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THE IMPACT OF EXCHANGE RATES, FOREIGN DIRECT INVESTMENT, AND UNEMPLOYMENT ON ECONOMIC GROWTH IN NAMIBIA

Tuulikki Ndapanda Nelulu¹ and Sayeed Aboobakr Milanzi²

¹*School of Graduate School and Leadership, University of South Africa, tnelulu@gmail.com,
<https://orcid.org/0009-0002-2207-1144>*

²*School of Graduate School and Leadership, University of South Africa, milansa@unisa.ac.za,
<https://orcid.org/0000-0002-8435-4564>*

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Corresponding Author: Sayeed Aboobakr Milanzi
(sayeed.milanzi@gmail.com)

ABSTRACT

Namibia continues to face enduring structural challenges, including high unemployment, exchange rate volatility, and uneven inflows of foreign direct investment (FDI), which collectively constrain the achievement of inclusive and sustainable economic growth. This study examines the combined effects of unemployment, FDI, and exchange rates on Namibia's economic growth, with the objective of generating evidence-based insights for policymakers. The study employs a Auto Regressive Distributed Lags (ARDL) approach using annual secondary data covering the period 1990–2023, sourced from the World Bank. The empirical findings indicate that FDI exerts a positive and statistically significant effect on economic growth, particularly under conditions of macroeconomic stability. However, the predominance of FDI in capital intensive sectors limits its capacity to generate widespread employment. Exchange rate stability is found to promote investment inflows, while exchange rate volatility undermines competitiveness and investor confidence. Persistent high unemployment, especially among the youth, remains a structural impediment to inclusive growth, even during periods of rising GDP. Namibia's economic growth is shaped by a complex interaction between FDI, unemployment, and exchange rate dynamics. Growth driven largely by extractive industries has not translated into sufficient employment creation, underscoring structural weaknesses within the economy. The study recommends policies aimed at diversifying FDI toward labour-intensive sectors such as manufacturing, agriculture, renewable energy, and tourism, alongside investments in human capital development through education and vocational training. Future research should incorporate sector-specific analyses of FDI, informal sector dynamics, and qualitative assessments of investor behaviour to enhance the policy relevance of empirical findings.

KEYWORDS: Foreign Direct Investment (FDI); Exchange Rate Stability; Unemployment; Economic Development; GDP per Capita; Developing Economies.

JEL CLASSIFICATION: O11, F21, E24, F31

1. INTRODUCTION

Economic development remains a central policy objective for Namibia amid persistent structural imbalances, exposure to global economic shocks, and deep seated socioeconomic challenges, particularly high unemployment (IMF, 2023). As a small open economy, Namibia's development trajectory is strongly influenced by external factors, notably foreign direct investment (FDI) and exchange rate dynamics, which play a critical role in shaping macroeconomic performance and long term growth prospects (World Bank, 2023).

Foreign direct investment is widely regarded as a key driver of economic development in developing economies due to its potential to enhance capital formation, facilitate technology transfer, improve access to global markets, and strengthen managerial capabilities (UNCTAD, 2023; OECD, 2022). In Namibia, however, the developmental impact of FDI has been uneven. While FDI contributes to export revenues and GDP growth, it has had a limited direct effect on employment creation because inflows are largely concentrated in capital intensive sectors such as mining (Bank of Namibia, 2024; Namibia Statistics Agency, 2022).

Exchange rate movements further shape Namibia's economic outcomes by influencing both FDI inflows and export competitiveness. Exchange

rate stability is generally associated with reduced investor uncertainty and improved investment inflows, whereas volatility discourages long term foreign commitments (World Bank, 2023). Namibia's fixed exchange rate regime, anchored to the South African rand, provides a degree of stability but constrains the country's ability to respond independently to external economic shocks (African Development Bank, 2022). A stronger rand can also reduce export competitiveness, particularly in mineral exports, thereby affecting foreign currency reserves and economic growth (UNCTAD, 2023; IMF, 2024).

Despite episodes of economic growth and rising GDP per capita, Namibia continues to experience persistently high unemployment, especially among the youth, which undermines inclusive and sustainable development (ILO, 2023). High unemployment constrains productive capacity and suppresses household consumption, weakening aggregate demand and limiting the broader development impact of growth (UNDP, 2023). The limited employment responsiveness of FDI, combined with exchange rate constraints and structural rigidities, raises concerns about the effectiveness of current growth drivers in addressing Namibia's socioeconomic challenges (Ndikumana & Verick, 2008) as illustrated in Figure 1 below.

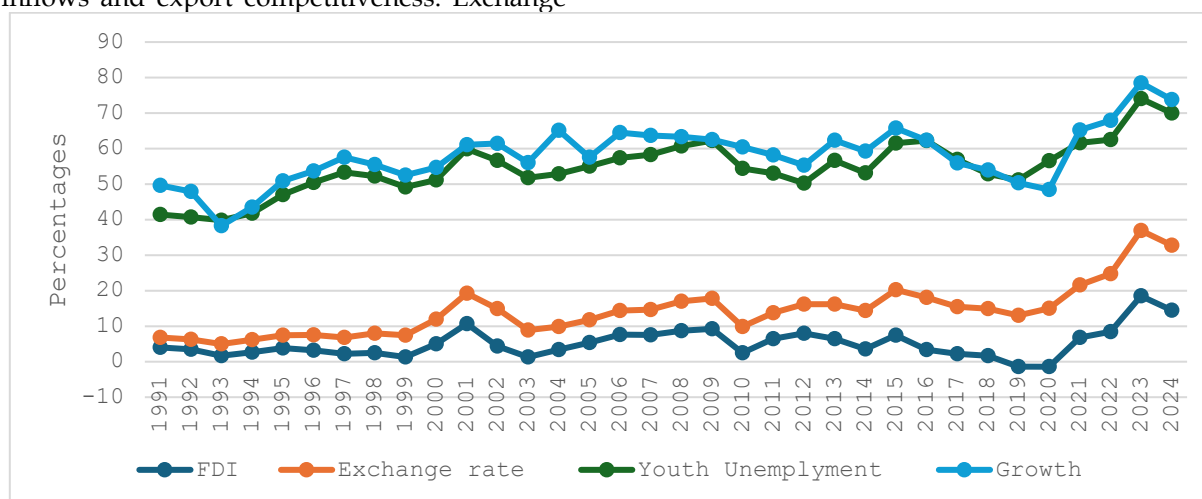


Figure 1: Namibia's socioeconomic challenges.
Source: World Bank Database.

The primary objective of this study is to examine the combined effects of foreign direct investment, exchange rates, and unemployment on Namibia's economic development as depicted in Figure 1 above. By analysing the interactions among these variables, the study seeks to provide empirical evidence that can inform policy interventions aimed at fostering inclusive growth. Understanding how exchange rate

stability influences FDI inflows, and how these inflows translate into growth and employment outcomes, is essential for designing a coordinated policy framework that promotes long term economic development (World Bank, 2023; UNCTAD, 2022; Hill, 2023).

The remainder of the paper is structured as follows. The next section reviews the relevant

theoretical and empirical literature on FDI, exchange rates, unemployment, and economic development. This is followed by a description of the research methodology and data sources. The empirical results are then presented and discussed in relation to existing studies. The final section concludes the paper by highlighting key findings, policy implications, and directions for future research, with particular emphasis on attracting investment into labour intensive sectors.

2. THEORETICAL FRAMEWORK REVIEW

Economic development in small open economies such as Namibia is shaped by the interaction of foreign direct investment (FDI), unemployment, and exchange rates. Classical and modern growth theories provide the foundation for understanding these dynamics. The Neoclassical Growth Theory emphasises capital accumulation and technological progress, with FDI supplying external capital and technology transfer, though diminishing returns limit long term impact (Solow, 1956). Endogenous Growth Theory highlights innovation, human capital, and knowledge spillovers as drivers of sustained growth, making Namibia's absorptive capacity critical for translating FDI into productivity gains (Romer, 1990; Becker, 1993). The FDI led Growth Hypothesis suggests that FDI fosters trade, employment, and capital accumulation, with empirical evidence confirming positive GDP effects in Namibia when paired with trade openness and macroeconomic stability (Borensztein et al., 1998; Sunde, 2023) and (Sunde, 2025). The Phillips Curve underscores unemployment and inflation trade-offs, yet Namibia's persistently high unemployment reflects structural rigidities rather than cyclical fluctuations (Samuelson & Solow, 1960; Butkus et al., 2024). Exchange Rate Pass Through Theory explains how currency movements affect import costs and export competitiveness, with Namibia's peg to the South African Rand stabilising inflation but constraining independent monetary policy (Goldberg & Knetter, 1997). Recent IMF consultations reinforce this theoretical framework, noting that Namibia's growth is constrained by structural unemployment, weather shocks, and volatility in the diamond market, underscoring the importance of resilience in fiscal and monetary policy (IMF, 2025; Feng et al., 2024).

3. EMPIRICAL LITERATURE

Different authors have highlighted the importance of integrated policy frameworks linking FDI, exchange rates, and unemployment to

development outcomes (Szirmai, & Verspagen, 2015). FDI inflows were concentrated in extractive and infrastructure sectors, limiting employment multipliers (Lakemann et al., 2025), while countries channelling FDI into manufacturing, ICT, and renewable energy achieved stronger developmental outcomes (World Bank, 2017; Hoekman et al., 2025). Exchange rate regimes played a decisive role, with stability enhancing investor confidence and export competitiveness (Goldberg and Ketter, 1997; Crystal, 1994), similarly volatility in Latin America triggered capital flight and inflationary pressures. Unemployment remained a pressing issue, with youth unemployment exceeding 30% in Africa (Gaggero, et.al, 2015; Abbas et al., 2025 and Borensztein, 1998), and jobless growth persisting in commodity dependent economies (Butkus, 2024). Policy lessons emphasised the need for employment intensive sectors, skill development, and currency stability, with the Sustainable Development Goals reinforcing the link between decent work, reduced inequality, and resilient infrastructure (Mwakalila, E. 2022). More recent studies confirm that greenfield FDI projects in Africa between 2025 and 2026 have stronger employment multipliers when directed toward manufacturing and ICT, compared to extractive industries (Bello et.al. 2022; Ndikumana, & Verick, 2008 and Onuogu, et.al, 2024).

3.1. African Evidence

African economies have faced exchange rate volatility, commodity dependence, and structural unemployment (Rodrik, 2008; Bleaney and Francisco, 2010 and Kumo, 2018 and). FDI inflows declined from US\$54 billion in 2015 to US\$45 billion in 2018, with Namibia relying heavily on mining focused FDI that created enclaves with weak linkages to domestic SMEs. Unemployment remained severe, with Sub Saharan Africa's workforce 60% informal and Namibia's unemployment reaching 33.4% in 2018, alongside youth unemployment above 46% (Namibia Statistics Agency, 2019; Page and Shimeles, 2015). Policy frameworks such as Namibia's Fifth National Development Plan (NDP5) targeted diversification and technical education but faced funding and coordination challenges. Exchange rate constraints further limited competitiveness in non mineral exports, as Namibia's peg provided nominal stability but restricted flexibility (Kumo, 2018a; Goldberg and Ketter, 1997). Consensus emerged that macroeconomic stability alone was insufficient, and integrated approaches combining industrial policy, human capital investment, and targeted FDI were essential for inclusive growth (Farole and Winkler,

2014; Alfaro, et.al, 2009). Recent studies such as (Asiedu, 2006; Ejeta and Negassa, 2023) confirms that FDI positively impacts growth in Sub Saharan Africa, but only when institutional quality and sectoral allocation are aligned with industrial policy. (Narula and Pineli, 2019a, Narula and Pineli, 2019b) reviews empirical evidence on the relationship between multinational enterprises (MNEs) and development. The study stresses that while many developing countries rely on foreign direct investment (FDI) as a cornerstone of their development strategies, academic research has not sufficiently refined policy implementation. Much of the literature emphasizes spillovers and externalities, often assuming MNEs are inherently beneficial, yet opportunity costs and structural change complicate this view.

3.2. *Namibia Specific Insights*

Namibia's development trajectory reflects broader African challenges but also unique national constraints. FDI remains concentrated in mining and telecommunications, limiting employment creation, while strategic redirection toward tourism, renewable energy, and agro processing is needed (World Bank, 2023; Hoekman, et.al, 2025). Labour market rigidities persist, with high unemployment driven by skill mismatches and dominance of capital intensive sectors (Namibia Statistics Agency, 2022). The CMA exchange rate peg stabilises inflation but constrains policy autonomy, reducing flexibility in responding to external shocks (Bank of Namibia, 2024). Research gaps remain significant, as few studies examine the combined effects of FDI, unemployment, and exchange rates on Namibia's development, and sector specific analyses are limited (Munyai, 2020; Shifotoka & Bevan, 2021). Moreover, recent global shocks such as COVID 19 and climate change have not been adequately incorporated into existing studies (World Bank, 2022; UNEP, 2023). Updated evidence from Namibia's Investment Promotion and Development Board (2025) shows net FDI inflows of N\$114.9 billion since 2021, largely driven by hydrocarbon discoveries in the Orange Basin, raising concerns about enclave development unless redirected toward labour-intensive sectors (NIPDB, 2025). The Bank of Namibia (2025) highlights renewable energy as a critical sector for diversification, reducing reliance on imported electricity and positioning Namibia as a regional clean energy leader (Munyai, 2020). A strong and commendable research gap emerging from the literature is the lack of integrated, Namibia specific empirical studies that simultaneously examine the combined effects of FDI, exchange rates, and

unemployment on economic development in the post COVID 19 and climate shock era (Addison, et.al, 2022).

Most existing studies either treat these variables in isolation or rely on outdated datasets, focusing narrowly on FDI inflows or unemployment trends without capturing their dynamic interdependencies. Even recent peer reviewed work (Page, 2019; Ang, 2010) highlights sectoral opportunities in renewable energy and manufacturing, but these analyses remain regional or cross country, often overlooking Namibia's unique constraints under the CMA exchange rate peg and its enclave type FDI structure (Shifotoka, and Bevan, 2021).

4. METHODOLOGY

The study employs the Autoregressive Distributed Lag (ARDL) bounds testing approach to examine the dynamic relationships between exchange rates, foreign direct investment (FDI), unemployment, and economic growth in Namibia. Originally developed by (Pesaran, Shin, and Smith, 2001), the ARDL framework is particularly suitable for time series analysis as it allows for the simultaneous estimation of short run and long run effects among variables that are integrated at different orders, provided none are integrated at order two (Pesaran, Shin, and Smith, 2001). This flexibility makes the ARDL approach appropriate for assessing how fluctuations in the exchange rate influence FDI inflows, how FDI affects economic development, and the extent to which unemployment constrains inclusive growth in Namibia. Within this framework, economic growth is proxied by GDP, while the exchange rate captures external competitiveness and macroeconomic stability, both of which are critical determinants of FDI inflows in a small open economy such as Namibia. The ARDL model further enables analysis of how persistent unemployment interacts with FDI-led growth, revealing whether increases in investment translate into meaningful employment creation or instead reinforce capital-intensive growth patterns. By incorporating an error-correction mechanism, the model also reflects the speed at which short-run deviations from equilibrium adjust toward long-run economic development outcomes. Although alternative econometric techniques such as the Johansen cointegration approach could be applied, the ARDL bounds testing method is preferred due to its robustness in small samples and its suitability for capturing Namibia's structural characteristics and macroeconomic dynamics (Pesaran, Shin, and Smith, 2001).

4.1. Study data

The study utilises annual time-series data spanning the period 1991 to 2024; the data were sourced from the World Bank database (<<https://data.worldbank.org/country/namibia>>). The selection of this study period is dictated by the

availability and consistency of data for all variables included in the analysis. The primary purpose of using this dataset is to examine the impact of exchange rate movements, foreign direct investment (FDI), unemployment, and economic growth in Namibia. Table 1 presents a detailed description of the variables employed in the study.

Table 1: Explanation of the variables.

Variable	Description	Source
GDP	GDP (current US\$)	World Bank database
UNEMP	Unemployment, total (% of total labour force) (modelled ILO estimate)	World Bank database
FDI	Foreign direct investment, net (BoP, current US\$)	World Bank database
EXRATE	Official exchange rate (LCU per US\$, period average)	World Bank database

Source: Authors' Compilation.

4.2. Model Specifications

To empirically examine the relationship between

Namibia's economic growth and the key macroeconomic variables, the following linear regression model is specified:

$$GDP = \beta_0 + \beta_1 UNEMP + \beta_2 FDI + \beta_3 EXRATE + \mu \dots\dots\dots 1$$

Where, *GDP* : GD per capita calculated in current international US\$, *UNEMP* : Unemployment rate total labour force , *FDI* : Net FDI inflows in US\$, *EXRATE* : Exchange rate and μ : Stochastic error term. Similarly, $t = time$, β_0 constant, $\beta_1, \beta_2 = Coefficients$ and $\mu = error - term$.

variables. The ARDL framework is particularly appropriate for this study due to its ability to produce robust and reliable estimates in the presence of a relatively small or finite sample size. Moreover, a key prerequisite for the application of the ARDL methodology is that the variables included in the model are integrated of different orders, specifically I(0) and I(1), but not I(2), which is consistent with the properties of the data used in this analysis (Pesaran et al., 2001). An additional advantage of the ARDL approach lies in its effectiveness in addressing potential econometric issues such as heteroskedasticity and autocorrelation. The formal specification of the ARDL model is presented below.

The Autoregressive Distributed Lag (ARDL) modelling approach developed by Pesaran, Shin, and Smith (2001) is employed to estimate the relationship between the dependent variable and its explanatory

$$\Delta GDP_t = \beta_0 + \sum_{i=1}^p \beta_1 \Delta GDP_{t-1} + \sum_{i=1}^q \beta_2 \Delta FDI_{t-1} + \sum_{i=1}^m \beta_3 \Delta UNEMP_{t-1} + \sum_{i=1}^n \beta_4 EXRATE_{t-1} + \alpha_1 \Delta GDP_{t-1} + \alpha_2 \Delta FDI_{t-1} + \alpha_3 \Delta UNEMP_{t-1} + \alpha_4 EXRATE + \mu_{t-1} \dots\dots\dots 2$$

$$H_0 = \beta_0 = \beta_1 = \beta_2 = \beta_3 = 0$$

In equation (2) above β Denote the short-run dynamics of the model whilst α Denote the long-run part of the model. The Δ is the first difference between the operator, and the μ is a term for the

disturbance of white noise. Based on equation (2), the null hypothesis is given as denotes that there is no cointegration among the variables. The alternative hypothesis is formulated as

$H_1 \neq \beta_0 \neq \beta_1 \neq \beta_2 \neq \beta_3 \neq 0$ denotes the presence of cointegration among the variables.

$$\Delta GDP_t = \beta_0 + \sum_{i=1}^p \beta_1 GDP_{t-1} + \sum_{i=1}^q \beta_2 FDI_{t-1} + \sum_{i=1}^m \beta_3 UNEMP_{t-1} + \sum_{i=1}^n \beta_4 EXRATE_{t-1} + ECM_{t-1} + \mu_{t-1} \dots \dots \dots 3$$

Where λ Is the coefficient of the *ECT* (Error Correction Term), which captures the reversion and speed of adjustment to reach an equilibrium (Pesaran et al., 2001).

Furthermore, the error correction model of the ARDL is formulated as follows.

This section of the study presents statistical and econometric findings, including descriptive statistics, unit root tests, diagnostic tests, and ARDL estimation results. Table 2, below, present's descriptive statistical results.

5. RESULTS AND DISCUSSION

Table 2: Descriptive statistics results.

	LNGDP	LNFDI	EXCHRATE	UNEMP
Std. Dev.	0.556200	9.283580	4.621392	1.663363
Skewness	-0.303668	3.669061	0.520694	-0.161408
Kurtosis	1.372999	14.68419	2.166885	2.638539
Jarque-Bera	4.272652	269.6884	2.519641	0.332724
Probability	0.118088	0.000000	0.283705	0.846740

Source: Authors' Compilation.

The descriptive statistics in Table 2 above indicate that GDP (LNGDP) exhibits relatively low variability and an approximately symmetric, platykurtic distribution, with the Jarque–Bera test failing to reject normality, suggesting stable economic output over the study period. In contrast, FDI (LNFDI) displays substantial volatility, pronounced positive skewness, and excess kurtosis, indicating frequent extreme fluctuations and a highly non normal distribution, which reflects the episodic and concentrated nature of investment inflows in Namibia. The exchange rate (EXCHRATE) shows moderate dispersion with slight positive skewness and a kurtosis close to the normal

benchmark, while the Jarque–Bera statistic confirms approximate normality, consistent with the relative stability associated with Namibia's exchange rate regime. Unemployment (UNEMP) demonstrates low variability, near symmetry, and a distribution closely approximating normality, indicating gradual and persistent movements rather than abrupt shifts. The results suggest that GDP, exchange rates, and unemployment are relatively stable over time, whereas FDI remains highly volatile, justifying the application of econometric techniques that are robust to non-normality and variability.

Table 3: Unit root test results.

Variable	Model	T-statistics	P-value	I(0)/I(1)	Decision
LNGDPP	Intercept	-4.330496***	0.0018	I (1)	Stationary
	Trend & intercept	-4.368397***	0.0082	I (1)	
	None	-4.211452*	0.0001	I (1)	
EXRATE	Intercept	-4.953484***	0.0004	I (1)	Stationary
	Trend & intercept	-4.984401***	0.0018	I (1)	
	None	-4.540257***	0.0000	I (1)	
LNFDI	Intercept	-6.053367***	0.0000	I (1)	Stationary
	Trend & intercept	-6.364439***	0.0001	I (1)	
	None	-6.003839**	0.0000	I (1)	
UNEMP	Intercept	-3.607700***	0.0112	I (0)	Stationary
	Trend & intercept	-3.936362***	0.0219	I (0)	
	None	-4.526229***	0.0000	I (1)	

Source: Authors' Compilation.

Table 3 reports the results of the unit root tests conducted to determine the order of integration of the variables included in the ARDL model, namely GDP per capita (LNGDPP), foreign direct investment (LNFDI), exchange rate (EXRATE), and unemployment rate (UNEMP). Establishing the stationarity properties of the variables is a critical prerequisite for the application of the ARDL bounds

testing approach, which requires that variables be integrated of order I(0) and/or I(1), but not I(2) by (Pesaran, Shin, and Smith, 2001). These results further justify the use of the ARDL error correction framework to examine how short run deviations from equilibrium adjust toward long run economic development outcomes.

Table 4: ARDL Bound Test results.

Test Statistic			Value			
F-statistic			20.254058			
	10%		5%		1%	
Sample Size	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
30	2.676	3.586	3.272	4.306	4.614	5.966
35	2.618	3.532	3.164	4.194	4.428	5.816
Asymptotic	2.370	3.200	2.790	3.670	3.650	4.660
* I(0) and I(1) are respectively the stationary and non-stationary bounds.						

Source: Authors' Compilation.

The results of the bounds test are reported in Table 4 above indicates that the computed F-statistic is 20.254, which is substantially higher than the upper bound critical values (I(1)) at the 10%, 5%, and 1% significance levels for all reported sample sizes (30, 35, and asymptotic values). For instance, at the 5% significance level, the highest upper bound critical value is 4.306 (sample size 30) and 4.194 (sample size

35), both of which are far below the calculated F-statistic. According to the decision rule of the ARDL bounds testing procedure, if the calculated F-statistic exceeds the upper bound critical value, the null hypothesis of no cointegration is rejected. Since $20.254 > I(1)$ across all critical values, the null hypothesis is decisively rejected.

Table 5: ARDL Short Run Results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.005001	0.000463	-10.80973	0.0000
D(LNFDI)	-0.001340	0.000860	-1.558331	0.1296
D(EXCHRATE)	-0.091001	0.007060	-12.89042	0.0000

Source: Authors' Compilation.

The ARDL short run results in Table 5 above show that the error correction term (COINTEQ*) is negative and highly significant, confirming the existence of a stable long run relationship and indicating that deviations from equilibrium are corrected over time, although at a slow adjustment speed of about 0.5% per year. Short run changes in foreign direct investment (D(LNFDI)) have a negative but statistically insignificant effect on GDP per capita, suggesting that fluctuations in FDI do not

translate into immediate growth benefits in Namibia, likely due to the capital intensive nature of FDI inflows. In contrast, short run changes in the exchange rate (D(EXCHRATE)) exert a strong, negative, and highly significant impact on economic growth, implying that exchange rate depreciation or volatility adversely affects GDP per capita in the short run through higher import costs, inflationary pressures, and increased macroeconomic uncertainty.

Table 6: ARDL Long-Run Results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGDP (-1) *	-0.005001	0.025175	-0.198662	0.8441
LNFDI (-1)	-0.003156	0.001137	-2.777041	0.0100
EXCHRATE (-1)	0.001629	0.003142	0.518318	0.6086
UNEMP**	-0.003300	0.005532	-0.596533	0.5560

D(LNFDI)	-0.001340	0.001090	-1.229464	0.2299
D(EXCHRATE)	-0.091001	0.008109	-11.22173	0.0000

Source: Authors' Compilation.

The long run ARDL results presented in Table 6 above indicate that foreign direct investment (FDI) is the only variable exerting a statistically significant effect on GDP per capita, with a negative coefficient, suggesting that increases in FDI are associated with lower long run economic development in Namibia, likely reflecting the dominance of capital intensive, enclave type investments with limited spillovers. Lagged GDP per capita shows a negative but insignificant effect, implying weak growth persistence over time. The exchange rate carries a positive yet statistically insignificant coefficient, indicating that exchange rate movements do not

meaningfully influence long run economic performance under Namibia's fixed exchange rate regime. Unemployment also exhibits a negative but insignificant relationship with GDP per capita, reinforcing evidence of structural unemployment and jobless growth. Finally, the short run differenced variables show that while changes in FDI have no significant immediate impact, exchange rate changes exert a strong and highly significant negative short run effect, highlighting the sensitivity of economic performance to exchange rate shocks rather than long term adjustments.

Table 7: Granger Causality results.

Null Hypothesis:	F-Statistic	Prob.	Decision
LNFDI does not Granger Cause LNGDP	0.28511	0.7542	Accept the H_0
LNGDP does not Granger Cause LNFDI	0.68893	0.5107	Accept the H_0
EXCHRATE does not Granger Cause LNGDP	1.51591	0.2377	Accept the H_0
LNGDP does not Granger Cause EXCHRATE	2.24917	0.1249	Accept the H_0
UNEMP does not Granger Cause LNGDP	1.70848	0.2001	Accept the H_0
LNGDP does not Granger Cause UNEMP	1.37488	0.2700	Accept the H_0
EXCHRATE does not Granger Cause LNFDI	2.05923	0.1471	Accept the H_0
LNFDI does not Granger Cause EXCHRATE	0.18024	0.8361	Accept the H_0
UNEMP does not Granger Cause LNFDI	0.81751	0.4522	Accept the H_0
LNFDI does not Granger Cause UNEMP	0.71311	0.4991	Accept the H_0
UNEMP does not Granger Cause EXCHRATE	2.66115	0.0881	Accept the H_0
EXCHRATE does not Granger Cause UNEMP	1.52408	0.2360	Accept the H_0

Source: Authors' Compilation.

The Granger causality results in Table 7 above indicate that there is no evidence of directional causality among foreign direct investment (FDI), economic growth (GDP per capita), the exchange rate, and unemployment in Namibia over the study period. For all tested pairs of variables, the null hypotheses of non-causality are accepted, as the associated p values exceed conventional significance levels (5% and 10%). This implies that past values of FDI, exchange rates, and unemployment do not significantly help predict changes in GDP per capita, nor does economic growth Granger cause changes in these macroeconomic variables. The absence of

Granger causality suggests that the relationships among these variables are not dynamic or predictive in a short run temporal sense but rather may be driven by long run structural factors, institutional constraints, and external conditions. In particular, the results are consistent with Namibia's structural characteristics, where capital intensive FDI, a fixed exchange rate regime and persistent structural unemployment limit feedback mechanisms between growth, investment, and labour markets, reinforcing the notion of jobless and enclave driven growth rather than mutually reinforcing macroeconomic linkages.

Table 8: Diagnostic test Robustness.

Diagnostic Analysis	Test	Null Hypothesis (H_0)	P-Value	Conclusions
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Normality	Jarque-Bera	Data are normally distributed.	0.9935	Fails to reject H_0 because $P > 5\%$
Serial correlation	Breusch-Godfrey Serial Correlation LM Test	No serial correlation.	0.5844	Fails to reject H_0 Because the P-value is greater than the level of significance. at 5%
Heteroscedasticity	Breusch-Pagan-Godfrey	H_0 : Homoskedasticity H_1 : Heteroskedasticity	0.7481	Fails to reject because the P-value is greater than the level of significance at 5%.

Source: Authors' Compilation.

The diagnostic tests in Table 8 above indicate that the ARDL model is statistically significant and well specified. The Jarque-Bera normality test p-value is greater than 5% significance level therefore fails to reject the null hypothesis, confirming that the residuals are normally distributed. Similarly, the Breusch-Godfrey serial correlation LM test shows no evidence of autocorrelation as their p-values are

greater than 5% significance level. In addition, the Breusch-Pagan-Godfrey test fails to reject the null hypothesis of homoskedasticity, suggesting the absence of heteroskedasticity in the model. Lastly, these results confirm that the regression assumptions are satisfied, and the estimated ARDL results are reliable, robust, and suitable for inference.

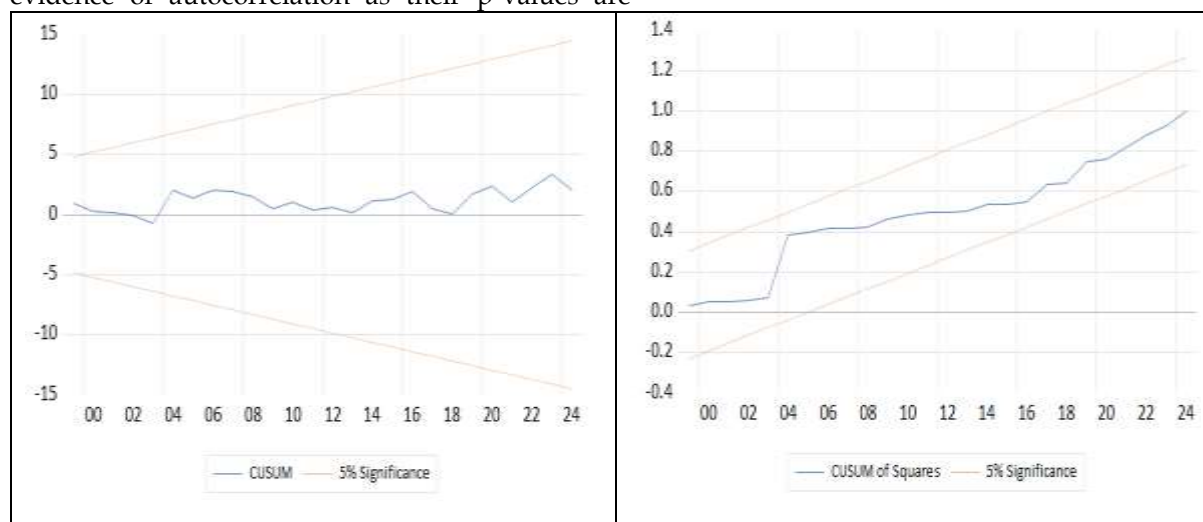


Figure 2: CUSUM AND CUSUM of squares results.

Source: Authors' Compilation.

The CUSUM and CUSUM of Squares tests presented in Figure 2 indicate that the estimated ARDL model is structurally stable over the study period, as the cumulative plots remain within the 5% significance bounds throughout. This confirms the absence of parameter instability or structural breaks in both the regression coefficients and their variance. Therefore, these results affirm the robustness and statistical reliability of the model, supporting the validity of the short-run and long-run inferences drawn from the ARDL estimates.

6. CONCLUSION

This study examined the combined effects of foreign direct investment (FDI), exchange rate dynamics, and unemployment on economic development in Namibia using annual time-series

data and the ARDL bounds testing framework. The empirical results confirm the existence of a stable long-run relationship among the variables, as evidenced by the bounds test and the statistically significant error-correction term. However, the nature of this relationship reveals important structural weaknesses in Namibia's growth model.

In the long-run the findings indicate that FDI exerts a statistically significant but negative impact on GDP per capita, suggesting that increases in investment have not translated into broad-based economic development. This outcome reflects the dominance of capital-intensive, enclave-type FDI, particularly in extractive industries, which generate limited employment and weak spillovers to the domestic economy. In the short run, changes in FDI are statistically insignificant, reinforcing the view

that investment inflows in Namibia do not produce immediate growth benefits.

In the short run Exchange rate dynamics play a critical role. Exchange rate movements are found to have a strong and negative short-run effect on economic growth, highlighting Namibia's vulnerability to exchange rate shocks through higher import costs, inflationary pressures, and macroeconomic uncertainty. In contrast, exchange rate effects in the long run are statistically insignificant, consistent with Namibia's fixed exchange rate regime under the Common Monetary Area (CMA), which dampens long-term adjustment mechanisms.

Unemployment displays a negative but statistically insignificant relationship with GDP per capita, providing further evidence of structural and jobless growth. Despite periods of rising output, employment creation remains weak, underscoring deep-seated labour market rigidities, skills mismatches, and the limited labour-absorptive capacity of prevailing growth sectors.

Granger causality results reveal no directional causality between economic growth, FDI, unemployment, and the exchange rate, suggesting that the interactions among these variables are not driven by short-run predictive dynamics but rather by long-run structural and institutional factors. Diagnostic and stability tests confirm that the estimated model is robust, well-specified, and stable over time, lending credibility to empirical conclusions.

Lastly, the study demonstrates that Namibia's economic growth has been largely enclave-driven and insufficiently inclusive, with weak linkages between investment, employment, and development outcomes. Without deliberate structural and policy intervention, continued reliance on capital-intensive growth is unlikely to resolve persistent unemployment or deliver sustainable economic development.

6.1. Policy Recommendations

Based on the empirical findings, the study recommends a strategic reorientation of Namibia's development agenda toward inclusive and employment-generating growth. This entails redirecting foreign direct investment from predominantly extractive activities to labour-intensive and high-spillover sectors such as manufacturing, agro-processing, tourism, renewable energy, and ICT, while strengthening linkages between foreign investors and the domestic economy through local content policies, SME participation, and technology transfer. The findings also underscore the importance of investing in human capital through targeted education, technical, and vocational training to enhance the economy's absorptive capacity. Given the strong negative short-run effects of exchange rate movements, complementary macroeconomic policies including fiscal support, export diversification, and inflation control are necessary to enhance resilience to external shocks. Addressing persistent structural unemployment further requires active labour market policies, particularly those targeting youth employment and skills development. The absence of short-run causal relationships among key variables highlights the need for an integrated and coordinated policy framework that aligns investment promotion, industrial policy, labour markets, and macroeconomic management to transform Namibia's growth model from enclave-driven to inclusive and sustainable development.

Therefore, the study provides robust empirical evidence that Namibia's current growth trajectory is constrained by structural factors that weaken the transmission of FDI and exchange rate stability into employment and inclusive development outcomes. Addressing these challenges requires a strategic shift toward labour-absorptive investment, stronger institutional coordination, and sustained investments in human capital. Future research should extend this analysis by incorporating sector-specific FDI data, informal sector dynamics, and the impacts of recent global shocks to further enhance the policy relevance of empirical findings.

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