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Attracting Foreign Direct Investment in the Digital Age: Analyzing the Role of the Digital Government

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Abstract

In the past, factors such as political stability and regulatory frameworks played a major role in attracting foreign direct investment. However, the advent of the digital age has changed this trend. Today, the quality of digital governance and the level of e-government development have become key indicators for measuring the readiness of countries to adopt new technologies and related investments. The efficiency, transparency, and speed of providing public services through digital tools are now considered competitive advantages that can create a transparent and trustworthy environment for investors. This research aims to examine the factors affecting the attraction of foreign direct investment in a sample of 30 countries during the years 2010-2023. To achieve accurate results, the advanced econometric method of "generalized moments" was used, which is capable of controlling endogeneity problems and examining the dynamics of panel data. Foreign direct investment is used as the dependent variable, e-government, internet access and open data index as independent variables, GDP and degree of trade openness and political stability as control variables. The findings show that the quality of e-government is the most important factor in increasing the attractiveness of foreign investment in the short term. This result highlights the increasing importance of transparency, efficiency and reducing administrative barriers through digital tools for international investors. In addition, political stability continues to have a significant positive effect on capital flows, indicating that security and reducing political risk are crucial even in the digital space. In contrast, trade barriers, as expected, are a serious obstacle to capital inflows. Finally, the study emphasizes that the success of countries in attracting foreign direct investment requires a focus on improving the quality of digital governance and investing in e-government infrastructure. This measure is not a cost, but a strategic investment to create a competitive advantage in the short term. Of course, achieving this goal in the long term requires providing a suitable environment for political and economic stability so that capital flows remain sustainable.

Keywords: Foreign Direct Investment, E Government, Generalized Method of Moments, Political Stability, Trade Obstacles.

JEL Classification: F21, H83, C33.

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1. Introduction

Foreign Direct Investment (FDI) remains a cornerstone for economic development, serving as a vital conduit for capital formation, technology transfer, and job creation in host economies. Traditionally, the determinants of FDI location choice have been heavily influenced by conventional factors such as political stability, market size, and regulatory quality, as framed by theories emphasizing location-specific advantages. However, the advent of the digital age and the pervasive nature of digital technologies have fundamentally altered the calculus for multinational enterprises (MNEs). This transformation necessitates a re-evaluation of the institutional and infrastructural prerequisites for attracting modern, knowledge-based capital flows.

This study posits that in the contemporary global economy, the quality of digital governance—encapsulated by the UN’s E-Government Development Index (EGDI)—has emerged as a critical, and perhaps dominant, competitive advantage. The efficiency, transparency, and speed with which public services are delivered through electronic platforms directly impact the transaction costs and perceived risks for international investors seeking data-driven and efficient operating environments. This research aims to empirically investigate the determinants of FDI inflows across a panel of 30 countries over the significant period spanning 2010 to 2023, specifically isolating and quantifying the impact of digital government maturity relative to traditional variables like political stability and trade barriers. The findings offer timely insights for policymakers prioritizing digital transformation as a strategic tool for short-term capital attraction.

2. Theoretical framework

The analytical foundation for this research is constructed upon a synthesized framework that integrates the eclectic paradigm (OLI) of Dunning with Institutional Theory. The OLI framework dictates that FDI occurs when ownership advantages (O) of the firm, location advantages (L) of the host country, and internalization advantages (I) align. In the digital era, the nature of these advantages has shifted. Ownership advantages increasingly rely on intangible assets like proprietary algorithms and data platforms, which are inherently vulnerable. Consequently, the location advantages (L) are now critically dependent on the host country’s Digital Institutional Framework. Digital government quality (EGDI) enhances location advantage by minimizing administrative friction and bolstering data security, which are prerequisites for Digital FDI (DFDI).

Furthermore, drawing from Institutional Theory, efficient institutions—as emphasized by North—reduce uncertainty and transaction costs. Digital government functions as an operational mechanism to modernize these institutions. Specifically, we model the impact through two primary channels: Transaction Cost Reduction, where e-government streamlines bureaucratic processes, and Transparency Enhancement, where electronic footprints and open data policies mitigate informational asymmetries and perceived corruption risks, thereby building investor trust. This theoretical linkage establishes a direct, positive pathway between high EGDI scores and greater FDI attraction.

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3. Methodology

To rigorously test our hypotheses amid the complexities of panel data dynamics—such as unobserved country heterogeneity and potential endogeneity issues—this study employs the System Generalized Method of Moments (System GMM) estimation technique. This advanced econometric approach is superior for dynamic panels as it controls for potential feedback loops (e.g., FDI itself influencing EGDI over time) and addresses the correlation between the lagged dependent variable and the error term.

The panel data set encompasses 30 diverse countries spanning 15 years (2010-2023). The dependent variable is Net FDI Inflows as a percentage of GDP. Key independent variables include the EGDI, Internet Access Penetration Rate (In), and control variables such as GDP Per Capita (GDP), Political Stability Index (PS), and Trade Openness (TO).

Prior to estimation, standard diagnostic tests were conducted. The Levin-Lin-Chu (LLC) unit root test confirmed that all variables are stationary at the level (I(0)). The F-Limer test strongly rejected the pooled OLS model in favor of a Fixed Effects (FE) model, and the subsequent Husman test decisively favored the Random Effects (RE) model structure due to the significance of unobserved country-specific effects. Ultimately, the dynamic nature of the model—acknowledging the persistence of FDI—mandated the use of the System GMM estimator, which effectively manages the identified econometric challenges to produce robust and reliable estimates.

4. Discussion

The econometric analysis yields several significant findings regarding the drivers of FDI in the digital era. The results strongly confirm the central hypothesis: the quality of e-government (EGDI) exerts the strongest and most statistically significant positive influence on short-run FDI inflows. This outcome underscores the paradigm shift where digital infrastructure is no longer a mere supporting factor but a primary criterion for capital allocation. Investors are actively choosing jurisdictions where bureaucratic hurdles are minimized through digital service delivery, signaling a preference for efficiency and predictability.

Furthermore, Political Stability (PS) maintains its expected positive and significant effect, affirming that even in a highly digitalized environment, the fundamental requirement for institutional security and mitigation of political risk remains paramount for long-term investment commitments. Conversely, Trade Obstacles (TO), measured by trade as a percentage of GDP, demonstrated a significant deterrent effect on foreign investment, aligning with established trade theories. The findings suggest that while digital efficiency attracts investment quickly, an unstable political landscape can negate those digital gains, emphasizing the need for a holistic institutional strategy

5. Conclusion

The research findings indicate that national success in attracting FDI is increasingly contingent upon the prioritization and sustained investment in digital governance quality and e-government infrastructure. Digital readiness, as measured by EGDI, represents a potent, short-term competitive advantage capable of offsetting some structural disadvantages. For policymakers, the message is clear: digital transformation in the public sector should be viewed not as an expenditure, but as a strategic capital investment yielding immediate returns in the form of enhanced FDI attraction.

The primary suggestion stemming from this research is the need for targeted policy interventions focused on accelerating EGDI components, particularly in service delivery and the quality of online public information. Moreover, achieving sustainable, long-run FDI requires coupling these digital improvements with ongoing efforts to ensure a stable political and predictable economic environment. Future research should explore the causal feedback mechanism where DFDI inflows themselves compel further digital upgrades by the host government.

6. Ethical considerations

6.1. Compliance with Ethical Guidelines

The present study has followed the scientific principles of research.

6.2. Funding

This research did not receive any specific funding from external sources or sponsors.

6.3. Authors' Contribution

The authors equally contribute to the writing of this article.

6.4. Conflict of interest

The authors declare that there is no conflict of interest in this research.

6.5. Acknowledgments

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