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The Contribution of Digitalization to FDI Inflows – Private Investment Nexus in Advanced Countries

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Abstract: Foreign direct investment (FDI) is crucial for economic advancement as it brings in physical capital, facilitates technology transfer, and promotes innovation. Concurrently, private investment stands as a fundamental driver of economic growth. The emergence of digital technology offers nations fresh prospects to cut costs, decrease emissions, and move towards a more sustainable, environmentally friendly economy. Does digitalization contribute to FDI inflows – private investment nexus in advanced countries? We provide the answer by applying the two-step system and difference GMM estimators to explore the effects of FDI, digitalization, and their interaction terms on private investment in 37 advanced countries from 2010 to 2023. The findings note that FDI crowds out private investment, but digitalization and interaction terms promote it. Furthermore, labor force increases private investment, while inflation decreases it. These results propose that advanced countries can adopt suitable policy strategies to maximize the benefits of FDI and digitalization for enhancing private investment.

Keywords: FDI; digitalization; private investment; advanced countries.

JEL classification: E22; F21; F23.

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1. INTRODUCTION

The impact of FDI on private investment is a contentious issue among economists, mainly due to conflicting crowd-in and crowd-out theories. Drawing from the insights of Agosin and Machado (2005), numerous studies have investigated this relationship to determine whether FDI and private investment complement each other or serve as substitutes. FDI inflows are crucial external factors for both developing and advanced economies. They are significant in facilitating technology transfer, acquiring expertise, promoting innovation, and building capital (Agosin and Machado, 2005). Consequently, several countries are revising their policies and regulations to attract more FDI. Meanwhile, private investment, an internal economic driver, fuels economic growth and development. Khan and Reinhart (1990) emphasize its role in stimulating economic expansion, creating jobs, and ensuring social stability.

Digital technology is quickly becoming an integral and irreversible global force. It enables individuals access to knowledge and skills, enhancing their ability to secure high-paying jobs while improving businesses' efficiency and competitiveness in management and production by effectively reducing transaction costs. Many governments rely on digitalization to stimulate economic activity, drive growth, and reduce the gap with advanced economies (Nguyen, 2022). Strengthening digital technology is a powerful approach to helping low-income individuals gain access to knowledge and develop skills that can increase their earnings. In several countries, digital technology is also central to advancing e-government initiatives. However, its rapid expansion has underscored the existence of a digital divide, with wealthier individuals enjoying greater access than those from poorer communities. This gap is often due to the high costs and technical expertise required to use digital tools, presenting difficulties for lower-income populations (Nguyen, 2023).

Advanced countries are characterized by high levels of education and technological progress, which support widespread digital literacy and skills (Nguyen, 2022). Many of the world's leading scientific and technological innovations come from companies based in these countries. Governments in these economies dedicate significant portions of their national budgets to research and development (R&D), promoting the growth of domestic businesses. Moreover, private companies place a strong emphasis on R&D investments to foster innovation and maintain a competitive edge.

The relationship between FDI inflows and private (or domestic) investment has been a prominent focus in the literature, attracting increasing attention from researchers. The literature shows that the effect of FDI inflows on private investment varies based on factors such as the research sample (e.g., individual country versus a group of countries), time frame, and estimation methods used. This study stands out from previous research in three significant ways. First, it utilizes private investment data from the IMF database, setting it apart from most studies that primarily rely on domestic investment figures. Second, to the best of our knowledge, no studies have yet examined the role of digital technology in the FDI inflows–private investment relationship. Third, the paper applies the two-step system and difference GMM estimators for its analysis. These features are central to the study's unique contribution to the literature. As a result, this paper investigates the role of digitalization in the relationship between FDI inflows and private investment, using the two-step system and difference GMM estimators for a panel dataset of 37 advanced countries from 2010 to 2023.

The paper is organized as follows: Section 1 outlines the motivation for the study. Section 2 presents figures for FDI inflows and digital technology in advanced economies.

Section 3 covers the theoretical framework and literature review, focusing on the influence of FDI inflows on private investment. Section 4 details the model and research data. Section 5 presents the results. Lastly, Section 6 concludes by summarizing the findings and providing policy recommendations.

2. FDI INFLOWS AND DIGITAL TECHNOLOGY IN ADVANCED COUNTRIES

2.1 FDI inflows

According to a recent United Nations (2024) report, global FDI inflows amounted to $1.33 trillion in 2023, a slight 2% decline from the previous year. This total was significantly influenced by large fluctuations in several small European transit economies.

FDI inflows into developed economies, excluding intermediary channels, dropped by 15%. Within these economies, the financial activities of multinational corporations led to fluctuations in FDI levels. When accounting for intermediary flows, FDI increased by 9%, but without these flows, the decline remained at 15%. Developed countries accounted for 35% of global FDI, a share that has been gradually decreasing. However, they continue attracting most new investment projects and international financing deals. FDI inflows into Europe experienced a high shift, rising from -$106 billion in 2022 to $16 billion in 2023. Certain countries, including Ireland, Luxembourg, the Netherlands, Switzerland, and the United Kingdom, reported significant negative figures when comparing combined inflows over the two years. North America also saw a drop in FDI inflows, as did most other developed nations. All developed regions experienced a sharp decline in M&A, with the value of cross-border M&A shrinking by $300 billion in 2023. Additionally, greenfield project announcements in developed economies fell by 6%, while project finance deals decreased by 21%.

FDI inflows fell in many reporting economies, with about two-thirds of developed countries experiencing drops. The United States continued being the largest recipient, accounting for nearly a quarter of global FDI, while China and Hong Kong made up 21%. Among the top 20 host economies, the steepest declines were recorded in France, Australia, China, the United States, and India.

2.2 Global digital technology

The World Bank (2024) published a report outlining global digital progress and trends. The report highlights that between 2018 and 2022, 1.5 billion new internet users were added worldwide, with the surge mainly driven by middle- and low-income countries as the COVID-19 pandemic accelerated growth. By 2022, the global internet user base had reached 5.3 billion, representing two-thirds of the world's population.

The COVID-19 pandemic has helped reduce the internet usage gap between high- and middle-income countries, though low-income countries still lag significantly. By 2022, 92% of people in high-income countries were online, up from 87% in 2018. Middle-income countries experienced faster growth, narrowing the gap with wealthier nations. In upper-middle-income countries, 79% of the population had internet access by 2022, an increase of 16% since 2018, while lower-middle-income countries saw a 25% rise, reaching 56% of the population. Although low-income countries also experienced a sharp increase in internet adoption, especially between 2021 and 2022, the gap with high-income nations remains large. By 2022, only 25% of people

in low-income countries had internet access. Worldwide, 2.7 billion people, mostly from low- and middle-income countries, are still without internet access.

The gap in fixed broadband access between wealthy and poorer nations widened during the pandemic, with middle-and high-income countries achieving higher coverage while low-income nations fell behind. By 2022, fixed broadband reached 38% of the population in high-income and 31% in upper-middle-income countries. In comparison, lower-middle-income countries had just 4% coverage, and in low-income countries, access remained almost nonexistent due to infrastructure challenges and high costs.

Mobile broadband penetration exceeds fixed broadband and continues to expand steadily across all income levels, though progress in low-income countries has been slow. As mobile devices like smartphones, tablets, and smartwatches have grown more advanced and versatile, mobile broadband has emerged as the primary method for accessing the Internet. While fixed broadband remains too costly for most people in low-income nations, mobile broadband is increasingly affordable. Nevertheless, the lack of widespread fixed broadband remains a high barrier to achieving universal connectivity, as many individuals in low-income countries still cannot afford it.

The gap in computer ownership is stark, showing significant disparities between high- and low-income countries and between urban and rural areas. From 2017 to 2021, more than 80% of households in nations such as Belgium, Poland, Japan, Israel, and Australia had a computer, with low variation between urban and rural regions.

3. THEORETICAL BACKGROUND AND LITERATURE REVIEW

3.1 Theoretical background

FDI is crucial in promoting economic development, though its effects on private investment can be complex. For instance, when foreign investors tap into domestic credit markets to fund their activities, local interest rates can be driven higher. This increase in borrowing costs can lead domestic businesses to miss out on potential opportunities, a situation referred to as the crowding-out effect of FDI on domestic investment (Delgado and McCloud, 2017). By contrast, FDI can also promote domestic investment by fostering collaboration opportunities. For example, joint ventures between foreign and local companies can boost capital flows and facilitate technology transfers. In addition, local firms might become suppliers of raw materials or provide contract manufacturing services to foreign enterprises, gaining access to knowledge and modern technologies that help reduce production costs. This beneficial interaction is known as the crowding-in effect of FDI on domestic investment (Agosin and Machado, 2005). However, Nguyen (2021) notes that in advanced economies with rule-based systems, foreign companies compete directly with domestic firms for market share and resources like raw materials and labor. As a result, the relationship between FDI and private investment often becomes substitutionary.

In contrast to FDI inflows, we argue that digitalization positively impacts private investment in advanced countries. These economies, characterized by advanced technological infrastructure and economic development, have established strong digital platforms. Most businesses in these regions have successfully integrated digital technologies into their trading and commercial operations, resulting in low transaction costs. As these economies move from traditional to digital systems, propelled by high education levels, increased incomes, and

significant digital advancement, online transactions become quicker and more convenient, ultimately encouraging private investment.

3.2 Literature review

The effect of FDI inflows on domestic and private investment is a key focus in economic research. The literature presents diverse findings: while some studies suggest a negative impact, others indicate a positive correlation, and many offer mixed evidence on the effects of FDI inflows on domestic and private investment levels.

Eregha (2012), Deok-Ki Kim and Seo (2003), Mutenyo and Asmah (2010), Szkorupová (2015), all indicate that FDI inflows tend to displace private investment. Wang (2010) suggests that while FDI inflows may initially suppress domestic investment, cumulative FDI can have a beneficial impact based on analyses using fixed and random effects models as well as GMM estimators. Pilbeam and Oboleviciute (2012) document a crowding-out effect of FDI on domestic investment across 14 EU countries from 1990 to 2008, utilizing the one-step GMM estimator. Elheddad (2019) shows that FDI inflows decreased private investment in six GCC economies from 2003 to 2013, employing fixed effects and FE-IV estimators. More recently, Chitambara (2021) applied the fixed effects model and two-step system GMM estimator to data from 48 African countries between 1980 and 2016, finding similar crowding-out effects of FDI on domestic investment in this context.

Several studies indicate a crowding-in effect of FDI inflows on domestic investment. For example, Ang (2009), Ang (2010), Desai *et al.* (2005), Ndikumana and Verick (2008), Prasanna (2010), and Tang *et al.* (2008) support this hypothesis. Al-Sadig (2013) shows that FDI inflows can enhance private investment in 91 developing economies from 1970 to 2000, especially when the host country has a high human capital base. Munemo (2014) finds that the complementarity between FDI and domestic investment is significantly affected by business start-up regulations, based on a balanced panel of 139 economies from 2000 to 2010 using a two-step difference GMM estimator. He suggests that improving these regulations could strengthen this positive relationship. Similarly, Tan *et al.* (2016) demonstrate that FDI inflows promote domestic investment in the long term for eight ASEAN economies from 1986 to 2011, utilizing the PMG technique. Boateng *et al.* (2017) confirm the crowding-in effect for 16 sub-Saharan African economies between 1980 and 2014, employing fixed effects models, pooled OLS regression, and FMOLS estimation. Jude (2019) reports a similar effect in 10 Eastern and Central European economies from 1995 to 2015, based on the one-step system GMM estimator. More recently, Ha *et al.* (2022) applied the system GMM estimator to sector-level data from Vietnam (2010–2015) and observed that foreign investment crowds in private investment within the same sector.

Notably, many studies provide mixed evidence regarding the relationship between FDI inflows and domestic investment (Jan Mišun, 2002; Agosin and Machado, 2005; Apergis *et al.*, 2006; Onaran *et al.*, 2013; Ahmed *et al.*, 2015). For instance, Lin and Chuang (2007) find that FDI inflows increase domestic investment in large enterprises while reducing it in smaller ones, based on the Heckman 2SLS technique for 1993–1995 and 1997–1999. Chen *et al.* (2017) observe a neutral overall effect of FDI inflows on private investment in China from the first quarter of 1994 to the fourth quarter of 2014 using the ARDL technique. They note that joint-venture FDI inflows tend to boost private investment, whereas wholly foreign-funded FDI inflows generally decrease it.

From the literature perspective, we note that no existing papers investigate the FDI inflows – private investment with the presence of digitalization. Therefore, we propose the hypotheses as follows:

H1*: FDI inflows negatively affect private investment in advanced countries from 2010 to 2023*

H2*: Digitalization positively affects private investment in advanced countries from 2010 to 2023*

H3*: The interaction term between FDI inflows and digitalization positively affects private investment in advanced countries from 2010 to 2023*

4. EMPIRICAL EQUATION AND DATA

4.1 Empirical equation

From the literature review, the empirical model is proposed as follows:

$$INV_{it} = \gamma_0 + \gamma_1 INV_{it-1} + \gamma_2 FDI_{it} + \gamma_3 TEC_{it} + \gamma_4 (FDI \times TEC)_{it} + Y_{it}\gamma' + \mu_i + \xi_{it} \quad (1)$$

where i and t represent the country and time indices, respectively. INV_{it} is the private investment (% GDP), INV_{it-1} is the initial level of private investment, FDI_{it} is the foreign direct investment, net inflows (% GDP), TEC_{it} is Individuals using the Internet (IND) or Fixed broadband subscriptions (SUB). Y_{it} is a vector comprising economic growth, labor force, and inflation, which serve as control variables.. μ_i is fixed effects, ξ_{js} is the error term, γ_i is parameters. In line with existing literature, we have chosen to include economic growth (Muthu, 2017) and inflation (Delgado and McCloud, 2017) as control variables. Additionally, we posit that the labor force can impact private investment, as it is a crucial resource for the growth and success of businesses.

Estimating Equation (1) presents several significant challenges in econometrics. First, there may be a bidirectional interaction between inflation and economic growth with private investment, which can lead to endogeneity issues. Furthermore, unobserved fixed effects in μ_i could be correlated with the independent variables. The lagged variable INV_{it-1} may also result in substantial serial autocorrelation. Additionally, the panel dataset consists of many countries ($N = 39$) observed over a relatively short time frame ($L = 14$), which could bias OLS regression results. Both the random effects model (REM) and fixed effects model (FEM) have difficulty addressing serial autocorrelation and endogeneity. The Instrumental Variables (IV-2SLS) estimator necessitates appropriate instruments beyond those used in the empirical model. Following the approach of Judson and Owen (1999), we utilize the system and difference GMM estimator.

Holtz-Eakin *et al.* (1988) were the pioneers in introducing the general method of moments (GMM), which was subsequently refined by Arellano and Bond (1991). It led to the development of two types of GMM estimators: difference GMM and system GMM. In estimation, the two-step system and difference GMM estimators (2SGMM and 2DGMM) can provide greater efficiency than the one-step version. However, applying 2SGMM to smaller

samples, like the one in this study, presents challenges (Roodman, 2009). This issue arises from the rapid increase in instrumental variables, which grows quadratically as the time dimension expands, leading to a situation where the number of instruments surpasses the number of panel units. A guideline suggests that the number of panel units should be equal to or greater than the number of instruments (Roodman, 2009) to address this issue. In this study, we employ the Arellano-Bond, Sargan, and Hansen statistics to assess the validity of the instruments in 2SGMM and 2DGMM. The Arellano-Bond AR(2) test checks for serial autocorrelation of the errors in first differences, while the Sargan and Hansen tests evaluate the presence of endogenous variables.

4.2 Research data

The dataset comprises private investment (% of GDP), net FDI inflows (% of GDP), real GDP per capita, labor force (%), and inflation (%). Except for private investment data sourced from the IMF, the other variables are obtained from the World Bank. The research sample focuses on 37[1] advanced countries from 2010 through 2023.

Table no. 1 defines the dataset, Table no. 2 provides summary statistics, and Table no. 3 presents the correlation matrix. Table no. 3 indicates a positive correlation between Internet usage, economic growth, and labor force with private investment. Internet usage and fixed broadband subscriptions show a strong correlation; therefore, they are treated separately in the empirical model.

Table no. 1 – Data description

Variable	Definition	Type	Source
Private investment (INV, %)	"Gross fixed capital formation (% GDP)"	%	IMF
FDI inflows (FDI, %)	"Foreign direct investment, net inflows (% of GDP)"	%	World Bank
Individuals using the Internet (IND, %)	"Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV, …"	%	World Bank
Fixed broadband subscriptions (per 100 people) (SUB, value)	"Fixed broadband subscriptions refers to fixed subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s."	log	World Bank
Economic growth (GDP, USD)	"GDP per capita (constant 2010 US$)"	log	World Bank
Labor force (LAB, %)	"Labor force participation rate is the proportion of the population ages 15-64 that is economically active: all people who supply labor for the production of goods and services during a specified period."	%	World Bank
Inflation (INF, %)	"Inflation, consumer prices (annual %)"	%	World Bank

Table no. 2 – Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
INV	518	26.643	33.354	2.041	234.969
FDI	518	6.584	36.308	-395.67	279.361
IND	518	84.086	10.546	44.4	99.83
SUB	518	33.389	6.749	16.250	49.64
GDP	518	41525.61	21624.73	10962.2	109714.9
LAB	518	74.876	5.940	0.658	89.205
INF	518	2.307	2.644	-2.096	19.705

Table no. 3 – The matrix of correlation

	INV	FDI	IND	SUB	GDP	LAB	INF
INV	1						
FDI	-0.021	1					
IND	0.131***	-0.177***	1				
SUB	-0.023	-0.102***	0.704***	1			
GDP	0.081*	-0.092**	0.538***	0.450***	1		
LAB	0.079*	-0.068	0.496***	0.344***	0.344***	1	
INF	0.001	-0.088**	0.177***	0.110***	0.004	0.122***	1

Note: *, **, and *** refer to significance level at 10%, 5%, and 1%, respectively.

5. EMPIRICAL FINDINGS

5.1 2SGMM estimates

Table no. 4 presents the results of the basic regression model (without interaction terms), while Table no. 5 shows the outcomes of the full regression model (with interaction terms). Each table contains two columns corresponding with two measures of digitalization: individuals using the Internet and fixed broadband subscriptions. The estimation process acknowledges FDI as an endogenous regressor, so this paper treats it as an instrumented in the GMM style, and the other variables are used instruments in the IV style instruments.

Table no. 4 – FDI inflows, digitalization, and private investment: 2SGMM (without interaction term)

Variables	Individuals using the Internet	Fixed broadband subscriptions
Private investment (-1)	0.993***	0.993***
	(0.0004)	(0.0005)
FDI	-0.0036***	-0.0039***
	(0.0000)	(0.0000)
Digitalization	0.007***	0.004***
	(0.0015)	(0.001)
Economic growth	-0.002	-0.0032
	(0.0001)	(0.0002)
Labor force	0.034***	0.034***
	(0.001)	(0.004)

Variables	Individuals using the Internet	Fixed broadband subscriptions
Inflation	-0.169***	-0.151***
	(0.007)	(0.0108)
Instrument	31	31
Country/Observation	37/481	37/481
AR(2) test	0.542	0.543
Sargan test	0.463	0.422
Hansen test	0.314	0.256

Note: *, **, and *** refer to significance level at 10%, 5%, and 1%, respectively.
Dependent variable: Private investment (%)

Table no. 5 – FDI inflows, digitalization, and private investment: 2SGMM (with interaction term)

Variables	Individuals using the Internet	Fixed broadband subscriptions
Private investment (-1)	0.993***	0.993***
	(0.0003)	(0.0005)
FDI	-0.022***	-0.072***
	(0.0007)	(0.0015)
Digitalization	0.010***	0.004***
	(0.002)	(0.001)
FDI*Digitalization	0.0002***	0.0001***
	(0.0000)	(0.0000)
Economic growth	-0.002	-0.003
	(0.0002)	(0.0002)
Labor force	0.039***	0.033***
	(0.002)	(0.004)
Inflation	-0.208***	-0.165***
	(0.012)	(0.007)
Instrument	31	32
Country/Observation	37/481	37/481
AR(2) test	0.538	0.543
Sargan test	0.628	0.559
Hansen test	0.208	0.340

Note: *, **, and *** refer to significance level at 10%, 5%, and 1%, respectively.
Dependent variable: Private investment (%)

Without the interaction term between FDI inflows and digitalization, Table no. 4 indicates that FDI inflows reduce private investment while digitalization enhances it. Additionally, the labor force stimulates private investment, whereas inflation constrains it. When the interaction term is included, Table no. 5 confirms that the sign and significance of the estimated coefficients remain unchanged, suggesting the robustness of the estimated results. In short, the results across models indicate that FDI crowds out private investment. Conversely, digitalization and interaction term reduces private investment. These results support the proposed hypotheses in the paper. It means that FDI negatively affects private investment, and this negative nexus is moderated by digitalization. Moreover, the labor force promotes private investment, while inflation hinders it.

The negative effect of FDI inflows on private investment in advanced economies further supports the "crowding-out" hypothesis, which suggests that FDI can displace domestic private investment rather than complement it. This result is highly consistent with the findings of Eregha (2012), Deok-Ki Kim and Seo (2003), Mutenyo and Asmah (2010), Szkorupová

(2015). Specifically, Nguyen (2021) highlights that FDI inflows crowd out private investment in these advanced countries. He explains that in economies where rule-based governance prevails, foreign companies often compete head-to-head with domestic firms for market share and resources such as labor, capital, and raw materials. This competition between foreign and domestic firms creates an environment where foreign investors, with their substantial financial resources and technological advantages, may gain the upper hand, thus limiting the growth opportunities for domestic companies. As a result, the relationship between FDI inflows and private investment is frequently characterized by substitution.

Unlike FDI, digitalization fosters private investment in advanced countries. This finding aligns with Xu and Jin (2024), who report that government digitalization enhances investment efficiency in China's private sector. We posit that in these economies where technological infrastructure and economic progress are highly developed, digital platforms are firmly established. Most businesses in advanced nations have successfully adopted digital technologies, reducing transaction costs. With the advantages of higher education levels, higher incomes, and substantial digital advancements, these countries are transitioning from traditional methods to fully digital systems. This transformation enhances the efficiency and ease of online transactions, further encouraging private investment.

Similarly, the interaction between FDI and digitalization enhances private investment in advanced economies. We believe that FDI inflows introduce modern digital technologies into these developed markets, accelerating their digital adoption. When foreign companies bring advanced technology and innovation, domestic firms are encouraged to upgrade their digital capabilities, driving further investment. Although FDI alone may lead to a decline in private investment due to competition, this effect is less significant compared to the boost by digitalization. Thus, the interaction between FDI and digitalization promotes private investment by fostering technological progress and business efficiency in advanced countries.

A highly skilled and disciplined labor force in developed countries plays a crucial role in fostering private investment. In these economies, workers often possess advanced education, specialized training, and significant expertise, contributing to increased productivity and innovation. This skilled labor force enables businesses to operate more efficiently and effectively, making these countries attractive destinations for domestic and foreign investors. As a result, the availability of a well-trained workforce directly stimulates private investment by reducing operational risks and enhancing the potential for business success. Therefore, the labor force in developed countries plays a crucial role in driving private investment.

Meanwhile, the negative impact of inflation on private investment in advanced economies is consistent with the conclusions of Wang (2010) and Delgado and McCloud (2017). Inflation increases transaction costs and reduces business profitability, which, in turn, leads to a decline in private investment. Moreover, inflation elevates the price of goods, eroding purchasing power and ultimately lowering production due to decreased consumption.

5.2 Robustness check by 2DGMM

The paper applies 2DGMM to test the robustness of the 2SGMM estimates. Table no. 6 follows a similar structure to Table no. 5, presenting the estimated model with two digitalization measures and incorporating the interaction term between FDI inflows and private investment. Consistent with the 2SGMM results, the 2DGMM estimates reveal that FDI hinders private investment, while digitalization and the interaction term enhance it. These

findings further validate the moderating effect of digitalization on the relationship between FDI inflows and private investment, particularly in advanced economies.

Table no. 6 – FDI inflows, digitalization, and private investment: 2DGMM (with interaction term)

Variables	Individuals using the Internet	Fixed broadband subscriptions
Private investment (-1)	0.717***	0.831***
	(0.089)	(0.059)
FDI	-0.058***	-0.238***
	(0.004)	(0.014)
Digitalization	0.0236***	0.098***
	(0.023)	(0.007)
FDI*Digitalization	0.0007***	0.0006***
	(0.0000)	(0.0000)
Economic growth	-0.131	-0.100
	(0.014)	(0.008)
Labor force	-0.153	0.032
	(0.115)	(0.020)
Inflation	0.173	-0.046
	(0.116)	(0.070)
Instrument	18	17
Country/Observation	37/407	37/407
AR(2) test	0.434	0.445
Sargan test	0.284	0.232
Hansen test	0.736	0.672

Note: *, **, and *** refer to significance level at 10%, 5%, and 1%, respectively.
Dependent variable: Private investment (%)

6. CONCLUSION AND POLICY LESSONS

This paper highlights the crucial role of digitalization in the relationship between FDI inflows and private investment. It employs 2SGMM and 2DGMM techniques to assess the effects of FDI, digitalization, and their interaction on private investment in 37 advanced countries from 2010 to 2023. The analysis reveals that FDI has a crowding-out effect on private investment, while digitalization and the interaction terms encourage private investment. In addition, labor force and inflation are significant factors influencing private investment in these countries.

From a policy standpoint, the findings of this study offer significant insights for policymakers in advanced economies. While it is evident that FDI can crowd out private investment, the research underscores the essential role of digitalization in fostering private investment. To fully harness this potential, policymakers should prioritize initiatives to advance digital progress. It can be achieved by promoting creativity and innovation within digital-based businesses, which can drive economic growth and competitiveness. Additionally, it is crucial to ensure widespread access to and adoption of digital tools among the general population. By doing so, governments can create an environment conducive to investment and entrepreneurship, ultimately leading to more robust economic development and resilience in the face of global challenges. For the business environment, the government should foster investment collaboration between domestic enterprises and FDI investors by facilitating public investment projects and promoting partnerships in digital technology development. Policies should actively promote the digitalization of economic activities in

domestic businesses to reduce transaction costs and enhance investment appeal for local and foreign enterprises.

This study utilizes World Bank data on Internet usage and fixed broadband subscriptions as proxies for digitalization due to their accessibility. However, future research could expand on this by incorporating additional indicators like secure Internet servers and mobile cellular subscriptions from the World Bank database. Furthermore, more comprehensive digital metrics - such as Digital Economy Metrics, Digital Society Metrics, Digital Industry Metrics, Digital Enterprise Metrics, Digital Client Metrics, and Digital Investment Metrics, as proposed by Kotarba (2017) when available - should be employed.

Future studies should explore the influence of digitalization in other economic contexts, such as the relationships between FDI and income inequality or FDI and environmental quality. Moreover, this research relied on internet users and fixed broadband subscriptions as indicators of digitalization based on the data provided by the World Bank. Future research should explore a wider range of measures, provided the necessary data is available.

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Notes

[1] Austria, Belgium, Canada, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, China, Iceland, Ireland, Israel, Italy, Japan, Korea, Rep., Latvia, Lithuania, Luxembourg, Macao SAR, China, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States.