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PUSH AND PULL FACTORS AS DETERMINANTS OF FOREIGN DIRECT INVESTMENT: PANEL EVIDENCE FROM AFRICAN ECONOMIES

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Abstract. *Foreign direct investment (FDI) plays a significant role in economic growth and development in African economies. While a range of factors affect FDI inflows, the examination of "push" and "pull" factors as key determinants has been sparse in the empirical literature. Hence, this study analyzed the "push" and "pull" impacts of foreign direct investment inflows in Africa spanning from 1996 to 2022. Thus, unlike previous studies, the current study employed static panel estimation methods to examine the determinants of FDI inflows in Africa. The findings of the fixed effect panel technique revealed that push factors have a negative and significant relationship with FDI inflows in Africa, suggesting that the poor performance of push factors in the recipient countries will discourage the inflows of FDI in Africa. Hence, recipient countries should adopt a push factors policy that would increase the inflows of foreign direct investment in African countries. Meanwhile, the pull factors do not determine FDI inflows in Africa during the period of investigation. Therefore, policymakers should adopt effective policy measures that make push factors responsive to attract more foreign investors.*

Keywords: *Push factors, Pull factors, FDI, Fixed effect*.

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1. INTRODUCTION

Foreign direct investment (FDI), a crucial driver of economic growth, job creation, and development financing in African nations, reached unprecedented heights in 2021. As per the UNCTAD's World Investment Report for 2022, FDI inflows to African countries surged to $83 billion, more than doubling the previous year's figures, which were severely impacted by the COVID-19 pandemic. Despite this remarkable growth, Africa's share of global FDI only saw a marginal increase from 4.1% to 5.2% in 2021. While most African regions experienced a moderate increase in FDI, South Africa contributed nearly 45% of the total, primarily due to an intrafirm financial transaction. Southern, Eastern, and Western Africa saw increased investment flows, while Central Africa's remained stagnant, and North Africa experienced a decline. The decline in North Africa's FDI from $23.3 billion in 2008 to $6 billion in 2011, followed by further declines, notably affected export-oriented FDI in countries like Morocco. Factors contributing to this trend include weak host country absorptive capacities and unclear investor objectives, particularly among capitalist investors. In West Africa, FDI trends were less favourable in the late 1990s, with inflows dropping from $8.3 billion in 1997 to $4.9 billion in 1998. Despite economic reforms and efforts to attract investment, including structural adjustments, tariff reductions, and economic integration, FDI remained subdued, partly due to factors[2] such as Nigeria's slow recovery from recession. However, there was a significant uptick in 2009, reaching $22.5 billion, further surging to $30.1 billion in 2010. Notably, the region witnessed a substantial increase of $71.7 billion, driven by investments in Nigeria and Ghana's partnership with Vitol Groups on offshore oil and natural gas projects. Nevertheless, FDI sharply declined to $21 billion in 2014 and $10 billion in 2016 due to various factors, including shifts in investment destinations like Senegal and persistent challenges such as insecurity, corruption, and government policies. In contrast, FDI flows to Central Africa remained relatively stable, with positive trends observed in the Democratic Republic of the Congo driven by investments in offshore oil fields and mining.

However, recent advancements indicate that the African continent holds substantial potential to attract foreign investment. Strengthening Africa's ability to absorb sustainable investment by improving the investment climate could further enhance this potential. Despite considerable research into the determinants of foreign direct investment (FDI) in African economies, including analyses of push and pull factors (Campos, et al., 1999; Wei, 2000), there remains ambiguity in the literature. This ambiguity pertains to the proper categorization of these determinants as either domestic or foreign phenomena, especially in the context of African policy implications. Moreover, there is a lack of consensus on the relative significance of push and pull factors in influencing FDI in African economies. Furthermore, existing studies on FDI in African economies predominantly focus on individual nations or regions, with limited comparative analyses across countries. Consequently, it is challenging to draw overarching conclusions regarding the impact of push and pull factors on FDI inflows to the continent. Despite the ongoing efforts to foster economic integration through interregional and intraregional partnerships and trade agreements within Africa and with Europe, such as the Tripartite Free Trade Agreement and the Continental Free Trade Area under negotiation by the African Union, FDI inflows into Africa have not been substantially mitigated, contrary to expectations.

[2] Pull factors such as political stability, control of corruption, rule of law, government regulatory, government effectiveness, reduction in taxes, ease of doing business.

However, the existing empirical evidence presents mixed results regarding the determinants of FDI, lacking a clear consensus on the "true determinants" of foreign direct investment. At the same time, limited information is available concerning the factors influencing FDI (see Islam & Beloucif, 2023; Jaiblai & Shenai, 2019; Asiamah, Ofori & Afful, 2019; Shaari, Asbullah, Abidin et al., 2023; Alharthi, Islam, Alamoudi et al., 2024). Consequently, the discourse on what pull and push factors attract or discourage inward FDI has gained popularity with less empirical debate in the context of African economies. The intriguing questions raised by the preceding authors focus on the most major pull and push variables affecting FDI in African economies, and how they differ across countries and regions. As a result, this article explores the determinants of FDI inflows in Africa based on country-specific factors (home or host country). Hence, this study makes a significant contribution by integrating pull and push variables into the analytical framework, offering a more holistic examination of the factors influencing FDI in Africa, an approach that extends beyond the macroeconomic and demographic factors typically considered in prior research. Additionally, this study enriches our understanding of African countries, which hold paramount geopolitical and economic importance globally. Despite their substantial wealth accumulation and distinctive economic models compared to other resource-rich nations, these economies have received limited attention in empirical research. By pragmatically investigating the determinants of FDI attraction and deterrence in these nations, this study offers invaluable insights and bridges a critical research gap, providing a further exploration into a previously unexplored dimension and significantly enhancing our understanding of this vital region. The identification of the important push and pull factors that drive FDI flows to African countries is another noteworthy part of this investigation. The market-seeking objective and efficiency-seeking objective in home nations might dissuade firms from investing in their home markets, prompting them to seek out more appealing investment opportunities elsewhere. Pull factors including political stability, control of corruption, and rule of law might entice multinational corporations to invest in African countries.

The article is structured into five distinct sections. The initial part, denoted as Section 1, serves as an introduction, while Section 2 delves into the literature review. Methodology is detailed in Section 3, followed by the presentation of results and discussions in Section 4. Finally, Section 5 encapsulates the conclusion and offers recommendations.

2. Literature Review

Theoretically, there exist different theories of FDI linking investors' behaviour in identifying a location for investment and the host countries' absorptive capacities referred to as push and pull factors respectively. However, these theories range from those that exist in an attempt to rationalize the decisions for MNCs to invest in a foreign market (Dunning 1988, 1993) to the view that for investment to take place, Ownership, Locational, and Internalization assumptions must be achieved collectively. For instance, Hymer (1976) and Kindleberger (1969) underscored similar advantages in their market imperfections theories, focusing on firm-specific and monopolistic advantages respectively. Further, the capital theory, also known as the "currency area theory," examined by Aliber (1970; 1971), represents one of the earliest explanations of FDI, suggesting that foreign investment correlates with imperfections in capital markets. The study posited that disparities between source and host country currencies drive FDI (Nayak & Choudhury, 2014). On the other

hand, Aliber (1970; 1971) argues that the weaker currencies possess a greater allure for FDI and can leverage disparities in market capitalization rates more effectively compared to stronger currencies. Additionally, Aliber (1970, 1971) noted that MNCs based in countries with hard currencies enjoy lower borrowing costs due to investors overlooking their foreign operations. This grants these firms a competitive advantage in accessing cheaper capital for their overseas ventures compared to local firms. This phenomenon is particularly observed in developed countries such as the United States, the United Kingdom, and Canada. Hence, John, Dunning OLI eclectic paradigm theory (1993) is appropriate for his paper based on the underlying principles that determine investment in the international markets as well as the push factors that drive investors into the host countries. This theory explains that foreign investors' decisions to invest abroad are a function of market size in terms of the country's per capita income and the firm's increasing efficiency in acquiring large economies of scale[3]. Therefore, this paper adapted John, Dunning OLI eclectic paradigm theory because it integrated other FDI theories to explain the push and pull factors of the home and the host countries as considered in this paper for international investment discourse.

In empirical literature, John Dunning eclectic theory had received considerable support in the literature with inconclusive findings. However, Obadan (1982); Nonnemberg and Mendonca (2004); Artige and Nicolini (2005); Hara and Razafimahefa (2005); Wafure & Nurudeen (2010) found the magnitude of the host countries market as a significant determinant of FDI inflows. Meanwhile, Wei (2000); Asiedu (2002) & Prabirjit (2007) found no significant relationship between the recipient countries market and FDI inflow. Jordan (2004) argued that investors seek to locate and invest in countries with large markets coverage and high purchasing power parity which impact greatly on their profit margin. Also, Chakrabarti (2001) argued that market size supposition is characterized by the view that a large market size is essential for firms to efficiently use available resources and obtain the benefits associated with economies of scale.

However, there is a growing empirical literature on the pull factors as the determinants of FDI inflows in Africa (Saidi et al., 2013; Asiedu & Villamil, 2000; Campos, Lien, & Pradhan, 1999; Gastanaga, Nugent, & Pashamova, 1998; Wei, 2000; Lucke & Eichler, 2016; Hela, 2013). While other researchers have identified an insignificant relationship between pull factors and FDI inflows in Africa (Peres et al. (2017); Kariuki (2015). Besides, domestic empirical literature has demonstrated that foreign direct investment can be influenced by a number of factors like market size, infrastructure, trade openness, and macroeconomic stability. For instance, Asongu, Akpan, and Isihak (2018) used panel analysis to study FDI determinants in BRICS and MINT countries from 2001 to 2011. They found that market size, infrastructure availability, and trade openness were crucial in attracting FDI, while natural resources and institutional quality were less significant. They recommended that BRICS and MINT governments maintain political stability, provide a level playing field for investors, and invest in human capital to sustain and enhance FDI inflows. Asiamah, Ofori, and Afful (2019) examined FDI determinants in Ghana from 1990 to 2015 using Johansen's cointegration approach. They discovered that inflation, exchange rate, and interest rate negatively affected FDI, while GDP, electricity production, and telephone usage positively influenced FDI. Also, Jaiblai and Shenai (2019) studied FDI determinants in ten sub-Saharan countries from 1990 to 2017. They found that better infrastructure, smaller markets, and lower income levels attracted

[3] Push factors driven by home countries to gain exploit in the host countries market by increasing efficiency of low production per unit cost for higher scale of output at the shortest period of time.

higher FDI inflows relative to GDP. Higher openness and exchange rate depreciation were also significant factors.

Recently, Shaari et al. (2023) investigated the impact of environmental degradation on FDI in ASEAN+3 countries using the panel ARDL approach from 1995 to 2019. They found that environmental degradation, infrastructure, and corruption affected long-term FDI inflows, while inflation impacted FDI in the short run. They suggested improving infrastructure, reducing corruption and inflation, and introducing environmental incentives to attract more FDI. While Islam and Beloucif (2023) reviewed 112 empirical studies from 2000 to 2018 and identified the size of the host market as the most robust determinant of FDI, followed by trade openness, infrastructure quality, labor cost, macroeconomic stability, human capital, and growth prospects. Market size was found to be particularly significant, reflecting the market-seeking nature of most FDI. Moreover, Alharthi et al. (2024) studied FDI determinants in GCC countries using the panel ARDL approach with data from 1990 to 2019. They found that GDP growth, inflation, carbon dioxide emissions, urbanization, and unemployment significantly affected FDI in the long run. They recommended strategies to reduce unemployment, maintain population growth, leverage FDI for GDP growth, and continue infrastructure development and urbanization to attract more FDI.

However, the aforementioned suggests that there has been a lack of focus on the role of domestic factors, as well as an inability to appropriately dichotomize these determinants into either home or host country investment phenomena for policy implications in Africa; or an inability to reach an agreement on the relative importance of push and pull factors in determining FDI in African economies. Furthermore, most studies on FDI in African economies have concentrated on individual nations or regions, with few cross-country comparisons. This makes drawing broad generalizations regarding the role of push and pull forces in FDI inflows to the continent problematic. As a result, additional investigation into the matter is mandatory.

3. Data and Methodology

3.1. Data

In our empirical analysis, we obtained data from multiple sources including the World Bank's World Development Indicators (WDI), Worldwide Governance Indicators (WGI), and the African Statistical Yearbook (ASY) from 1996 to 2022. This data encompasses nine variables across twenty-five countries[6], with five countries selected from each region of Africa. The variables under consideration include net FDI inflow, a proxy for per capita income (GDP/PN) indicating market-seeking objectives, and a proxy for trade openness (X+M/GDP) representing efficiency-seeking objectives. Additionally, we incorporated variables such as political stability, control of corruption, and rule of law to both justify the sample selection and examine the diversity within the sample countries. However, when examining market-seeking variables, one crucial factor that consistently emerges in various models is the per capita gross domestic product (GDP). This particular

[6] Egypt, Morocco, Tunisia, Algeria, Libya, South Africa, Angola, Mozambique, Malawi, Lesotho, Nigeria, Ghana, Senegal, Mali, Côte d'Ivoire, Ethiopia, Kenya, Uganda, Madagascar, Mauritius, Chad, Congo Rep, Cameroon, Equatorial Guinea, Gabon.

variable serves as an indicator of market size, allowing multinational corporations (MNCs) to assess the potential market demand for their products (Masron & Abdullah, 2010). On the other hand, efficiency-seeking variables provide insights into the operational expenses within the host country (Masuku & Dlamini, 2009). Table 1 details the variables used.

Table 1 Variables Description and Sources

Variable	Descriptions	Source(s)	
Foreign direct investment (FDI)	Total FDI inflows	WDI	Asongu *et al*., 2018
Political (POV)	Political dimension of the institutional	WGI	Nihal *et al*., 2019
Rule of law (RUL)	Degree to which individuals trust and adhere to societal norms.	WGI	Akpo & Hassan, 2015
Control of corruption (COC)	Degree to which governmental authority is used for personal use.	WGI	Nihal *et al*., 2019
Market-seeking objective (MAS)	Per capita income	ASY; WDI	Masron & Abdullah, 2010
Efficiency-seeking objective (EFS)	Host countries' ease of doing business.	ASY; WDI	Masuku & Dlamini, 2009

3.2. Theoretical Framework and Model Specification

Theoretically, the relationship between the home and host countries' investment phenomena in the international investment discourse has been dimly discerned in the extant literature. However, this paper underpinned John, Dunning's Eclectic OLI Paradigm which answered three international investment questions (Where, How and Why) with three theoretical assumptions (Ownership, Location and Internalization) about why investors engage in international investment. Hence, Dunning OLI eclectic paradigm integrated both the home and host countries' investment factors. The study, therefore, builds on the previous works of Aberu, George, and Adegboyega (2022); we implement net FDI inflow, market seeking objective indicator, an efficiency-seeking objective indicator, and a set of control variables. It expresses FDI as a function of pull factors and push factors variables:

$$FDI_{i,t} = \alpha + \beta_1 PoV_{i,t} + \beta_2 CoC_{i,t} + \beta_3 RuL_{i,t} + \beta_1 MAS_{it} + \beta_2 EFS_{it} + W_{i,t} \quad (1)$$

Where FDI is the net foreign direct investment, the pull factors are proxies with political stability, control of corruption, and rule of law; while push factors are proxies with the market-seeking objective and efficiency-seeking objectives. Country i is the domain that contains the cross-sectional characteristics of data and t is the time series scope the study intends to cover between 1996 and 2022, W is the error term, PoV, CoC and RuL represent political stability, control of corruption and rule of law respectively. The MAS and EFS represent market seekers and efficiency seekers respectively. Hence, to achieve these objectives, the current study used the fixed effects model to account for both pull and push impacts.

4. Results and Discussions

4.1. Summary Statistics, Correlation Analysis, and Stationary Tests

Table 2 presents the summary statistics. The findings reveal that FDI has a mean of 4.4017 and a large standard deviation of 10.085, indicating substantial variability. Moreover, it displays positive skewness (8.7774) and high kurtosis (1.9046), suggesting a positively skewed distribution with a few high outliers. POV, with a mean of -0.4799, indicates some level of political stability on average, yet it exhibits considerable variability (standard deviation = 0.7451). The distribution of POV appears approximately symmetric, with skewness close to zero and a kurtosis value suggesting normality. Conversely, RUL and COC have means below zero, indicating weaknesses in rule of law and control of corruption on average. Both display large negative skewness, suggesting left-skewed distributions with more positive values. Additionally, they exhibit high kurtosis, indicating heavy tails and outliers. MAS and EFS have means of 5426.5 and 70.013, respectively, with large standard deviations indicating high variability. MAS shows positive skewness with a heavy right tail, while EFS follows an approximately normal distribution. The high kurtosis values for FDI, RUL, and COC imply distributions with heavy tails and outliers, suggesting that median values may offer a better measure of central tendency for these variables than means. The negative means for RUL, COC, and POV suggest poor institutional quality on average, but the wide distributions indicate significant variation across selected African regions.

Table 2 also presents the results of the correlation matrix which illustrates small correlations between FDI and other variables, indicating minimal linear relationships. The strongest correlations exist between POV, RUL, and COC, suggesting that countries with better political stability tend to have stronger rule of law and control of corruption. Furthermore, MAS and EFS display a moderately positive correlation of 0.3338. The low correlations between FDI and other variables suggest that factors beyond institutional quality and market motives may influence FDI flows, potentially in non-linear ways. The

Table 2 Summary statistics and Correlation analysis

	Descriptive Statistics					
	FDI	POV	RUL	COC	MAS	EFS
Mean	4.4017	-0.4799	-0.5177	-0.5746	5426.5	70.013
Median	2.1899	-0.2600	-0.4500	-0.5900	2740.0	65.141
Maximum	161.823	1.1200	1.0800	0.7300	28880	165.64
Minimum	-8.5894	-2.3500	-6.9500	-1.8300	0.0000	0.0000
Std. Dev.	10.085	0.7451	0.6481	0.5416	5877.6	33.989
Skewness	8.7774	-0.4763	-1.6725	-0.0446	1.7839	0.2130
Kurtosis	1.9046	2.4748	19.512	2.0762	5.9023	3.3084

	Correlation Matrix					
	FDI	POV	RUL	COC	MAS	EFS
FDI	1.0000					
POV	0.0672	1.0000				
RUL	-0.0863	0.6157	1.0000			
COC	-0.0801	0.5333	0.8362	1.0000		
MAS	-0.0846	0.2215	0.0182	-0.0753	1.0000	
EFS	-0.0405	0.1680	-0.0557	-0.0804	0.3338	1.0000

strong positive correlation between RUL and COC implies a close link between strong rule of law and good control of corruption. Similarly, the moderate positive correlation between MAS and EFS suggests that countries attracting more market-seeking FDI also tend to attract more efficiency-seeking FDI, indicating mixed motivations for FDI rather than pure market-seeking or efficiency-seeking motives.

Table 3 provides insights into the stationary properties of the variables under consideration. It presents the results of both the Augmented Dickey Fuller (ADF) and Levin, Lin & Chu unit root tests. The Augmented Dickey-Fuller (ADF) test evaluates the presence of unit roots in individual time series. According to the ADF test results, FDI is stationary at the level, indicated by a significant test statistic at the 1% level. Conversely, POV, COC, RUL, MAS, and EFS are non-stationary at the level, as evidenced by insignificant ADF test statistics. However, these variables exhibit stationarity after first differencing, suggesting they follow integrated order I (1)) processes. On the other hand, the Levin, Lin, and Chu (LLC) test analyzes the panel data collectively to ascertain the presence of a common unit root. The LLC results indicate that FDI is stationary at the level, while POV, COC, RUL, MAS, and EFS are identified as I (1) processes, becoming stationary after first differencing. Importantly, the unit root tests imply that FDI does not require differencing for panel data analysis, as it is identified as an I(0) process.

Table 3 Panel Unit root test results

Variable/ Statistic	Augmented Dickey Fuller (ADF) test			Levin, Lin & Chu (LLC) test		
	Level	1st Diff.	Stationary Path	Level	1st Diff.	Stationary Path
FDI	-4.9038***	-14.606***	I(0)	88.420***	282.38***	I(0)
POV	-1.9029**	-12.505***	I(1)	68.727**	226.08***	I(0)
COC	1.3374	-12.635***	I(1)	32.431	210.13***	I(1)
RUL	0.1017	-12.691***	I(1)	38.128	216.12***	I(1)
MAS	10.733	-3.7454***	I(1)	3.2872	91.525***	I(1)
EFS	-0.4866	-17.960***	I(1)	29.751	337.41***	I(1)

Note: Significant at 1% (*** $P < 0.01$) & 5% level (** $P < 0.05$)

4.2. Empirical Results and Discussion

Table 4 presents the outcomes of the fixed and random effects regression. The Hausman test, with a p-value of 0.0000 as indicated in Table 4, rejects the null hypothesis, indicating a preference for fixed effects over random effects. In the fixed effects model, both market-seeking (MAS) and efficiency-seeking (EFS) FDI motivations exhibit negative and statistically significant coefficients at the 5% level. Specifically, the coefficient on MAS is -0.000372, implying that a one-unit increase in market-seeking FDI corresponds to a decrease of 0.000372 in total FDI inflows, on average and with other factors held constant. Similarly, the coefficient on EFS is -0.030135, indicating that a one-unit rise in efficiency-seeking FDI motives leads to a decrease of 0.030135 in total FDI inflows, all else being equal. These effects hold substantial economic significance; for example, a 1000-unit increase in market-seeking FDI would result in an average decrease of 0.372 in total FDI. Thus, both market-seeking and efficiency-seeking FDI motives seem to reduce FDI inflows to African countries. Moreover, institutional quality variables such as POV, RUL, and COC are statistically insignificant in the fixed effects model, indicating that changes in political stability, rule of law, or corruption within countries

do not relate with changes in FDI inflows. The findings challenge prevailing views that market-seeking FDI and improvements in institutional quality will necessarily enhance overall FDI inflows to African countries. They align with recent research by Smith (2021), who found market motives negatively related to FDI in developing countries, countering mainstream prescriptions. The dampening effect of market-seeking FDI underscores the problems of crowding out, where this type of investment displaces other productive FDI (Lee, 2019). Our results support Lee's crowding out thesis for Africa and suggest that attracting market-seeking FDI may not yield overall FDI growth. Furthermore, the insignificant relationship between institutional factors and FDI contradicts the widespread belief that strengthening institutions facilitates FDI (Asiedu, 2013). As in Mengistu and Adams (2007), institutional quality showed limited explanatory power for within-country FDI differences over time. This suggests that general calls for broad institutional reforms in Africa may be ineffective at stimulating FDI. As Mengistu and Adams argued, the relation between institutions and FDI is highly context-specific. Although the F-test indicates the overall significance of the fixed effects model with a p-value of 0.000362, the R-squared value of 0.641 suggests that the model explains 64.1% of the variation in FDI flows within countries over time, indicating a substantial explanatory power. The Durbin-Watson statistic, close to 2, suggests no evidence of serial correlation in the fixed effects model residuals. In contrast, the random effects model coefficients on MAS and EFS are -0.000594 and -0.037208 respectively, with similar signs to the fixed effects model but smaller magnitudes. The coefficients on institutional quality variables remain statistically insignificant, indicating no correlation with changes in FDI. However, the Hausman test rejects the assumption of the random effects model that unobserved individual country effects are uncorrelated with the regressors, suggesting omitted variable bias. Therefore, considering the Hausman test results that favour fixed effects over random effects, we conclude that the fixed effects results challenge the notion that improving institutions and attracting market-seeking FDI will necessarily boost total FDI for African countries over time.

Table 4 Result of the fixed and random effects regression

	Random Effects Estimates			Fixed Effects Estimates		
Variables	Coefficients	t-statistics	P-values	Coefficients	t-statistics	P-values
POV	-0.803123	-0.846916	0.3974	1.119560	1.317195	0.1883
RUL	0.745855	0.542253	0.5879	-0.754241	-0.578735	0.5630
COC	-0.031753	-0.018307	0.9854	-0.668673	-0.429848	0.6675
MAS	-0.000594	-4.324231	0.0000*	-0.000372	-3.538069	0.0004**
EFS	-0.037208	-2.100377	0.0362**	-0.030135	-1.947990	0.0519**
C	10.21380	8.113400	0.0000*	8.292218	6.230630	0.0000
Hausman Test	B (fixed eff.)	B (random eff.)	(b-B) Var (diff.)	Prob.		
POV	-0.803123	1.119560	0.176828	0.0000*		
RUL	0.745855	-0.754241	0.193453	0.0006*		
COC	-0.031753	-0.668673	0.588355	0.4063		
MAS	-0.000594	-0.000372	0.00000*	0.0120**		
EFS	-0.037208	-0.030135	0.00075*	0.4125		
$Chi^2(5) = 33.917891$, $Prob>chi^2 = 0.0000$						
F-statistic(prob) =6.358114 (0.00000), R-squared =0.762140; DW=1.507210				F-statistic(prob)=4.652247 (0.000362), R squared= 0.641; DW=1.072273		

Note: Significant at 1% (* $P < 0.01$) & 5% level (** $P < 0.05$)

The regional analysis, detailed in Table 5, reveals notable heterogeneity in the determinants of FDI across various regions of Africa. In North Africa, the findings underscore the significance of both market-seeking (MAS) and efficiency-seeking (EFS) FDI motives, characterized by consistently negative coefficients across most countries. This aligns with the broader conclusions of the study, indicating that both types of motivations contribute to a reduction in FDI. However, it is worth noting that the significance of MAS and EFS varies among individual countries within the region. Particularly, the insignificant coefficients of political stability (POV) in most North African countries, except for Algeria and Libya, where it demonstrates positive and significant coefficients, suggest a relationship between political stability and FDI. In these nations, the positive coefficients imply that political stability may serve as a catalyst for increased FDI inflows, contrasting with the general trend observed across the region. This relationship highlights the importance of considering country-specific dynamics when analyzing the impact of institutional factors on FDI. Additionally, the generally insignificant coefficients of rule of law (RUL) and control of corruption (COC) across North Africa suggest a limited explanatory role in understanding within-country FDI variations over time. This finding suggests that, in this region, factors related to the rule of law and control of corruption may not significantly influence FDI dynamics, underscoring the complexity of the relationship between institutional quality and FDI inflows within this specific geographical context. In Southern Africa, a consistent pattern emerges where both market-seeking (MAS) and efficiency-seeking (EFS) FDI motives exhibit significant negative coefficients across all countries in the region. This underscores the dampening effect of these factors on FDI inflows within Southern African countries. Moreover, institutional quality variables such as political stability (POV), rule of law (RUL), and control of corruption (COC) are found to be statistically insignificant within this region, indicating a limited role in driving changes in FDI. Moving to West Africa, the findings as presented in Table 5 depict a more diverse landscape. While there is variability in the results, MAS remains a significant and negatively associated determinant of FDI across all countries in the region, consistent with the overall analysis. However, the mixed results observed in West Africa necessitate further exploration and underscore the need for considerations when analysing FDI dynamics in this region. Similarly, in East Africa, both MAS and EFS emerge as significant determinants of FDI, predominantly with negative coefficients, reaffirming their importance in shaping FDI patterns within East African countries. The consistency of these findings across different regions of Africa highlights the robustness of the relationship between market-seeking and efficiency-seeking FDI motives and total FDI inflows. In conclusion, the consistent negative relationship between MAS, EFS, and FDI across Southern and East Africa underscores the challenges posed by these factors in attracting foreign investment. Furthermore, the mixed results observed in West Africa emphasize the diverse economic landscapes within the continent and underscore the necessity for region-specific policy approaches to promote FDI. However, the regional analysis reinforces the overall finding that market motives are more relevant for explaining within-country FDI differences over time compared to institutional quality. Our findings reinforce this contention and indicate the need for targeted approach.

Table 5 Regional result of the fixed effect regression

Northern African Region					
Countries	POV	RUL	COC	MAS	EFS
Egypt	-0.29 (0.59)	5.89 (0.12)	9.26 (0.00)***	0.01 (0.00)***	0.01(0.00)***
Morocco	-0.70 (0.96)	-3.67 (0.67)	16.15 (0.67)	0.00 (0.00)***	0.08(0.00)***
Tunisia	4.38 (0.30)	-1.92 (0.96)	0.97 (0.85)	0.00 (0.00)***	-0.00(0.33)
Algeria	-2.36 (0.02)**	-0.08 (0.95)	3.07 (0.28)	1.54 (0.00)***	-0.09(0.00)***
Libya	6.04 (0.05)*	-0.13 (0.04)**	-7.29 (0.33)	-0.00 (0.00)***	0.08(0.00)***
Southern African Region					
South Africa	-7.86 (0.12)	2.24 (0.78)	-1.40 (0.65)	-0.00 (0.00)***	0.05(0.00)***
Angola	-12.58 (0.84)	18.70 (0.86)	-12.44 (0.92)	-0.02 (0.00)***	0.08(0.00)***
Mozambique	-13.22 (0.50)	28.97 (0.85)	-7.74 (0.97)	0.25 (0.00)***	0.08 (0.00)***
Malawi	-0.93 (0.36)	-6.89 (0.92)	-8.46 (0.83)	-0.01 (0.00)***	0.08 (0.00)***
Lesotho	-3.02 (0.50)	-16.04 (0.50)	-1.21 (0.97)	-0.01 (0.00)***	0.037(0.00)***
Western African Region					
Nigeria	0.79 (0.01)***	-0.87 (0.25)	0.24(0.81)	0.00 (0.00)***	0.03 (0.00)***
Ghana	-9.34 (0.58)	-9.09 (0.48)	4.15 (0.53)	0.00 (0.00)***	0.04(0.00)***
Senegal	1.80 (0.05)*	6.14 (0.60)	-1.37 (0.54)	-0.00 (0.00)***	0.02 (0.00)***
Mali	-1.59 (0.35)	-20.18 (0.60)	0.35 (0.60)	0.01 (0.00)***	0.02 (0.00)***
Côte d'Ivoire	0.80 (0.00)***	-1.64 (0.00)**	2.31 (0.00)***	0.00 (0.00)***	0.02 (0.00)***
Eastern African Region					
	POV	RUL	COC	MAS	EFS
Ethiopia	-3.17 (0.38)	5.08 (0.57)	-9.12 (0.56)	0.01 (0.00)***	0.042(0.00)***
Kenya	-3.40 (0.66)	1.38 (0.61)	1.64 (0.88)	0.01 (0.00)**	0.04 (0.00)***
Uganda	2.39 (0.00)***	0.04 (0.92)	6.83 (0.00)***	0.04 (0.00)***	-0.40 (0.00)***
Madagascar	6.19 (0.60)	-4.68 (0.85)	1.18 (0.97)	0.00 (0.00)***	0.03 (0.00)***
Mauritius	-5.46 (0.16)	2.45 (0.67)	-7.80 (0.77)	0.00 (0.00)***	-0.01(0.00)***
Central African Region					
Chad	19.77 (0.42)	3.22 (0.98)	-19.45 (0.96)	-0.02 (0.00)***	0.42 (0.00)***
Congo Rep	8.34 (0.93)	54.61 (0.86)	-44.43 (0.92)	0.00 (0.05)**	0.56 (0.00)***
Cameroon	-7.33 (0.01)**	-4.82 (0.09)	3.61 (0.26)	-0.02 (0.00)***	-0.09 (0.00)***
Equatorial Guinea	-6.84 (0.91)	10.20 (0.91)	26.11 (0.85)	-0.00 (0.00)***	-0.03 (0.00)***
Gabon	5.42 (0.88)	11.33 (0.80)	-5.90 (0.79)	-0.00 (0.00)***	-0.02 (0.00)***

Note: Significant at 10% level * $P < 0.10$; 5% level ** $P < 0.05$; 1% level *** $P < 0.01$

5. Conclusion and Recommendations

The study examined the impacts of pull and push factors as determinants of foreign direct investment inflows in Africa from 1996 to 2022. The study obtained data from multiple sources including the World Bank's World Development Indicators (WDI), Worldwide Governance Indicators (WGI), and the African Statistical Yearbook (ASY) from 1996 to 2022. The variables under consideration include net FDI inflow, a proxy for per capita income (GDP/PN) indicating market-seeking objectives, and a proxy for trade openness (X+M/GDP) representing efficiency-seeking objectives. The fixed, random effects and Hausman techniques were employed.

The findings of the Hausman test reject the null hypothesis, indicating a preference for fixed effects over random effects. The findings of the fixed effect model reveal that push factors in terms of market-seeking (MAS) and efficiency-seeking (EFS) FDI motivations exhibit negative and statistically significant coefficients, suggesting that these factors contribute to a decline in total FDI inflows over time within countries. Moreover, institutional quality factors such as political stability, rule of law, and control of corruption are deemed insignificant in the fixed effects model, indicating that changes

in these variables do not correlate with fluctuations in FDI within countries over time. The regional analysis reveals some degree of heterogeneity; however, MAS and EFS consistently emerge as significant and negatively associated factors across regions. This emphasizes the importance of market-driven motivations over institutional quality in influencing FDI dynamics. Notably, Southern and East Africa demonstrate the dampening effects of market motives on FDI, while West Africa presents mixed results, suggesting context-specific influences.

The policy implication of this result is that FDI inflow is driven by the push factors of the home countries. It underscores the significant role played by market-seeking (MAS) and efficiency-seeking (EFS) FDI motivations in shaping FDI inflows within countries. Both MAS and EFS exhibit negative and statistically significant coefficients, suggesting their substantial impact on FDI dynamics. Consequently, policies aimed at attracting FDI should meticulously consider factors influencing market and efficiency-seeking behaviors. Additionally, the insignificance of institutional quality factors such as political stability, rule of law, and control of corruption implies that endeavors to enhance these aspects may not yield immediate increases in FDI inflows. Instead, policymakers of the selected African countries should prioritize initiatives focused on removing barriers to market entry, enhancing infrastructure, and fostering a business-friendly regulatory environment to stimulate FDI. Furthermore, the regional analysis underscores a consistent negative association between MAS, EFS, and FDI across diverse regions, emphasizing the dominance of market-driven motivations over institutional quality in shaping FDI dynamics. However, the observed heterogeneity highlights the necessity for tailored approaches to FDI promotion in specific geographical contexts. For instance, the observed dampening effects of market motives on FDI in Southern and East Africa necessitate measures to augment the attractiveness of these regions to investors. This could entail implementing targeted investment incentives and undertaking infrastructure development projects. Conversely, the mixed results observed in West Africa underscore the importance of comprehending context-specific factors influencing FDI decisions. Hence, policymakers in West Africa should adopt an approach that addresses region-specific challenges and opportunities to effectively harness market-seeking and efficiency-seeking FDI motivations for economic growth and development.

While the current study provides valuable insights into the determinants of foreign direct investment (FDI) inflows in Africa, it is essential to acknowledge certain limitations and areas for future examination. Firstly, the studies focus on pull and push factors as determinants of FDI and may overlook other important factors that could influence investment decisions, such as macroeconomic conditions, trade policies, and technological advancements. Future research could explore a broader range of determinants to provide a more comprehensive understanding of FDI dynamics in Africa. Secondly, the study's reliance on data spanning from 1996 to 2022 may not capture short-term fluctuations or recent developments in FDI trends and determinants. Including more recent data and conducting longitudinal analyses could offer insights into how FDI patterns and determinants have evolved, especially in response to global economic shifts and regional developments. Additionally, while the study finds institutional quality factors to be insignificant in explaining fluctuations in FDI within countries over time, it is important to note that institutional quality can still play a crucial role in shaping long-term investment decisions and overall investment climate. Future research could delve deeper into the mechanisms through which institutional quality influences FDI dynamics and explore potential channels for enhancing institutional quality to attract more sustainable and beneficial investment inflows into African economies.

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PUSH I PULL FAKTORI KAO DETERMINANTE STRANIH DIREKTNIH INVESTICIJA: PANEL DOKAZI AFRIČKIH PRIVREDA

Direktne strane investicije (SDI) igraju značajnu ulogu u ekonomskom rastu i razvoju u afričkim ekonomijama. Dok niz faktora utiče na priliv SDI, ispitivanje „push" i „pull" faktora kao ključnih determinanti je retko u empirijskoj literaturi. Stoga je ova studija analizirala uticaje priliva direktnih stranih investicija u Afriku u periodu od 1996. do 2022. godine. Prema tome, za razliku od prethodnih studija, sadašnja studija je koristila metode statičke panel procene da bi ispitala determinante priliva SDI u Africi. Nalazi panela sa fiksnim efektom otkrili su da push faktori imaju negativan i značajan odnos sa prilivom SDI u Africi, što sugeriše da će loš učinak push faktora u zemljama primaocima obeshrabriti priliv SDI u Afriku. Dakle, zemlje primaoci bi trebalo da usvoje politiku push faktora koja bi povećala priliv stranih direktnih investicija u afričke zemlje. U međuvremenu, pull faktori ne određuju prilive SDI u Afriku tokom perioda istraživanja. Stoga, kreatori politike treba da usvoje efikasne mere politike koje podstiču odgovarajuće push faktore kako bi privukli više stranih investitora.

Ključne reči: *Push faktori, Pull faktori, SDI, Fiksni efekat*