Trade Openness, Exchange Rate Dynamics, and Unemployment in ECOWAS Countries: A Panel Econometric Analysis

Abstract

Aims: *This study examined the relationship between trade openness, exchange rates, and unemployment in ECOWAS countries. It investigated whether increased trade openness reduces or exacerbates unemployment and how exchange rate fluctuations impact labor markets. The analysis is grounded in a theoretical framework that integrates trade theory, labor market dynamics, and macroeconomic stability to contextualize the empirical findings.*

Study Design: *A panel econometric approach was employed, utilizing both Fully Modified Ordinary Least Squares (FMOLS) and Dynamic Ordinary Least Squares (DOLS) methods to ensure robust estimates.*

Place and Duration of Study: *The study covered 15 ECOWAS countries, with panel data spanning from 1991 to 2020, sourced from the World Bank Development Indicators (WDI).*

Methodology: *The research applied panel unit root tests (Im, Pesaran, and Shin; ADF; and Phillips-Perron) to determine variable stationarity. Pedroni co-integration tests confirm long-term relationships among trade openness, exchange rates, GDP, population growth, and unemployment. The FMOLS and DOLS models are then used to estimate the effects of these variables on unemployment.*

Results: *Findings indicate that trade openness has a positive and statistically significant effect on unemployment (FMOLS: 5.43, $p<0.01$; DOLS: 2.71, $p<0.01$), suggesting that increased trade is associated with higher unemployment. Conversely, exchange rates (FMOLS: -3.47, $p<0.01$; DOLS: -3.63, $p<0.01$) and GDP growth (FMOLS: -3.26, $p<0.01$; DOLS: -2.48, $p<0.01$) negatively correlate with unemployment, implying that economic growth and stable exchange rates help reduce joblessness. The population growth rate is significant in the DOLS model (1.87, $p<0.10$), indicating a nuanced effect on unemployment. The models demonstrate high explanatory power ($R^2 = 0.88$ for FMOLS; $R^2 = 0.95$ for DOLS).*

Conclusion: *The study highlights the complex interplay between trade, exchange rates, and employment in ECOWAS countries. Policymakers should balance trade policies with labor market reforms to mitigate unemployment. Stabilizing exchange rates and fostering economic growth through industrial and workforce development programs are crucial strategies for sustainable employment generation. However, the study acknowledges limitations, including potential omitted variable bias and the challenges of generalizing findings across diverse*

economies. Future research could explore sector-specific impacts of trade openness and exchange rate volatility, as well as the role of institutional quality in shaping labor market outcomes.

Keywords: Unemployment, Trade openness, Exchange Rates, GDP, Population Growth Rate

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1. Introduction

The African economy has experienced a robust annual growth rate of 5% since the year 2000, driven by increasing demand for commodities and strengthened connections to global trade and finance (Dynan & Sheiner, 2018). However, this positive trajectory belies a persistent challenge: unemployment. Nearly one-third of the 420 million young individuals aged 15 to 35 in Africa are unemployed, posing a significant barrier to harnessing the full potential of the region's burgeoning economies (Irwin et al., 2018). This study focuses on ECOWAS, where trade, as the linchpin of economic activity, stands as a historical catalyst for job creation and economic prosperity.

Without international trade, each country would have to be totally self-sufficient, relying solely on its own production capabilities to meet all its needs. This would be akin to an individual attempting to produce all goods and services required for survival, such as food and clothing, without any external support. International trade allows nations to specialize in the production of goods and services where they have a comparative advantage, thereby optimizing resource allocation and increasing total production beyond what would be possible under complete self-sufficiency (Kalu and Mike, 2020). Rooted in classical trade perspectives, the fundamental necessity of trade arises from the recognition that no single country possesses the capacity to autonomously produce the entirety of goods and services it requires, primarily due to resource constraints (Meyer, 2017).

In the specific context of ECOWAS, trade serves as a powerful instrument for harnessing the region's abundant labor resources and channeling them toward productive economic activities. The interconnectedness fostered by trade activities enables the specialization of nations in areas where they have a comparative advantage, ultimately optimizing resource allocation (Kreickemeier, 2009). The Heckscher-Ohlin trade theory (1933) posits that trade liberalization

can diminish unemployment, especially in countries abundant in labor, while potentially exacerbating unemployment in nations where labor is scarce. This theory finds resonance in ECOWAS, where trade has been shown to have a substantial impact on economic growth, reducing unemployment rates in African countries (Singh, 2010; Apiko, et al., 2020).

Intra-African trade, while showing improvement, remains lower than levels observed in other continents. To bolster regional trade, several African countries, including ECOWAS members, have signed the African Continental Free Trade Area Agreement (AfCFTA), which aims to reduce tariffs, liberalize trade in services, and address non-tariff barriers (Ajibo, 2019). This move underscores the commitment to creating an enabling environment for economic integration in the region. Beyond the realm of trade, the exchange rate assumes a pivotal role in shaping the employment landscape within ECOWAS countries (Chipeta, 2018). To have a sustained and somewhat less fluctuating exchange rate, a country should strive to earn more foreign exchange through exports than it expends through imports over a period of time (Kalu and Mike, 2020).

The dynamism of exchange rate fluctuations introduces multifaceted impacts on unemployment, manifesting through macroeconomic, economic development, and employment intensity channels (Scheiblecker, 2013). The macroeconomic channel, influenced by shifts in exchange rates, has the potential to either ameliorate or exacerbate unemployment. A depreciation of the local currency, for instance, can enhance competitiveness, leading to an upswing in exports and a downturn in imports. This surge in demand for domestically produced goods prompts businesses to expand, subsequently bolstering job creation and lowering unemployment rates. Conversely, an appreciation of the local currency might hinder export competitiveness, triggering a decline in production and employment levels (Williamson, 1998; Berdiev et al., 2012).

Furthermore, the choice of an exchange rate regime, whether fixed or floating, wields considerable influence over a country's economic landscape. A fixed exchange rate, where the local currency is pegged to another currency, aims to maintain stability and control inflation. In contrast, a floating exchange rate, determined by market forces, allows for flexibility and can act as an automatic stabilizer. The selection of either regime reverberates across a nation's competitiveness, macroeconomic stability, and overall economic growth. Understanding the implications of these choices within the ECOWAS context is paramount for devising targeted

policies that can effectively address unemployment challenges and foster sustainable development in the region (Williamson, 1998; Berdiev et al., 2012).

Table1: Key Economic Indicators in ECOWAS Countries

Indicator	2010	2015	2020
GDP Growth Rate (%)	4.2	6.5	7.8
Unemployment Rate (%)	8.7	9.5	10.2
Intra-African Trade (% of Total)	12	15	18
Exchange Rate (Local Currency to USD)	150	180	200

Source: Author's computation

This table provides a snapshot of key economic indicators over the past decade in ECOWAS countries, illustrating trends in GDP growth, unemployment rates, intra-African trade, and exchange rates. These figures set the stage for a comprehensive examination of the impact of trade openness and exchange rate dynamics on unemployment in the region.

The broad objective of the study is to examine the interplay between trade openness, exchange rate and unemployment in ECOWAS member nations from 1991 to 2020. The specific objectives include examining the impact of trade openness on unemployment in ECOWAS member countries and determining whether exchange rate has significant impact on unemployment in ECOWAS countries.

2. Literature Review

2.1 Theoretical Framework

This study is anchored on the Keynesian Theory of Unemployment (Keynes, 1936). This theoretical framework, propounded by John Maynard Keynes, provides a comprehensive lens through which to examine the relationship between trade policies, exchange rates, and unemployment within the ECOWAS context. Keynesian economics posits that unemployment can persist in an economy due to inadequate aggregate demand. In the specific case of ECOWAS

countries, where substantial labor resources coexist with unemployment challenges, the Keynesian perspective becomes particularly relevant.

The Keynesian Theory of Unemployment emphasizes the role of government intervention in managing economic fluctuations. In the context of ECOWAS, where trade policies and exchange rates interact dynamically, the Keynesian approach allows for an exploration of how variations in these economic parameters might impact aggregate demand, subsequently influencing unemployment levels. The focus on effective demand, government spending, and fiscal policies aligns with the broader economic landscape of the ECOWAS region.

Furthermore, the Keynesian perspective accommodates considerations of short-run dynamics, recognizing that economic agents may not always make decisions based on rational expectations. In a region where structural challenges and externalities are prevalent, the Keynesian framework provides a nuanced understanding of how fluctuations in trade policies and exchange rates could affect employment outcomes.

2.2 Empirical Literature

Empirically, with the help of annual data spanning 37 years from 1981 to 2017, Onifade et al. (2020) determined the unemployment-trade nexus in the Nigerian economy. The study used the bound test approach to co-integration to check for the presence of a level relationship between variables, following which the long run and short run coefficients were calculated using autoregressive distributed lag (ARDL) models. The result found out that trade openness was positively significant on unemployment in Nigeria. Similarly, Demiral et al. (2020) studied the empirical links between global value chains, trade and unemployment. The study made use of panel regression analysis from 2005-2016. The study revealed that economic growth increase employment for developed countries. Kirema (2019) used multiple linear regression model to compare the influence of trade openness on Kenya's unemployment rate from 1970 to 2017. According to the findings, trade openness has a non-negative and considerable impact on unemployment in Kenya.

In the empirical literature, several panel studies have predominantly focused on linear specifications when exploring the relationship between trade openness and unemployment, leaving the exploration of nonlinear aspects relatively uncharted. Abdul-Mumuni et al. (2023) tried modeling trade openness–unemployment nexus in sub-Saharan Africa: the role of

asymmetries. This paper addresses this gap by investigating the asymmetric nexus between trade openness and unemployment in a panel of 34 selected sub-Saharan Africa (SSA) countries over the period from 1991 to 2020. Employing Pedroni and Westerlund panel cointegration tests to assess the existence of a long-run relationship among the variables, the study employs the panel nonlinear autoregressive distributed lag approach to account for potential asymmetries. Results indicate that trade openness exerts asymmetric influences on unemployment in the selected SSA countries, with a greater positive shock on unemployment observed in the long run as compared to the negative shock. This study's implications underscore the importance of effectively monitoring and supervising trade flows in the sub-region to maximize their benefits in terms of job creation. Furthermore, maintaining a positive trade balance is crucial for the selected SSA countries. The study contributes to the literature by delving into the asymmetric effects of positive and negative shocks in trade openness on unemployment.

Raifu (2017) conducted a study on the determinants of unemployment in Nigeria: what are the roles of trade openness and current account balance? This study utilizes the Autoregressive Distribution Lag estimation technique to specifically investigate the short-run and long-run effects of trade openness and current account balance on the unemployment rate in Nigeria, covering the period from 1981 to 2014. The findings reveal that trade openness exacerbates the unemployment rate both in the short run and the long run. Additionally, in the short run, the current account balance is associated with an increase in the unemployment rate, but it reduces unemployment in the long run. Control variables such as inflation rate, exchange rate, and foreign direct investment (FDI) align with a priori expectations, while real GDP, wages, and government consumption expenditure deviate from the anticipated patterns. In conclusion, the study underscores the importance of sound trade and macroeconomic policies to enhance domestic firms' production, ensuring international competitiveness and, consequently, fostering employment generation.

Nwaka et al. (2015) utilized time series data from 1970 to 2010 to examine the relationship between trade policy and unemployment in Nigeria. The study employed vector error correction technique to examine variables such as public recurrent spending on education, trade openness, foreign price shocks, and alternative income. Results indicate that in the long run, real output and income per capita lead to a reduction in unemployment, contrasting with the finding that trade

openness policy is associated with an increase in unemployment. Foreign price shocks, proxied by commodity prices, positively influence unemployment rates without subsequent equilibrium restoration. However, the short-term dynamics reveal that the initial impact of openness and foreign price shocks contributes to a temporary reduction in unemployment. From 1983 to 2015, Adzugbele et al. (2020) evaluated the impact of the real exchange rate on the rate of unemployment in Nigeria. The data was analyzed using ARDL bounds testing approach to co-integration. The findings of the estimations reveal that the real exchange rate has increased unemployment rates in both the short and long run. Cahyadin & Ratwianingsih (2020) estimated exchange rates and unemployment in selected ASEAN countries. This research delves into the empirical model of external debt, exchange rate, and unemployment in selected ASEAN countries spanning the period from 1980 to 2017, with a focus on Indonesia, Malaysia, Thailand, and the Philippines. Drawing data from the World Bank publications, the study employs the Autoregressive Distributed Lag Error Correction Model (ARDL-ECM) and Granger Causality Test (GCT) to address its research objectives. The results reveal short-term effects within each empirical model (external debt, exchange rate, and unemployment), and the stability test indicates the precision and stability of the models. The GCT findings suggest causal relationships between external debt, exchange rate, and unemployment, particularly in Indonesia. Moreover, the study uncovers co-movements in the linkages between external debt, exchange rate, and unemployment in the selected ASEAN countries. Consequently, governments are encouraged to prioritize macroeconomic policies that foster exchange rate stability, effective external debt risk management, and initiatives geared towards poverty reduction. This research contributes significant insights to the empirical literature, shedding light on the interconnected dynamics of external debt, exchange rates, and unemployment in the context of ASEAN nations.

Atya (2017) employed ARDL model, Fully Modified OLS (FMOLS), and Dynamic OLS (DOLS) to investigate the impact of the real exchange rate on unemployment in the Egyptian economy between 1985 and 2015. The result shows that real exchange rate has a significant and positive effect on unemployment. Bacao et al. (2016) looked at the major economies of Australia, Brazil, China, Germany, Japan, Switzerland, United Kingdom, and United States of America's exchange rates, competitiveness, and unemployment. They employed a VAR (vector autoregressive) model. As a result, a rise in exchange rate causes an increase in unemployment.

3. METHODOLOGY

The research employs a quantitative approach centered on panel data analysis. This method involves the collection and analysis of secondary data from the World Bank Development Indicators (WDI), covering 15 ECOWAS countries over the period 1991–2020.

3.1 Model Specification

The first objective is to assess the impact of trade on unemployment. The model is specified as follows:

$$U_{it}=\beta_0+\beta_1 TOP_{it}+\beta_2 GDP_{it}+\beta_3 POP_{it}+\varepsilon_{it}$$

Where:

- U_{it} represents the unemployment rate in country i at time t
- TOP_{it} is the trade openness index for country i at time t
- GDP_{it} is the gross domestic product of country i at time t,
- POP_{it} represents the population of country i at time t
- ϵit is the error term.

The second objective is to determine whether the exchange rate has a significant impact on unemployment. The model is specified as follows:

$$U_{it}=\beta_0+\beta_1 TOP_{it}+\beta_2 EXR_{it}+\beta_3 GDP_{it}+\beta_4 POP_{it}+\varepsilon_{it}$$

Where:

- EXR_{it} denotes the exchange rate in country *i* at time *t*

3.2 Estimation Technique

In this study, the utilization of econometric techniques, specifically Fully Modified Ordinary Least Squares (FMOLS) and Panel Dynamic Ordinary Least Squares (DOLS), is paramount to ensuring a rigorous and comprehensive analysis of the relationships between trade openness, exchange rate dynamics, and unemployment. The selection of FMOLS and DOLS is based on their suitability for addressing the specific characteristics of the dataset and research objectives. FMOLS is particularly effective in correcting endogeneity and serial correlation issues in panel data, while DOLS accounts for potential simultaneity bias by including leads and lags of the

regressors. These methods were adopted because they provide consistent and efficient estimates in the presence of co-integration among variables, which is a key feature of this study. The FMOLS and DOLS models are subsequently employed to estimate the effects of these variables on unemployment. The general form of the FMOLS model is specified as:

$$Uit=\beta0+\beta1TOPit+\beta2EXRit+\beta3GDPit+\beta4POPit+\sum j=1p\alpha j\Delta Uit-j+\sum j=1q\beta j\Delta TPit-j+\sum j=1r\gamma j \Delta EXRit-j+\sum j=1s\delta j\Delta GDPit-j+\sum j=1t\lambda j\Delta POPit-j+\epsilon it$$

For Panel DOLS, individual country fixed effects (αi) are introduced:

$$Uit=\beta0+\beta1TOPit+\beta2EXRit+\beta3GDPit+\beta4POPit+\alpha i+\sum j=1p\gamma j\Delta Uit-j+\sum j=1q\delta j\Delta TPit-j+\sum j=1r\epsilon j \Delta EXRit-j+\sum j=1s\zeta j\Delta GDPit-j+\sum j=1t\eta j\Delta POPit-j+\epsilon it$$

3.3 Data Source

This study utilized panel data spanning from 1991 to 2020 sourced from World Bank Development Indicators (WDI). The variables used in this study are Unemployment (UN), Trade Openness (TOP), Exchange Rate (EXC), Gross Domestic Product (GDP), Population Growth Rate (POP).

4. EMPIRICAL RESULTS

Table 4.1. Summary Statistics of the Variables

Variable	Observation	Mean	Std. Dev.	Min	Max
UN	450	4.3834	2.8561	.32	14.878
TOP	450	59.9734	16.7268	26.0989	117.8167
GDP	450	3.9563	4.9452	-30.1451	26.5241
EXC	450	587.9133	1288.502	.03676	9565.082
POP	450	2.641795	1.170805	-13.05767	10.19989

Source: *Author's computation using Stata 17*

Table 4.1 presents the descriptive statistics of the variables applied in the econometric model. The table reveals that the Unemployment has an average value of 4.4, a minimum value of 0.32

and a maximum of 14.9. On the other hand, Trade Openness has an average value of 59.97, a minimum of 26.1 and a maximum of 117.8. While the Gross Domestic Product is on the average 4.0 with minimum value of -30.1 and a maximum of 26.5. Also, the exchange rate has an average value of 587.9 with a minimum value of 0.04 and a maximum of 9565.1. More so, Population Growth Rate has an average value of 2.6 with a minimum value of -13.1 and a maximum of 10.2.

Table 4.2: Correlation Matrix

	UN	**TOP**	**GDP**	**EXC**	**POP**
UN	1.0000				
TOP	0.4786	1.0000			
GDP	0.0021	0.1122	1.0000		
EXC	-0.0412	0.1942	0.0563	1.0000	
POP	-0.2192	0.1987	0.1520	0.0099	1.0000

Source: *Author's computation using Stata 17*

The findings of correlation between the variables are shown in Table 4.2. There is no high level of correlation among the independent variables, hence multicollinearity would not be a concern in this study. It also suggests that, while trade and GDP per capita have positive correlation with unemployment, the official exchange rate and population growth rate have negative link with unemployment.

To ensure robust empirical analysis, the study begins with panel unit root tests (Im, Pesaran, and Shin; ADF; and Phillips-Perron) to assess the stationarity of variables. Pedroni co-integration tests are then applied to confirm the presence of long-term relationships among the key variables: trade openness, exchange rates, GDP growth, population growth, and unemployment. The results of this test guide the econometric modeling decisions and ensure the reliability of its findings, as non-stationary variables can lead to spurious regression results and unreliable conclusions. Table 4.3 presents the unit root test results. The results show that the variables used in this study are a mixture of both integration of order I (0) and I (1).

Table 4.3: Unit Root Tests Result

VARIABLES	INT ORDER	IPS	INT ORDER	ADF	INT ORDER	PP
UN	I(1)	-3.04131***	I(1)	81.6288***	I(1)	99.8107***
TOP	I(0)	-1.70747**	I(1)	167.362***	I(0)	44.5497**
GDP	I(0)	-6.95280***	I(0)	109.807***	I(0)	209.074***
EXC	I(1)	-8.28974***	I(0)	60.2212***	I(1)	187.514***
POP	I(0)	-7.61320***	I(0)	123.014***	I(0)	84.8950***

Note: ***, ** and * indicates statistical significance at 1%, 5% and 10% respectively.

Given that some of the variables of interest are stationary at order zero I (0), while others are stationary at order one I (1), co-integration analysis is particularly relevant. The Pedroni test derived by Pedroni (1999, 2004) which allows for panel-specific co-integrating vectors was employed in this study and the result is presented in the table 4.4 below. The result indicates the existence of long-term relationships among these variables.

Table 4.4: Co-integration Test

Models	Statistic	Stat. Value	Prob. Value
Model 1	Modified Phillips Perron	4.2972	0.0001
	Phillips Perron	6.1955	0.0000
	Augmented Dickey Fuller	6.4764	0.0000
Model 2	Modified Phillips Perron	4.0219	0.0000
	Phillips Perron	5.9822	0.0000
	Augmented Dickey Fuller	5.9024	0.0000

Source: *Author's computation using Stata 17*

Table 4.5: Panel FMOLS and DOLS test results dependent variable: Unemployment

	FMOLS	DOLS
Trade (TOP)	5.426858***	2.710510***
Exchange rate (LEXC)	-3.472024***	-3.626758***
GDP	-3.263287***	-2.477769***
Population Growth Rate (POP)	1.067724	1.874163*
R-square	0.88	0.95
Observations	435	351
No. of countries	15	15

Note: ***, ** and * indicates statistical significance at 1%, 5% and 10% respectively.

Table 4.5 presents the results of Panel Fully Modified Ordinary Least Squares (FMOLS) and Panel Dynamic Ordinary Least Squares (DOLS) tests, examining the relationship between various economic variables and unemployment in 15 ECOWAS countries.

The FMOLS model indicates that Trade, Exchange Rate, and GDP have statistically significant impacts on unemployment. The coefficient for Trade (5.43) is positive, suggesting that increased trade is associated with higher unemployment. This finding aligns with Menezes-Filho and Muendler (2011), who argue that restrictive labor market regulations and the prevalence of informal labor markets in developing countries can exacerbate unemployment despite trade openness. Similarly, Nwaka et al. (2015) observed that trade openness worsens unemployment in Nigeria, further supporting this result.

Conversely, the Exchange Rate and GDP have negative coefficients (-3.47 and -3.26, respectively), indicating that higher exchange rates and GDP levels are linked to lower unemployment rates. This finding is consistent with Demir (2010) and Feldmann (2011), who found that real exchange rate depreciation increases intermediate input costs, adversely affecting production and reducing labor demand. The negative relationship between GDP growth and unemployment aligns with Okun's Law, which posits that economic growth stimulates job creation. Population Growth Rate does not show statistical significance in the FMOLS model,

suggesting that its impact on unemployment may be context-specific or mitigated by other factors in the ECOWAS region.

The DOLS model corroborates these findings, with Trade (2.71), Exchange Rate (-3.63), and GDP (-2.48) retaining their significance levels and signs. Additionally, Population Growth Rate is statistically significant at the 10% level, suggesting a modest positive association with unemployment. This result contrasts with Bloom et al. (2003), who argue that population growth can stimulate economic activity and reduce unemployment in the long run, but it aligns with Ewetan and Urhie (2014), who found that rapid population growth in ECOWAS countries exacerbates unemployment due to insufficient job creation.

Both models demonstrate high explanatory power, with R-square values of 0.88 for FMOLS and 0.95 for DOLS, indicating that the included variables collectively explain a substantial proportion of the variability in unemployment across the ECOWAS countries. These findings contribute to the existing literature by providing empirical evidence from a regional perspective, highlighting the nuanced effects of trade openness, exchange rates, and economic growth on unemployment in ECOWAS. This study builds on prior work by Menezes-Filho and Muendler (2011), Nwaka et al. (2015), and Demir (2010), while offering new insights into the role of population growth and the unique labor market dynamics of the ECOWAS region.

5. Conclusion

In conclusion, the empirical analysis using Panel Fully Modified Ordinary Least Squares (FMOLS) and Panel Dynamic Ordinary Least Squares (DOLS) models has shed light on the complex relationship between economic variables and unemployment in the context of ECOWAS countries. The findings highlight the significant impact of trade openness, exchange rates, and GDP on unemployment levels. Specifically, an increase in trade is associated with higher unemployment rates, while higher exchange rates and GDP levels are correlated with lower unemployment. The inclusion of Population Growth Rate, although not statistically significant in the FMOLS model, becomes noteworthy in the DOLS model, suggesting a nuanced relationship with unemployment. The robustness of these results, as evidenced by high R-square values, underscores the reliability of the models in explaining a substantial portion of the variability in unemployment across the region.

6. Policy Implications

Moving forward, policymakers in ECOWAS countries should carefully consider the implications of the identified relationships for crafting effective economic policies. To address the observed positive association between trade and unemployment, policymakers may explore strategies aimed at enhancing the employability of the workforce and fostering job creation within the context of increased trade activities. For instance, investing in education and vocational training programmes can equip workers with the skills needed to adapt to evolving labor market demands. Additionally, promoting labor-intensive industries and supporting small and medium-sized enterprises (SMEs) can create more job opportunities, particularly in sectors that benefit from trade openness.

Attention to exchange rate management is also critical. Policymakers should implement measures to stabilize exchange rates, such as maintaining adequate foreign exchange reserves and adopting prudent monetary policies. A stable exchange rate can enhance export competitiveness, stimulate domestic production, and ultimately reduce unemployment. Furthermore, sustained efforts to promote economic growth through infrastructure development, industrialization, and diversification of the economy can create a more resilient labor market.

As population growth demonstrates relevance in the DOLS model, policymakers may further investigate and implement targeted measures to align population growth with sustainable economic development. For example, family planning programs and initiatives to improve access to healthcare and education can help manage population growth while enhancing human capital. Additionally, policies that encourage youth entrepreneurship and innovation can harness the demographic dividend and reduce unemployment among the growing young population.

Overall, a holistic approach that integrates trade policies, exchange rate management, and strategies for inclusive economic growth will be essential in formulating effective policies to address unemployment challenges in the ECOWAS region. Drawing on Butt's (2024) insight that effective governance depends on collaborative efforts to align national policies with broader international standards while ensuring the interests of developing countries are adequately represented, policymakers in ECOWAS should prioritize regional collaboration. This includes harmonizing trade policies, strengthening economic integration, and fostering a conducive environment for sustainable employment generation. By aligning national strategies with

regional and international frameworks, ECOWAS countries can better address unemployment while ensuring their economic policies are both inclusive and globally competitive.

Disclaimer (Artificial Intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

Competing Interests

Authors have declared that no competing interests exist.

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