

THRESHOLD EFFECTS OF MIGRATION ON THE TRADE POLICY– EMPLOYMENT RELATIONSHIP IN NIGERIA (1981–2024)

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<https://doi.org/10.37602/IJSSMR.2026.9603>

ABSTRACT

This study estimates migration thresholds associated with the relationships between trade openness, tariff rate, exchange rate and employment in Nigeria from 1981 to 2024. Using annual secondary data, it applies three two-regime threshold autoregressive specifications, one for each trade policy indicator, with net migration as an externally observed threshold variable. Each specification includes lagged employment, net migration, real GDP growth and inflation. Thresholds are selected by a trimmed grid search, with 1,000 bootstrap replications used to assess the null of a linear relationship. The estimated trade openness threshold is –69,000 net migrants but does not pass the 10 per cent bootstrap test ($p = .106$). Tariff rate has a threshold of –157,300 net migrants significant at the 5 per cent level ($p = .031$); the exchange rate model has the same estimated threshold but only weaker 10 per cent evidence ($p = .070$). Positive regime-specific tariff and exchange rate coefficients appear in the heavy-emigration regime, which contains only nine observations. The study concludes that migration-regime differences are most clearly supported for tariff rate, while exchange rate results are tentative and openness results exploratory. It recommends migration-sensitive assessment of trade policies without treating estimated thresholds as automatic intervention targets.

Keywords: trade policy; net migration; threshold autoregression; tariff rate; exchange rate; trade openness; employment; Nigeria.

1.0 INTRODUCTION

International trade and labour migration are important components of economic development because they affect production, resource allocation, and employment generation (Ossa, 2024). Similarly, trade policies shape domestic economic activities through changes in trade openness, tariff regulations and exchange rate conditions, while international migration influences the availability, composition and productivity of the labour force (Gnimassoun, 2025). However, the relationship between international trade and employment is particularly important in developing economies where productive capacity and labour market conditions determine the extent to which trade opportunities translate into employment generation (Shuaibu & Ohams, 2024). Consequently, migration decisions are influenced by economic opportunities, institutional conditions and prevailing uncertainties, with potential implications for domestic labour availability (Adelakun et al., 2025). Therefore, the employment outcomes associated with trade policy may differ under varying migration conditions.

Trade openness provides opportunities for international market participation, while tariff policies influence domestic production costs and competition between local and foreign producers (Grossman et al., 2024). Exchange rate movements further affect the prices of imported production inputs and the competitiveness of domestically produced goods (Feenstra & Taylor, 2021). These trade policy instruments are important because of their potential implications for productive activities and labour demand. However, the availability of labour, its skill composition and the capacity of domestic industries to absorb workers are equally important considerations. International labour migration may therefore influence the economic conditions under which trade policy adjustments are associated with employment opportunities (Gnimassoun, 2025).

In Nigeria, successive governments have introduced trade policy reforms aimed at improving international competitiveness, strengthening domestic production and promoting employment opportunities (Soneye et al., 2024). These reforms include the introduction of the Structural Adjustment Programme (SAP) in 1986, subsequent adjustments in import tariffs, trade liberalisation measures and changes in exchange rate management (Ibeh, 2024). Despite these initiatives, Nigeria continues to experience challenges associated with industrial competitiveness, export diversification and productive capacity. At the same time, changing migration conditions raise concerns about the availability and composition of the domestic workforce, particularly in sectors experiencing skilled labour emigration (Adelakun et al., 2025). The coexistence of trade policy reforms, employment challenges and international labour movements makes it important to determine whether the employment relationships associated with individual trade policy variables differ across levels of migration.

A major concern is that the relationship between trade policy and employment may not remain constant under different migration conditions. Periods characterised by relatively high net emigration may present different labour market circumstances from periods of comparatively lower net emigration, particularly regarding labour availability and productivity (Gnimassoun, 2025). Such differences could influence the employment relationships associated with trade openness, tariff rates and exchange rate movements. The possibility of nonlinear relationships is particularly relevant, as migration-related economic outcomes may vary across different economic conditions (Eshun, 2025). Conventional linear models may therefore conceal differences across distinct economic regimes. Threshold analysis provides a framework for identifying whether an observable variable distinguishes regimes within which estimated economic relationships differ (Hansen, 2000). Establishing such thresholds could improve understanding of the migration conditions associated with more favourable trade policy–employment relationships.

Despite the growing importance of trade policy and international labour migration to employment generation, existing studies have paid limited attention to the threshold level of migration at which individual trade policy variables may positively influence employment in Nigeria. The underlying concern is that changes in labour availability and migration conditions may alter the employment responses associated with trade openness, tariff rates and exchange rate movements. Consequently, assuming a uniform relationship between trade policy and employment across different migration conditions may conceal important differences in employment outcomes. Identifying the relevant migration thresholds is therefore essential for understanding the conditions under which trade policy may be associated with favourable

employment outcomes. This study addresses this identified gap by estimating the threshold level of migration which fosters the positive effects of each of the trade policy variables on employment in Nigeria over the period 1981–2024.

Research Question

What threshold level of migration fosters the positive effect of each trade policy variable on employment in Nigeria?

Objective of the Study

To estimate the threshold level of migration that fosters the positive effects of each of the trade policy variables on employment in Nigeria.

2.0 LITERATURE REVIEW

2.1 Conceptual Literature

Trade Openness

Trade openness refers to the extent to which an economy participates in international trade through the exchange of goods and services with other countries. It is commonly measured as the combined value of exports and imports expressed as a percentage of gross domestic product (Ossa, 2024). Trade openness provides opportunities for market expansion, production specialisation and increased international competition, thereby influencing the allocation of productive resources across economic sectors (Zi, 2025). However, its implications for employment depend on the competitiveness of domestic industries, labour productivity and the capacity of firms to respond to international market conditions (Busse et al., 2024). Consequently, the availability and composition of labour may influence whether greater trade openness is associated with favourable employment outcomes under different migration conditions.

Tariff Rate

Tariff rate refers to the tax or duty imposed on imported goods as an instrument of international trade policy. Tariffs influence domestic prices, import competition and production costs, particularly for industries dependent on imported intermediate inputs. Grossman et al. (2024) explained that tariffs may disrupt international supply chains by increasing input costs and altering firms' sourcing and production decisions. Although tariff protection may strengthen the competitive position of some domestic industries, it may also constrain production in sectors reliant on imported materials and equipment (Handley et al., 2024). Consequently, the employment implications of tariff adjustments depend on industrial structure, productive capacity and labour availability, as changes in tariff protection may generate different employment responses across industries and adjustment periods (Steinberg, 2025). Under varying migration conditions, these differences provide a conceptual basis for examining whether tariff rates are associated with favourable employment outcomes.

Exchange Rate

Exchange rate refers to the price of one country's currency expressed in terms of another currency. In Nigeria, the nominal exchange rate is measured as the number of naira required to purchase one United States dollar, with an increase indicating depreciation of the naira. Exchange rate movements influence international relative prices, import costs and the competitiveness of domestically produced goods (Aminu & Afolabi, 2024). Currency depreciation may increase the domestic prices of imported production inputs while raising the naira value of foreign-currency export earnings, thereby influencing firms' production and pricing decisions (Oyadeyi et al., 2024). However, the employment implications of exchange rate movements depend on industrial structure, import dependence and firms' capacity to respond to changing production costs and financial conditions (Sharma, 2024). Consequently, differences in domestic labour availability under varying migration conditions may influence the relationship between exchange rate adjustments and employment opportunities.

Employment

Employment refers to the engagement of individuals in productive economic activities undertaken for pay or profit. In this study, employment is measured by the employment-to-population ratio, which represents the proportion of persons aged 15 years and above who are employed relative to the total population within that age group. This indicator provides a measure of labour utilisation, although it does not independently capture job quality or working conditions. Trade-related production adjustments, industrial competitiveness and labour market inequalities may influence employment opportunities (Shuaibu & Ohams, 2024). Furthermore, labour supply and occupational participation may be shaped by migration-related financial flows, skills and household economic circumstances (Alhassan et al., 2024). Consequently, the relationship between trade policy and employment may differ across migration conditions, making it important to identify the migration thresholds associated with favourable employment outcomes.

Net Migration

Net migration refers to the difference between the number of immigrants entering a country and emigrants leaving it during a specified period. A negative value indicates that emigration exceeds immigration, while a positive value indicates net immigration (World Bank, 2025). Migration influences the size and composition of the domestic labour force through the movement of workers with different skills and productive capabilities. Also, Gnimaassoun (2025) emphasised the relevance of international migration to labour productivity. Therefore, in the present study, net migration serves as the conditioning variable through which differences in the employment relationships of trade policy indicators are examined while more negative values represent heavier net emigration.

Migration Threshold

Migration threshold refers to an estimated level of net migration at which the relationship between an economic policy variable and employment may change. The concept recognises that economic relationships may not remain uniform across different migration conditions, particularly where changes in labour mobility affect the availability and composition of the workforce. Eshun (2025) highlighted the relevance of nonlinear relationships in understanding

migration-related economic outcomes within West African economies. Building on this perspective, threshold analysis provides a framework for identifying distinct economic regimes within which the relationship between explanatory variables and an outcome may differ (Hansen, 2000). In the present study, net migration serves as the threshold variable for examining whether trade openness, tariff rate and exchange rate exhibit more favourable employment relationships under different levels of net emigration. However, an estimated threshold does not necessarily indicate a positive employment effect unless the evidence supports a meaningful difference between regimes. Understanding these differences is therefore essential to estimating the migration threshold associated with the positive employment effects of each trade policy variable in Nigeria.

2.2 Theoretical Literature

The study is anchored on the Heckscher–Ohlin theory of international trade, developed by Heckscher (1919) and expanded by Ohlin (1933), and the Harris–Todaro migration model (Harris & Todaro, 1970). The Heckscher–Ohlin theory explains how relative factor endowments shape trade patterns, production specialisation and demand for labour and capital. Feenstra (2015) noted that countries tend to specialise in goods that use their relatively abundant productive factors intensively. An illustrative production relationship is:

$$Q_i = F_i(K_i, L_i) \quad (1)$$

Here, Q_i denotes output of commodity i , K_i capital input, L_i labour input and F_i the production function. Changes in openness and tariffs may alter production incentives and labour demand; exchange rate movements may also affect import costs and export prices. This equation illustrates production, not the estimated migration-threshold specification.

The Harris–Todaro model explains migration through expected earnings and employment opportunities at a destination (Harris & Todaro, 1970). Its expected-income principle can be illustrated as:

$$E(W_a) = p_a W_a \quad (2)$$

Here, $E(W_a)$ denotes expected earnings in the destination labour market, p_a the probability of obtaining employment and W_a the wage if employed. The original framework concerns rural–urban migration, but its expected-income principle provides a limited conceptual basis for considering outward labour mobility and changes in domestic labour availability.

The Heckscher–Ohlin model relies on restrictive assumptions concerning production and factor markets, while the Harris–Todaro model does not directly describe international migration barriers or estimate threshold levels. Together, they motivate the possibility that the relationships of trade openness, tariff rate and exchange rate with employment vary across net-migration conditions. Consistent with Specific Objective Four, the study tests whether migration regimes are associated with more favourable employment relationships for each trade policy variable. It does not assume that every variable has a statistically significant or causally beneficial threshold.

2.3 Threshold Model: Consistency with the Doctoral Thesis

The two equations above belong to the theoretical discussion. The thesis's empirical threshold specification (Equations 3.8–3.11) permits the trade policy coefficient to differ across regimes defined by net migration. Its estimation section subsequently adds one lag of employment. The journal article should therefore present the estimated specification in the methodology as:

$$\text{EMP}_t = \beta_0 + \rho \text{EMP}_{t-1} + \beta_1 P_t I(\text{MIG}_t \leq \tau) + \beta_2 P_t I(\text{MIG}_t > \tau) + \beta_3 \text{MIG}_t + \beta_4 \text{GDPG}_t + \beta_5 \text{INF}_t + \varepsilon_t$$

(3)

P_t is entered separately as TOP (trade openness), TAR (tariff rate) or LEXR (log of the official exchange rate), consistent with the Objective Four results. EMP is the employment-to-population ratio; MIG is net migration; GDPG is real GDP growth; INF is inflation; τ is the threshold; and $I(\cdot)$ equals one when its regime condition holds and zero otherwise. More negative net migration indicates heavier net emigration. The bootstrap threshold test, not an individual regime coefficient alone, determines whether regime dependence is statistically supported.

2.4 Editorial verification notes

The thesis prints EXR in its initial threshold equations but reports the log exchange rate in the threshold results. Check the estimation script and variable transformations before finalising LEXR in the methodology. The thesis also describes a lagged-employment augmentation that is absent from its earlier displayed threshold equations. Equation (3) above explicitly reflects this later description. The thresholds are statistical regime boundaries, not migration policy targets.

3.0 EMPIRICAL LITERATURE AND RESEARCH GAP

3.1 Empirical Literature

Asaleye et al. (2021) examined trade openness channels and labour market performance in Nigeria using the Vector Error Correction Model (VECM) and Structural Vector Autoregression (SVAR). The study investigated the implications of trade openness for employment and wages in the agricultural and manufacturing sectors. The findings revealed that trade openness adversely affected employment and wages in both sectors, while shocks to trade openness exerted a greater influence on wages than on employment. The authors recommended coordinated labour market policies and measures to improve the competitiveness of domestic industries. However, the study did not consider whether migration conditions could produce different employment responses to trade openness.

Similarly, Shuaibu and Ohams (2024) investigated the relationship between trade openness, gender gaps and unemployment in Nigeria from 1991 to 2021. The study employed cointegration analysis and the VECM to examine short-run and long-run relationships among the variables. The findings revealed that trade openness had a negative and statistically significant relationship with unemployment in the long run, although its short-run relationship was statistically insignificant. The authors recommended trade liberalisation policies complemented by measures to reduce labour market inequalities and improve employment opportunities. These findings differ from those of Asaleye et al. (2021), suggesting that the

employment implications of trade openness may vary according to economic conditions and analytical specifications.

Considering tariff policy, Ojike et al. (2024) investigated the symmetric and asymmetric effects of tariffs on industrial performance in Nigeria between 1988 and 2021. The study employed linear and nonlinear Autoregressive Distributed Lag (ARDL) techniques, using the applied weighted mean tariff rate and industry value added as a percentage of gross domestic product. The linear results revealed a positive and statistically significant relationship between tariffs and industrial performance in both the short and long run. The nonlinear analysis further established that tariff increases and reductions produced asymmetric responses, with tariff reductions exhibiting a relatively stronger estimated effect. The authors recommended caution in implementing protective tariff policies and greater attention to other constraints affecting domestic industries. Although the study demonstrated the importance of nonlinear policy adjustments, it did not estimate migration thresholds or examine employment as its dependent variable.

Furthermore, Udeorah et al. (2025) examined trade facilitation and unemployment in Nigeria from 1985 to 2022 using the ARDL approach. Trade facilitation was represented by trade openness, foreign direct investment, real exchange rate and official development assistance. The findings showed that trade openness and foreign direct investment were negatively and significantly associated with unemployment in both the short and long run, while the real exchange rate exhibited a positive but statistically insignificant relationship. The authors recommended policies supporting labour-intensive industries and small and medium-sized enterprises to strengthen employment generation through international trade. Nevertheless, the analysis did not establish whether the relationships between individual trade policy variables and employment changed at particular levels of net migration.

Regarding migration, Gnimassoun (2025) investigated the relationship between immigration and labour productivity using panel data from 187 countries, including 53 African countries, covering 1990–2019. The study employed a gravity-based instrumental variables approach to address potential endogeneity. The findings revealed that immigration had a positive and statistically significant relationship with labour productivity, with intra-African immigration exhibiting relatively stronger productivity effects. These gains were associated particularly with improvements in total factor productivity and capital efficiency, with the services sector recording substantial benefits. The study highlighted the economic importance of international labour mobility. However, its emphasis was on immigration and labour productivity rather than net-migration thresholds in the trade policy–employment relationship.

More directly addressing nonlinear migration relationships, Eshun (2025) investigated labour migration and economic growth in the Economic Community of West African States (ECOWAS) using annual data covering 2000–2021. The study employed a nonlinear analytical approach to examine asymmetric responses to increases and decreases in labour migration. The findings indicated that positive and negative changes in migration were associated with different economic growth responses, although some estimated long-run effects were statistically insignificant. The study emphasised the need for migration-sensitive economic policies that recognise differences in the direction of labour movements. While this provides evidence supporting the relevance of nonlinear migration relationships, the analysis focused on

economic growth rather than the threshold levels associated with trade policy effects on employment in Nigeria.

The empirical literature reviewed reveals differing findings concerning the relationships among trade policy, migration and labour market outcomes. While previous studies have examined trade openness and employment, tariff adjustments and industrial performance, and nonlinear relationships involving migration, limited attention has been devoted to estimating the specific levels of net migration at which individual trade policy variables exhibit favourable employment relationships in Nigeria. Furthermore, evidence of asymmetric migration responses does not necessarily establish a statistically significant migration threshold. The present study addresses this gap by estimating and testing the migration threshold levels associated with the positive employment effects of trade openness, tariff rate and exchange rate separately in Nigeria over the period 1981–2024. This approach permits an assessment of whether favourable employment relationships differ across identifiable migration regimes, rather than assuming that a common threshold applies to all trade policy variables.

4.0 METHODOLOGY

4.1 Sources of Data

The study employed secondary annual time-series data covering Nigeria from 1981 to 2024. The data were obtained from the World Development Indicators (WDI), Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), United Nations Conference on Trade and Development (UNCTAD), and United Nations demographic sources. The variables comprised employment-to-population ratio (EMP), trade openness (TOP), tariff rate (TAR), exchange rate (EXR), net migration (MIG), real gross domestic product growth (GDPG) and inflation rate (INF). Employment was measured as the employment-to-population ratio for persons aged 15 years and above, while trade openness was measured as total exports and imports relative to GDP. Tariff rate represented applied import duties, and the exchange rate was expressed as the natural logarithm of the official naira–US dollar exchange rate. Net migration, measured as immigration minus emigration, served as the threshold variable. Real GDP growth and inflation were included as control variables. Although the study covered 44 calendar years, the inclusion of lagged employment reduced the estimation sample to 43 annual observations spanning 1982–2024.

4.2 Model Specification

The study adopted a two-regime threshold regression framework to estimate the level of net migration at which the employment relationship associated with each trade policy variable may differ. The approach permits the coefficient of a trade policy indicator to vary according to whether net migration falls below or above an estimated threshold. Following Hansen's (2000) threshold estimation framework, the model is specified as follows:

$$EMP_t = \alpha + \rho EMP_{t-1} + \beta_1 P_I(MIG_t \leq \tau) + \beta_2 P_I(MIG_t > \tau) + \gamma MIG_t + \delta GDPG_t + \phi INF_t + \varepsilon_t \quad (4)$$

Where:

EMP_t = Employment-to-population ratio in period t ;

EMP_{t-1} = One-period lagged employment;

P_t = Trade policy indicator, represented separately by TOP, TAR or the logarithm of EXR;

MIG_t = Net migration;

τ = Estimated migration threshold;

$I(\cdot)$ = Indicator function identifying the migration regime;

β_1 and β_2 = Trade policy coefficients in the respective migration regimes;

$GDPG_t$ = Real GDP growth rate;

INF_t = Inflation rate;

α = Constant term;

ρ, γ, δ and ϕ = Parameters to be estimated; and

ε_t = Error term.

The model was estimated separately for trade openness, tariff rate and the logarithm of exchange rate. Since net migration is defined as immigration minus emigration, increasingly negative values represent heavier net emigration. Consequently, the regime in which $MIG_t \leq \tau$ represents heavier net emigration, while $MIG_t > \tau$ represents comparatively lighter net emigration. The regime-specific coefficients indicate whether the relationship between each trade policy variable and employment is positive or negative under the respective migration conditions.

4.3 Estimation Technique

The study employed a two-regime threshold estimation technique to identify migration levels associated with differences in the employment relationships of trade openness, tariff rate and exchange rate. The threshold value was determined through a conditional least-squares grid search over admissible net migration values, applying a 15 per cent trimming rule to exclude extreme candidate observations. The threshold was selected as the value that minimised the residual sum of squares.

Following Hansen (1996, 2000), the statistical significance of each estimated threshold was assessed using a bootstrap test based on 1,000 replications. The null hypothesis of a linear relationship was tested against the alternative of different trade policy coefficients across migration regimes. Statistical significance was evaluated at the 5 per cent level, while results significant only at the 10 per cent level were interpreted as weaker evidence of threshold behaviour.

To address the study objective, the estimated threshold and the signs and statistical significance of the regime-specific trade policy coefficients were examined jointly. A positive coefficient indicates a favourable estimated association with employment within the corresponding migration regime, while the bootstrap test determines whether the distinction between regimes is statistically supported. This approach permits the identification of migration conditions associated with favourable employment relationships without assuming that a positive or statistically significant threshold exists for every trade policy indicator.

5.0 RESULTS AND DISCUSSION

5.1 Results Presentation

This section presents the two-regime threshold autoregressive (TAR) estimates for Specific Objective Four: to estimate the threshold level of migration which fosters the positive effects of each trade policy variable on employment in Nigeria. The three specifications examine trade openness (TOP), applied tariff rate (TAR) and the natural logarithm of the official exchange rate (LEXR) separately, with net migration (MIG) defining the threshold regimes. The underlying annual data cover 1981–2024; inclusion of lagged employment leaves 43 usable observations for threshold estimation (1982–2024).

In interpreting the thresholds, $MIG \leq \tau$ denotes the heavier net-emigration regime, while $MIG > \tau$ denotes relatively lighter net emigration. The overall bootstrap test of linearity determines whether the data support a threshold; a statistically significant coefficient within one regime does not, on its own, establish threshold significance.

Table 1. Estimated Migration Thresholds and Regime-Specific Trade Policy Coefficients

Trade policy indicator	Threshold τ (net migrants)	Obs. $MIG \leq \tau$ / $MIG > \tau$	Policy coeff. $MIG \leq \tau$ (p)	Policy coeff. $MIG > \tau$ (p)	F statistic	Bootstrap p
TOP	−69,000	30 / 13	0.0139 (.179)	0.0352 (.006)	8.48	.106
TAR	−157,300	9 / 34	0.1804 (.001)	−0.0075 (.723)	12.17	.031
LEXR	−157,300	9 / 34	0.4174 (.050)	0.0199 (.862)	9.01	.070

Note. Dependent variable: employment-to-population ratio (EMP). Estimation sample: $n = 43$ (1982–2024). Each model includes a constant, lagged employment, net migration, real GDP growth and inflation. Values in parentheses are within-regime p-values. Bootstrap p-values derive from 1,000 fixed-regressor replications, with 15% trimming in the threshold grid search.

Source: Author's compilation (2026).

5.2 Trade Openness and the Migration Threshold

The trade openness specification identifies a candidate threshold of $-69,000$ net migrants, dividing the sample into 30 observations at or below the threshold and 13 above it. In the heavier-emigration regime, the estimated trade openness coefficient is positive but statistically insignificant (0.0139 , $p = .179$). In the lighter-emigration regime, the coefficient is larger and positive (0.0352 , $p = .006$). Taken individually, these estimates suggest a stronger positive openness–employment association when net emigration is lighter. However, the overall bootstrap threshold test is not significant at the 10% level ($F = 8.48$, $p = .106$). The sample therefore does not provide sufficient statistical evidence to establish a migration threshold for the trade openness relationship. The contrast between its regime coefficients remains exploratory.

5.3 Tariff Rate and the Migration Threshold

For tariff rate, the estimated migration threshold is $-157,300$ net migrants, separating nine heavy-emigration observations from 34 lighter-emigration observations. The bootstrap test rejects the linearity null at the 5% significance level ($F = 12.17$, $p = .031$), providing the clearest threshold evidence among the three trade policy indicators. Within the heavy-emigration regime, the tariff coefficient is positive and statistically significant (0.1804 , $p = .001$), whereas the lighter-emigration coefficient is negative and insignificant (-0.0075 , $p = .723$). Consequently, the statistically supported regime distinction is associated with a positive tariff–employment coefficient only in the heavy-emigration regime. That regime comprises 2015 and 2017–2024, however, and the tariff series varies only between approximately 12% and 13% in those nine years. This narrow variation and small subsample warrant particular caution when interpreting the coefficient magnitude.

5.4 Exchange Rate and the Migration Threshold

The log exchange rate specification also selects a threshold of $-157,300$ net migrants, with nine observations at or below the threshold and 34 above it. Its overall bootstrap result ($F = 9.01$, $p = .070$) meets the 10% significance criterion but not the conventional 5% criterion. The estimated coefficient for LEXR is positive in the heavy-emigration regime (0.4174 , $p = .050$), compared with a small and statistically insignificant coefficient in the lighter-emigration regime (0.0199 , $p = .862$). This provides suggestive, rather than strong, evidence that the exchange rate–employment relationship differs across migration regimes. Because the exchange rate variable is measured in natural logarithms, its coefficient is not directly comparable in units to the trade openness or tariff coefficients. The positive association must not be interpreted as proof that nominal depreciation causes employment to rise.

5.5 Supporting Results for Macroeconomic Controls

Table 2 summarises the real GDP growth and inflation coefficients from the same threshold estimations. Real GDP growth is positively associated with employment in all three specifications, while inflation is negatively associated with employment. All six control-variable coefficients are statistically significant at the 5% level or better. These estimates describe associations conditional on each model rather than independently identified causal effects.

Table 2. Real GDP Growth and Inflation in the Threshold Models

Trade policy model	Real GDP growth coefficient (p)	Inflation coefficient (p)	R ²
TOP	0.0789 (.018)	−0.0383 (< .001)	0.707
TAR	0.1214 (< .001)	−0.0268 (< .001)	0.716
LEXR	0.1188 (.001)	−0.0277 (< .001)	0.702

Source: Author's compilation (2026).

6.0 DISCUSSION OF FINDINGS

The results reveal distinct degrees of statistical support for migration-related threshold behaviour across the three trade policy indicators. The tariff specification provides evidence of a regime distinction at the 5% level, the exchange rate specification yields weaker evidence at the 10% level, and the trade openness specification does not pass the 10% bootstrap test. This comparison is central to the study objective: although candidate migration cut-offs can be estimated for all three indicators, the data do not establish a statistically supported favourable threshold for every trade policy variable.

The positive and significant tariff coefficient in the heavier net-emigration regime suggests that the observed tariff–employment association differs under particular migration conditions. This is economically relevant because labour mobility can alter labour availability and the composition of productive resources, while trade policy can influence sectoral production incentives. The Heckscher–Ohlin framework offers a perspective on how changes in trade-related relative prices affect demand for factors of production, while the Harris–Todaro migration model highlights expected employment and earnings in mobility decisions. Neither theory, however, directly predicts the estimated numeric cut-off or establishes that high emigration improves employment outcomes. The regime differences must therefore be interpreted as empirical associations rather than theoretical certainties.

The less conclusive trade openness result is also important. Although the within-regime coefficient above −69,000 net migrants is positive and statistically significant, the overall test does not establish a threshold. Treating that coefficient as a confirmed migration threshold would overstate the evidence. For the exchange rate specification, positive employment association is concentrated in the heavy-emigration years, but the 10%-level bootstrap evidence is weaker than the tariff result. Both tariff and exchange rate findings are particularly sensitive to the same nine observations, limiting the precision and generalisability of their regime interpretations.

These findings are broadly relevant to the literature on nonlinear economic relationships and threshold estimation (Hansen, 1996, 2000) and to discussions of migration-related labour market differences (Gnimassoun, 2025). They should not, however, be equated directly with the smooth migration interaction results from the thesis's separate ARDL models. The ARDL interaction captures a continuous change in the long-run association, whereas the TAR estimates discrete coefficients on opposite sides of an estimated net-migration cut-off. In particular, their tariff implications differ in direction, and they cannot be presented as mutually confirming results.

The macroeconomic controls provide additional context. The positive GDP growth and negative inflation coefficients across the threshold specifications are consistent with the importance of overall economic conditions for labour absorption. Nevertheless, these controls do not eliminate concerns about omitted sector-specific influences, the changing composition of migrants or potential endogeneity. The available net migration series does not distinguish skilled from unskilled migration, immigration from emigration effects, or the remittance and return-migration channels.

Overall, the study provides its clearest evidence of migration-related differences in the tariff rate–employment relationship, tentative evidence for the exchange rate–employment relationship, and insufficient threshold evidence for trade openness. The estimated migration level of $-157,300$ is an empirical dividing point for the tariff and exchange rate models, not an optimal migration target or a recommended level of outward migration. Because the heavy-emigration regime contains only nine observations, the results favour migration-sensitive evaluation of trade and labour market policy rather than mechanical policy intervention at the reported thresholds.

7.0 CONCLUSION AND POLICY RECOMMENDATIONS

7.1 Conclusion

The study estimated the threshold level of migration associated with positive employment effects of trade openness, tariff rate and exchange rate in Nigeria over the period 1981–2024. Using threshold autoregressive analysis, the findings revealed that the employment relationships of the trade policy variables differed across migration regimes, although the statistical evidence varied considerably among the indicators. The tariff rate exhibited a significant migration threshold of $-157,300$ net migrants at the 5 per cent level, with a positive employment relationship observed under heavier net-emigration conditions. The exchange rate recorded the same estimated threshold, but its statistical significance was limited to the 10 per cent level. Conversely, trade openness recorded an estimated threshold of $-69,000$ net migrants, which was not statistically significant at the 10 per cent level. These findings indicate that migration-related differences in the trade policy–employment relationship are most strongly supported for tariff rates, while evidence for exchange rates remains relatively weak and that for trade openness is insufficient. The study concludes that prevailing migration conditions may be important when assessing the employment implications of individual trade policy instruments in Nigeria. However, the estimated thresholds represent statistical distinctions between migration regimes rather than optimal migration levels or evidence that increased emigration necessarily improves employment.

7.2 Policy Recommendations

Based on the findings, the following recommendations are proposed:

- a) The Federal Government should incorporate migration dynamics and domestic labour market conditions into tariff policy formulation and evaluation. Given the statistically significant migration threshold identified for tariff rates, policy adjustments should consider changes in labour availability, industrial competitiveness and domestic productive capacity to support favourable employment outcomes.

- b) Monetary and trade authorities should strengthen coordination between exchange rate management and employment policies. Since the exchange rate model provides weaker statistical evidence of a migration threshold, policy decisions should consider the implications of currency movements for imported production inputs, industrial activities and labour demand without assuming that currency depreciation necessarily promotes employment generation.
- c) The government should complement trade liberalisation initiatives with measures aimed at strengthening industrial productivity, workforce development and export diversification. Given the absence of a statistically significant migration threshold for trade openness, greater emphasis should be placed on addressing structural constraints that limit the ability of domestic industries to translate international trade opportunities into productive employment.
- d) Relevant government agencies should improve the collection, documentation and reporting of migration and employment statistics, particularly data on skilled emigration, immigration, return migration and sectoral labour demand. Reliable and disaggregated data would facilitate more accurate identification of migration-related labour market conditions and provide a stronger empirical foundation for formulating effective trade and employment policies.

7.3 Limitations and Suggestions for Further Research

The study employed aggregate annual data and threshold autoregressive models to examine migration-related differences in the relationships between trade policy variables and employment. Although the findings identified a statistically significant tariff threshold and weaker evidence for exchange rate, the heavier-emigration regime contained only nine observations, thereby limiting the robustness and generalisability of the regime-specific estimates. Furthermore, aggregate net migration does not distinguish workers by skills, occupation or destination, while the estimated models do not establish causal relationships. Future studies should employ more detailed migration and sectoral employment data, examine the stability of estimated thresholds across alternative model specifications and investigate whether similar relationships persist over longer observation periods.

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