FOREIGN EXCHANGE RATE AND FIRM SURVIVAL: EVIDENCE FROM NIGERIA

Ighodalo David Ehizojie[1*] & Popogbe Oluwaseyi Omowunmi[2]
[1]Department of Administration and Management, Crawford University, Ogun State
[2]Department of Economics, Crawford University, Ogun State
*Corresponding Author's Email: ighodalodavid71@gmail.com

ABSTRACT

The role of monetary policy is crucial for the survival of the industrial sector. This study focuses on examining the relationship between foreign exchange rates and firm survival in Nigeria. The research utilizes secondary data from the World Bank Development Indicators (WDI) and the Central Bank of Nigeria's Statistical Bulletin, covering the years 1986 to 2021. Industrial output (INO) serves as a proxy for firm survival, while the independent variable is the foreign exchange rate (FEX). The stationarity of the variables was confirmed through unit root tests conducted at the level and first difference. The estimation technique employed in this study is the bounds testing cointegration approach, specifically the Autoregressive Distributed Lag (ARDL) model. The empirical model incorporates control variables such as interest rate, gross capital expenditure, and lending interest rate. The findings of the study reveal that an increase in the foreign exchange rate has a negative impact on the performance of the industrial sector. This implies that if the exchange rate continues to rise, the long-term survival of the Nigerian industry will be at risk. Hence, it is advisable to uphold a stable foreign exchange rate and facilitate its accessibility to industries in Nigeria.

Key words: Exchange rate, Firm survival, Industrial sector, Scapegoat theory

INTRODUCTION

In the early stages of business development, survival is the primary and instinctive measure of its legitimacy. This is because it is often challenging to obtain alternative indicators such as profit or growth opportunities due to incomplete data. The probability of a company's survival and its ability to enhance performance and achieve growth relies on successful strategies that can be adapted to changing environmental conditions (Cegielka, 2020). Currently, businesses operate in dynamic environments characterized by evolving customer demands, intense global competition, uncertainty, and rapid technological advancements (Droge et al., 2008). Therefore, it is crucial for firms to attain success and competitive advantage through innovation (Prajogo & Ahmed, 2006). Innovative companies are more agile and capable of swiftly responding to change (Drucker, 1998). Since the 1980s, there has been a growing interest in studying the determinants of a firm's survival.

Several factors have been identified as contributing to the increased survival of firms. These factors include the number of owners, employment, work experience, education, and business sectors, which have had a significant impact on service sector delivery worldwide, especially in Nigeria. Many owners possess managerial skills, communication skills, competence, commitment to building a successful venture, and strategic abilities (Barloloni & Baussiola, 2018). Numerous studies indicate that economic processes are closely linked to new technologies and innovation (Zawawi et al., 2016; Kogabayev & Maziliauskas, 2017).

The implementation of new ideas and the development of new products and processes lead to dynamic economic growth, increased employment, and profitability for innovative enterprises. Innovation is considered a key factor that enhances the chances of a firm's survival in the market and predicts above-average performance after entering the market. Ritala, Kianto, Vanhala and Hussinki (2023) argue that both simple companies and innovation startups are significant contributors to sustainable value creation in the economy. It is crucial for scientific research and political activities to aim at creating an environment that fosters the emergence of technological and managerial innovations, ultimately improving firms' performance (Zawawi et al., 2016).

In the literature, there is a general consensus among researchers that organizations with formal strategies perform better compared to those without strategies (Boon et al., 2019). The organizational structure is also linked to innovation performance, as it can improve cost-effectiveness in the service sector. However, despite the advantages of innovation, the complexity of the concept has a negative impact on firm survival in Nigeria. It is important to note that assessing firms' survival should not be based solely on organizational performance (Onuwkwube et al., 2010; Akhtar, 2016). Organizational performance refers to analyzing an organization's performance in relation to its objectives and goals, comparing the intended results with the actual outcome. Successful businesses increasingly recognize that there are numerous factors contributing to performance, with the human factor being particularly crucial. Regardless of the size and nature of organizations and the operating environment, their success depends on employees and their behavior.

In the performance literature, a classic measure of performance is often represented as a single general factor accounting for the total variance in business outcomes. However, Singh (2004) argues that a general factor does not adequately explain performance and outlines various factors responsible for different behaviors. Similarly, Ighodalo and Popogbe (2022) argue that these factors can be categorized into two groups: financial and non-financial factors. They further suggest that financial indicators include sales growth, profitability, market share, and interest rates, while non-financial indicators encompass operational measures such as business efficiency, staff training. Also, customer interactions lead to improved referrals, and employee satisfaction (Ainin et al., 2015; Wang & Kim, 2017).

The service and industrial sectors are recognized as fast-moving sectors within the economy (Khanna, Papadavid, Tyson & Willem, 2016). A productive service sector is known to enhance the performance of other sectors, such as manufacturing. The service industry, also known as the tertiary industry, includes insurance, communication, banking, and transportation. It has contributed to the gross domestic product (GDP) through individual consumption, per capita income (Bottazzi & Gragnolati, 2015), and the demand for the manufacturing sector. According to the National Bureau of Statistics (NBS, 2021), the tertiary industry's share of GDP in Nigeria stood at approximately 92.76%, with an average employment contribution of around 38%. In a technologically advanced economy, the procurement of imported inputs is necessary to facilitate the service industry, leading to a continuous inflow of foreign exchange. Several studies have questioned the significant rise of the Dollar to Naira exchange rate in Nigeria (Rutkowski, 2015; Subair et al., 2019). The volatility of the exchange rate significantly affects the service sector due to increased service delivery costs, particularly in terms of procuring technical equipment from abroad using Nigerian Naira. Service sectors play a major role in heavily industrialized economies like China, Japan, Germany, and Russia, driving their economies forward.

However, emerging economies like Nigeria have not experienced substantial industrial growth, and their service industries have focused more on providing direct services to aid the production of consumer goods rather than capital goods, which could generate additional foreign exchange inflows. According to NBS (2021), foreign exchange has boosted the conversion rate of Naira to other trading partner currencies. In some developing economies like Kenya and Gambia, the service industry, particularly through tourism and hospitality services, has contributed significantly to foreign exchange earnings and economic growth. As a result, one of the main challenges in international macroeconomics is the issue of linking exchange rates to macroeconomic fundamentals, known as the "disconnect puzzle" of exchange rates (Obstfeld & Rogoff, 2000). This puzzle manifests itself in various ways, including the lack of out-of-sample predictability of exchange rates and the instability of ex-post relationships between exchange rates and fundamentals, which are particularly noticeable in the Nigerian service sector.

The pursuit of a stable foreign exchange regime has proven challenging in Nigeria, defying existing macroeconomic paradigms and models. Government failures resulting in corruption and bureaucratic inefficiencies have contributed to the volatility of foreign exchange rates, reducing the optimal production capacity in the service and industrial sectors. Therefore, this study aims to examine the consequential relationship between foreign exchange rates and firm survival in the Nigerian service sector, as existing research on the topic remains inconclusive.

LITERATURE REVIEW

This section explains the relevant concepts used in this study, the theory which underpins the study, as well as the empirical review of previous studies that have been conducted along similar research line. This is necessary to understand the depth of work that has been carried in the past and the relevance of the current study.

Concept of Exchange Rate

Exchange rate is an important macroeconomic indicator which measures the value of at which a currency can be exchanged for another. It is important in facilitating international trade and foreign direct investment. A country's exchange rate affects the predictability and profitability of international trade (Alagbe, Jimoh & Jimoh, 2021). Therefore, an understanding of the dynamics of exchange rate is important for macroeconomic development, policy making, business development, international relations and navigating the challenges of the global economy (Oladipupo & Ogbenovo, 2011; Otokini, Olokoyo, Okoye & Ejemeyovwi, 2018).

The exchange of goods and services among countries requires the use of the selling country's currency, which leads to the need for an exchange rate. The exchange rate represents the value and unit of a country's currency in relation to foreign currencies, linking domestic currency to foreign countries' currencies. The balance of payments records a nation's transactions with the rest of the world (Beatrice, 2001).

In Nigeria, the issue of exchange rate instability and its management has been a major policy concern. The country's heavy reliance on oil and the neglect of agriculture and the industrial sector have had a detrimental impact on the country's currency, which has fluctuated against major world currencies such as the British pound, the US dollar, and the euro (Agundu et al., 2013). Achieving a realistic exchange rate for the Nigerian Naira poses a significant challenge to policymakers, as it plays a crucial role in economic prosperity and growth (Onoh, 2002; Nnanna, 2004; Ogbonna, 2010).

Concept of Firm Survival

Firm survival is an important concept in business and entrepreneurship. It refers to a company's ability to continue operating and remain in business for an extended period of time. A company's survival is an important indicator of its long-term success and sustainability. Gwadabe and Amirah (2017) defines SME survival as the ability to operate for over five (5) years in a business environment characterized by uncertainty, volatility, complexity and ambiguity. Therefore, as rightly opined by Mbu-Ogar, Kangkpang, Nkiri and Amoke (2023), a firm's ability to have a competitive advantage is crucial to its existence.

In managing an organization, it is crucial to explore the variables that influence the success of new ventures, especially during the initial and challenging phase of conducting business in the market. Numerous studies have recognized that the performance of new ventures in the business sector is influenced by factors such as increased sales and demand. Hongo and Kato (2016) examine various industries, including ICT, transportation, manufacturing, real estate, courier service, and construction, to assess the potential impact of industry type on financial performance. Research and development (R&D) also play a significant role across different business sectors (Lima & Venancio, 2011 cited in Cegielka, 2020). Additionally, the size of the company matters, as industries that offer significant gains to large enterprises may have a lower survival rate compared to industries in which small firms perform better (Astebro & Bernhardt, 2000).

Another factor that influences the performance of new ventures is the level of human capital and knowledge-based factors. Companies with higher levels of human capital tend to perform better in the market. Researchers use variables such as education, age, gender, work experience, and ethnicity of the founders to capture the effect of human capital, which can also influence the capital structure (Lee & Zhang, 2011; Cegielka, 2020). However, it is important to note that there is a selection bias in startups, as owners with higher skills tend to perform better. Better-educated owners often have more capital, which provides them with additional financing opportunities. Nonetheless, these startups still face significant challenges in the market (Astebro & Bernhardt, 2000).

Theoretical Review of the Scapegoat Theory of Exchange Rate

This study is based on the scapegoat theory of exchange rate, which was proposed by Bacchetta and van Wincoop (2004, 2009, 2012 & 2013). The theory provides a theoretical framework that aims to explain the weak connection between macro fundamentals (such as money supplies and interest rates) and exchange rates. According to the scapegoat model, economic agents form rational expectations but have incomplete information. They are unaware of certain economic variables in the economy, such as shifts in money demand and real exchange rate shocks, and lack knowledge of the structural parameters that influence the exchange rate. This lack of information leads economic agents to assign excessive importance to certain observed macro fundamentals when determining the exchange rate, which can result in potential errors. In this model, it is the economic agents' perceptions of the structural parameters that influence the exchange rate, rather than the structural parameters themselves. The theory suggests that due to the frequent updating of expectations by agents regarding the impact of macro fundamentals on exchange rates, it can explain the highly unstable relationship observed between macroeconomic fundamentals and exchange rates.

Empirical Review

Empirical evidence from Huang et al. (2014) confirms that exchange rate movements affect the profits, survival, and sales of the services sector in Canada. The study shows that as the domestic currency appreciates, less productive firms have a lower survival rate, leading to a decline in sales for the surviving firms. Similarly, Iashmi and Kumar (2012) highlight the significant increase in India's export services, particularly in information technology and electronic services, which contributed to the country's global services trade. Khanna et al. (2016) also emphasize the role of finance, ICT, tourism, and transport services in Kenya's economic transformation.

Several studies examine the relationship between the service sector and economic growth. Linden and Mahmood (2007) find a two-way causality between the growth of the service sector and the growth rate of GDP per capita. Hansda (2005) shows that the service sector has a greater impact on growth compared to the industrial or agricultural sector. Mujahid and Alam (2014) analyze Pakistan's service sector and its potential contribution to growth, finding a significant relationship between the service sector and trade liberalization. Hussin and Ching (2013) investigate the contribution of economic sectors to growth in Malaysia and China, with the service sector playing a key role in Malaysia's economic growth and the manufacturing sector driving China's development.

Tang and Selvanathan (2007) explore the causal link between foreign direct investment and tourism in China, finding that foreign direct investment has contributed to the rapid growth of tourism in the country. Eichengreen and Gupta (2009) investigate the relationship between service sector productivity and living standards in Asia, observing a positive correlation between the output share of services and income per capita. They note that modern services have the highest productivity growth and their share in output tends to increase at higher income levels. Eichengreen and Gupta (2013) further highlight the second wave of service sector growth in countries that are open to trade, democratic, and close to major global financial centers. Moreover, Okwori, Ochinyabo and Sule (2014) analyzed the position of the manufacturing sector in the Nigerian economy before and during the global meltdown. It used time-series data from 2005 to 2008 to assess the effect of electricity, real GDP, inflation rate, and lending interest rate on manufacturing sector performance in Nigeria proxied by capacity utilization. The study found that lending interest rate does not significantly affect manufacturing sector performance in Nigeria. Electric consumption, real GDP, and inflation rate have a significant impact on the manufacturing sector.

Despite previous empirical studies that have examined the impact of foreign exchange on firm survival, there is still no clear consensus due to variations in country-specific contexts and analytical approaches. Consequently, there is a critical need to further establish a definitive relationship between exchange rates and the efficiency of the industrial sector in Nigeria. This study aims to address this research gap by employing advanced model estimation techniques to thoroughly examine the association between exchange rates and industrial performance in Nigeria. By adopting this approach, we aim to provide a more nuanced and accurate understanding of how exchange rate fluctuations influence the survival and overall performance of firms operating in the Nigerian industrial sector.

METHODOLOGY

The study utilizes time-series data from the World Bank Development Indicators (WDI) and the Central Bank Statistical Bulletin for the years 1986 to 2021. The dependent variable in this study is industrial output, which is represented by the total industry and service output. The primary independent variable is foreign exchange. Additionally, other control variables examined include inflation, government capital expenditure, and interest rate, as they have an influential role in firm survival in Nigeria (Obstfield & Rogoff, 2000; Ighodalo & Popogbe, 2022). Table 1 explains the variables used, how they were operationalized and measured.

Table 1: Measurement of Variables

Variable	Meaning	Measurement
Foreign Exchange Rate	This is the rate at which one currency is exchanged for another. Specifically, in this context, it is the exchange rate of a dollar to naira.	Official exchange rate
Firm Survival	It refers to the ability of a company to continue operating and remain in business over a specific period of time.	Industrial output of real GDP
Inflation	Rate of increase in the general price level over a period of time	Consumer price index

Variable	Meaning	Measurement
Gross Capital Expenditure	Gross Capital Expenditure refers to funds spent on capital assets or infrastructural development	Gross Capital Formation as percentage of GDP
Lending Interest Rate	Lending Interest Rate refers to the bank rate that usually meets the short- and medium-term financing needs of the private sector	Bank Lending Rate

Source: Authors' Compilation

To investigate the relationship between these variables, the study employs an Autoregressive Distributed Lag Model analysis.

Model Specification

In order to evaluate the impact of foreign exchange on Nigerian firms' survival, the following functional equation is set:

$$FEX_t = \beta_0 + \beta_1 INO_t + \beta_2 INF_t + \beta_3 GCE_t + \beta_4 LIR_t + \mu_t \quad (1)$$

Where

β_0 = Constant

FEX= Foreign Exchange

INO= Industrial Output

INF = Inflation

GCE = Government Capital Expenditure

LIR = Lending Interest Rate

$\beta_1 - \beta_4 =$ Coefficients

μ_t = Error term

The Autoregressive Distributed Lag (ARDL) modelling approach proposed by Pesaran and Shin (1999) is adopted for this study because it can be applied to variables that are integrated of order I(0) and I(1) unlike other cointegration techniques which may not accept such mixed stationarities (Nkoro & Uko, 2016). The ARDL functional form of equation 1 is given as:

$$\Delta FEX_t = \beta_0 + \beta_1 FEX_{t-1} + \beta_2 INO_{t-1} + \beta_3 INF_{t-1} + \beta_4 logGCE_{t-1} + \beta_5 LIR_{t-1} + \sum_{i=1}^{m} a_1 \Delta FEX_{t-1} + \sum_{i=1}^{m} a_2 \Delta INO_{t-1} + \sum_{i=1}^{m} a_3 \Delta INF_{t-1} + \sum_{i=1}^{m} a_4 \Delta logGCE_{t-1} + \sum_{i=1}^{m} a_5 \Delta LIR_{t-1} + \varepsilon_t \quad (2)$$

where $logGEX$ is natural log of government capital expenditure, Δ is first differential operator, m is the ARDL model maximum lag order, and $a_1 - a_5$ is the short run dynamic parameters of the regressors.

RESULTS AND DISCUSSIONS

Preliminary Analysis

The purpose of conducting the descriptive statistics was to enhance comprehension of the types of variables utilized. Additionally, the unit root test was performed to assess the stationarity of the variables. The outcomes of these analyses are subsequently discussed.

Table 2: Descriptive Statistics

Descriptive Stat	FEX	GCE	INF	INT	INO
Mean	123.064	645.423	19.443	18.533	31220.030
Median	123.195	368.475	12.715	17.695	25904.560
Maximum	403.580	1965.300	72.840	31.650	53655.260
Minimum	1.750	1.170	5.390	9.960	14020.940
Std. Dev.	109.474	662.214	17.575	4.057	14560.250
Skewness	0.868	0.525	1.738	0.825	0.433
Kurtosis	3.042	1.826	4.701	4.848	1.534
Jarque-Bera	4.519	3.724	22.461	9.208	4.348
Probability	0.104	0.155	0.000	0.010	0.114
Sum	4430.32	23235.24	699.95	667.17	1123921
Sum Sq. Dev.	419461	15348461	10811.2	575.974	7.42E+09

Source: Authors' Computation

The study presents the descriptive statistics of the variables analyzed in Table 2. The mean values for foreign exchange, gross capital expenditure, inflation, interest rate, and industrial output are 123.06, 645.42, 19.44, 18.53, and 31,220.03, respectively. This indicates that, on average, foreign exchange was N123, while industrial output was estimated to be N31,220 billion during the examined period (1986-2021). The maximum value for foreign exchange was N403, and for industrial output, it was N53,655 billion. Conversely, the minimum values for these two variables were N1.75 and N14,020 billion, respectively. The Jacque-Bera test indicates that most of the variables follow a normal distribution.

Table 3: Unit Root Test

Variable	ADF Critical Value	T-Stat (5% significance level)	Order of Integration
FEX	0.006	-2.951	I(1)
INF	-3.424	-2.951	I(1)
logINO	-4.746	-2.951	I(1)
INT	-2.951	-3.558	I(0)
logGCE	-3.685	-2.948	I(0)

Source: Authors' Computation

The stationarity of the variables was examined by conducting the Augmented Dickey Fuller (ADF) unit root test and the result is presented in Table 3.. The test results indicate that FEX, INF, and logINO reject the null hypothesis of having a unit root and become stationary after taking the first difference [I(1)]. However, INT and logGCE remain stationary at the level [I(0)]. Due to this mixed stationarity, the Autoregressive Distributed Lag (ARDL) model proposed by Pesaran and Shin (1999) is suitable for further analysis.

Table 4: ARDL Long Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LOGINO(-1)	0.750	0.152	4.925	0.000
LOGINO(-2)	0.528	0.201	2.626	0.015
LOGINO(-3)	-0.377	0.147	-2.573	0.017
FEX	-0.0004	0.000	-2.939	0.008
FEX(-1)	0.0004	0.000	3.224	0.004
INF	-0.0005	0.000	-2.459	0.022
INF(-1)	0.0004	0.000	1.685	0.106
INT	0.002	0.001	2.058	0.052
INT(-1)	-0.002	0.001	-2.736	0.012
LOGGCE	0.018	0.007	2.515	0.020
C	0.422	0.156	2.705	0.013

R-squared	0.997
Adjusted R-squared	0.996
F-statistic	763.218
Prob(F-statistic)	0.000
Durbin-Watson stat	1.861

Source: Authors' Computation

The long-run estimates of the ARDL model are displayed in Table 4. The results indicate that there is a lag effect of INO, FEX, INF, and INT on the current INO. Specifically, a 1% increase in industrial output led to a 75% and 53% overall increase in the sector's output in the first and second lags respectively. This demonstrates that the performance of the industrial sector in the first and second periods positively influenced its output. An increase in FEX resulted in a 0.04% reduction in industrial output. However, in the first period, the lag effect showed a similar impact on INO, but in a positive direction.

There exists a positive relationship between INT and INO. The lagged value (INT(-1)) however show a negative effect on industrial output. A 1% increase in INT resulted in a 0.2% increase in INO. However, in the first lag, a 0.2% reduction in industrial output was observed as a consequence of a 1% increase in INT. This could potentially indicate long-term investment by the industrial sector. Additionally, a significant and positive relationship was found between logGCE and INO. Consequently, a rise in gross capital expenditure led to a 2% increase in industrial output.

The R-squared value of 0.997 indicates that the model explains approximately 99.7% of the variation in industrial output. The F-statistic tests the overall significance of the model, and a p-value of 0.000 indicates that the model is statistically significant. The Durbin-Watson statistic of 1.861 indicates no significant autocorrelation.

Table 5: Long Run Form and Bounds Test

F-Bounds Test	**Null Hypothesis: No levels relationship**			
Test Statistic	Value	Significance	I(0)	I(1)
F-statistic	4.791	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Authors' Computation

The bounds test examines the long-run relationship between the variables, and the findings are displayed in Table 5. If the F-statistic is below I(0), the null hypothesis of no long-run relationship is accepted. Conversely, if the F-statistic exceeds I(1), we reject the null hypothesis, indicating the presence of a long-run relationship. When the F-statistic falls within the two boundaries, no definitive conclusion can be drawn. According to the results presented in Table 4, it is evident that a long-run relationship exists between the variables; hence, the null hypothesis is rejected.

Table 6: Error Correction Model

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(LOGINO(-1))	-0.151	0.112	-1.350	0.191
D(LOGINO(-2))	0.377	0.113	3.339	0.003
D(FEX)	0.000	0.000	-4.104	0.001
D(INF)	0.000	0.000	-3.374	0.003
D(INT)	0.002	0.001	2.990	0.007
ECT(-1)*	-0.100	0.017	-5.940	0.000

Source: Authors' Computation

Table 6 presents the short-term relationship between the independent variables under examination and industrial output. The estimates indicate that there is a positive relationship between INO and the performance of the industrial sector with a lag of two periods, but a negative relationship with a lag of one period. However, only the effect with a lag of two periods is statistically significant. Additionally, the variables FEX, INF, and INT also show a positive and significant relationship with INO. The ECT, which represents the error correction term, reveals the speed at which the model adjusts back to equilibrium. The ECT results demonstrate that 10% of the deviation in the short term is corrected within the first month of the year. As anticipated, the result is negative and highly significant.

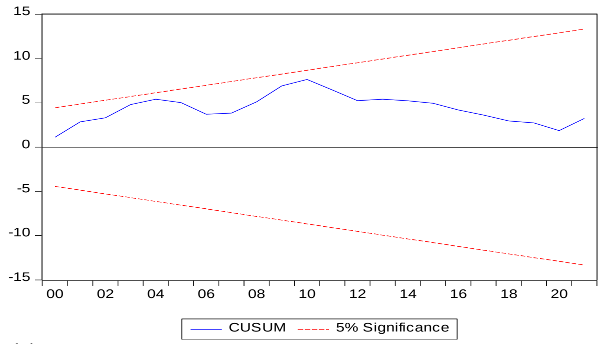
Table 7: Diagnostic Tests

Test	T-Stat	p-Value
Breusch-Godfrey Serial Correlation LM Test	1.217	0.317
Ramsey Reset Test	0.577	0.570
Heteroskedasticity Test	1.296	0.292
Jacque-Bera	0.533	0.766

Source: Authors' Computation

Four diagnostic tests, namely serial correlation, stability, heteroscedasticity, and normality, were conducted, and the results are presented in Table 7. Based on the p-values obtained from these tests, we fail to reject the null hypothesis for all four tests at a significance level of 0.05. Consequently, we can conclude that the model does not exhibit serial correlation, indicating its relative stability and reliability. Moreover, the errors in the model demonstrate constant variance, and the variables used follow a normal distribution.

Figure 1A: CUSUM



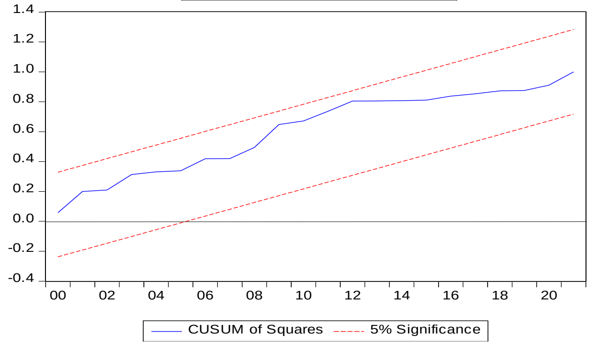


Figure 1B: CUSUM of Squares

It is crucial to test the stability and accuracy of the estimated model as well. Figures 1A and 1B depict the cumulative sum of the recursive residuals (CUSUM) and the CUSUM of squares test. Both tests fall within the 0.05 significance lines, indicating that the model is stable.

Discussion of Findings

The study finds that past industrial output has a significant influence on the present level of industrial output. A similar finding was reported in Linden and Mahmood's study (2007), which revealed a two-way causal relationship between industrial output and gross economic output. In other words, the positive performance of the industrial sector had a positive impact on the national economy, while the national economy also had a positive impact on the industrial sector.

This study also reveals that a stronger domestic currency can make exports relatively more expensive, potentially reducing the competitiveness of domestic industries in international markets. As a result, industrial output decreases. On the other hand, a decrease in the exchange rate will likely give domestic industries competitive advantage, which will lead to increased output. Also, the negative coefficient for INF suggests that an increase in inflation rate leads to a decrease in industrial output. This finding contradicts the results of Abina and Mogbeyiteren's study (2021) but aligns with the findings of Khanna et al. (2016). Okwori et al. (2014) also discovered a negative relationship between industrial sector performance and the consumer price index (inflation). Inflation reducing purchasing power and can lead to higher production costs, such as increased wages and high costs of raw materials. This increased cost burden can negatively impact industrial performance as businesses encounter higher costs and reduced profitability.

The result obtained on the interest rate contradicts that of Okwori et al. (2014). While our study found a positive relationship between interest rate and industrial performance, Okwori et al. (2014) observed a negative relationship. The lagged interest rate however reveals a negative relationship. These mixed findings may indicate that the relationship between interest rates and industrial output is influenced by other factors such as investment behavior of businessmen, availability of credit, and monetary policy measures in place. The finding also suggest that higher government spending on capital projects can have a stimulating effect on industrial output.

CONCLUSION AND RECOMMENDATION

This study investigates the influence of foreign exchange on the survival of the industrial sector from 1986 to 2021. The analysis employed the Autoregressive Distributed Lag (ARDL) model. One significant finding of this study reveals that an increase in foreign exchange has a detrimental effect on the performance of the industrial sector. Consequently, if the exchange rate continues to rise, it will pose a threat to the long-term survival of the Nigerian industry. Since the Nigerian industrial sector heavily relies on imported raw and intermediate materials, obtaining these goods necessitates foreign exchange. Another notable finding is the negative correlation between the inflation rate and industrial output. Hence, as the inflation rate rises, industrial output declines. While industrial sector producers do import some raw materials, they also acquire goods locally. Therefore, a high consumer price index would result in higher production costs, negatively impacting performance.

Based on the findings of this study, it is recommended to ensure a stable and accessible foreign exchange for Nigerian industries. However, this policy is not sustainable or desirable, as it would lead to an economy dependent on imports. Consequently, efforts should be made to source raw materials domestically and promote their production. By boosting local production, prices would decrease, thereby addressing the challenge of inflation faced by the industrial sector and the overall economy. In conclusion, a focus on internal resources is crucial for achieving long-term industrial survival.

REFERENCES

Abass, S. I., & Aidi, H. O. (2018). Exchange rate volatility and the Nigerian industrial sector performance. *Saudi Journal of Economics and Finance, 2*(5), 208-215.

Abina, A. P., & Mogbeyiteren, O. L. B. (2021). Exchange rate fluctuation and sectoral output in Nigeria. *International Journal of Innovative Finance and Economics Research, 9*(3), 125-144.

Agundu, P.C.C, Akani, W.H. & Kpakoi, F.C. (2013). Exchange rate dynamics and Balance of Payment repositioning in Nigeria. *European Journal of Business and Management, 5*(29), 84-91

Ainin, S., Nayshbandi, M.M., Moghavvemi, S., & Noor, I.J. (2015). Factors Influencing the use of Social Media by SMEs and its Performance Outcome. *Industrial and Data System, 115*(3), 570-587.

Akhtar, I. M. D. (2016). *Research Design.* New Delhi: Jamia Millia Islamia.

Alagbe, E.A, Jimoh, S.O, & Jimoh, B.A (2021). Effect of Exchange Rate Changes on Financial Performance of Listed Oil and Gas Companies in Nigeria. *African Multidisciplinary Journal of Development (AMJD), 10*(3), 74-89.

Anyanwu, J. C. (1997). *The structure of the Nigerian Economy (1960-1997).* Joanee educational publishers.

Astebro. T. & Bernhardt, U. (2000). Start-up financing, owner characteristics and Survival. *Journal of Economics and Business, 55(*4), 303-319

Bacchetta, P., & van Wincoop, E. (2004). A scapegoat model of exchange rate determination. *American Economic Review, Papers and Proceedings, 94,* 114-118.

Bacchetta, P., & van Wincoop, E. (2009). On the unstable relationship between exchange rates and macroeconomic fundamentals. NBER Working Paper No. 15008.

Barloloni, E., & Baussiola, M. (2018). Driving business performance: Innovation complementarities persistence patterns. *Industry and Innovation, 25*(5), 505-525.

Beatrice, K.M. (2001). Long run and Short run determinants of the real Exchange rate in Zambia, Working Paper No 40 http//www handel's gu./econ/

Boon, C., Den Hartog, D. N., & Lepak, D. P. (2019). A Systematic Review of Human Resource Management Systems and Their Measurement. *Journal of Management, 45*(6), 2498–2537.

Bottazzi, G., & Gragnolati, U. (2015). Cities and clusters: Economy-wide and sector-specific effects in corporate location. *Regional Studies, 49*(1), 113–129. doi: 10.1080/00343404.2013.870635

Cegielka, M. (2020). Factors determining the survival of new companies. *Central European Economic Journal, 7*(54), 300-315.

Droge, C., Calantone, R., & Harmancioglu, N. (2008). New product success: Is it really controllable by managers in highly turbulent environments? *Journal of Product Innovation Management, 25*(3), 272-286.

Drucker, P. F. (1998). The discipline of innovation. *Harvard Business Review, 76*(6), 149-157.

Eichengreen, B., & Gupta, P. (2009). The service sector as India's road to economic growth. NBER Working Paper No. 1675.

Eichengreen, B., & Gupta, P. (2013). The two waves of service sector growth. *Oxford Economic Papers, 65*(1), 96–123.

Gwadabe, U. M., & Amirah, N. A. (2017). Entrepreneurial competencies: SMES performance factor in the challenging Nigerian economy. *Academic Journal of Economic Studies, 3*(4), 55–61.

Hansda, S. K. (2005). Sustainability of services-led growth: An input-output exploration of the Indian economy. University Library of Munich, Germany.

Hongo, T. & Kato, M. (2016). Entrepreneurial human capital and the survival of new firms in high- and low-tech sector. *Journal of Evolution and Economics Springer, 25*(5) 925-952

Huang, H., Pang, K., & Tang, Y. (2014). Effects of exchange rates on employment in Canada. *Canadian Public Policy, 40*(4), 339–352.

Hussin, F. A., & Ching, C. W. (2013). The contribution of economic sectors to economic growth: The cases of Malaysia and China. *International Journal of Academic Research in Economics and Management Sciences, 2*(2), 36–48.

Iashmi, P., & Kumar, S. (2012). Economic growth and impact of service's sector in India. *International Journal of Business Management & Economic Research, 3*(5), 7-10.

Ighodalo, D. E., & Popogbe, O. O. (2022). Social media business network and MSMEs performance in Ogun state, Nigeria. *UNIBEN Journal of Marketing, 1*(1), 20-37.

Khanna, A., Papadavid, P., Tyson, J., & Willem te Velde, D. (2016). The role of services in economic transformation with an application to Kenya. Supporting Economic Transformation (SET), ODI and UKaid.

Kogabayev, T., & Maziliauskas, A. (2017). The definition and classification of innovation. *Holistica, 8*(1), 59-72.

Lanza, R., & Maurer, A. (2015). Services and global value chains: Some evidence on servicification of manufacturing and services networks. WTO Staff Working Paper.

Lee, J. & Zhang, X. (2011). An Overview of Eco-Driving Theory, Capability Evaluation and Training. *MDPI Journal*, *21*(19), 2442-2459

Linden, M., & Mahmood, T. (2007). Long run relationship between sector shares and economic growth: A panel data analysis of the Schengen Region. Economics and Business Administration, University of Joensuu, Finland.

Mbu-Ogar, G. B., Kangkpang, K. A., Nkiri, J. E., & Amoke, C. V. (2023). Sustainability reporting and survival of selected oil and gas companies in Nigeria. *Nigerian Journal of Management Sciences*, *24*(1b), 173-182.

Mujahid, H., & Alam, S. (2014). The impact of financial openness, trade openness on macroeconomic volatility in Pakistan: ARDL Co integration approach. *Journal of Business Management & Economics*, *5*(1), 001-008.

Mukand, S., & Rodrik, D. (2015). The political economy of liberal democracy. National Bureau of Economic Research.

National Bureau of Statistics. (2021). Nigerian gross domestic product report for quarter four, 2021.

Nkoro, E., & Uko, A. K. (2016). Autoregressive distributed lag (ARDL) cointegration technique: Application and interpretation. *Journal of Statistical and Econometric Methods, 5*(4), 63-91.

Nnanna, D.O (2004). Financial Sector Development and Economic growth in Nigeria. *Economic and Financial Review, 3*, 23-34

Ogbonna, B. C. (2010). Financial development, trade openness and economic growth in a small open economy: Evidence from Botswana. *Journal of Banking, 4*(1), 59-76.

Okwori, J., Ochinyabo, S., & Sule, A. (2014). The effect of interest rate on manufacturing sector performance in Nigeria (1986-2012). *The Benue Journal of Social Sciences, 2*(1), 112-129.

Oladipupo, A. O., & Ogebenovo, F. O. (2011). Impact of exchange rate on balance of payment in Nigeria. *An International Multidisciplinary Journal, 5*(4), 73-88.

Onoh, J.O. (2002). *Dynamics of Money, Banking and Finance.* An Emerging Market, Astra Meridian Publisher.

Onuwkwube, H. N., Iyagba, R., & Fajana, S. (2010). The influence of motivational factors on job performance of construction professionals in construction companies in Nigeria. *Journal of Applied Psychology, 79, 98*-107.

Pesaran, M. H., & Shin, Y. (1999). *An autoregressive distributed lag modeling approach to cointegration analysis*. In S. Strøm (Ed.), Econometrics and economic theory in the 20th century: The Ragnar Frisch Centennial Symposium (pp. 371-413). Cambridge University Press.

Prajogo, D. I., & Ahmed, P. K. (2006). Relationship between innovation stimulus, innovation capacity and innovation performance. *Research and Development Management, 36*(5), 499-515.

Ritala, P., Kianto, A., Vanhala, M., & Hussinki, H. (2023). To protect or not to protect? Renewal capital, knowledge protection and innovation performance. *Journal of Knowledge Management, 27*(11), 1-24.

Rutkowski, R. (2015). Service sector reform in China. Policy brief, (PB15-2), Peterson Institute for International Economics.

Singh, P. (2004). Globalization and Education. *Educational Theory, 54*(1), 103-115.

Subair, K., Tella, S. A., & Somoye, R. (2019). Dynamics of Exchange Rate and the Performance of Service Industry: The Nigerian Experience. *Jinnah Business Review, 7*(1), 1-10.

Tang, S., & Selvanathan, S. (2007). The relationship between foreign direct investment and tourism: Empirical evidence from China. *Institute of Economics, 5*(2), 59–68.

Wang, Z., & Kim, H. G. (2017). Can Social Media Marketing Improve Customer Relationship Capabilities and Firm Performance? Dynamic Capacity, *Journal of Interactive Marketing. 39,* 15-26

Zawawi, N. M., Wahab, S. A., Al-Mamun, A., Yaacob, A. S., AI-Samy, N. K., & Fazal, S. A. (2016). Defining the concept of innovation and firm innovativeness: A critical analysis from resources-based view perspective. *International Journal of Business and Management, 11*(6), 87-94.