signals for investor decision-making.

Among these, GDP growth, inflation rate, public debt burden, fiscal deficit, and exchange rate stability serve as primary filters for evaluating a host country's macroeconomic resilience. These indicators are often used by foreign investors to assess a nation's ability to offer a stable and predictable investment environment.

According to the latest report published by the United Nations Conference on Trade and Development (UNCTAD), global FDI inflows declined by 11% by the end of 2024. One of the key drivers of this contraction

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was identified as heightened inflationary pressure and exchange rate uncertainty in developing economies (UNCTAD, 2025). Similarly, an empirical study published in PLOS ONE in 2024, covering 33 countries, found that a 1 percentage point increase in inflation leads to an average 0.42% decrease in FDI inflows (Tarawneh et al., 2024). This statistical relationship underscores the critical importance of inflation control for emerging markets, including Uzbekistan.

From this perspective, the phased implementation of an inflation targeting policy in Uzbekistan is not only vital for strengthening domestic macroeconomic stability but also for building a trustworthy environment for foreign investors.

Institutional quality is also becoming a key determinant in attracting FDI. The protection of private property rights, enforcement of contracts, low levels of corruption, and transparency of regulatory agencies are increasingly seen as essential factors influencing regional investment attractiveness. These institutional features serve as signal mechanisms for investors, reflecting the overall legal predictability and credibility of the host economy.

According to the OECD's FDI Quality Indicators, a 0.1-point improvement in institutional performance is associated with an approximately 6% increase in FDI inflows, particularly in sectors characterized by high value-added activities and well-paid employment (OECD, 2024). This finding highlights the decisive role of institutions in determining not only the quantity but also the quality and strategic relevance of FDI.

Building on the systemic GMM model developed by Zhang and Chowdhury (2024), the empirical analysis confirms a statistically significant positive correlation (at the 1% level) between institutional quality and the inflow of foreign direct investment (FDI). Such findings establish a robust academic rationale for prioritizing institutional reforms within national investment attraction strategies.

In the case of Uzbekistan, considerable institutional disparities are evident in comparative indicators. For instance, the average duration of contract enforcement in local courts stands at approximately 218 days, whereas in Poland—a member of the European Union—the same process takes around 120 days. If Uzbekistan aligns its judicial processing duration with the Polish benchmark, the institutional indicator could improve by an estimated 0.04 points, potentially increasing the country's overall FDI attractiveness score by 0.03–0.05 points. This underscores that enhancing transparency and efficiency in the judiciary should be viewed not only as a domestic legal priority but also as a key trust-building factor for international investors.

Global investment flows are not solely determined by macroeconomic variables; rather, they are strongly influenced by factors such as market size, trade openness, infrastructure quality, innovation environment, and geopolitical risks. These parameters are frequently highlighted in global indices and play a decisive role in shaping country risk assessments by international investors.

According to Kearney's 2025 Foreign Direct Investment Confidence Index, 73% of top executives identified the size of the domestic market as the primary driver of investment decisions (Kearney, 2025). Viewed through this lens, Uzbekistan—with a population of 37 million and an e-commerce sector growing at an annual rate of 18–20%—holds one of the largest domestic market potentials in Central Asia, offering long-term demand stability for investors.

Low tariff rates, a network of free trade agreements, and digitalized customs processes serve as key "unlocking" mechanisms that facilitate the entry of FDI. The World Bank's 2023 Logistics Performance Index reports that countries ranked in the top quintile had an average FDI-to-GDP ratio of 6.2%, compared to only 1.4% in the bottom quintile (World Bank, 2023). Uzbekistan, ranked 79th with a score of 2.42, demonstrates significant untapped potential in logistics modernization.

Key infrastructure components—such as multimodal transport systems, broadband internet, renewable energy access, and supply chain reliability—are critical for reducing operational risks perceived by investors. Despite an 8% global increase in infrastructure-targeted FDI in 2024, several major projects were suspended due to energy-related uncertainties (UNCTAD, 2025). In response, Uzbekistan implemented $1.2 billion worth of highway reconstruction and established 3,000 km of fiber-optic internet networks, reducing logistics costs by an estimated 5–7%. Concurrently, the country's integrated score in the TOPSIS multi-criteria decision analysis model improved by 0.02 points.

OECD research suggests that a one percentage point increase in R&D expenditure as a share of GDP contributes up to a 0.7% rise in the inflow of "green" and digital investments (OECD, 2024). Currently, Uzbekistan's R&D spending stands at 0.32% of GDP. In light of this gap, government initiatives—such as startup visa programs, results-based grant schemes, and venture capital platforms—are being actively promoted to strengthen the innovation ecosystem.

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Meanwhile, a 2025 report by Reuters highlighted that heightened geopolitical tensions and abrupt tariff regimes could further depress global FDI flows (Reuters, 2025). In a related international survey, 67% of C-level executives rated geopolitical risk as "extremely high" (Kearney, 2025). In this context, Uzbekistan's geo-economic positioning as a "neutral logistics node" offers a strategic opportunity for risk diversification. However, this advantage requires a cautious and forward-looking approach to international sanctions policy.

Table 1.
AHP–TOPSIS–DEA Ranking Results of FDI Attractiveness in Central, South-East Asia and Selected Developing Countries[1]

Country	TOPSIS C_i	DEA θ	Category
South Korea	0,79	1,00	Highly Attractive
Poland	0,74	0,94	Attractive
Vietnam	0,71	0,92	Attractive
Malaysia	0,69	0,89	Attractive
Kazakhstan	0,61	0,82	Moderate
Uzbekistan	**0,58**	**0,84**	Moderate
Kyrgyzstan	0,46	0,71	Low

In an era of intensifying global competition for foreign direct investment (FDI), assessing the investment climate through a multidimensional lens has become increasingly critical. This analysis applies an integrated AHP–TOPSIS model to derive composite attractiveness scores (C_i), alongside a Data Envelopment Analysis (DEA) index (θ) to capture the relative efficiency of resource utilization. Seven countries from Central, South, and Southeast Asia, as well as selected emerging economies, are compared, with each classified into attractiveness categories based on their combined performance.

South Korea emerges as the clear leader, with a composite score of $C_i = 0.79$ and a DEA efficiency score of $\theta = 1.00$. This reflects the country's robust institutional quality, advanced infrastructure, and well-executed innovation policies. A DEA score of 1.00 indicates that South Korea utilizes its available resources with full efficiency, placing it firmly in the "Highly Attractive" category.

Poland ($C_i = 0.74$; $\theta = 0.94$) and Vietnam ($C_i = 0.71$; $\theta = 0.92$) are classified as "Attractive." Poland's strong judiciary and well-developed logistics network are key drivers, while Vietnam benefits from rapidly expanding domestic markets and export-oriented industrial clusters.

Malaysia ($C_i = 0.69$; $\theta = 0.89$), although recognized for its large number of FTAs and deep integration into global supply chains, sees its position moderated by relatively high corruption levels and energy-related vulnerabilities.

Among Central Asian countries, Kazakhstan and Uzbekistan are grouped under the "Moderate" attractiveness tier. Kazakhstan ($C_i = 0.61$; $\theta = 0.82$) has notable strengths in resource endowment and infrastructure projects, yet is constrained by macroeconomic instability and geopolitical uncertainty.

Uzbekistan ($C_i = 0.58$; $\theta = 0.84$) occupies a mid-level position. While innovation-oriented reforms and strong domestic market potential positively influence its score, high logistics costs (per TEU) and lengthy judicial proceedings act as limiting factors. The efficiency score of $\theta = 0.84$ implies that approximately 16% of resources are underutilized. Addressing institutional inefficiencies and reducing tariff barriers could significantly elevate the country's investment appeal.

Kyrgyzstan ($C_i = 0.46$; $\theta = 0.71$) and Tajikistan ($C_i = 0.41$; $\theta = 0.69$) fall into the "Low" attractiveness category. These countries face structural challenges such as small market size, underdeveloped infrastructure, and weak legal protections, which collectively hamper their ability to attract FDI.

The AHP–TOPSIS composite index (C_i) reflects the overall investment attractiveness, while the DEA efficiency score (θ) indicates how effectively countries utilize their existing capacities. South Korea stands out as the only country excelling in both metrics. Uzbekistan's "Moderate" classification underscores the urgency of deepening reforms. Targeted actions in curbing corruption, optimizing logistics costs, and boosting R&D investment could help the country transition to the "Attractive" tier in the near future.

CONCLUSION.

The process of attracting foreign direct investment (FDI) is inherently multidimensional, dynamic, and shaped by a complex interplay of interrelated factors. Both theoretical frameworks and empirical research converge on the notion that

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macroeconomic stability and the quality of the institutional environment serve as foundational preconditions for a favorable investment climate. Without credible inflation targeting and robust protection of property rights, investor confidence remains fragile, impeding the formation of stable investment flows.

Infrastructure development and the degree of digitalization represent the second critical tier of competitiveness. International studies suggest that reducing logistics costs by even 5–7% can have a substantial positive impact on inward FDI. Likewise, the expansion of domestic market size and rising purchasing power signal long-term demand stability to prospective investors. However, such advantages must not be eroded by institutional bottlenecks, excessive bureaucracy, or legal uncertainty.

Within this study, an integrated AHP–TOPSIS–DEA hybrid model was proposed to holistically evaluate FDI attractiveness. The model enabled both the determination of weight coefficients for individual factors and a nuanced analysis of resource-use efficiency across countries. Based on the results, Uzbekistan currently holds a mid-level position in the composite FDI attractiveness ranking. Nevertheless, it has the potential to ascend into the "Attractive" category in the short term through targeted reforms—particularly by modernizing logistics infrastructure, digitizing the judiciary, and increasing R&D investment intensity.

Meanwhile, heightened geopolitical risks and regulatory volatility have begun to significantly influence global FDI decision-making. In this context, introducing political risk insurance mechanisms, establishing an "Environmental, Social, and Governance (ESG) Guarantee Fund" under public–private partnership models, and acceding to multilateral trade agreements could serve as effective instruments for investment risk diversification.

Additionally, expanding the country's green energy potential, developing infrastructure based on carbon-neutral technologies, and introducing performance-based R&D incentives would further support the attraction of high-value-added, sustainable FDI flows.

In conclusion, the triad of quality–efficiency–sustainability is becoming the defining paradigm in global investment policy. Uzbekistan can not only increase the quantitative inflow of FDI, but also significantly enhance its technological, social, and environmental value by simultaneously strengthening all three dimensions of this strategic triangle.

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