Foreign Trade and Unemployment in Nigeria, 1981-2017

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Abstract— We queried international trade impact on unemployment in Nigeria, 1981-2017. In other to accomplish set objectives, this work proxy unemployment (UNE) as regressand, import (MPT), export (XPT), exchange rate (EXR) and EDB ranking served as regressors. Descriptive statistic and ECM were employed for data analysis. The result elicited long run relationship exists between trade and work force cutback, determined from the Engle-Granger co-integration test. Import reduced unemployment, but exports, currency rate pluses of doing business increased unemployment from 1981-2017. Consequent upon these outcomes, we advocate that government invest 5% of GDP in agriculture and its value chains for exports and local consumption given Nigeria’s exports is predominantly oil as a commodity. Play in the chocolate market, not cocoa beans market. Process 50% of Nigeria’s crude in Nigeria into a plethora of refined petroleum products using small refineries for local consumption, generation of employment and redistribution of wealth. Export refined value-added products to African countries. Stabilise the Naira by all means necessary. Finally, legislate Nigeria’s development plans such that successive governments would focus on it until all objectives are realised before starting another plan.

Index Terms — Unemployment, Import, Export, Exchange Rate, Ease of Doing Business.

I. INTRODUCTION

Highlight Unemployment a main problem afflicting our country and hindering its development particularly young unemployment. NBS and Nigeria’s National Population Commission recent statistics indicate youth layoff shot up to 58.1% in 2017 (NBS, 2017). This is scandalous, considering that Nigeria’s population is a youthful population. The populace aged 15-34 years Nigeria’s total population was put at about 43 percent (NBS, 2017). Given the above scenario, Anyawu in 2013, observed that in Africa, percentage of populace aged 15-34 years laid off rate is higher than adult unemployment rate. Particularly because young people are those who turn up at venues for aptitude or physical fitness tests in their search for jobs buttress this observation.

The consequences to our economy are quite observable and they include: increased crime rate; vandalisation of public assets, particularly oil installations; emigration of skilled labour (brain drain syndrome); insurgency and insecurity; widespread poverty; low economic output and psychological effects of unemployment.

The country can be freed from all these consequences by putting up policies to encourage trade to create jobs. Growth in export curtails the atrocious poverty cycle and advance development (Bosede, 2014).

According to Oaikhenan and Aigheyisi (2015) efforts on programmes such as NEEDS 1 and NEEDS 11, seven point agenda and Sure P. Government job creation yielded no positive results. Also, Meroyi (2016) noted that a severe policy by each successive government of Nigeria to tackle unemployment problem failed.


The skewed economy especially on unemployment level suggests that the economy needs stability. These observations amongst others makes it imperative to query the aftermath effect of trade on unemployment in Nigeria from 1981-2017. The paper is arranged thus: Section 1 is introduction while section two empirical literature review; section three discusses model and methodology while section four provides data and empirical outcomes and finally section five provides the summary and closure.

II. LITERATURE REVIEW

2.1 Theoretical Framework

This theory developed by two Swedish economists known as Eli Heckscher and Bertil Ohlin. Their theory addressed 2 problems, determinants of absolute advantage of a nation also its consequences on trading countries.

The Heckscher – Ohlin theory focused at large natural resources, price of input and output its disparity amongst nation’s significant drivers of trade. However, with theory machinery and preferences Heckscher-Ohlin contended factors endowment determine a nation’s comparative advantage. This mental analysis is the foundation on which rests the theory. Their approach analysed factor endowment and international specialisation. The model stands; firstly, specialisation secondly, countries factor endowments
difference.

The advanced economies like Nigeria with abundant labour concentrate on unmanufactured products, especially agricultural products as workers required for these products are high where mechanised commercial farming is not inexistence. They argued less developed economies buy completed products preferably from advanced nations. It argued that where factor for two economies are homogeneous, production surge in inputs elicits boost in outputs and long term occurs.

The proposition that it’s predicated on, exposed the Heckscher-Ohlin argument to some criticisms. Factors are different. They discounted perfect competition, assumed products are differentiated, and comparative factor values are reflective disparity during benefaction. Determination of input cost occurs when supply exceed demand.

Heckscher-Ohlin theory concluded that trading increases aggregate production. International trade raise capital, commodities from other economies and all nations gain.

Trade stimulates growth, generate employment that reduces unemployment in emerging economies (Akeem, 2011; Enu, Havi & Hogan, 2013).

2.2 Review of Empirical Literature

Works exist that query the consequence of international trade on unemployment of specific country. For instance; Sodipe and Ogunrinola (2013), Investigated the association amidst growth and unemployment, 1981-2006. The outcomes indicated that an absolute and compelling association exist betwixt cutback and economic growth. However, an adverse association exist amidst employment and GDP increase in Nigeria. They suggested efforts should be directed towards employment generating ventures.

Kim (2011) studied analytically the repercussion of trade own onaggregate unemployment on twenty OECD countries from 1961 to 2008. Kim established imports from high-income economies could increase aggregate unemployment when the explicit fallout of trade is considered. However, no clear evidence subsist that other trade indicators such astotal trade, total imports, or imports from low-income economies have any compelling effect on cutback.

Goff and Singh (2012) questioned the reaction trade openness exact on poverty. They opined requires interdependent rejigging of strategies and tactics for an economy strong enough to compete internationally. A non-linear regression specification utilised Poverty as the responsive variables, while governance and strong financial system, education were regressors and a panel of thirty economies in Africa from 1981-2010. They established that when an economy has strong education system, deep-rooted stable institutions that tradeliberalisation add to contraction of poverty rate.

Umoru (2013) interrogated impact on international trade and job creation,1986 to 2011. VECM was deployed for data analysis. The study elicited trade flows has a negative and substantial aftermath effect on job creation. He advised Nigeria government should widen her trade basket, control importation such that BOP becomes favourable.

Nwaka, Uma and Tuna(2015), scrutinized the consequences international trade policy exacts on unemployment from 1970-2010 using VECM methodology to analyse the data. Nwaka et al, established that on the long run real GDP and trade liberalisation boost unemployment rate. Commodity price shocks exact absolute hike on unemployment, however, failed to normalize equilibrium. The reverse is, however, the case in short term as it dropped unemployment rate.

Ikechukwu, Kalu and Gulcay (2015), studied the effect trade openness had on job cutback. The study spanned 1970-2010 and analysed the data deploying Vector Error Correction method. Variables comprised adjustment in RGDP or income per head, unemployment rate, international price shock, the recurrent spending of government on education and open trade. Their work concluded that increasing merchandise price and promoting trade openness resulted in higher unemployment,1970-2010. The long-term income per head and RGDP triggered reduction in unemployment.

Belenkiy and Riker (2015) studied the theoretical evidence linking exports on cutback on employment. The archetype showed an intricate theoretical models compelling association exists amongst trade and cumulative cutback rates. They established that the factual study showed foreign trade contracted cutback on the long run.

Keawphun (2016) looked at trade openness repercussion on job cutback. Linear regression archetype was deployed for 89 countries, 1994-2005. The study established trade had an adverse association with unemployment. And neither did differences in time frame exact a significant aftereffect of liberalisation on labour cutback.

Okere and Iheanacho (2016) queried the repercussion of protectionist export approach on Nigeria's economyspanning 1990 to 2013. They deployed ARDL and co-integration test for their analysis. They affirmed real GDP per head, unemployment, labour and output significantly promoted economic advancement. And suggested policies which could encourage trading be implemented.

Yolanda (2017) studied impact of export development on job loss in Indonesia from 1986 to 2016 using OLS to analyse the data. Export development owned an absolute and substantial relationship with job cutback in Indonesia. Yolanda advanced policies to trigger an upswing in Indonesian exports.

III. METHOD OF STUDY

3.1 Analytical Framework and Model Specification

The analytical method depicts work Meroyi (2016) with further modification. Meroyi (2016) studied the aftereffect of trade Liberalization on job creation under military and civilian leadership in Nigeria by regressing employment (EMPLOY) as a role of export (XIT), import (MIT), exchange rate (EXR), interest rate (INTR) and (FDI), 1980 to 2012. But this study deviates from this scholarly examining the aftereffect of foreign trade on unemployment by regressing UNE as a function of Import (MPT), Export (XPT), Exchange Rate (EXR) and Ease of Doing Business (EDB) from 1981 to 2017. Hence, the archetype is explained thus:
UNE = f(MPT, XPT, EXR, EDB);

(1) Where: UNE = Unemployment, MPT = Import, XPT = Export, EXR = Exchange Rate, EDB = Ease of Doing Business. From equation (1) above, the explicit econometric archetypes is detailed as:

\[ UNE_t = \beta_0 + \beta_1 MPT_t + \beta_2 XPT_t + \beta_3 EXR_t + \beta_4 EDB_t + \mu_t \]

Where: UNE = Unemployment at time ‘t’, MPT = Import at time ‘t’, XPT = Export at time ‘t’, EXR = Exchange Rate at time ‘t’, EDB = Ease of Doing Business at time ‘t’, \( \mu_t \) = Parameter measure and \( \mu_t \) = Error term

3.2 Data Sets and Estimation Method

4.1 Descriptive Statistics

Table 1 below arrays the results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>UNE</th>
<th>MPT</th>
<th>XPT</th>
<th>EXR</th>
<th>EDB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>11.28649</td>
<td>3072.365</td>
<td>4429.276</td>
<td>82.78649</td>
<td>42.83784</td>
</tr>
<tr>
<td>Median</td>
<td>9.400000</td>
<td>862.5000</td>
<td>1309.500</td>
<td>92.69000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Maximum</td>
<td>27.40000</td>
<td>11076.10</td>
<td>15262.00</td>
<td>305.7900</td>
<td>170.0000</td>
</tr>
<tr>
<td>Minimum</td>
<td>3.200000</td>
<td>6.000000</td>
<td>7.500000</td>
<td>0.610000</td>
<td>0.000000</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.062643</td>
<td>3992.370</td>
<td>5367.481</td>
<td>80.40607</td>
<td>64.01585</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.054028</td>
<td>1.064298</td>
<td>0.883832</td>
<td>0.713596</td>
<td>0.881859</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>3.363411</td>
<td>2.489995</td>
<td>2.270978</td>
<td>2.868120</td>
<td>1.956980</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>7.054622</td>
<td>7.386170</td>
<td>5.636506</td>
<td>3.167002</td>
<td>6.472825</td>
</tr>
<tr>
<td>Probability</td>
<td>0.029384</td>
<td>0.024895</td>
<td>0.059710</td>
<td>0.205255</td>
<td>0.039305</td>
</tr>
<tr>
<td>Sum</td>
<td>417.6000</td>
<td>113677.5</td>
<td>163883.2</td>
<td>3063.100</td>
<td>1585.000</td>
</tr>
<tr>
<td>Sum Sq. Dev.</td>
<td>1323.203</td>
<td>5.74E+08</td>
<td>3063.100</td>
<td>3063.100</td>
<td>1585.000</td>
</tr>
<tr>
<td>Observations</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
<td>37</td>
</tr>
</tbody>
</table>

Source: Author’s Computation (2018)

Table 1 array standard deviation determined for export as most changeable array with a figure of 5367.48, unemployment was least capricious fickle calculated to be 6.06. Computed amount of skewness statistic for all fickle – UNE, MPT, XPT, EXR, and EDB were absolutely skewed, indicating their dispersion down a long right tail. Again, the kurtosis statistics of MPT, XPT, EXR and EDB.

Jarque-Bera statistics (J-B) for UNE, MPT and EDB variables denied the axiom for usual dispersion while XPT and EXR variables do not reject the axiom of usual dispersion at 5% level of importance. The outcomes suggest the presence of non-stationary in the array. The Augmented Dickey Fuller (ADF) unit root tests procedures were adopted.

4.2 Unit Root Test

Table 2 below presents outcomes of these regressors and regressand; UNE, MPT, XPT, EXR and EDB were stationary at 1st difference.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>1st Difference</th>
<th>Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOG(UNE)</td>
<td>-1.587240</td>
<td>-6.571605</td>
<td>I(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LOG(MPT)</td>
<td>-1.074857</td>
<td>-6.789922</td>
<td>I(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LOG(XPT)</td>
<td>-1.181633</td>
<td>-6.196973</td>
<td>I(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LOG(EXR)</td>
<td>-1.905764</td>
<td>-5.101654</td>
<td>I(1)</td>
<td>Stationary</td>
</tr>
<tr>
<td>LOG(EDB)</td>
<td>-0.100453</td>
<td>-4.913223</td>
<td>I(1)</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: Author’s Computation (2018)

4.3 Co-integration Test Result and Analysis

Because the array is order I(1), co-integration analysis is required, therefore, Engle-Granger two-step process was deployed. The result of the Engle-Granger Co-integration are given in Table 3 below.

The analysis employed are explanatory and investigative. The analytical tool used is the OLS regression method. These econometric techniques include: unit root test, co-integration test and error correction mechanism (ECM).

IV. EMPIRICAL RESULTS AND ANALYSIS

Chapter four arrays scrutinised data and outcomes. It further evaluated and explained the outcomes.
Table 3: Engle and Granger Co-integration Test Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Level</th>
<th>5% Critical Values</th>
<th>Order of Integration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESID(ECM)</td>
<td>-3.436143</td>
<td>-2.948404</td>
<td>I(0)</td>
<td>Co-integrated</td>
</tr>
</tbody>
</table>

Stationary at both 5% and 10% Level of Significance

Source: Author’s Computation (2018)

The Engle and Granger (1987), two-step co-integration process of the archetype details that leftovers from the reversion were stationary and symbolic at 5%, affirming that (MPT, XPT, EXR and EDB) are co-integrated with unemployment (UNE) from 1981-2017 connoting long term association amidst regressor and regressand in Nigeria.

4.4 Parsimonious ECM test result and Analysis

To affirm the presence of co-integrating vector amidst the fickle, ECM is used. Interpretation stretch from the broad to concise rules as detailed in Table 4 below.

Table 4: Parsimonious ECM Result

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.009154</td>
<td>0.055101</td>
<td>0.166137</td>
<td>0.869</td>
</tr>
<tr>
<td>DLOG(UNE(-1))</td>
<td>0.257446</td>
<td>0.153790</td>
<td>1.674008</td>
<td>0.105</td>
</tr>
<tr>
<td>DLOG(MPT(-1))</td>
<td>-0.250265</td>
<td>0.112847</td>
<td>-2.217730</td>
<td>0.035</td>
</tr>
<tr>
<td>DLOG(XPT)</td>
<td>0.142592</td>
<td>0.100280</td>
<td>1.421945</td>
<td>0.166</td>
</tr>
<tr>
<td>DLOG(EXR(-1))</td>
<td>0.053467</td>
<td>0.136857</td>
<td>0.390678</td>
<td>0.699</td>
</tr>
<tr>
<td>D(EDB(-2))</td>
<td>0.002099</td>
<td>0.002404</td>
<td>0.873184</td>
<td>0.390</td>
</tr>
<tr>
<td>ECM(-1)</td>
<td>-0.553187</td>
<td>0.143804</td>
<td>-3.846815</td>
<td>0.000</td>
</tr>
</tbody>
</table>

R2 = 0.458; Adj-R2 = 0.337; D.W. = 1.868; F-Stat. = 3.797

Source: Author’s Computation (2018)

Presented in Table 4 are determined Adjusted-R square of 0.337, suggesting that the regressors in the archetype are responsible for 34% of the cumulative differences in unemployment (UNE). The remaining 66% are determined by externalities to the archetype, but accounted for by residual.

Regression decisions of the active archetype is compelling at 5% level as F-calculated of 3.797 is above the table value of 2.92. The ECM is accurate and symbolic. It indicates 55% disequilibrium in UNE in the past year is rectified with the year as the array of data are annual. The Durbin-Watson (D-W) statistics amount to 1.868, conveys nonexistence of serial interrelationship in the archetype.

The numerical quantity of previous lag (1) from import (MPT) is unfavourable at -0.250265, implying that 1% hike of imports reduces unemployment by 0.25 percent. The constant quantity of previous lag (1) of import (MPT) conforms to presumptive as with economic axiom and is numerically symbolic at 5% level.

The results further suggest numerical quantity of recent export (XPT) is positive with a value of 0.142592. Therefore, 1% upswing in export (XPT) increases unemployment by 0.14% within time span reviewed. The numeric quantity of export (XPT) denies the economic axiom and numerically inconsequential with unemployment in Nigeria.

The constant quantity of previous lag (1) for exchange rate (EXR) own a positive value of 0.053467, implying a 1% gain in previous lag (1) for exchange rate (EXR) increases unemployment by 0.05%. The numerical quantity of former lag (1) of exchange rate (EXR) is infinitesimal on job cutback at 5% level. While numerical quantity of prior lag (2) for ease of doing business (EDB) with positive rate of 0.002099, connoting 1% deterioration in prior lag (2) of ease of doing business (EDB) increases unemployment by 0.002%. The constant quantity of former lag (2) of ease of doing business (EDB) inconsequential on unemployment at 5% level.

4.5 Diagnostic Testing Results

Table 4.5 arrays results from these tests; Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test and Stability test (CUSUM &CUSUMSQ test). These final analysis test affirmed that the archetype properly modelled and stability endured within 5% critical boarder as depicted by the CUSUM and CUSUMSQ plots.

Table 5: Diagnostic Test Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breusch-Godfrey</td>
<td>0.610392</td>
<td>0.4665</td>
</tr>
<tr>
<td>Serial Correlation LM Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heteroskedasticity Test</td>
<td>0.791562</td>
<td>0.5195</td>
</tr>
</tbody>
</table>

Source: Author’s Computation (2018)
V. CONCLUSION AND POLICY RECOMMENDATION

We scrutinised foreign trade association with unemployment from 1981 to 2017. For inquiry, we used Engle-Granger Co-integration and Error Correction Modeling procedures. Datasets used for reasoning were annual and sourced from, CBN, NPC, and NBS amongst others. The outcome affirmed the presence of long term association between foreign trade and unemployment elicited from Engle-Granger co-integration test. Furthermore, the paper revealed that import reduced job cutback while exports, exchange rate and the deteriorating ease of doing business environment increased unemployment.

We advised that government invest 5% of GDP in crop production and its value chains for exports and local consumption given Nigeria’s exports is predominantly oil as a commodity. Play in the chocolate market, not cocoa beans market. Process 50% of Nigeria’s crude in Nigeria into a commodity. Play in the chocolate market, not cocoa beans market.

Finally, legislatively Nigeria's development plans such that successive governments would focus on it until all objectives are realised before starting another plan.

REFERENCES


