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Economic Development Implications of Taxation and Fiscal Deficit in West African Monetary Zone (WAMZ)

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Abstract
This paper offered some insights into the development implications of taxation and fiscal deficit in the WAMZ with a focus on employment. Essentially, the dynamic effects of tax revenue and external debt with its servicing requirements on employment rate were examined for the six member countries of Nigeria, Ghana, the Gambia, Liberia, Seria Leone and Guinea over the period 2005-2020. The datasets obtained from the World Bank and Organization of Economic Cooperation and Development (OECD) Statistics were analyzed using the panel non-linear autoregressive distributed lag model (NARDL), Pedroni residual-based cointegration and causality test among others. Evidence of mixed integration and long-run relationship among the series was established from the panel unit root and Pedroni residual-based cointegration test respectively. The results of the panel NARDL showed that the asymmetric effect of tax revenue on employment is positive and significant at the 5 per cent level. This finding highlights that taxes help the government increase its revenue base and achieve a significant level of financial sustainability for investment in critical sectors with the potential to create jobs. However, it was found that employment responded negatively to both positive and negative changes in external debt shock in the long run. This finding suggests that the growth in external borrowings has not translated to economic development in terms of employment creation in the member countries of WAMZ. At the same time, the debt service requirements of external debt negatively affected employment during the study period. This finding suggests that debt service payment is detrimental to economic development. The causality test results showed unidirectional causality flowing from tax revenue to employment which suggests that tax revenue is important in forecasting changes in employment in the WAMZ. Given the findings, this paper recommends that policymakers should boost tax revenue and ensure the effective allocation of borrowed funds to enhance fiscal sustainability and create more opportunities for employment in the WAMZ.
Keywords: *Taxation, fiscal deficit, economic development, external debt, debt service and employment*

1.1 Introduction

The effects of tax revenue and fiscal deficit on economic development in developing economies have been controversial. This may be linked to the growing challenge of optimizing tax revenue to promote fiscal sustainability and keep the economy on the path of rapid and sustainable development. Ebeke and Ehrhart (2012) describe tax revenues in Africa as largely unstable due to persistent political and economic instability. This has posed a threat to the economic development

goals, especially equitable income distribution, sustainable poverty reduction, structural change and job creation, among others. It is worrisome that in many sub-Saharan African (SSA) nations, fiscal policies are not being implemented to their full potential (Udoh, 2011). The World Bank, International Monetary Fund (IMF), and domestic monetary authorities are concerned about the low proportion of tax revenue to Gross Domestic Product (GDP) in the West African Monetary Zone (WAMZ). It is argued that a significant increase in tax revenue will help the Zone's financial sustainability by reducing the worsening debt crisis. Hence, the member countries of the WAMZ have thus continued to implement tax reforms to boost tax revenue and production through tax mobilisation and management.
Besides taxation, fiscal deficit has emerged as a notable source of public funding in the WAMZ considering the widening savings-investment gap associated with the poor capital formation in each of the member countries. According to Arestis and Sawyer (2004), deficit financing is another source of finance that stimulates economic activity by increasing aggregate demand. It equally helps governments in addressing monetary pressures, which seriously jeopardise the achievement of economic development objectives. However, the persistent increase in the debt-to-income ratio in Nigeria and other WAMZ countries poses a threat to growth and economic development in the long run. Traditionally, Friedman (1963) argues that deficit financing results in the expansion of the money aggregates, which raises inflation and has a detrimental effect on economic growth. Again, the increasing cost of debt servicing for borrowed funds has triggered a negative perception of deficit financing in the WAMZ.
Although theory and empirical evidence highlighted the benefits of tax revenue and deficit financing for economic development, the experience of countries in the WAMZ has remained a contentious issue in recent times. This has raised concern about the buoyancy of the tax system and debt sustainability for economic growth and development in the zone. As the controversy on optimal tax revenue mobilization and debt management grows, this study examined the effects of tax revenue and fiscal deficit economic development with a focus on employment generation in the WAMZ. Specifically, this study sets out to:

i. examine the effect of tax revenue on employment generation in the WAMZ;
ii. determine the effect of external debt on employment generation in the WAMZ; and
iii. ascertain the effect of debt servicing on employment generation in the WAMZ.

2. Review of the Related Literature
2.1 Theoretical Literature
Keynes's (1936) theory of public debt assumes that budget deficit and the increase in government spending stimulate aggregate demand for the employment of idle resources in the economy. Therefore, debt is considered beneficial for growth and development if it is invested in productive economic activities. The Keynesian view of public debt deviated from the classical assumptions. They perceive public borrowing as growth-enhancing due to the expected turnaround associated with its investment in productive ventures. According to Renjith and Shanmugam (2018), public debt would increase aggregate demand and drive economic prosperity. The extensive theoretical construct of Keynes provides the basis for state intervention, through its financial means, in support of economic recovery and combating unemployment in times of recession. However, Bernheim (1989) criticised the Keynesian theory of public debt on the grounds that it suggests that budget deficits have both positive and negative effects depending on how fully the Keynesian hypotheses are verified.

2.2 Empirical Literature Review

Adegbie, Nwaobia and Osinowo (2020) examined the effect of non-oil taxes on economic growth and development of Nigeria. The study employed ex post facto research design with time series data for the period 1994Q1 - 2017Q4 from CBN statistical bulletin and National Bureau of Statistics. The data were analyzed using descriptive and inferential statistics, particularly multiple regressions. The study found that custom and excise duties, capital gain tax, company income tax, tertiary education tax and value added tax have significant effect on economic growth. On the basis of the findings, the study concludes that non-oil taxes significantly influenced both economic growth and economic development in Nigeria. To this end, the study recommended that government must strive to sustain the efforts towards improving non-oil tax revenue and ensure efficient utilization of tax payers' money to boost economic growth and development.

Owuru and Olabisi (2020) used a Fully Modified Ordinary Least Square (FMOLS) estimation strategy to empirically investigated the possibility for Nigeria to leverage non-oil tax revenue for inclusive and pro-poor growth. The data utilized quarterly data on oil tax revenue and non-oil tax revenue factors for the period 2011-2016. The results reveal that non-oil tax revenue has a positive contribution to inclusive growth in Nigeria than oil revenue. Based on this empirical evidence, the study concludes that non-oil tax revenue has the potential of aiding sustainable inclusive growth in Nigeria. The study, therefore, recommended that the economy of Nigeria should be diversified intensively to increasingly harness the potential opportunities of the real sectors to boost the generation of non-oil tax revenue and in turn foster sustainable inclusive and pro-poor growth.

Iwuoha (2020) utilized time series data spanning from 1981 to 2019 to determine whether borrowing will come to the rescue in reducing unemployment in Nigeria. Employing the VECM model, the study carried out the stationarity and cointegration tests respectively. While the stationarity test confirmed all variables being stationary at I(1), existence of cointegration was also confirmed indicating a relationship between public debt and unemployment which turned out to be an inverse relationship. A high value of error correction coefficient was recorded. It was found that unemployment granger causes government debt and debt servicing. The overall result shows that public debt has rendered little or no assistance in combating unemployment in Nigeria. The study therefore, recommends that corruption should be put in check so as to allow the amount of borrowing be reflected on the infrastructures available, as public debt also have some adverse effects on the economy.
Cahyadin and Ratwianingsih (2020) empirically investigated the relationships between external debt, exchange rate, and unemployment in selected ASEAN countries during 1980-2017. The countries included Indonesia, Malaysia, Thailand and the Philippines. The data were collected from the World Bank publications. The ARDL-ECM and Granger Causality Test (GCT) were employed to address the research objectives. The findings indicated that there were short-term effects on each empirical model (external debt, exchange rate, and unemployment). Furthermore, the stability test exhibited that the models were precise and stable. The GCT result showed that there was a causal between external debt, exchange rate, and unemployment, especially in Indonesia. Moreover, the linkages between external debt, exchange rate, and unemployment in selected ASEAN Countries were co-movement. Therefore, the study recommends that

governments are expected to emphasis on macroeconomic policies, such as pro-stability of the exchange rate, external debt risk management, and pro-poor.

Whajah, Bokpin and Kuttu (2019) applied a fixed effect regression model to examine the relationship among government size, public debt and inclusive growth for a panel of 54 African countries over the period 2000-2016. The findings from the study showed that, the size of government has a positive effect on inclusive growth whereas the extent of public indebtedness has a negative effect on inclusive growth. The study further observed that improvements in inclusive growth help to promote levels of inequality-reducing growth. On the basis of the findings, the study recommended for policymakers in Africa to take the necessary steps to make growth more inclusive by ensuring optimal fund allocations, and optimal debt levels of public debt for each government is not breached.

3. Methodology

3.1 Research Design

An ex post facto research design was adopted. The choice of this research design resonates from the fact the data utilized in this study are sourced from secondary sources and as such devoid of manipulations.

3.2 Model Specification

The functional specification of the model is provided as:

EMGR = f (TXR, EXB, DSV) (1)

Where: EMPR = Employment generation, a proxy for economic development

TXR = Tax revenue

EXB = External borrowing

DSV = Debt servicing

The panel non-linear autoregressive distributed lag (NARDL) model is specified below:

$$EMGR_t = \lambda_0 + \lambda_1 EMGR_{t-1} + \theta_1^{+} TXR_{t-1}^{+} + \theta_2^{-} TXR_{t-1}^{-} + \theta_1^{+} EXB_{t-1}^{+} + \theta_2^{-} EXB_{t-1}^{-} + \theta_1^{+} DSV_{t-1}^{+} + \theta_2^{-} DSV_{t-1}^{-} + \sum_{j=1}^{p} \beta_1 \Delta EMGR_{t-j} + \sum_{j=1}^{q} \left(\Omega_1^{+} \Delta TXR_{t-j}^{+} + \Omega_1^{-} \Delta TXR_{t-j}^{-} \right) + \sum_{j-1}^{q} \left(\Omega_1^{+} \Delta EXB_{t-j}^{+} + \Omega_2^{-} \Delta EXB_{t-j}^{-} \right) + \sum_{j=1}^{q} \left(\Omega_1^{+} \Delta DSV_{t-i}^{+} + \Omega_2^{-} \Delta DSV_{t-i}^{-} \right) + e_t \quad (2)$$

Where: TXR^{+} and TXR^{-} = partial sums of positive and negative changes in tax revenues

EXB^{+} and EXB^{-} = partial sums of positive and negative changes in external borrowings

DSV^{+} and DSV^{-} = partial sums of positive and negative changes in debt servicing

θ_1^{+} *and* θ_2^{-} = Long run multipliers of the partial sums of positive and negative changes in the explanatory variables

Ω_1^{+} *and* Ω_2^{-} = short run parameters

P and q = maximum lag orders for the dependent and independent variables

Δ = First difference operator

e_t = error term

3.3 Description of Variables

i. **Employment generation:** This defines the proportion of the country's population that is employed. In this study, the total employment to population ratio measured in percentage which is based on the ILO estimate is used to capture the level of employment in the WAMZ countries.

ii. **Tax revenue:** This refers to revenue accruable to the government from both oil and non-oil tax sources. It is measured as the percentage of tax revenue to GDP in the WAMZ countries.

iii. **External debt:** This defines loans sourced from multilateral and bilateral sources. The external debt stock (% of GNI) is used in this study.

iv. **Debt servicing:** This refers to the repayment of interest and principal on a debt for a particular period. In this study, debt servicing is measured by the total debt service as a percentage of GNI.

3.4 Data Analysis Method

The NARDL approach, ascribed to Shin, Yu, and Greenwood-Nimmo (2014), was used to estimate the asymmetric effects of tax revenue and deficit finance on employment. Since it captures asymmetries in the explanatory variables through partial sum decompositions of their positive and negative changes and how they affect the forecast variable, this method was chosen as an extension of the conventional Pesaran, Shin and Smith (2001) symmetric ARDL method. The dynamic regressors' short- and long-term asymmetric effects are combined in a single equation setting in the NARDL model configuration. The NARDL should is used, especially when the variables are fractionally integrated [I(0) and I(1)].

4. Results and Discussion

4.2.1 Descriptive Statistics

The results of the descriptive analysis of the variables are presented in Table 1.

Table 1: Basic descriptive statistics of the variables

Variable	Obs	Mean	Std. Dev.	Min	Max
EMGR	96	16.90	6.901	6.89	27.99
TXR	96	9.909	2.593	4.38	17.7
EXB	96	48.365	73.057	4.950	497.93
DSV	96	2.700	7.957	0.102	59.67

Source: Researcher's computation

As observed from the basic descriptive statistics, the employment rate in the zone during the study period showed that it fluctuated between a minimum value of 6.89 per cent and a maximum value of 27.99 per cent with an average value of 16.90 per cent. Tax revenue as a percentage of the GDP varied between a minimum value of 2.59 per cent and a maximum value of 17.7 percent. It, however, averaged 9.91 percent of the GDP, which suggests that, on the average, tax revenue accounts for less than 10 per cent of the GDP in the WAMZ. The implication of this finding is that the WAMZ countries do not mobilized enough revenue from tax sources. The external debt stock and total debt servicing averaged 48.365 and 2.700 per cent of the GNI. The standard deviations showed that the observations for employment rat and tax revenue clustered around the around their respective mean values. This is because the respective standard deviations for each of the variables are greater than their associated mean values.

4.2 Panel Unit Root Test Results

The IPS panel unit root test approach was employed to ascertain their stationarity properties of each of the variables and the results are summarized in Table 2.

Table 2: Summary of IPS panel unit test results

Variable	Levels test results IPS statistic	First difference test results IPS statistic	Order of Integration
EMGR	1.012 (0.844)	-2.756 (0.003)	I(1)
TXR	-1.849 (0.032)	NA	I(0)
EXB	-11.778 (0.000)	NA	I(0)
DSV	-1.798 (0.761)	-5.235 (0.000)	I(1)

Source: Researcher's computation

Note: Figures in parenthesis are the corresponding probability values associated with of the IPS statistics and NA denotes not available due to the evidence of stationarity at the levels

The IPS unit root test results reported in revealed that tax revenue and external debt stock are all stationary at levels given their respective IPS statistics are associated with probability values which are less than 0.05. This implies that the null hypothesis of unit root for these variables is rejected at 5 per cent level. However, employment rate and total debt servicing are not stationary at levels as evidenced in the probability values of their IPS statistics which are greater than 0.05 at the levels test results. Given their non-stationary at levels, employment rate and total debt servicing were subjected to first difference and they were found to be stationary at first difference. This implies that the variables (employment rate and total debt servicing) are integrated of order one [I(1)]. It, therefore, follows from the IPS unit root test results that the variables are fractionally integrated [I(0) and I(1)]. The evidence of fractional integration in the series corroborates with the findings of Amaning and Seidu (2020) and Ali, Mandara and Ibrahim (2018), amongst others.

4.3 Panel Cointegration Test Results

The Pedroni residual cointegration test method was applied to determine if long run relationship exists among the variables. The results are presented in Table 3.

Table 3: Pedroni residual cointegration test results

Series: EMGR TXR EXB DSV				
Sample: 2005 2020				
Null Hypothesis: No cointegration				
Alternative hypothesis: common AR coefs. (within-dimension)				
	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	2.457467	0.0070	1.136380	0.1279
Panel rho-Statistic	2.083898	0.9814	2.975065	0.0063
Panel PP-Statistic	3.092933	0.0006	4.209086	0.0000
Panel ADF-Statistic	-2.775738	0.0028	-3.039728	0.0009
Alternative hypothesis: individual AR coefs. (between-dimension)				
	Statistic	Prob.		
Group rho-Statistic	2.900167	0.9981		
Group PP-Statistic	3.613595	0.0001		
Group ADF-Statistic	-4.939242	0.0000		

Source: Researcher's computation

Given that the probability values of the test statistics are less than 0.05, the findings showed that eight out of the eleven outcomes are statistically significant at the five percent level. The null hypothesis that there is no cointegration is thus rejected. This suggests that the employment rate has a long run relationship with tax revenue, the stock of external debt, and overall debt servicing. In other words, the ratio of tax revenue to GDP and the financing of the deficit have long-term effects on the creation of jobs in the WAMZ member states. This finding agrees with those of

Unem Cahyadin and Ratwianingsih (2020), Ayogueze and Anidiobu (2017), and Eze and Nwambeke (2017a).

4.4 Model Estimation

As previously explained, the model was estimated with the application of the NARDL techinique> the results are reported in Table 4.

Table 4: Asymmetric long and short run results

Dependent Variable: D(EMGR)				
Method: NARDL				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
	Long Run Equation			
TXR_POS	0.626247	0.065819	9.514708	0.0000
TXR_NEG	0.298630	0.109148	2.736025	0.0097
EXB_POS	-0.140509	0.057183	-2.457165	0.0191
EXB_NEG	-0.952656	0.185153	-5.145243	0.0000
DSV_POS	2.329871	0.513628	4.536108	0.0001
DSV_NEG	2.621226	0.513107	5.108536	0.0000
	Short Run Equation			
COINTEQ01	-0.268745	0.105659	-2.54351	0.0053
D(TXR_POS)	0.038948	0.097636	0.398904	0.6924
D(TXR_NEG)	-0.147845	0.158163	-0.934763	0.3563
D(EXB_POS)	-0.068125	0.066146	-1.029917	0.3101
D(EXB_NEG)	0.103355	0.060926	1.696394	0.0987
D(DSV_POS)	-1.396021	0.712732	-1.958692	0.0582
D(DSV_NEG)	0.958158	0.698401	1.371931	0.1788
C	12.60963	6.911331	1.824487	0.0766

Source: Researcher's computation

As observed from Table 4, the partial sums of positive and negative changes in tax revenue have positive effects on employment generation in the long run. This implies that employment responds positively to both positive and negative changes in tax revenue. The implication of this finding is that taxation helps government to boosts its revenue base and maintains appreciable level of fiscal sustainability for investment in critical sectors of the economy with potentials of job creation. The asymmetric positive effect of tax revenue on employment is contrary to the finding of Huang (2021) which showed evidence of adverse implications of company income tax on job creation. Furthermore, the asymmetric effects of external borrowing on employment rate are negative. This finding is in tandem with previous results such as Mhlaba and Phiri (2019) and Festus and Saibu (2019), which revealed that government deficit finance over the years contributed negatively to output growth. At the same time, the results show that employment generation responds negatively to both positive and negative changes in external debt shock in the long run. In other words, the long term implication of external borrowings on employment generation is negative. The adverse effect of debt servicing on employment corroborates with the findings of Ajayi and Edewusi (2020) and Ayunku and Markjackson (2020). The implication of this finding is that debt servicing causes outflow of resources required for investment in critical sectors of the economy to generate employment. It further explains the growing costs of debt servicing on economic development in the member countries of WAMZ. The short-run results reveal that employment generation responds negatively to debt servicing. This finding is in accordance with the theoretical expectation, meaning that external debt servicing has adverse imimplicationsn productive employment in the short run. The error correction coefficient (-0.2687) has the hypothesized negative coefficient and it is highly significant. he significant negative coefficient of the error correction term indicates that the variables in the employment model can adjust to changes in long-run equilibrium at a speed of 26.87 per cent.

5. Concluding Remarks

Focusing on employment in the WAMZ, this study examines the implications of tax revenue, deficit financing, and debt servicing on economic development. The results demonstrate that tax revenue contributed positively to job creation in the WAM. This confirms that taxes play a stabilizing function in enhancing financial sustainability and laying out a plan for employment creation. The results further showed that debt servicing and external borrowings, in particular, are detrimental to employment generation. This underscores the ineffectiveness of external debt and the negative impact of debt servicing on employment generation. From the findings, this study concludes that tax revenue is central to job creation in the WAMZ. To this end, this study recommends that policymakers should boost tax revenue and ensure the effective allocation of borrowed funds to enhance fiscal sustainability and create more opportunities for employment in the WAMZ.

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