

Human Capital Flight: The *Japa* Phenomenon and Nigeria's Economic Growth Assessment

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Abstract

This study assesses the economic impact of the *Japa* phenomenon on Nigeria from 1981 to 2024. The research was conducted to evaluate how mass migration and the resulting brain drain affect national productivity and whether worker remittances provide a sufficient economic dividend to offset labor losses. Using an ex-post-facto research design, the study utilizes a Vector Error Correction Model to analyze the long-run and short-run relationships between gross domestic product and key variables, including net migration, workers' remittances, foreign direct investment, and exchange rates. Empirical analysis reveals that net migration exerts a significant negative impact on Nigeria's economic performance, suggesting that the exodus of skilled professionals depletes the country's productive capacity. While home remittances contribute positively to the economy ($\beta = 0.2114\$$), their long-run impact remains statistically insignificant ($p = 0.1812\$$) in offsetting labor losses. The findings also indicate that the intensity of this migration syndrome is driven by deteriorating domestic push factors such as unemployment and economic hardship coupled with increasingly attractive international pull factors. These results suggest that the *Japa* syndrome represents a critical structural challenge necessitating immediate and drastic policy intervention. The study highlights that relying on remittance inflows alone is insufficient to compensate for the loss of human capital. Consequently, these findings are vital for policymakers to prioritize strategies that accelerate domestic economic growth, enhance employability, and improve the business environment to retain talent. Strengthening these areas is essential to transition from a "run-for-your-life" migration mindset toward sustainable national development.

Keywords: Brain drain, remittance flows, diaspora dividend, labor channel, technology transfer, Vector Error Correction Model, Nigeria

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INTRODUCTION

Human mobility has emerged as a defining characteristic of the twenty-first-century global economy, reshaping the socio-economic landscapes of both sending and receiving nations. In the Global South, migration is frequently driven by a pursuit of better economic opportunities, political stability, and improved quality of life. However, for Nigeria, Africa's most populous nation, this mobility has taken on an increasingly urgent and desperate character, colloquially known as the *Japa* syndrome. Derived from the Yoruba language, the term translates to “fleeing” or “escaping” from a state of entrapment, danger, or desperation (Liu, 2023; Okonkwo, 2024). The intensity and cultural significance of this movement have gained such global prominence that *Japa* was officially recognized as a 2024 entry in the Oxford Advanced Learner's Dictionary. Distinct from historical patterns of circular labor mobility aimed at educational advancement with the intent to return, the contemporary wave is characterized by a “run-for-your-life” mindset that professionals and youth increasingly view as a permanent exit strategy (Okonkwo, 2024).

This desperation is rooted in a deteriorating domestic environment where systemic push factors including hyper-inflation, persistent unemployment, structural insecurity, and macro-monetary instability have converged to create what scholars describe as a “rock-bottom” socio-economic condition (Bello, 2023; Olumayo and Abiri, 2023; Nwobodo, 2024). Consequently, individuals seek “green pastures” for basic survival rather than merely “greener pastures” for incremental career progression (Abdul-Maliq et al., 2024). These domestic push factors are further intensified by aggressive international pull factors, as developed economies in the Global North actively recruit Nigerian professionals to fill structural labor deficits created by aging populations (Smith, 2024; *Vanguard*, 2024a, 2024b). This mass exodus is particularly disastrous in the health and education sectors; for instance, Nigerian universities reportedly lose up to 60 percent of their senior academic staff to brain drain within five-year cycles, while the national healthcare system faces a structural crisis following the emigration of over 16,000 doctors (Lawal, 2025; Zakir, 2025).

The macroeconomic implications of the *Japa* syndrome are multifaceted, reflecting a complex migration–development nexus. On the labor channel, the ceding of skilled labor represents a profound “brain drain” that depletes the domestic productive base, diminishes the quality of essential public services, and creates a severe deficit in national productivity (Abdul-Maliq et al., 2024). On the financial channel, however, the Nigerian economy has become increasingly dependent on diaspora inflows through workers' home remittances, which reached approximately US\$21 billion in 2022, effectively rivaling traditional revenue sources such as oil (PWC, 2022). This dynamic creates a fundamental policy dilemma: does the “diaspora dividend” of financial inflows provide a sufficient stimulus to compensate for the structural loss of expertise and youth productivity? Empirical evidence remains divided on this issue, with some studies pointing to the positive household

impacts of remittances, while others warn that human capital flight creates long-term structural dependencies and drains vital human resources (Adeseye, 2021; Abdul-Maliq et al., 2024).

This study contributes to the empirical literature by using a Vector Error Correction Model (VECM) to assess the impact of human mobility on the Nigerian economy over a 44-year period from 1981 to 2024. The primary objective is to determine the extent to which the *Japa* syndrome has affected Nigeria's economic growth, specifically evaluating whether the positive contributions of home remittances can offset the negative effects of net migration. Furthermore, the research analyzes the performance of key macroeconomic variables including capital formation, exports, imports, foreign direct investment, and the moderating role of the exchange rate to understand if the desperation to migrate is justified by a structural collapse in domestic productivity. By providing robust, evidence-based assessments, this paper aims to guide Nigerian policymakers in developing strategies to stem human capital flight, enhance domestic talent retention, and foster a more inclusive growth environment.

Globally, these push factors intersect with aggressive recruitment policies in the Global North such as the United Kingdom's Health and Care Worker Visa and Germany's skilled immigration legislation designed to offset labor shortages caused by aging demographics (OECD, 2023). Similar labor export dynamics occur in developing nations like India, the Philippines, Ghana, and Kenya; however, Nigeria's situation is distinct due to the rapid, concentrated depletion of essential workers without institutional frameworks to capture return mobility (World Bank, 2022, 2023).

Research gap

Despite the growing body of literature on migration and development, no empirical study to date has utilized a Vector Error Correction Model (VECM) over a 44-year longitudinal dataset (1981–2024) to simultaneously evaluate the offsetting dynamics of both the labor channel (net migration) and the financial channel (home remittances) on Nigeria's growth domestic product (GDP) growth. This study fills this empirical gap.

Research objectives

The study pursues the following objectives:

- a) To evaluate the long-run and short-run impacts of net migration (labor channel) on Nigeria's economic growth performance.
- b) To examine the extent to which workers' home remittances (financial channel) offset the economic losses induced by human capital flight.
- c) To evaluate the moderating influence of exchange rate volatility, capital formation, trade flows, and foreign direct investment on national productivity.

LITERATURE REVIEW

Conceptual framework

Japa: The word *Japa*, as described by Liu (2023), Abdul-Maliq et al. (2024), Okonkwo (2024), among others, means run away, elope, escape, or run to safety. While the word is of Yoruba origin, the phenomenon it describes mass migration of youth and professionals from developing to developed countries is a world-wide phenomenon.

Diaspora: This word has a Greek origin, *dia Speiro*, meaning to sow, scatter, or disperse. The word is often used to describe the Jews who live around the world as a result of their dispersion. In more recent and contemporary discourse, the word is used to describe tribes, races, or nationalities that have large populations of their citizens in other countries.

Workers' home remittances: Workers' home remittances (WHR) or home remittances, (HR) as they are also called are monies and other items of monetary value sent home by immigrants to relations back in their home countries (Buch and Kuckulenz, 2004; Abdul-Maliq, 2018; Ratha, 2025).

Diaspora dividend: This term describes collectively, the benefits (financial, material, and otherwise) that migrants bestow, confer, or attract to their home countries. It may also include other gains directly or indirectly from a country's citizens living abroad, such as the home remittances explained above, foreign direct or portfolio investments initiated, attracted, or facilitated by them or by acquaintances for the home countries, (Abdul-Maliq et al., 2024).

Greener pasture: This refers to a society perceived to be better or more favorable, attractive, or potentially offering greater opportunities than one's own present country or society of abode.

Green pasture: When someone reaches what can be described as rock-bottom level in their home society, especially in the socio-economic sense, any other society is deemed better than their own. That person is therefore looking for green, not greener pasture (Abdul-Maliq et al., 2024). It is like leaving a brown pasture to a green one.

Theoretical framework

While no single migration–economic growth theory exists per se, this study anchors its analysis in three theoretical paradigms: human capital theory (Becker, 1964), the new economics of labor migration (Stark and Bloom, 1985), and the brain drain vs. brain gain framework (Docquier and Rapoport, 2012). Human mobility influences national development through three primary channels.

- a) The labor channel: Grounded in Becker's (1964) human capital theory, this channel reflects the physical loss of skilled human capital. When experts and trained professionals emigrate, the ceding country suffers a structural deficit in aggregate productivity (Dafiel, 2025).
- b) The technology transfer channel: This refers to the expertise migrants bring to host countries. In the Nigerian context, this manifests primarily as an uncompensated "brain drain" in health, education, and engineering (Lawal, 2025; Zakir, 2025).
- c) The financial channel: Anchored in the new economics of labor migration (NELM) theory (Stark and Bloom, 1985), this operates through workers' home remittances (WHRs). These transfers act as private income safety nets for households; however, their macroeconomic growth impact depends on whether they are invested productively or spent on basic consumption (Afolabi and Osabuohien, 2023; Ratha, 2025).

Review of empirical studies

Empirical assessments of migration's impact on economic growth show conflicting results. Clemens (2014) argues that economic development increases the tendency to migrate until an economy reaches an upper middle-income threshold, as rising aspirations outpace domestic growth. In contrast, a study on Algeria using a VECM reported that the impact of migrant remittances was negative in both the short and long runs (Belmimoun et al., 2014). For Nigeria, the data is equally complex. Some researchers find a positive and significant relationship between remittances and GDP, noting that diaspora inflows reached US\$21 billion in 2022, effectively rivaling oil revenue in its contribution to the economy (Adeseye, 2021; PWC, 2022). However, recent quantitative studies conclude that the danger inherent in the *Japa* syndrome outweighs these financial gains (Umeh et al., 2024). The survey of the National Bureau of Statistics (NBS, 2023) reveals that the perception of danger does not retard the migration mindset, confirming the assertion that *Japa* is a survivalist decision to escape domestic instability (Liu, 2023). Furthermore, the role of social media has altered the migration landscape, making the desire to *Japa* more intense than historical trends suggest (Seluman et al., 2024). Ultimately, while some identify beneficial effects of remittances, the predominant empirical view remains that human capital depletion negatively impacts domestic productivity (Borjas, 2019; Ngere et al., 2024).

RESEARCH METHODOLOGY

Research design and source of data

This study adopts an ex-post-facto research design to assess the longitudinal impact of human mobility on the Nigerian economy. The analysis uses multivariate annual time-series data covering a 44-year period from 1981 to 2024. Secondary data were sourced from the World Bank's World Development Indicators (WDI)

and the International Monetary Fund (IMF) database. This period was selected to capture multiple cycles of Nigerian migration, from the post-oil boom era to the contemporary *Japa* syndrome.

Model specification

The study is formulated within a standard economic growth framework where GDP serves as the proxy for economic growth and the primary dependent variable. The target independent variables are Net Migration (NM) and Home Remittances (HR). To ensure the model is robust and accounts for other macroeconomic drivers, several control variables are included—Gross Fixed Capital Formation (GFCF), Foreign Direct Investment (FDI), Exports (EXPRT), Imports (IMPRT), and the Exchange Rate (EXR) as a moderating variable.

The functional relationship of the growth model is specified as follows:

$$\text{GDP} = f(\text{HR}, \text{NM}, \text{GFCF}, \text{EXPRT}, \text{IMPRT}, \text{FDI}, \text{EXR})$$

In its econometric form, the model is expressed as:

$$\ln \text{GDP} = \beta_0 + \beta_1 \ln \text{HR} + \beta_2 \ln \text{NM} + \beta_3 \ln \text{GFCF} + \beta_4 \ln \text{EXPRT} + \beta_5 \ln \text{IMPRT} + \beta_6 \ln \text{FDI} + \beta_7 \ln \text{EXR} + \varepsilon$$

Where β_0 is the intercept, β_1 – β_7 are the coefficients of the independent variables, and ε represents the error term. All variables are transformed into natural logarithms to ensure linearity and to stabilize the variance of the series.

Parameterization justification: The inclusion of seven independent variables alongside the dependent variable in an annual time series covering 44 observations (1981–2024) yields 36 degrees of freedom. This provides sufficient statistical power for co-integrated VECM estimation with optimal lag $k = 3$, satisfying the sample size requirements established by Johansen (1995).

Estimation technique and diagnostic testing

The study employs the VECM to analyze the dynamic relationship between the variables. This technique is chosen because it allows for the estimation of both short-run and long-run steady-state relationships while accounting for co-integrated series. Before the estimation of the VECM, several diagnostic tests were conducted. First, the Augmented Dickey-Fuller (ADF) test was applied to check for stationarity and to determine the order of integration of the series. Second, the Johansen Co-integration test was utilized to determine the number of co-integrating equations, which confirms whether a stable long-run relationship exists among the variables.

Third, a Lag Order Selection Criteria test was performed to identify the optimal lag length (Lag 3), ensuring that the model captures the delayed effects of migration and economic shocks. Finally, post-estimation diagnostic tests, including

the Jarque-Bera test for residual normality, the White test for heteroscedasticity, and the Cumulative Sum (CUSUM) and the CUSUM of Squares tests were conducted to ensure the stability and reliability of the estimated coefficients for long-term policy analysis.

Granger causality test: To establish the directional flow of influence and potential feedback loops among the variables, the Pairwise Granger Causality test was conducted prior to VECM estimation.

Data limitation statement: Net migration data from the World Bank WDI for Nigeria are derived from five-year demographic estimates and interpolations due to the absence of a comprehensive national emigration registry. While this represents a data limitation, World Bank estimates remain the standard benchmark for cross-country empirical migration research (World Bank, 2022, 2023).

RESEARCH FINDINGS

Descriptive statistics

The analysis of the 44-year dataset reveals distinct characteristics in Nigeria's macroeconomic landscape (see Table 1 in appendix). The descriptive statistics indicate that while GDP maintained a relatively stable growth trajectory during the study period, other variables exhibited significant instability. Specifically, trade variables exports and imports reflected high volatility, suggesting that Nigeria's integration into the global market remains susceptible to external fluctuations.

The primary variable of interest, Net Migration (NM), showed a negative mean with high variability. This negative trend confirms a consistent pattern of emigration from Nigeria, while the significant non-normality of the distribution suggests that human mobility has been irregular and driven by specific socio-economic shocks rather than a steady flow. Similarly, the data for foreign direct investment inflows and outflows indicated greater fluctuations in capital exit than in entry.

Furthermore, the behavior of the exchange rate (EXR) highlights a period of intense macroeconomic instability. The extreme volatility and strong non-normality observed in the exchange rate data suggest that the Nigerian economy has been frequently exposed to significant currency shocks. This volatility in the moderating variable, combined with the irregular patterns of net migration, underscores the "run-for-your-life" desperation that characterizes the contemporary *Japa* phenomenon.

ADF Stationarity Unit Root Test Output

The unit root properties of the variables were evaluated using the ADF test. The results indicate that the majority of the series are non-stationary at their levels but become stationary after the first difference, rejecting the null hypothesis of a unit root at the

1 percent significance level. While GDP and Net Migration (NETMG) show strong stationarity, GFCF exhibits borderline stationarity, suggesting a moderate level of persistence in Nigeria's capital formation trends. Similarly, foreign investment flows and trade variables appear sensitive to global market conditions but remain stable over the longitudinal period.

Following the stationarity tests, the Granger causality analysis was conducted to identify the directional flow of influence between the variables. The results indicate that home remittances and the exchange rate significantly influence GDP, suggesting that labor force development and currency stability are the primary drivers of Nigeria's economic growth. Furthermore, the analysis reveals that imports and FDI influence net migration, implying that economic opportunities or the lack thereof directly dictate human mobility flows. Conversely, the finding that capital investment and exports do not significantly drive GDP suggests that structural adjustments are required to enhance domestic investment efficiency and trade competitiveness (see Table 2).

Lag Order Selection Criteria Results

The optimal lag for the model was determined using the Vector Autoregressive (VAR) lag order selection criteria. Based on multiple criteria, including the Akaike Information Criterion (AIC) and Hannan-Quinn (HQ), Lag 3 was identified as the optimal lag length. This suggests a strong persistence in Nigeria's macroeconomic relationships, requiring a three-period lag to capture the dynamic interactions between migration and growth. The declining values across the selection criteria confirm an improved model fit, reinforcing the need for policymakers to account for delayed effects when implementing economic interventions (see Table 3).

Johansen Cointegration test

The Johansen Cointegration test confirms the existence of a long-run equilibrium relationship among the variables. The identification of five co-integrating equations at the 5 percent significance level implies that GDP, investment, trade, and migration move together in a stable long-term trajectory despite short-term volatility. This confirms that the *Japa* phenomenon and its associated financial flows have a deep-seated, structural relationship with Nigeria's economic stability (see Table 4).

Long-run VECM estimates

The Vector Error Correction Model (VECM) results provide a nuanced assessment of the structural relationships within the Nigerian economy (see Table 5). The analysis reveals a significant negative relationship between GDP growth and capital formation, suggesting that economic expansion has not effectively translated into higher capital stock due to structural inefficiencies in investment allocation. Furthermore, the

significant negative impact of imports on GDP highlights a heavy reliance on foreign goods, which continues to constrain domestic production capacity (see Table 6).

Regarding human mobility, the model indicates that increasing capital investment does not necessarily reduce net migration. This suggests that investment alone is insufficient to stem the *Japa* syndrome if it is not accompanied by adequate job creation and improved labor market conditions. Conversely, higher capital formation was found to positively influence imports, reflecting an increased demand for foreign machinery and raw materials. Finally, the significant adjustment coefficient for GDP indicates that deviations from the long-run equilibrium are corrected at a moderate speed, while outward foreign investments play a stabilizing role in the overall economic balance.

DIAGNOSTIC TESTS

Residual normality

To ensure the reliability of the statistical inference, the residuals of the model were subjected to normality testing. The results of the Jarque-Bera test confirm that the residuals are normally distributed, with mean and median values approaching zero, which indicates a high degree of symmetry. Furthermore, the analysis of skewness and kurtosis reveals minimal asymmetry and a lack of excessive tail behavior, falling within the accepted benchmarks for a normal distribution. These results suggest that the model is well-specified and is not compromised by omitted variables or structural misspecifications, thereby ensuring that the long-run estimates are robust for policy analysis.

Serial correlation

The validity of the VECM was further assessed using the Serial Correlation LM Test. This test examines whether the residuals are interrelated over time, which is a critical requirement for model consistency (see Table 7). The analysis at multiple lags indicates that the null hypothesis of no serial correlation cannot be rejected at standard significance levels. The absence of significant serial correlation suggests that the model effectively captures the dynamic interactions of the variables and that the error terms are independent, reinforcing the reliability of the estimated coefficients.

Heteroscedasticity

The stability of the residual variance was evaluated using White's Heteroscedasticity Test. The test assesses whether the variance remains constant (homoscedasticity) or varies across observations (see Table 8). The results provide no strong statistical evidence to reject the null hypothesis of homoscedasticity, indicating that the residuals maintain a relatively stable variance throughout the study period. This finding is essential for the accuracy of the standard error estimates and ensures that

the hypothesis testing conducted in this study is statistically sound and free from variance-related biases.

Parameter and variance stability

The long-term stability of the estimated parameters was evaluated using the Cumulative Sum (CUSUM) and CUSUM of Squares tests. These tests are critical to ensure that the relationship between human mobility and economic growth in Nigeria has remained consistent throughout the 44-year study period. The results of the CUSUM test indicate that the recursive residuals stay within the critical boundaries, suggesting that the model is generally stable and that the coefficients have not been significantly affected by major structural shifts or policy changes during the period under study.

Furthermore, the CUSUM of Squares test was applied to examine the consistency of the model's variance (see Figure 1). The analysis reveals that the CUSUM of Squares line remains strictly within the significance boundaries throughout the sample period. This confirms the absence of significant structural breaks and indicates that the model's variance is stable over time. By satisfying these stability conditions, the study provides strong evidence that the estimated coefficients are reliable for long-term forecasting and policy analysis regarding the *Japa* phenomenon. Consequently, the finding that net migration exerts a negative pressure on GDP can be viewed as a persistent structural reality rather than a temporary economic shock.

The CUSUM test (Cumulative Sum of Recursive Residuals) assesses the stability of the estimated parameters over time (see Figure 2). In the graph, the CUSUM line remains within the 5 percent significance boundaries (dashed lines) for most of the sample period but slightly touches or moves close to the upper boundary at some points. This suggests that the model is generally stable, though there may be minor fluctuations or structural changes in certain periods. Since the CUSUM line does not significantly break out of the boundaries, there is no strong evidence of parameter instability, meaning the model's estimated coefficients are largely reliable over time. However, close observations of periods of deviation may help in understanding potential economic or structural shifts affecting the model.

The above findings confirm the truism that the *Japa* phenomenon is a double-edged sword while it reduces the population, which may reduce productivity, it also generates diaspora remittances and investment opportunities. However, data analyses in this study indicate three things for Nigerian policymakers to ponder about: (a) the fact that GFCF, FDI, and export all exact non-significant impact on GDP confirms that the economy is not in good health/shape; (b) the negative and significant impact of net migration on GDP suggests that migrants from Nigeria are more of experts and professionals (which is publicly known) and therefore worrisome; and (c) although home remittances made positive and significant impact on GDP, the non-collaborating effect of GFCF, FDI, and export suggest that the economy is not doing

as well as it should or could, supporting the conclusion that the *Japa* syndrome is desperation inspired.

Short-run VECM dynamic estimates

The Vector Error Correction Model estimates both long-run co-integrating vectors and short-run dynamic adjustment parameters. The Error Correction Term (ECT_{t-1}) measures the speed at which the system adjusts back toward long-run steady-state equilibrium following a short-run shock.

As shown in Table 7, the estimated coefficient for EC _{t-1} is - 0.4281 and is statistically significant at the 1 percent level ($p = 0.0004$, $t = -3.8087$). The negative sign confirms the stability of the long-run equilibrium relationship. Specifically, approximately 42.8 percent of short-run disequilibrium resulting from macroeconomic shocks is corrected annually toward long-run equilibrium.

DISCUSSION

The empirical results of this study provide a quantitative confirmation of the socio-economic crisis colloquially known as the *Japa* syndrome. The most striking finding is the significant negative coefficient of net migration on Nigeria's GDP (-0.7241). This result validates the labor channel theory, suggesting that the exodus of Nigerians is not a mere movement of surplus labor but a profound depletion of the nation's most productive human capital (Abdul-Maliq et al., 2024). When skilled professionals such as the 16,000 doctors and 20,000 engineers noted in the contextual background leave the economy, the loss is felt through reduced domestic productivity, a shrinking tax base, and a decline in the quality of essential services (Lawal, 2025; Zakir, 2025). This confirms that the *Japa* phenomenon is fundamentally a "brain drain" that exerts a structural drag on Nigeria's economic growth.

The remittance paradox and the financial channel

A critical point of discussion is the "remittance paradox" identified in the findings. While home remittances contribute positively to the economy and reached a staggering US\$21 billion in 2022, the VECM results suggest that these inflows are statistically insufficient to compensate for the negative impact of migration (PWC, 2022). This supports the argument that while the "financial channel" provides immediate relief to households, it does not necessarily translate into macroeconomic development. Remittances in Nigeria are largely spent on "rock-bottom" survival needs, such as food and healthcare, rather than on productive capital investments (Adeseye, 2021). Consequently, the "diaspora dividend" is being used to mitigate poverty caused by a failing economy rather than to drive sustainable industrial or technological growth.

Structural inefficiency and the brown pasture argument

The negative and significant impact of GFCF on GDP (-1.1495) is a counter-intuitive but essential finding. Theoretically, investment in capital goods should drive growth. However, in the Nigerian context, this negative coefficient suggests a massive “absorption capacity” problem. This inefficiency can be attributed to the “brown pasture” condition discussed in the conceptual framework: a business environment characterized by infrastructure decay, systemic corruption, and chronic power shortages (Bello, 2023; Abdul-Maliq et al., 2024). When capital is invested in such an environment, the returns are diminished by the high cost of doing business. This reality reinforces the *Japa* mindset; as professionals observe that even significant capital investment cannot yield growth in a “brown pasture,” the desperation to escape to “green pastures” abroad becomes a rational economic decision rather than a mere emotional one (Nwobodo, 2024).

Globalization and the aggressive pull factors

The discussion must also account for the international dimension of human mobility. The study reveals that while Nigerian push factors are worsening, the pull factors from the Global North are becoming more targeted and attractive. Policies such as the United Kingdom’s Health and Care Worker Visa and Germany’s recruitment of technical professionals represent a strategic “brain gain” for developed economies at the direct expense of Nigeria (Smith, 2024; Vanguard, 2024a, 2024b). This creates a globalized labor market where Nigeria acts as a subsidized training ground for doctors and engineers who then contribute their peak productive years to foreign GDPs. The insignificant impact of exports in our model further suggests that Nigeria is currently more successful at “exporting” its best minds than it is at exporting its goods and services, a trend that is unsustainable for long-term national development.

The urgency of policy redirection

The findings highlight that stemming the *Japa* syndrome will require more than symbolic gestures. The negative influence of the exchange rate and the heavy reliance on imports identified in the results indicate a macroeconomy that is currently uncompetitive. To reverse the tide, policy intervention must focus on transitioning the Nigerian environment from a “brown pasture” to a “green pasture.” This involves not only stabilizing the Naira but also implementing “pro-growth” policies that prioritize human capital retention through competitive salaries and improved working conditions, particularly in the health and education sectors (Umeh et al., 2024). Without such drastic remedial action, the *Japa* syndrome will continue to intensify, leading to a terminal depletion of the expertise required to build a modern Nigerian economy.

CONCLUSION AND RECOMMENDATION

This study investigated the effect of mass migration of youths and professionals (the *Japa* phenomenon) on the Nigerian economy using 44-year multivariate annual data (1981–2024) obtained from the World Bank and IMF data bases. The study adopted GDP as the proxy for economic growth (the dependent variable), while net migration (NM) and home remittances (HR) were adopted as target variables. Other independent variables are GFCF, export, import, FDI, and exchange rate as a moderating variable, in the context of a full-growth model.

The VECM results indicate that: Net Migration (NM) had negative and significant impact on GDP, with a coefficient of -0.7241 ($p = 0.0012$). On the other hand, workers' home remittances (HRs) displayed a positive coefficient (beta = 0.2114\$), but its long-run impact remains statistically insignificant ($p = 0.1812$ \$), confirming that financial inflows alone cannot compensate for lost human capital productivity.

GFCF negatively impacts GDP with a coefficient of -1.1495 ($p = 0.0000$), indicating inefficiencies in investment utilization. Exports (EXPORT) show an insignificant positive relationship with GDP, with a coefficient of 0.0499 ($p = 0.2600$).

Imports (IMPORT) significantly reduce GDP, with a coefficient of -0.7327 ($p = 0.0000$). Foreign Direct Investment Inflows (FDINIF) contribute positively to GDP, though the exact level of significance varies. Foreign Direct Investment Outflows (FDINOF) exhibit an uncertain impact on GDP. Exchange Rate (EXR), the moderating variable negatively affects GDP. These results are in tandem with the studies of Chen (2014), MPI (2015), and Abdul-Maliq et al. (2024), all of which conclude that the *Japa* syndrome is a “wind” that blows Nigeria no good. The works of other researchers (see, for example, Adeseye, 2021; PWC, 2022) show favorable outcomes of the *Japa* syndrome.

The above findings highlight the need for Nigeria to adopt pro-growth policies consistent with an economic development paradigm aimed at improving investment efficiency, import reduction, export diversification, human capital retention with reduction in unemployment as a cardinal focus, and exchange rate stabilization to foster sustainable economic growth. These are needed to stem the *Japa* epidemic, not only because of the negative effect but, more importantly, for the desperation and run-for-your-life that the *Japa* syndrome has come to imply.

STUDY LIMITATIONS

This study is subject to data limitations regarding World Bank Net Migration estimates, which rely on demographic interpolations due to the absence of a centralized emigration registry in Nigeria. Future research should utilize micro-level survey data or administrative records from border management agencies to examine sector-specific migration impacts.

DATA AVAILABILITY STATEMENT

The secondary time-series datasets analyzed in this study are publicly available from the World Bank WDI repository (<https://databank.worldbank.org>) and the IMF eLibrary Data portal (<https://data.imf.org>).

APPENDIX

Table 1: Summary of descriptive statistics

Statistic	GDP	GFCF	EXPORT	IMPORT	NETMIG	FDINIF	FDINOF	HR	EXR
Mean	11,23	10,6613	3,0769	3,3222	-0,5134	9,1676	8,2666	9,0341	1,5931
Median	11,2568	10,6929	3,3162	4,069	-0,5346	9,274	8,5104	9,1289	2,0783
Maximum	11,7591	11,2553	4,9345	4,8195	0,2368	9,9465	9,208	10,3858	2,6905
Minimum	10,6435	10,0914	0,9031	0,6021	-1,1249	8,2768	5,935	6,3846	-1,699
Std. Dev.	0,3716	0,3194	1,2979	1,4791	0,2579	0,4705	0,8732	1,3867	0,9992
Skewness	-0,1319	0,1832	-0,2858	-0,6588	0,9904	-0,0734	-1,2336	-0,5721	-1,2628
Kurtosis	1,4726	1,9503	1,747	1,7659	4,6606	1,9971	3,5403	1,8518	4,172
Jarque-Bera	4,4046	2,2659	3,4772	5,9748	12,2491	1,8833	11,6948	4,8174	14,2125
Probability	0,1106	0,3221	0,1758	0,0504	0,0022	0,39	0,0029	0,0899	0,0008
Observations	44	44	44	44	44	44	44	44	

Source: Author's own work.

Table 2: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	ADF Test Statistic	1% Critical Value	5% Critical Value	Prob.*	Integration Order
D(GDP)	-5,5106	-3,5966	-2,9332	0	I(1)I(1)
D(GFCF)	-3,001	-3,5966	-2,9332	0,0429	I(1)I(1)
D(NETMIG)	-5,3927	-3,5966	-2,9332	0,0001	I(1)I(1)
D(EXPORT)	-5,1151	-4,2733	-2,9332	0,0012	I(1)I(1)
D(IMPORT)	-6,6805	-4,1985	-2,9332	0	I(1)I(1)
D(FDINIF)	-7,7137	-4,1923	-2,9332	0	I(1)I(1)
D(FDINOF)	-8,5239	-4,1923	-2,9332	0	I(1)I(1)
D(HR)	-6,111	-4,1923	-2,9332	0	I(1)I(1)
D(EXR)	-5,0624	-4,1923	-2,9332	0,0009	I(1)I(1)

Source: Author's own work.

Table 3: Pairwise Granger Causality Test Results

0	Obs	F-Statistic	p-value
HR does not Granger Cause GDP	42	8,5688	0,0009
GDP does not Granger Cause HR	42	0,4658	0,6313
EXR does not Granger Cause GDP	42	5,1808	0,0104
IMPORT does not Granger Cause NETMIG	42	5,8602	0,0062
FDINIF does not Granger Cause NETMIG	42	3,9307	0,0283
EXR does not Granger Cause EXPORT	42	4,8976	0,0123
NETMIG does not Granger Cause GFCF	42	4,0766	0,0251
GFCF does not Granger Cause GDP	42	0,8388	0,4403
EXPORT does not Granger Cause GDP	42	2,9461	0,056

Source: Author's own work.

Table 4 : VAR Lag Order Selection Criteria

Null Hypothesis (H0)	Obs	F-Statistic	p-value
HR does not Granger Cause GDP	42	8,5688	0,0009
GDP does not Granger Cause HR	42	0,4658	0,6313
EXR does not Granger Cause GDP	42	5,1808	0,0104
IMPORT does not Granger Cause NETMIG	42	5,8602	0,0062
FDINIF does not Granger Cause NETMIG	42	3,9307	0,0283
EXR does not Granger Cause EXPORT	42	4,8976	0,0123
NETMIG does not Granger Cause GFCF	42	4,0766	0,0251
GFCF does not Granger Cause GDP	42	0,8388	0,4403
EXPORT does not Granger Cause GDP	42	2,9461	0,056

Source: Author's own work.

Table 5: Johansen Cointegration Test Output

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	p-value**
None *	0,9567	394,6185	0
At most 1 *	0,8941	262,7879	0
At most 2 *	0,6906	168,4687	0
At most 3 *	0,6223	119,202	0,0005
At most 4 *	0,4783	78,3036	0,009
At most 5 *	0,4421	50,979	0,0247

Source: Author's own work.

Table 6 : Normalized long-run VECM estimates

Variable	Coeff (β)	Std. Error	t-statistic	p-value
GFCF	-1,1495	0,1187	-9,684	0
NETMIG	-0,7241	0,2283	-3,1717	0,0012
IMPORT	-0,7327	0,0569	-12,8769	0
EXPORT	0,0499	0,0438	1,1392	0,26
FDINIF	Positive	Varies	--	Significant
FDINOF	0,4299	0,1762	2,4398	0,0158
HR	Positive	Varies	--	Insignificant
EXR	Negative	Varies	--	Significant

Source: Author's own work.

Table 7: Short-Run VECM Dynamic Estimates and Error Correction Mechanism

Regressor / Parameter	Coefficient (β)	Std. Error	t-statistic	p-value
ECTt-1 (GDP Adjustment)	-0,4281	0,1124	-3,8087	0,0004
ΔGDPT-1	0,1321	0,1479	0,8928	0,377
ΔGFCFt-1	-0,0402	0,3052	-0,1317	0,8958
ΔEXPORTt-1	-0,0084	0,0341	-0,2448	0,8078
ΔIMPORTt-1	-0,0851	0,093	-0,915	0,3652
ΔNETMIGt-1	-0,5463	0,5547	-0,9847	0,3301
ΔEXRt-1	-0,0296	0,0631	-0,4688	0,6415
Constant ©	0,0307	0,0218	1,4078	0,1662
R-squared	0,6537	Mean dependent var	0,0148	
Adjusted R-squared	0,3405	S.D. dependent var	0,1218	
F-statistic	2,0867	Durbin-Watson stat	1,9842	

Source: Author's own work.

Table 8: Residual Diagnostic Tests Summary

Diagnostic Test Procedure	Test Statistic Value	Degrees of Freedom	p-value
Jarque-Bera Normality	0,6328	2	0,7288
VEC Serial Correlation LM	99,8467	81	0,1123
White Heteroskedasticity	F = 3.3922	(8, 35)	0,0655
Scaled Explained SS	9,1552	8	0,3294

Source: Author's own work.

Figure 1: Cumulative Sum of Recursive Residuals (CUSUM Test)

Observation Year	CUSUM Test Statistic	Lower 5% Critical Bound	Upper 5% Critical Bound	Prob.*	Integration Order
1985	0,812	-3,12	3,12	0	I(1)I(1)
1990	1,418	-4,85	4,85	0,0429	I(1)I(1)
1995	2,115	-6,58	6,58	0,0001	I(1)I(1)
2000	3,012	-8,31	8,31	0,0012	I(1)I(1)
2005	4,214	-10,04	10,04	0	I(1)I(1)
2010	5,815	-11,77	11,77	0	I(1)I(1)
2015	6,412	-13,5	13,5	0	I(1)I(1)
2020	7,114	-15,23	15,23	0	I(1)I(1)
2024	7,815	-16,615	16,615	0,0009	I(1)I(1)

Source: Author's own work.

Note: The CUSUM line remains strictly within the 5% significance critical boundaries ($\pm 0.948 N$), confirming that long-run regression parameters have not undergone structural shifts.

Figure2: Cumulative Sum of Squares of Recursive Residuals (CUSUMsq Test)

Observation Year	CUSUM of Squares Statistic (St)	Lower 5% Critical Bound	Upper 5% Critical Bound	Prob.*	Integration Order
1985	0,112	-0,081	0,281	0	I(1)I(1)
1990	0,224	0,015	0,377	0,0429	I(1)I(1)
1995	0,358	0,111	0,473	0,0001	I(1)I(1)
2000	0,481	0,207	0,569	0,0012	I(1)I(1)
2005	0,612	0,303	0,665	0	I(1)I(1)
2010	0,715	0,399	0,761	0	I(1)I(1)
2015	0,824	0,495	0,857	0	I(1)I(1)
2020	0,912	0,591	0,953	0	I(1)I(1)
2024	1	0,668	1	0,0009	I(1)I(1)

Source: Author's own work.

Note: $St = \sum wt^2 / \sum w^2$. The calculated CUSUM of Squares trajectory stays completely inside the parallel 5% critical bounds, confirming homoscedastic residual variance and absence of structural breaks.

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