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Impact of Security Threats on Investment in Nigeria

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Abstract

A study on the relationship between security threats and investment in Nigeria is essential for providing empirically data-driven insights into how security challenges, such as insurgency, crime and instability, influence investment decisions. This research can guide policymakers, investors and stakeholders in formulating effective strategies to mitigate risks, enhance investor confidence and promote economic growth. This study employed the vector error correction model method to examine the association between security threats and investment in Nigeria from 1986 to 2021. The analysis of the long-term perspective revealed an adverse relationship between security threats and domestic investment and between security threats and foreign direct investment in Nigeria. Additionally, the study revealed that although security threats do not substantially influence domestic investment in the short run, they exhibit a pronounced adverse impact on economic growth in the long run. Consequently, security threats significantly affect domestic investment and foreign direct investment in Nigeria in the long run. As a result, the study suggests that the Nigerian government should enhance security measures to counteract issues such as political instability, terrorism and social unrest, thereby cultivating a more conducive business environment that stimulates both domestic and foreign investment activities.

Keywords: domestic investment, foreign direct investment, security threats

JEL classification: E2, F21, P33

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1. Introduction

The imperative of fostering economic growth on a global scale has prompted nations to prioritize areas such as investment, government spending and security measures (Yusuf & Mohd, 2023). The efficiency of markets and the success of investments hinge upon the ability to guard against local and global risks. Consequently, pursuing peace and security becomes paramount for nations, reflecting the understanding that various threats persist worldwide and emphasizing the crucial role of safety in facilitating stable markets and encouraging investment (Amana *et al.*, 2020).

Global recognition of the adverse impacts of insecurity on economies is underscored by its disruptive effects on prices, output and trade balance (Isola *et al.*, 2019; Mazumdar & Bhattacharjee, 2019). In the context of Sub-Saharan Africa, particularly Nigeria, insecurity poses a distinct challenge to investment, as funds tend to gravitate towards secure economies, leading to a drain of resources away from areas of instability (Chuku *et al.*, 2019; Brodeur, 2018). The escalation of costs due to insecurity compounds the issue, diminishing profits and impeding investment returns.

The significance of assessing the nexus between security threats and investment in Nigeria becomes evident in light of the nation's persistent security challenges and potential economic ramifications. Nigeria faces a spectrum of security threats, including terrorism, insurgency, communal conflicts and criminal activities, all of which disrupt economic activities and supply chains and increase operational costs for businesses. The cumulative effect is a heightened risk perception among potential investors, reducing foreign direct investment (FDI) and portfolio investment inflows. The nature of this relationship unfolds to varying degrees across industries and regions, requiring a focused investigation to comprehend how security threats act as deterrents to investment, impeding economic growth and shaping the investment climate in Nigeria.

Furthermore, the dichotomy between risk-averse investors who are hesitant to engage in insecure environments and those who view adverse conditions as opportunities for strategic investments adds complexity to the discussion. This research endeavours to empirically assess the specific impact of security threats on investment in Nigeria from 1986 to 2021. By doing so, it aims to offer valuable insights for policymakers, investors and businesses, enabling them to formulate strategies that effectively mitigate security risks and foster a conducive environment for investment.

This study introduces a novel aspect by decomposing the effects of security threats on both domestic and foreign direct investment. This approach adds a new dimension to the study since there are limited empirical studies that have addressed this nexus while breaking down the effects on the distinct components of investment. This study explicitly tests the extent of the impact of security threats on domestic and foreign direct investment in Nigeria after the Structural Adjustment Programme of 1986. The novelty of the research is its contribution to the existing body of knowledge.

2. Literature review

Security threats encompass potential risks that can compromise information, systems or assets arising from sources such as human actions, natural disasters or vulnerabilities (Nwokwu & Ogayi, 2021). Iwundu and Thom-Otuya (2013) define them as risks posed by authorized individuals misusing privileges. Nwankwor and Nkechukwu (2023) describe security threats as unpredictable events leading to potential loss of life or property. Onime (2018) sees them as potential dangers to safety. In this study, security threats involve insecure activities that cause harm, property damage and societal impact, including bombings, attacks and organized crime, indicating potential trouble or risk.

From 1986 to 2021, Nigeria grappled with diverse security threats arising from political, ethnic, religious and economic tensions. These challenges significantly impact the country's stability and development. Instances of instability include political coups (1986-1999), followed by ethnic and religious conflicts (1990s-2000s), particularly in the Niger Delta region, due to disputes over resource control. Niger Delta militancy (2000s) disrupted oil production, while the emergence of Boko Haram (2009-present) led to deadly attacks, abductions and economic disruptions in northeastern Nigeria. Herder-farmer conflicts (2010s) and banditry/kidnapping (2010s-2021) escalated, affecting agriculture and security. Secessionist movements (2010s-2021) also strained unity. These threats resulted in casualties, displacement, economic disruptions and reduced investment, impacting Nigeria's international image. The return of civilian rule in 1999 saw increased terrorism, fuelled by arms proliferation and unemployment. Boko Haram and its offshoot ISWA remained primary security concerns, with criminal gangs contributing to kidnapping surges.

Investment involves allocating assets to increase their value over time. It encompasses various components, such as foreign investment and domestic investment. Suprapto *et al.* (2022) describe it as acquiring capital goods to replace or expand existing goods. Investment entails deferring consumption to direct resources towards productive assets. Investors are classified as individual or institutional. Investment can mean saving, enhancing

future income or utilizing resources to boost future income or production output (Ghirmay *et al.*, 2001). Adetiloye and Adeyemo (2012) view it as augmenting an economy's capital stock, generating physical assets and contributing to industrial activity. Lean and Tan (2011) classify investment into domestic, foreign direct and portfolio investment. Domestic investment drives demand and economic growth, while FDI promotes knowledge transfer and trade (Tan & Tang, 2016). Portfolio investment involves tradable financial instruments such as stocks and bonds (Chaudhry *et al.*, 2014). This study focuses on the impact of security threats on domestic and foreign direct investments in Nigeria.

2.1. Theoretical framework

Several theories help explain the effects of security threats on investment. These theories shed light on how uncertainty and risks stemming from security issues can influence investors' decisions and overall investment climate (for instance, flight-to-safety theory and uncertainty avoidance theory).

The flight-to-safety theory, developed by Brunnermeier and Pedersen (2009), explains investor behaviour during security threats. This finding suggests that investors seek safer assets during instability, shifting from riskier options such as stocks to government bonds or stable economies. However, criticisms include oversimplification, as not all investors respond uniformly due to factors such as risk appetite and goals. Behavioural finance research reveals that irrational behaviour is influenced by emotions and cognitive biases. The theory assumes rational decision-making, overlooking these realities. Additionally, perceptions of safety vary among investors, and the theory focuses solely on security-related risks, neglecting other vital investment factors. It mainly addresses short-term reactions, not underlying causes of threats or shifts in investor behaviour. In summary, flight-to-safety theory offers insights into uncertain times but faces limitations due to diverse investor perceptions and behaviours.

The uncertainty avoidance theory, developed by Hofstede (1980), posits that security threats create uncertainty, impacting investors' assessment of future returns and risks (Shane, 1995). Investors tend to avoid uncertainty and prefer stable investment destinations. However, criticism arises due to oversimplified risk aversion assumptions. The theory neglects the risk-return trade-off, market and investor sentiments and diverse investment goals. It fails to accommodate varying investor perspectives shaped by biases, experiences and emotions. Also, it assumes uniform uncertainty perception, overlooking individual differences. The theory's applicability depends on the context and type of uncertainty, which can differ significantly. In summary, while uncertainty avoidance theory offers insights, its focus on risk aversion and excluding other factors has led to criticism. Therefore, understanding investor behaviour requires considering multiple theories and acknowledging diverse influencing factors.

Investment uncertainty theory asserts that security threats introduce uncertainty into the investment environment, diminishing investment inflows (Mellati, 2008). Investors are reluctant to invest in insecure regions due to concerns about asset expropriation, contract disputes and supply chain disruptions. This hampers economic growth by constraining business expansion, job creation and productivity. Critics highlight the theory's oversimplification, vague definition of uncertainty, omission of risk-return trade-offs and uniform response assumption among investors. A broader range of factors should be considered to fully comprehend investor behaviour. Security threats impact economic growth through intricate links with investment, human capital, fiscal and monetary policies, trade and tourism. Effective governance, conflict resolution and targeted policies are essential for fostering stability and supporting economic growth amidst security challenges.

2.2. Empirical review

Several studies have explored the relationship between insecurity and its impact on investment. Yusuf and Mohd (2023) analysed the period from 1980 to 2019 and found that insecurity negatively affected domestic

capital formation and foreign direct investment. Onime (2018) focused on 1999 to 2016, revealing that insecurity reduced domestic investment, increased unemployment and decreased government revenue. Nwankwor and Nkechukwu (2023) and Nwankwo and Okoye (2022) showed that insecurity hindered FDI growth. Jelilov *et al.* (2018) explored the period from 2007 to 2017 and highlighted that insecurity detrimentally impacted economic growth and FDI. Maduka *et al.* (2014) examined the years from 1994 to 2010 and inferred that insecurity negatively affected FDI, while GDP per capita had a positive influence. Bandyopadhyay *et al.* (2014) studied 1980 to 2013 and reported that domestic terrorism reduced FDI and GDP growth. Osemwengie and Oriakhi (2012), analysing 1980 to 2009, revealed that government spending on security negatively influenced FDI inflow. These studies highlight the complex relationship between insecurity and economic outcomes in Nigeria. Recently, Nwankwor and Nkechukwu (2023) examined the effects of insecurity on investment in Nigeria. In an exploratory approach, the study suggested policy measures to mitigate the effects of insecurity on investment in Nigeria. Considering the above literature, there is a need to examine the effects of security threats on the different components of investment (foreign direct investment and domestic investment) in Nigeria while suggesting policy measures that could mitigate the adverse effects of insecurity.

3. Research methodology

This study employs an ex post facto research design that combines qualitative and quantitative techniques to analyse the impact of insecurity on investment in Nigeria. It utilizes descriptive methods such as the mean and median and analytical tools, including the vector error correction method. Secondary data from sources such as the CBN Statistical Bulletin and World Development Indicators were used for variables such as security threat indices, GDP, domestic investment, FDI, real interest rate and trade balance.

3.1. Model specification

This study considers the influence of security threats on investment, which is further disaggregated into domestic and foreign direct investment (Lean & Tan, 2011). This study adopts the modified model of Bandyopadhyay *et al.* (2014) to examine the influence of security threats on domestic investment, which is stated as follows:

$$DIN_t = f(TSF_t, INTR_t, GDP_t) \quad (1)$$

where:
DIN – domestic investment;
TSF – total state fragility index;
INTR – interest rate;
GDP – gross domestic product.

The stochastic form of the modified model is written as:

$$DIN_t = \beta_0 + \beta_1 TSF_t + \beta_2 INTR_t + \beta_3 GDP_t + \mu_t \quad (2)$$

The transformed model is written as:

$$\ln DIN_t = \beta_0 + \beta_1 TSF_t + \beta_2 INTR_t + \beta_3 \ln GDP_t + \mu_t \quad (3)$$

where:
β_0 – constant;
β_1-β_3 – parameters to be estimated;
μ_t – error term.

The a priori expectation is that β_1 and β_2 negatively affect domestic investment, while β_3 positively affects investment.

Model 2 is used to investigate the effect of security threats on FDI and is in line with Osemwengie and Oriakhi (2012). The modified model is written as:

$$FDI_t = f(TSF_t, INTR_t, GDP_t) \quad (4)$$

where:
FDI – foreign direct investment;
TSF – total state fragility index;
INTR – interest rate;
GDP – gross domestic product.

However, the FSI – fragile states index was used as another measure of security threats for a robustness check. The stochastic model is:

$$FDI_t = \beta_0 + \beta_1 TSF_t + \beta_2 INTR_t + \beta_3 GDP_t + \mu_t \quad (5)$$

By transformation, the model becomes:

$$\ln FDI_t = \beta_0 + \beta_1 TSF_t + \beta_2 INTR_t + \beta_3 \ln GDP_t + \mu_t \quad (6)$$

where:
β_0 – constant;
β_1-β_3 – parameters to be estimated;
μ_t – error term.

The a priori expectation is that β_1 and β_2 are expected to negatively affect FDI, while β_3 is expected to affect FDI positively.

3.2. Method of data analysis

This study utilized a combination of descriptive and econometric methods. The descriptive tools included measures such as the means, medians, skewness, kurtosis and the Jarque-Bera test. The econometric techniques included the augmented Dickey-Fuller (ADF) unit root test, Johansen cointegration test and vector error correction model (VECM). These approaches facilitated a comprehensive examination of the data, offering insights into the interrelationships and dynamics among the studied variables.

4. Results and discussion

4.1. Unit root test results

This study used the augmented Dicker-Fuller unit root test. The results of the ADF test are presented in Table 1.

Table 1. Results of the ADF unit root test

Variables	At level	First difference	1% critical level	5% critical level	10% critical level	Order
lnDIN	-2.36214	-10.08890***	-3.63290	-2.94840	-2.61287	I(1)
lnFDI	-1.33439	-9.12608***	-3.63941	-2.95113	-2.61430	I(1)
FSI	-1.27706	-5.03495***	-3.63290	-2.94840	-2.61287	I(1)
TSF	-0.96654	-6.99338***	-3.63290	-2.94840	-2.61287	I(1)
lnGDP	-0.67628	-3.78588***	-3.64634	-2.95402	-2.61582	I(1)
INTR	-2.38585	-6.70724***	-3.63290	-2.94840	-2.61287	I(1)

Source: Extracts from E-Views Output.

Table 1 shows that all the series were stationary at the first difference or were integrated of order I(1). This calls for applying the cointegration test to examine long-run relationships (specifically, the Johansen cointegration test).

4.2. VAR lag order selection criteria

The results of the VAR lag selection criteria are presented in Table 2. The VAR lag selection criterion test determines the optimal lag that yields robust results.

Table 2. Optimal lag selection results

Lag	LogL	LR	FPE	AIC	SC	HQ
Domestic Investment Model						
0	-155.174	NA	0.136929	9.363151	9.542723	9.424390
1	-54.738	171.33140*	0.000962*	4.396348*	5.294207*	4.702544*
2	-46.337	12.35366	0.001570	4.843378	6.459524	5.394530
Foreign Direct Investment Model						
0	-217.026	NA	5.207369	13.001520	13.181090	13.062750
1	-110.757	181.28190*	0.025957*	7.691592*	8.589451*	7.997788*
2	-101.242	13.99235	0.039685	8.073074	9.689221	8.624227

Source: E-Views Output.

Table 2 displays the lag selection results using different criteria (* denotes optimal lag). The lag model is preferred because it has the lowest AIC, SC and HQ values across all models, indicating optimal performance. Thus, lag one is chosen as the optimal lag.

4.3. Cointegration test results

The cointegration results of the domestic and foreign investment models are presented in Table 3.

Table 3. Johansen cointegration test results

Hypothesized No. of CE(s)	Eigenvalue	Trace statistic	0.05 critical value	Prob.**	Hypothesized No. of CE(s)	Eigenvalue	Maximum eigenvalue statistic	0.05 critical value	Prob.**
Domestic Investment Model (TSF)					**Domestic Investment Model (FSI)**				
None*	0.777165	87.87471	63.87610	0.0001	None*	0.777165	51.04502	32.11832	0.0001
At most 1	0.419433	36.82968	42.91525	0.1776	At most 1	0.419433	18.48752	25.82321	0.3410
At most 2	0.368107	18.34216	25.87211	0.3214	At most 2	0.368107	15.60720	19.38704	0.1629
At most 3	0.077290	2.73497	12.51798	0.9064	At most 3	0.077290	2.73497	12.51798	0.9064
Foreign Direct Investment Model (TSF)					**Foreign Direct Investment Model (FSI)**				
None*	0.501198	56.75651	55.24578	0.0366	None	0.501198	23.64853	30.81507	0.2901
At most 1	0.443421	33.10797	35.01090	0.0789	At most 1	0.443421	19.92219	24.25202	0.1688
At most 2	0.266515	13.18578	18.39771	0.2298	At most 2	0.266515	10.53824	17.14769	0.3495
At most 3	0.074914	2.64754	3.84147	0.1037	At most 3	0.074914	2.64754	3.84147	0.1037

* Denotes rejection of the null hypothesis at the 5% level of significance.

** Mackinnon-1Haug-Michelis (1999) p-values.

Source: E-Views Output.

Table 3 indicates the cointegration among variables in all models. The trace and maximum eigenvalue statistics confirm that there is cointegration in the domestic investment model. However, only the trace statistic suggests one cointegration for FDI, while the maximum eigenvalue suggests none. Thus, the study confirms cointegration in all models at the 5% significance level.

4.4. Impact of security threats on investment in Nigeria

The results of the VECM were utilized for the analysis and are presented in Table 4.

Table 4. Results on the long-term impact of security threats on investment in Nigeria

Variables	Estimates	Variables	Estimates	Variables	Estimates	Variables	Estimates
Domestic Investment Model (main results)		Domestic Investment Model (robustness check)		Foreign Direct Investment Model (main results)		Foreign Direct Investment Model (robustness check)	
TSF(-1)	-0.017084	FSI(-1)	-0.000133	TSF(-1)	-0.147096	FSI(-1)	-0.136890
	(0.00284)		(0.00601)		(0.05293)		(0.08204)
	[-6.02564]		[-0.02219]		[-2.77929]		[-1.66851]
INTR(-1)	-0.00870	INTR(-1)	-0.00558	INTR(-1)	-0.17138	INTR(-1)	-0.14063
	(0.00211)		(0.00241)		(0.04524)		(0.03311)
	[-4.12579]		[-2.31493]		[-3.78787]		[-4.24670]
lnGDP(-1)	0.099423	lnGDP(-1)	0.148967	lnGDP(-1)	3.388030	lnGDP(-1)	0.505470
	(0.06527)		(0.09372)		(0.92971)		(0.50741)
	[1.52316]		[1.58954]		[3.64420]		[0.99618]
@TREND(86)	0.03433	@TREND(86)	0.02234				
	(0.00368)		(0.00388)				
	[9.34099]		[-5.75373]				
C	10.11610	C	10.07880	C	19.67748	C	10.59062

Source: Extracts from E-Views Output.

The findings presented in Table 4 shed light on the relationship between security threats and both domestic and foreign direct investment in Nigeria. The coefficient of security threats (-0.017084) as it affects domestic investment is negative. This indicates a significant inverse relationship between security threats and domestic investment in the long run. This means that heightened security threats, encompassing factors such as political instability, terrorism and social unrest, negatively influence domestic investment in the long run. An estimated decrease of approximately 0.017084 units in domestic investment is expected for every one-unit increase in security threats. This correlation stems from the adverse business climate created by security vulnerabilities.

Similarly, focusing on FDI, the coefficient of security threats (-0.147096) reveals a significant negative connection between security threats and FDI in Nigeria in the long run. With a negative coefficient, this finding shows that FDI is expected to decrease as security threats escalate. The estimated value of -0.147096 indicates an average decrease of approximately 0.147096 units in FDI for each unit increase in security threats. This negative relationship is grounded in the perceived risks and uncertainties accompanying investing in an environment characterized by security challenges.

Turning to the impact of interest rates, the estimated coefficient of -0.0087 for domestic investment reveals an inverse relationship between interest rates and domestic investment in Nigeria in the long run. This signifies that domestic investment is likely to decline when interest rates rise. The coefficient value indicates that, on average, for every one percentage point increase in interest rates, domestic investment is estimated to decrease by an average of 0.0087 percentage points. This outcome is rationalized by the increased cost of borrowing and capital for businesses as interest rates climb.

The coefficient of interest rates (-0.17138) from the Foreign Direct Investment Model explains a negative relationship with interest rates in Nigeria in the long run. A higher interest rate is associated with decreased foreign direct investment, aligning with the coefficient's negative sign. This suggests that a one percentage point increase in interest rates leads to a 0.17138 percentage point decrease in FDI. This linkage can be attributed to the impact of elevated interest rates on capital costs and investment decisions, making foreign investment less attractive.

Examining the GDP coefficients, the positive values for domestic investment (0.099423) and FDI (3.38803) have a positive relationship with the country's gross domestic product. These coefficients indicate that as Nigeria's GDP rises, domestic and foreign direct investments are expected to increase. An increase of approximately 0.099423 units in domestic investment and 3.38803 units in FDI is anticipated for every one-unit increase in GDP. This demonstrates that a growing GDP encourages more significant investment activity, fostering economic expansion and attracting foreign capital.

This positive relationship can be explained by the fact that a growing economy and higher GDP often signal increased business opportunities, improved market conditions and greater consumer demand. As the overall economic situation improves, businesses may become more optimistic about their prospects and be more willing to invest in new ventures or expand existing operations, increasing domestic investment. A growing economy often indicates a stable and expanding market, improved infrastructure and a favourable business environment, making Nigeria an appealing destination for foreign investors seeking higher returns and market expansion.

Table 5. Results of the short-term impact of security threats on investment in Nigeria

Variables	**Estimates**	**Variables**	**Estimates**	**Variables**	**Estimates**	**Variables**	**Estimates**
Domestic Investment Model (main results)		**Domestic Investment Model (robustness check)**		**Foreign Direct Investment Model (main results)**		**Foreign Direct Investment Model (robustness check)**	
Error correction	D(lnDIN)	Error correction	D(lnDIN)	Error correction	D(lnFDI)	Error correction	D(lnFDI)
CointEq1	-0.82744	CointEq1	-0.83446	CointEq1	-0.01377	CointEq1	-0.01214
	(0.25719)		(0.27789)		(0.12957)		(0.17318)
	[-3.21323]		[-3.64552]		[-0.10629]		[-0.07009]
D(lnDIN(-1))	0.383215	D(lnDIN(-1))	0.500460	D(lnFDI(-1))	-0.385950	D(lnFDI(-1))	-0.374340
	(0.21591)		(0.19695)		(0.16723)		(0.20183)
	[1.77486]		[2.54101]		[-2.30787]		[-1.85476]
D(TSF(-1))	-0.009597	D(FSI(-1))	-0.001645	D(TSF(-1))	-0.055390	D(FSI(-1))	-0.031030
	(0.00506)		(0.01340)		(0.03027)		(0.08485)
	[-1.89680]		[-0.12282]		[-1.83010]		[-0.36569]
D(INTR(-1))	0.000991	D(INTR(-1))	0.001850	D(INTR(-1))	0.047300	D(INTR(-1))	0.038182
	(0.00498)		(0.00466)		(0.02734)		(0.02906)

Variables	Estimates	Variables	Estimates	Variables	Estimates	Variables	Estimates
Domestic Investment Model (main results)		Domestic Investment Model (robustness check)		Foreign Direct Investment Model (main results)		Foreign Direct Investment Model (robustness check)	
Error correction	D(lnDIN)	Error correction	D(lnDIN)	Error correction	D(lnFDI)	Error correction	D(lnFDI)
	[0.19896]		[0.39722]		[1.73006]		[1.31387]
D(lnGDP(-1))	0.416840	D(lnGDP(-1))	-0.640250	D(lnGDP(-1))	2.281536	D(lnGDP(-1))	2.367997
	(0.44024)		(0.43429)		(2.30589)		(2.61626)
	[0.94683]		[-1.47424]		[0.98944]		[0.90511]
C	0.021227	C	0.036416	C	0.021231	C	-0.02346
	(0.02298)		(0.02178)		(0.13175)		(0.14280)
	[0.92353]		[1.67194]		[0.16114]		[-0.16430]
R-squared	0.558141	R-squared	0.608236	R-squared	0.367110	R-squared	0.273590
Adj. R-squared	0.479238	Adj. R-squared	0.538278	Adj. R-squared	0.254094	Adj. R-squared	0.143873
F-statistic	7.073728	F-statistic	8.694325	F-statistic	3.248306	F-statistic	2.109140

Source: Extracts from E-Views Output.

The results from Table 5 indicate that the coefficients of security threats, real interest rate and GDP on both domestic and foreign direct investment in Nigeria are statistically insignificant at the 5% significance level in the short run. The results suggest that security threats, changes in actual interest rates and fluctuations in GDP do not significantly and immediately impact investment decisions for either domestic investment or FDI in the short term. However, it is essential to note that statistical insignificance in the short run does not necessarily negate the presence of a relationship entirely. Under different economic conditions or in the long run, these factors still significantly shape investment patterns.

The coefficients of security threats on domestic investment and FDI, as well as the real interest rate on domestic investment and FDI, are all deemed statistically insignificant in the short run. This finding implies that other factors are currently more influential in driving investment decisions within a specified time frame. The coefficients of GDP on domestic investment and FDI are also statistically insignificant in the short run. While short-term analysis does not strongly associate GDP with investment decisions, it does not discount the potential relevance of GDP in the long term or under different circumstances. Additionally, the study reveals negative estimates of error correction terms for both domestic investment and FDI, indicating that in the presence of initial distortions, these variables correct themselves towards the long-term equilibrium in Nigeria, signifying a self-adjustment process.

Overall, the study's findings highlight the complexity of investment decisions, suggesting that while certain factors such as security threats, real interest rates and GDP might not exhibit immediate statistical significance in the short term, they have a significant influence on investment in the long term. The self-correcting nature of error correction terms further explains the tendency of investment variables to adjust towards long-term equilibrium over time.

4.5. The impulse response results

The results of the impulse response function for the response of investment and economic growth to shocks are presented in Figures 1 and 2.

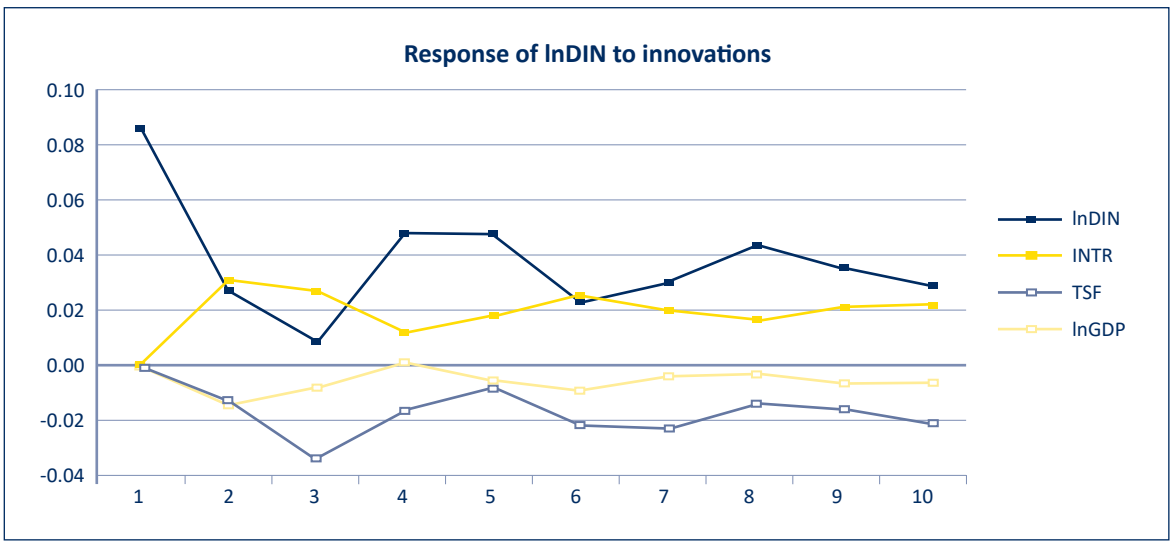

Figure 1. The response of domestic investment to shocks in Nigeria

Figure 1 shows that the response of domestic investment to own shocks and shocks in interest rates in Nigeria is positive over the forecast period. The response would decline slightly in some periods of the forecast period. However, domestic investment will respond negatively to changes in security threats and gross domestic product (economic growth) in Nigeria over the forecast period.

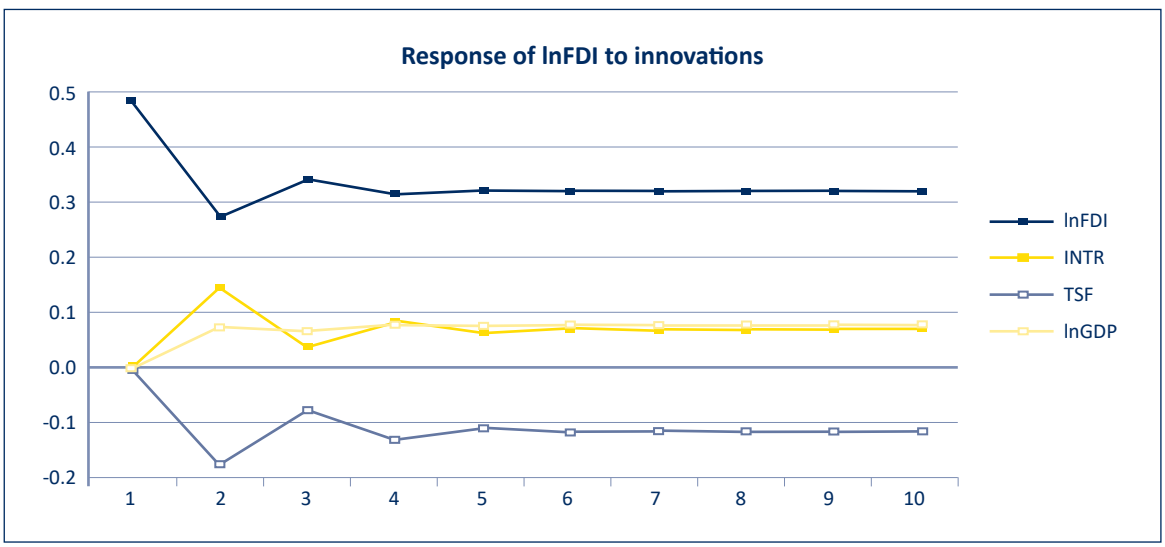

Figure 2. The response of foreign direct investment to shocks in Nigeria

Figure 2 shows the response of foreign direct investment to own shocks and shocks in Nigeria's interest rate and gross domestic product (economic growth), which is positive over the forecast period. However, foreign direct investment will also respond negatively to changes in security threats in Nigeria over the forecast period.

4.6. The accumulated forecast error variance

The variance decomposition of domestic investment and foreign direct investment to shocks in all the variables is presented in Table 6.

Table 6. Variance decomposition results

Period	SE	lnDIN	TSF	INTR	lnGDP
Domestic Investment Model					
Initial period	0.086	100.000	0.000	0.000	0.000
Short-run (third year)	0.108	71.448	11.459	14.695	2.398
Middle-term (fifth year)	0.130	75.678	9.758	12.747	1.818
Long-term (tenth year)	0.164	68.245	13.336	16.545	1.874
Foreign Direct Investment Model					
Initial period	0.484	100.000	0.000	0.000	0.000
Short-run (third year)	0.705	85.929	7.235	4.718	2.118
Middle-term (fifth year)	0.867	83.765	8.518	4.670	3.047
Long-term (tenth year)	1.179	82.502	9.226	4.393	3.879

Source: Extracts from E-Views Output.

The results in Table 6 reveal that a one standard deviation change in domestic investment contributes to 71.448% and 68.245% of the variation in domestic investment in the short and long run, respectively. Similarly, security threats and interest rate shocks result in 11.459% and 14.695% variations in the short run and 13.336% and 16.545% variations in the long run, while GDP changes account for 2.398% in the short run and 1.874% in the long run. Similar patterns are observed for FDI, with one standard deviation due to one's own shock causing 85.929% and 82.502% of the variation in the short and long run, respectively. Security threats account for 7.235% in the short term and 9.226% in the long term, with variations increasing slightly over time. Innovations in GDP increase variations in foreign direct investment, while variations in foreign direct investment due to interest rate decline over time.

4.7. Post estimation test results

The VEC heteroskedasticity test was examined to ascertain the reliability of the VEC estimates, and the results are presented in Table 7.

Table 7. Results of the VEC residual heteroskedasticity test

Models	Chi-sq	df	Prob.
Domestic Investment Model	103.4551	100	0.3864
Foreign Direct Investment Model	116.1244	100	0.1291

Source: Extracts from E-Views Output.

Table 7 reveals the absence of heteroskedasticity in the two models, implying that the residuals are homoskedastic. This means that the variance of the residuals is constant across all levels of the explanatory variables or different periods. The homoskedasticity in VEC residuals is desirable because it ensures that the model's assumptions are met and enhances the accuracy and reliability of its estimates and inferences. Table 8 contains the results of the VEC residual serial correlation LM test.

Table 8. Results of the VEC residual serial correlation LM test

Models	Lag	LRE* stat	df	Prob.	Rao F-stat	Df	Prob.
Domestic Investment Model	1	19.99800	16	0.2203	1.300775	(16, 64.8)	0.2242
Foreign Direct Investment Model	1	20.26083	16	0.2087	1.320398	(16, 64.8)	0.2125

Source: Extracts from E-Views Output.

The VEC residual serial correlation LM test results in Table 8 indicate the absence of serial correlation, with probability values exceeding 0.05. This implies no systematic pattern between consecutive residuals, which is essential for strong inference in time-series models. Some vector error correction models also exhibit normally distributed residuals, ensuring the reliability and accuracy of the results, even though strict normality is not always necessary.

Robustness check: This study aimed to understand the relationship between security threats and investment in Nigeria by analysing two security threat indices (the total state fragility index (TSF) and the state fragility index (FSI)). Vector error correction models were employed for data analysis using both indices, and the results were similar. This indicates that the choice of the index does not substantially affect the reliability of the estimates, ensuring their validity for statistical inferences.

4.8. Discussion

The study revealed an inverse correlation between security threats and domestic investment in Nigeria in the long run. This is linked to the findings of Onime (2018), who found that insecurity hurts domestic investment. This negative relationship is attributed to the unfavourable business climate caused by heightened security threats, including political instability, terrorism and social unrest. Such conditions lead to increased risks and uncertainties, dissuading investors from putting their money into a country facing security challenges. As a result, investments are redirected to more stable and secure environments, resulting in reduced domestic investment in Nigeria. The negative coefficient indicates that security issues significantly impact the country's investment climate.

Similarly, the study revealed an inverse relationship between security threats and FDI in Nigeria in the long run. This result is consistent with the findings of Maduka *et al.* (2014), who found that insecurity had a negative and significant impact on FDI. The perceived risks and uncertainties associated with investing in a country facing security challenges deter potential foreign investors. Being risk averse, foreign investors seek stable and secure environments for their investments. Security threats increase the likelihood of disruptions to business operations, potential asset damage, and difficulties in profit repatriation. These factors make investing in Nigeria during security challenges less attractive and riskier, leading to a decline in FDI.

In the short run, the study revealed no meaningful or immediate impact of security threats on domestic investment at the 5% critical level. In practical terms, this implies that short-term fluctuations in security threats, such as changes in political instability or crime rates, may not significantly influence domestic investment decisions instantaneously. However, statistical insignificance in the short run does not necessarily negate the relationship altogether. In the long run, security threats had a significant negative influence on shaping domestic investment in Nigeria.

Similarly, the study indicates that security threats do not significantly or immediately impact FDI within a specified time frame. Although this result does not dismiss the potential relevance of security threats to FDI in the long run, the short-term analysis does not demonstrate a significant and immediate link between security threats and FDI. The implication is that other factors may be more critical in driving investment decisions in Nigeria in the short run, while the impact of security threats on investment may be less pronounced.

5. Conclusion/policy recommendations

Security threats significantly affect domestic investment and FDI in Nigeria in the long run. Heightened security challenges discourage investment. However, the immediate impact of security threats on investment is less pronounced in the short run. Based on the findings of the study, the following policy recommendations are suggested:

✓ The Nigerian government should enhance security measures to address security threats in Nigeria. Implementing effective security strategies to combat political instability, terrorism and social unrest will create a more favourable business climate. Investors will be more confident in investing in a secure environment, which can lead to increased domestic and foreign direct investment.

✓ The Nigerian government and relevant authorities should work towards promoting investor confidence through transparent and stable policies, regulatory frameworks and efficient dispute resolution mechanisms. Building trust between investors and the government can attract more investments and bolster economic growth. Policymakers should focus on achieving long-term economic stability by diversifying the economy, improving infrastructure and investing in education and skills development.

✓ The Nigerian government should also implement policies to encourage domestic investment by providing incentives, reducing bureaucracy and improving access to financing for local businesses. Domestic investment can stimulate economic growth and create employment opportunities, contributing to overall development. On the other hand, attracting FDI requires creating an attractive business environment. Policymakers should prioritize legal and regulatory reforms, provide investment incentives and offer reliable infrastructure to attract foreign investors.

✓ Policymakers and central banks should carefully assess and manage interest rate policies to support favourable investment climate and economic growth.

References

1. Adetiloye, K.A., Adeyemo, K.A. (2012), *Domestic Investment, Capital Formation and Population Growth in Nigeria*, Developing Country Studies, Vol. 2, No. 7, pp. 37-45.
2. Amana, S.A., Aigbedion, I.M., Zubair, A.Z. (2020), *Impact of Government Security Expenditure on Economic Growth in Nigeria*, International Journal of Innovative Research in Social Sciences and Strategic Management Techniques, Vol. 7, No. 1, pp. 211-225.
3. Apanisile, T.O., Okunlola, C.O. (2014), *Does Military Expenditure Influence Economic Growth in Nigeria During 1989-2013? A Bound Testing Approach*, Romanian Journal of Fiscal Policy (RJFP), Vol. 5, No. 2, pp. 56-71, https://www.econstor.eu/handle/10419/107959.
4. Bandyopadhyay, S., Sandler, T., Younas, J. (2014), *Foreign Direct Investment, Aid, and Terrorism*, Oxford Economic Papers, Vol. 66, No. 1, pp. 25-50, http://hdl.handle.net/10.1093/oep/gpt026.
5. Brodeur, A. (2018), *The Effect of Terrorism on Employment and Consumer Sentiment: Evidence from Successful and Failed Terror Attacks*, American Economic Journal: Applied Economics, Vol. 10, No. 4, pp. 246-282, http://dx.doi.org/10.1257/app.20160556.
6. Brunnermeier, M.K., Pedersen, L.H. (2009), *Market Liquidity and Funding Liquidity*, The Review of Financial Studies, Vol. 22, No. 6, pp. 2201-2238, http://hdl.handle.net/10.1093/rfs/hhn098.
7. Chaudhry, I.S., Farooq, F., Mushtaq, A. (2014), *Factors Affecting Portfolio Investment in Pakistan: Evidence from Time Series Analysis*, Pakistan Economic and Social Review, Vol. 52, No. 2, pp. 141-158.
8. Chuku, C., Abang, D., Isip, I.-A. (2019), *Growth and Fiscal Consequences of Terrorism in Nigeria*, Defence and Peace Economics, Vol. 30, No. 5, pp. 549-569.
9. Ghirmay, T., Grabowski, R., Sharma, S.C. (2001), *Exports, Investment, Efficiency and Economic Growth in LDC: An Empirical Investigation*, Applied Economics, Vol. 33, No. 6, pp. 689-700, http://www.tandfonline.com/doi/abs/10.1080/00036840122027.
10. Hofstede, G. (1980), *Culture's Consequences: International Differences in Work Related Values*, Sage, Beverly Hills, California.

11. Hofstede, G. (1984), *Culture's Consequences: International Differences in Work-Related Values*, Vol. 5, Sage, Beverley Hills, California.
12. Isola, L.A., Ayopo, B.A., Abiola, A., Joseph, I.O. (2019), *Examining the Linkages Between Economic Growth and Terrorism: Evidence from Nigeria*, in R.C. Das (Editor), *The Impact of Global Terrorism on Economic and Political Development. Afro-Asian Perspectives*, Emerald Publishing, pp. 353-377.
13. Iwundu, C.O., Thom-Otuya, B.E.N. (2013), *Security Challenges as Threats to National Unity in Nigeria: Causes, Prevention and Treatment*, International Affairs and Global Strategy, Vol. 14, No. 1, pp. 16-21.
14. Jelilov, G., Ozden, K., Briggs, S.O. (2018), *Impact of Insecurity on Investment in Nigeria*, Journal of Management, Economics, and Industrial Organization, Vol. 2, No. 3, pp. 41-61, http://dx.doi.org/10.31039/jomeino.2018.2.3.3.
15. Lean, H.H., Tan, B.W. (2011), *Linkages Between Foreign Direct Investment, Domestic Investment and Economic Growth in Malaysia*, Journal of Economic Cooperation & Development, Vol. 32, No. 4, pp. 75-96.
16. Lensink, R., White, H. (2001), *Are There Negative Returns to Aid?*, Journal of Development Studies, Vol. 37, No. 6, pp. 42-65, https://www.tandfonline.com/doi/abs/10.1080/713601082.
17. Maduka, A.C., Alumona, M.I., Chukwuma, O.T. (2014), *Impact of Insecurity on Foreign Direct Investment in Nigeria: An Empirical Analysis*, Journal of Political Science, Vol. 4, No. 1, pp. 236-249.
18. Mazumdar, D., Bhattacharjee, M. (2019), *Terrorism: Its Economic Perspective*, in R.C. Das (Editor), *The Impact of Global Terrorism on Economic and Political Development. Afro-Asian Perspectives*, Emerald Publishing, pp. 23-34.
19. Mellati, A. (2008), *Investment Under Uncertainty: A Theory*, Munich Personal RePEc Archive, MPRA Paper No. 26714, pp. 1-24, https://mpra.ub.uni-muenchen.de/26714/.
20. Nwankwo, O.D., Okoye, V.J. (2022), *Terrorism and Jihadism as Correlates of Insecurity in Nigeria*, Journal of Psychology and Behavioural Disciplines, Coou, Vol. 2, No. 1, pp. 102-110.
21. Nwankwor, V.A., Nkechukwu, G.N. (2023), *Insecurity and Investment in Nigeria: An Exploratory Review*, International Journal of Advanced Academic Research, Vol. 9, No. 7, pp. 104-113.
22. Nwokwu, P.M., Ogayi, G.O. (2021), *Security Challenges as a Threat to Socio-Economic Development in Nigeria*, African Journal of Politics and Administrative Studies (AJPAS), Vol. 14, No. 1, pp. 18-32.
23. Onime, B.E. (2018), *Insecurity and Economic Growth in Nigeria: A Diagnostic Review*, European Scientific Journal, Vol. 14, No. 4, pp. 377-391, https://doi.org/10.19044/esj.2018.v14n4p377.
24. Osemwengie, D.O.P., Oriakhi, D.E. (2012), *The Impact of National Security on Foreign Direct Investment in Nigeria: An Empirical Analysis*, Journal of Economics and Sustainable Development, Vol. 3, No. 13, pp. 89-95.
25. Shane, S. (1995), *Uncertainty Avoidance and the Preference for Innovation Championing Roles*, Journal of International Business Studies, No. 26, pp. 47-68.
26. Suprapto, H.A., Sumaryoto, S., Saleh, S. (2022), *The Effect of Investment on Economic Growth and Human Development Index and Community Welfare (Case Study in Bekasi Regency)*, International Journal of Economics, Business and Accounting Research (IJEBAR), Vol. 6, No. 1, pp. 891-901.
27. Tan, B.W., Tang, C.F. (2016), *Examining the Causal Linkages Among Domestic Investment, FDI, Trade, Interest Rate and Economic Growth in ASEAN-5 Countries*, International Journal of Economics and Financial Issues, Vol. 6, No. 1, pp. 214-220.
28. Yusuf, A., Mohd, S. (2023), *Growth and Fiscal Effects of Insecurity on the Nigerian Economy*, The European Journal of Development Research, Vol. 35, No. 4, pp. 743-769, https://doi.org/10.1057/s41287-022-00531-3.