The Role of Foreign Direct Investment on Economic Growth in Tanzania

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Abstract:

This paper investigates the effects of foreign direct investment (FDI) on economic growth using time series data spanning the period from 1988 to 2020, sourced from the BOT, WDI, and NBS. The study employs an explanatory (causal) research design to quantify this relationship using the ARDL and VECM estimation techniques. This research has two interlinked objectives: to examine the effects of FDI on growth and the effects of growth on FDI, thus shedding light on the direction of causality between the two variables. Key findings indicate that FDI has an insignificant effect on economic growth however, economic growth has a positive effect on FDI in the long run, pointing to a unidirectional causality from growth to FDI. Other significant variables include inflation, currency adjustments, and political stability, which negatively impact growth, while human capital bolsters it. Moreover, FDI is positively influenced by money supply and natural resource rents but negatively affected by domestic investment. These findings suggest a need for improvements in Tanzania's use of FDI, which should be prioritized in key economic sectors such as agriculture, which employs the majority of Tanzanians, through incentives like subsidies, tax holidays based on FDI performance, and providing low-interest loans to investors willing to invest in these key sectors. Furthermore, curtailing rent-seeking activities in government offices and ensuring stability in macroeconomic indicators such as inflation and the exchange rate is important for sustainable economic growth.

Keywords: ARDL, Foreign Direct Investment, economic growth, Tanzania

JEL Classification: F21, 047, 055

KAMPALA
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1.   Introduction

In recent years, capital inflows to developing countries have become a major source of finance for investment. According to the United Nations Conference on Trade and Development (UNCTAD), (UNCTAD, 2020), foreign direct investment (FDI) flows to emerging economies increased by 632% between 2000 and 2019. Developing countries perceive the inflows of FDI as a means of fostering economic growth through technological improvement and employment creation (Vitor *et al.*, 2018). Being primary recipients of global FDI flows, developing economies have reviewed their investment policies and adopted various measures including, privatization, improving infrastructure, and regional integration to attract further inflows. These measures make it easier for international investors to invest in these countries and thus justify the ongoing impressive trend of foreign capital inflows into these economies. Parallel to global trends, Tanzania's economic reforms, which began in the mid-1980s, were successful in restoring macroeconomic stability. The process began with the goal of liberalizing the trading system as part of the structural adjustment programs. For several years, however, the reforms were gradual. Furthermore, in the early 1990s, economic growth was slow and inflation was high. The privatization program began in earnest in the mid-1980s, as the economy started to prosper. The situation improved over time, and over the past decade, Tanzania experienced a 7 percent growth rate, single-digit inflation, sustainable government debt, a favourable balance of payments, and impressive trends of foreign direct investment.

Despite recent improvements in openness and significant inflows of FDI, policymakers, researchers, and political activists are concerned that its impact on economic growth is insufficient (Feeny *et al.*, 2014). This is because empirical evidence at both micro and macro levels is inconclusive. For example, at the micro-level, while (Jilenga *et al.*, 2016) and (Kingu, 2018) support the negative FDI spillovers hypothesis, the findings from (Marobhe, 2015) and (Urio, 2018) support the positive FDI spillovers hypothesis. On the other hand, at the macro level, while (Sunde, 2017) in South Africa, (Phouthakannh *et al.,* 2019) in the Lao Republic, and (Osei *et al.,* 2020) support the positive FDI spillover hypothesis, findings from (Kentor, 1998) and (Adams, 2009) support the negative foreign capital spillovers hypothesis. Nevertheless, considering factors like the potential for efficiency spillovers to indigenous firms, the link between growth and FDI has been ambivalent as suggested by (Li *et al.,* 2003) and (Mawugnon *et al.,* 2011). Recent studies such as (Hanif *et al.,* 2019) and (Shahbaz *et al.,* 2019) suggest a curvilinear relationship between FDI and growth. This ambiguity in empirical studies justifies the need for more research in this area.

Further, several studies on the link between FDI and economic growth have been conducted in Tanzania. Some of these studies include (Jilenga *et al.,* 2016), Kingu (2018), (Lema *et al.,* 2011), (Marobhe, 2015), and (Taylor, 2020). None of these studies has

assessed the short-run and long-run effects of the inflows of foreign capital on per capita GDP growth. On one hand, there is a lack of information on the contribution of these inflows of FDI on per capita GDP. Besides this, the results of the causality test from several studies in Tanzania are inconsistent: that is, while (Jilenga *et al.* 2016) indicate no directional causality in the short run, (Lema *et al.,* 2011) find the existence of bidirectional causality between the two variables. Thus, there is no consensus on whether the inflows of foreign capital cause growth or it is economic growth that attracts the inflows of foreign capital.

These conflicting results necessitate more research to be conducted. Moreover, most of the empirical studies in the literature on FDI and growth are cross-country in nature; for example, (Mark *et al.,* 2014), (Herzer, 2010), (Adams, 2009), and (Kentor, 1998), and their conclusions cannot be generalized for policy analysis in a specific country. Therefore, a country-specific investigation is necessary. Despite the multitude of empirical research on FDI and growth, Tanzania has a scarcity of specialized studies, and the ones that exist are limited in scope and some have used outdated methodologies such as (Gonzalo *et al.,* 1997) and (Kalokora, 2020) who used Ordinary Least Squares (OLS) and data for the period from 1998 to 2018, and as a result, the dynamics of the link between FDI and growth could not be effectively addressed. Thus, a thorough investigation employing modern analytical techniques is necessary.

The purpose of this study is to address a vacuum in the literature on the impact of FDI on economic growth in Tanzania, with a focus on the short-run and long-run effects of FDI on the per capita GDP growth rate. It also contributes to the debate on the causal direction between FDI and the per capita GDP growth rate. The relationship between the inflows of foreign capital and growth is crucial for policymaking and thus justifies further empirical investigation. Therefore, this research has two specific objectives: to analyze the effects of FDI on economic growth, and to examine the effects of economic growth on FDI, thus addressing the following research questions: How do inflows of FDI affect economic growth? How does economic growth influence the inflows of FDI? What is the direction of causality between FDI and economic growth in Tanzania?

Notable in the reviewed studies is that none of them incorporated political stability as a key determinant of economic growth. Thus, this study pioneers the inclusion of political stability in analyzing its impact on growth, thereby filling a literature gap and enhancing understanding of the FDI-growth nexus, particularly reinforcing Mancur Olson's theory on political stability and the detrimental effect of rent-seekers on economic growth. Unlike previous studies in Tanzania's context that employed real GDP growth as an economic growth measure, this study utilizes the growth rate of per capita GDP, offering a more accurate reflection of FDI inflows on individual welfare. Moreover, the findings underscore a reverse impact where economic growth precipitates FDI inflows, suggesting a pivotal consideration for policymakers in crafting and executing policy reforms to foster growth. Furthermore, the longer data span from 1988 to 2020 ensures that our findings are more robust and precise than the earlier studies.

The paper is structured as follows; after the introduction in Section 1, Section 2 discusses related theoretical and empirical research on FDI and economic growth and Section 3

provides an analytical framework of the study. The methodology is presented in Section 4, and the findings are discussed in Section 5. Section 6 concludes the study and discusses some policy implications.

2.   **Theoretical and empirical review**

Theoretical review

The relationship between growth and foreign capital inflows can be categorized into three fundamental impacts: direct, indirect, and reverse (Nowbutsing, 2009). Direct impact shows foreign capital directly influencing economic growth through the accumulation of real assets in the production process. Indirect impact, illustrated by spillover effects, encompasses competition, linkages (vertical and horizontal), skill transfers, and imitation facilitated by multinational corporations. However, the effectiveness of these spillovers is governed by a nation's absorptive capacity, denoted as Z, which measures its ability to harness foreign capital benefits considering factors like credit, education, infrastructure, and openness as indicated in equation 1 below. These spillovers can either be detrimental or beneficial for domestic investment. Lastly, a reverse effect emerges when economic growth attracts foreign direct investment, as observed in studies like (Lema *et al.,* 2011).

$$Z = \frac{1}{4}(CRDT + ED + INFR + OPEN) \hspace{4cm} (1)$$

This research is underpinned by several key economic theories that explain the relationship between FDI and growth. Various theories posit how different factors, such as labour, capital, technological advancements, and firm-specific advantages, influence growth. The neo-classical growth theory posits that external factors, like labour and capital, drive economic growth, with foreign capital directly promoting growth by increasing investment efficiency and facilitating technology utilization (De Jager, 2004; Barro *et al.,* 1995; Herzer *et al.,* 2008). Contrarily, the endogenous growth model emphasizes long-run growth resulting from technological progress, with foreign capital inflows fostering growth via technology transfer and diffusion (Lucas, 1988; Romer, 1990; Nair-Reichert *et al.,* 2001). Meanwhile, the monopolistic advantage theory explains that multinational corporations possess unique characteristics, such as strong brands and innovations, giving them an edge over local firms (Hymer, 1960; Kindleberger, 1969). These advantages allow MNCs to invest abroad successfully, bringing new technologies and practices to host countries, thereby stimulating economic growth. Lastly, the transaction cost and internalization theory, introduced by Coase (1937), suggests firms exist due to their ability to minimize transaction costs, emphasizing the importance of efficient interlinkages in global operations (McManus, 1972). This internalization helps in transferring technology and management practices efficiently, fostering economic growth in the host country.

Empirical review

Numerous empirical studies have explored the influence of FDI on economic growth using varied econometric methodologies. For instance, cointegration studies; (Gokmen, 2021) focused on Turkey's growth and FDI nexus, revealing that GDP positively affects FDI in the short run. Similarly, (Sunde, 2017) found a positive relationship between FDI and growth in South Africa. (Ridzuan *et al.,* 2017) also concluded a positive relationship between FDI and growth in Singapore. Moreover, (Blin *et al.,* 2009) identified a positive impact of FDI on Mauritius' economic growth. In contrast, (Naqeeb, 2016) observed that in Pakistan, the interaction between FDI and human capital negatively affects growth. Additionally, (Fadhil *et al.,* 2015) concluded a negative relationship between the interaction of human capital and FDI in influencing Malaysia's growth. These studies provide varied insights and applied different methodologies such as ARDL, VECM, and VAR, with our research adopting the ARDL method, influenced by these studies but with modifications in data span and variable selection.

From cross-country and panel data studies; (Walid *et al.,* 2019) studied Maghreb countries and found a positive correlation between FDI and economic growth in Morocco but not in Algeria and Tunisia, by utilizing the GMM method. (Alvarado *et al.,* 2017) in their Latin American study revealed that FDI's influence on growth varies with a country's GDP level. (Seiko, 2016) found a marginal positive impact of FDI on growth in the East African region. (Mark *et al.,* 2014) reported a weak effect of FDI on growth in Pacific Island countries using both OLS and GMM. (Herzer, 2010) used panel cointegration techniques on 44 developing countries, concluding that FDI negatively impacts growth. Lastly, (Schneider, 2005) found inconclusive results about FDI's influence on growth across 47 countries using OLS regression. Our study employs the ARDL method, integrating insights on variables and time span from these prior studies.

The selected studies on Tanzania, such as (Taylor, 2020), highlight the inconsistent influence of FDI across sectors, emphasizing quality over quantity. (Kingu, 2018) found a negative relationship between FDI and growth, pointing to overlooked factors like human capital. (Jilenga *et al.,* 2016) and (Marobhe, 2015) identified cointegration between FDI and growth but differed on causality; Jilenga found no short-run causality, while Marobhe observed unidirectional causality from FDI to growth, suggesting that tax incentives and infrastructure development could enhance FDI, thereby boosting growth. Although these studies employ varied methodologies and timeframes, their conclusions generally align, albeit with some differences. For example, (Moses *et al.,* 2013) and (Lema *et al.,* 2011) reported contrasting findings on the causality between FDI and growth. Our study distinguishes itself by utilizing a more updated methodology (ARDL), extending the data coverage to 2020, and focusing on per capita GDP growth as a more precise indicator of growth. Additionally, it includes factors like political stability and natural resource rents, which previous studies have not considered in the Tanzanian context.

3.   Analytical approach

Data

This study made use of annual times series data from 1988 to 2020, allowing for periods of modest and rapid FDI growth. Secondary data for the study is sourced from the Bank of Tanzania (BOT), World Development Indicators (WDI), and the National Bureau of Statistics (NBS).

Estimation method

The empirical model evaluates FDI's impact on growth using the basic production function, which in economics indicates that production relies on labor and capital, as outlined by (Gravelle *et al.,* 2004) in equation 2.

$$Y = F(L, K) \tag{2}$$

Our model is adapted to include a third input: investment, alongside labour and capital, to determine output levels, as supported by (Shapiro *et al.,* 1986) in equation 3.

$$Y = F(L, K, I) \tag{3}$$

where; *I* is foreign direct investment, *L* is labour and *K* is the amount of capital stock. For simplicity and in order to mimic the context of Tanzania, we relax the *strict* essentiality condition and concentrate on the essentiality condition.

To formulate the linear model, we use (Blin *et al.,* 2009) to evaluate the effect of foreign capital on growth, as well as the endogenous growth theory to guide variable inclusion (see Romer, 1986; Lucas, 1988; Barro, 1990; Mankiw; Romer & Weil, 1992; and Romer, 1990). Furthermore, we use a logarithmic transformation to linearize our model, so as to minimize the variability in the variables and hence reduce the heteroscedasticity problem, and also the non-stationarity behaviour inherent in the macroeconomic variables, since most of the macroeconomic time series are non-stationary (Gujarati, 2004) and to allow for easier interpretation of the results.

The econometric model in equation (4) addresses the first research question:

$$LnRGDP_{ct} = \beta_o + \beta_1 LnFDI_t + \beta_2 LnHC_t + \beta_3 LnPS_t + \beta_4 LnEXR_t + \beta_5 LnINF_t + e_t \tag{4}$$

Where; $RGDP_c$ is the real per capita GDP growth, *HC* is human capital proxied by secondary school enrolment, *PS* is the Political stability, *EXR* is the exchange rate, *INF* is the inflation rate.

The second research questions is addressed by the econometric model in equation (5):

$$LnFDI_t = \beta_O + \beta_1 LnGFCF_t + \beta_2 LnRGDP_{Ct} + \beta_3 LnMS_t + \beta_4 LnNRE_t + e_t \tag{5}$$

Where; *GFCF* is gross fixed capital formation, a proxy for domestic investment, *MS* is money supply (M2), and *NRE* is the total natural resource rents.

4.   Estimation technique

We employ the ARDL technique to estimate equation (4) and the VECM estimation equation (5), capturing both long and short-run impacts of FDI on growth and vice versa.

The ARDL's popularity is due to its simplicity compared to rational distributed lag models, and its adaptability with an appropriate lag order. Furthermore, it effectively addresses endogeneity problems, and offers consistent outcomes even with limited data spans (Ghatak *et al.*, 2001).

Equation (3)'s bound test procedure using ARDL is given in equation (6), which is represented as a conditional ARDL-Error Correction Model.

$$\Delta ln(RGDP_{Ct}) = \beta_0 + \sum_{i=1}^{n} \beta_i \, \Delta ln(FDI)_{t-i} + \sum_{i=1}^{n} \alpha_i \, \Delta ln(HC)_{t-i} + \sum_{i=1}^{n} \gamma_i \, \Delta lnPS_{t-i} + \ldots$$

$$+ \sum_{i=1}^{n} \theta_i \, \Delta lnEXR_{t-i} + \sum_{i=1}^{n} \sigma_i \, \Delta lnINF_{t-i} + \rho_1 lnRGDP_{ct-1} + \rho_2 ln(FDI)_{t-1} + \ldots$$

$$+ \rho_3 ln(HC)_{t-1} + \rho_4 lnPS_{t-1} + \rho_5 lnEXR_{t-1} + \rho_6 lnINF_{t-1} + e_t \tag{6}$$

Similarly, the VECM equation for equation (5) is given in equation 7;

$$\Delta \, ln(FDI)_t = \partial + \sum_{i=1}^{k-1} \rho_1 \Delta ln(FDI)_{t-i} + \sum_{m=1}^{k-1} \alpha_i \Delta lnRGDP_{ct-m} + \cdots$$

$$+ \sum_{j=1}^{k-1} \beta_i \Delta ln(GFCF)_{t-j} + \sum_{n=1}^{k-1} \gamma_i \Delta lnMS_{t-n} + \lambda_1 ECT_{t-1} + u_{1t} \tag{7}$$

5. Results and discussion

Descriptive Statistics

Table 1 presents the descriptive statistics for log-transformed variables, showing generally low variability indicated by small standard deviations, except for real per capita growth (RGDP$_C$) and foreign direct investment (FDI). The RGDP$_C$ saw a significant surge in 2005, propelled by notable export performances and economic stability, while the latter experienced a 1534% increase from 1990 to 2000 due to a shift towards a mixed market economy. The distribution measures, skewness, and kurtosis reveal that while several variables align with a normal distribution, real per capita GDP growth and FDI deviate significantly. They exhibit higher kurtosis values, indicating a longer right tail, and differing skewness values, representing a deviation from symmetry, which could be influenced by the substantial fluctuations observed in these variables.

Table 1: Descriptive statistics

Variable	Obs	Mean	Std	Skew	Kurt	Min	Max
LN. RGDP$_C$	33	0.91	1.03	1.02	6.83	-1.49	4.65
LN. FDI	33	0.09	2.42	-2.70	10.09	-8.51	1.73
LN. EXCHANGE RATE	33	6.79	0.77	-0.91	3.04	4.83	7.74
LN. INFLATION	33	2.29	0.77	0.33	1.73	1.19	3.58
LN. HUMAN CAPITAL	33	0.49	0.27	0.07	2.05	-0.01	0.93
LN. GFCF	33	3.15	0.26	0.09	1.77	2.74	3.67
LN. N. RESOURCE	33	1.82	0.44	-0.16	2.86	0.71	2.64
LN. MONEY SUPPLY	33	2.14	0.99	-0.99	3.03	-0.30	3.19

Note: LN is the natural logarithm of a respective variable.

Equation 4 Results: The Effect of the Inflows of FDI on Economic Growth

Equation (4) was estimated using annual data from 1988 to 2020, with the ARDL model's optimal lag order determined as two, following standard econometric procedures. Table 2 shows the cointegration test results, with the computed F-statistic of 9.46 surpassing the critical bounds (2.62, 3.79) at 5% significance level. This rejects the null hypothesis of no cointegration, suggesting a long-run equilibrium relationship among the model's variables.

Table 2: ARDL Cointegration test results

F-statistics	5% Critical values	
	I_0	I_1
9.455	2.62	3.79

After establishing the equilibrium relationship among the variables, the ARDL model with error correction was run to obtain both long-run and short-run estimates, (see Table 3). Based on the Akaike Information Criterion (AIC), the selected ARDL lag of (1,0,2,2,0,1). Notably, within this ARDL configuration, variables with a selected lag of 0, including FDI and exchange rate, do not have short-run coefficients.

Table 3: Estimates of the Long Run and Short Run Coefficients – ARDL

VARIABLES	ADJ	LR	SR
LN_EXCHANGE RATE		-3.422*** (0.844)	
LN_INFLATION		-1.670*** (0.411)	
LN_ HUMAN CAPITAL		7.956*** (1.858)	
LN_FOREIGN DIRECT INVESTMENT		0.106 (0.075)	
LN_POLITICALSTABILITY		-13.83** (5.820)	
L. LN_RGDP$_C$	-0.890*** (0.186)		
D.LN_INFLATION			1.084** (0.488)
LD. LN_INFLATION			1.318*** (0.439)
D.LN_ HUMAN CAPITAL			-1.969 (1.350)
LD.LN_ HUMAN CAPITAL			-4.230*** (0.891)
D.LN_POLITICAL STABILITY			8.175** (3.242)
Constant			40.60*** (7.427)
Observations	31	31	31
R-squared	0.882	0.882	0.882
*** p<0.01, ** p<0.05, * p<0.1			

In the long run, the estimation results indicate that inflation adversely affects economic growth, corroborating findings in existing literature such as (Ferdinand *et al.,* 2014), and growth theories (Romer, 2001). This negative relationship is often attributed to inflation's tendency to reduce the return on capital, prompting a substitution of effective labour for capital, and thereby stifling growth. Similarly, exchange rate adjustments, particularly depreciation, negatively influence economic growth, as they tend to raise the price of traded goods, diminishing aggregate demand and output as suggested by (Achouak *et al.,* 2018). Human capital has a positive impact on growth, as measured through secondary school enrolment. This aligns with the predictions of the endogenous growth theory (see Naqeeb, 2016), underlining the crucial role of education in fostering economic growth.

FDI does not show a significant effect on growth, a result echoed in several studies, which often point to a country's absorption capacity and the sectoral distribution of FDI as influencing factors. Particularly in agrarian-based economies like Tanzania, FDI tends to bypass the crucial agricultural sector due to higher financial risks and lack of policy incentives (Taylor, 2020), rendering its impact on growth insignificant. The studies with similar results include (Walid *et al.,* 2019) and (Gokmen, 2021). Political stability, surprisingly, has a negative impact on economic growth in the long run, which resonates with Mancur Olson's theory of political stability and growth, as cited in (Arthur, 1987). This suggests that stable societies might accumulate more collusions and organizations for collective action over time, which in turn could hinder the adoption of new technologies and the reallocation of resources, eventually slowing down economic growth.

In the short run, inflation positively impacts growth, confirming Tobin's effect, serving as a macroeconomic stability indicator, and potentially boosting investment, according to (Fischer, 1979). Political stability also fosters growth, as it enhances economic certainty, attracting both domestic and foreign investments, thus increasing people's confidence in the economy and leading to higher outputs, as supported by studies by (Nomor *et al.,* 2017), and (Zakaria *et al.,* 2020). The impact of human capital, however, does not significantly influence growth in the short run, which is attributed to the delayed returns on educational investment. This delay stems from the time and resources required to equip students with market-relevant skills, with the government's hefty education expenditure only yielding returns in the long run, a perspective shared by (Aslam, 2020).

Equation 5 Results: The Effect of Economic Growth on FDI

Equation (5) was estimated using annual data from 1988 to 2020, and the ARDL model's optimal lag order was determined by the standard econometric procedure. However, the chosen lag of (2,0,0,0,0) revealed that all independent variables lacked short-run coefficients, prompting the use of VECM as an alternative to ARDL. Table 4 shows the Johansen cointegration test results using the Maximum-Eigen value statistic. The results confirm the existence of an equilibrium relationship among the variables with two cointegrating equations, which are both significant at a 5 per cent level, hence indicating a long-run relationship among the model variables.

Table 4: Johansen Tests for Cointegration

Max. rank	Parms	LL	Eigenvalue	Max. Statistic	5% Critical Value
0	30	-16.310	-	52.712	33.46
1	39	10.045	0.817	27.625	27.07
2	**46**	**23.858**	**0.589**	**19.026**	**20.97**
3	51	33.371	0.458	8.648	14.07
4	54	37.695	0.243	5.405	3.76
5	55	40.397	0.160		

Although we obtained two cointegrating equations in this test, we will just include one in the error correction model in order to avoid complexity in the interpretation of the results as suggested by (Brooks, 2008).

Table 5: Estimates of the Long Run and Short Run Coefficients - VECM

VARIABLES	ADJ	LR	SR
LN_RGDP$_C$		10.401***	
		(1.629)	
LN_MONEY SUPPLY		7.678***	
		(0. 762)	
LN_ GROSS FIXED CAPITAL FORMATION		-7.454***	
		(1.629)	
LN_NATURAL RESOURCE RENTS		10.330***	
		(1.425)	
L.LN_ FOREIGN DIRECT INVESTMENT	-0.260**		
	(0.104)		
D. LN_RGDP$_C$			-3.265***
			(1.247)
D.LN_MONEY SUPPLY			15.886***
			(5.693)
D.LN_ GROSS FIXED CAPITAL FORMATION			2.676
			(2.761)
D.LN_ NATURAL RESOURCE RENTS			-5.555***
			(2.112)
Constant			-0.0224
			(0.491)
Observations	31	31	31

*** p<0.01, ** p<0.05, * p<0.1

The long-run estimates reveal a positive relationship between growth and FDI, substantiating the literature (see Sultanuzzaman *et al.,* 2018) and growth theories (see Romer (2001). Macroeconomic stability in growing economies instills confidence in foreign investors on potential profitability. Additionally, the money supply's positive

relationship with FDI underscores its role in enhancing the growth-FDI nexus, where a bolstered money supply propels economic growth, subsequently attracting more FDI as found in (Hina, 2019).

Domestic investment, proxied by gross fixed capital formation, discourages FDI inflows, either due to foreign firm's risk aversion or decreased market demand in the host country, as observed by (MacMillan, 1999). Interestingly, contrary to some existing literature, the analysis indicates that natural resource rents, embodying natural resource dependency, have a positive impact on FDI inflows in the long run. This is especially pertinent to Tanzania, which has vast non-oil resources like coal and minerals with low price volatility. (Asiedu, 2006) also finds this positive FDI-natural resource relationship, highlighting a nuanced understanding of the resource-rich country's appeal to foreign investors. In the short run, economic growth deters FDI inflows, a significant finding at a one per cent significance level, though contrary to expectations. This effect is potentially tied to increased production costs from technology advancements, which might deter cost-sensitive multinational corporations, as noted in a study by (Catherine *et al.,* 2011). Money supply, with a positive relationship to FDI, enhances FDI inflows as it may lead to moderate inflation, signalling macroeconomic stability, a notion supported in the literature (see Fischer, (1979); Nouman *et al.,* (2015)). Conversely, natural resource rents, indicating natural resource dependency, have a negative effect on FDI inflows in the short run, possibly due to increased production costs for new market entrants (see Hayat, 2017). Lastly, gross fixed capital formation shows no immediate impact on FDI inflows.

6. Conclusion and policy implications

This study explored the impact of FDI on Tanzania's growth from 1988 to 2020 using ARDL and VECM methodologies, enriching the understanding of the nexus between FDI and growth dynamics, and the direction of causality. The empirical results show the long-run insignificance of FDI on growth, yet a positive influence of growth on FDI, indicating a unidirectional causality from growth to FDI. The key findings include the long-run negative effect of inflation on growth, with a short-run positive effect, long-run growth enhancement by human capital, detrimental long-run effects of exchange rate adjustments on growth, short-run growth promotion by political stability, with adverse long-run effects, and consistent positive influence of money supply on FDI. While short-run analysis shows a negative impact of economic growth on FDI, the long-run analysis shows a positive effect, alongside negative effects of domestic investment on FDI and contrasting effects of natural resource rents on FDI in the short and long run.

The policy implications drawn from the findings of the first specific objective are; first, given that FDI does not significantly affect growth in the long run, its impact is indirect in terms of influencing domestic investment before affecting growth. For FDI to be effective, pre-conditions like credit availability, education attainment, robust infrastructure, and trade openness must be met. Thus, policies to enhance infrastructure and skills development to attract and benefit from multinational enterprises are important, as well as monetary policies offering low-interest loans to encourage both multinational and domestic firms to invest, with additional incentives like grants and

special tax rates. Second, the negative influence of political stability on growth, stemming from rent-seeking activities and resource misallocation by interest groups, hinders technological adoption crucial for growth. Thus, policies aimed at curbing rent-seeking, such as controlling subsidies, quotas, and grants are essential, to ensure a conducive environment for economic growth and FDI attraction.

Third, policies aimed at channeling FDI into crucial sectors for GDP, such as agriculture, despite its slower investment return rate compared to sectors like oil and gas, would achieve significant growth impact due to the multiplier effect and employment generation, as more than two-thirds of the population depends on this sector. Particularly, incentivizing FDI in the agriculture sector through grants, subsidies, tax incentives, and low-interest loans could help import advanced equipment to boost production. Additionally, promoting insurance opportunities in the sector could build investor confidence, ensuring compensation for losses, and thereby attracting more FDI into this economic sector. Moreover, the policy implications drawn from the findings of the second specific objective are; considering the money supply's positive influence on the inflows of FDI, harmonization of monetary policy should be undertaken by the central bank to ensure an increase in the inflows of FDI. However, this policy must be taken with caution as too much money in the economy may depreciate the currency and lead to inflation and a high cost of living.

Concomitantly, the study's findings suggest that natural resource rents positively influence FDI in the long run. Therefore, policies to promote effective use of natural resources, and promotion of research and development to discover other potential minerals that can help increase the inflows of FDI must be encouraged. Finally, domestic investment negatively influences FDI in the long run. This indicates that domestic investment crowds out FDI. Proper harmonization of protection policy might reverse the situation. Also, the Tanzania Investment Centre must ensure effective cooperation between domestic firms and the foreign firms to mitigate this situation as strong domestic investment performance signals high returns to capital, which increases the rate of the inflows of FDI into the country. Therefore, policies should harness complementarity between FDI and domestic investment and avoid regarding them as substitutes.

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