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Interactive Effects of External Debt and Domestic Investment on Global Competitiveness Among West African Countries

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Abstract

West African countries face significant challenges of high external debt accumulation, soaring external debt burdens, inadequate investment and weak global competitiveness which hampers their level of economic growth and development. Thus, this study investigated the interactive effect of external debt and domestic investment on global competitiveness among West African countries from 1990 to 2023. The Study used non-stationary heterogeneous panel model of pooled mean group estimator (PMG)based on the suggestion of the Hausman Test results. The findings revealed that a combination of external debt and investment produced a negative and significant impact on global competitiveness among West African countries. This implies that, if external debts are used for domestic investments, it will improve real effective exchange rate which is used as a proxy for global competitiveness. This is because higher REER connotes weakening competitiveness and vice versa and hence variables that have inverse relationship with it make it better. The study also found that external debt service has a tendency to weaken global competitiveness in West Africa. The study recommended among other measures prudent debt management practices to ensure that external debts are allocated effectively to productive sectors such as infrastructure, education, and innovation. This will help maximize the

long-term benefits of external borrowing and reduce the negative impact of high debt servicing on economic growth and global competitiveness.

Keywords: External Debt, Global Competitiveness, Interactive Effect, Investment
JEL Classification Codes: F34, F43, C33, E22

1. Introduction

One way of measuring whether an economy is healthy or not is by gauging its level of global competitiveness. According to the European Union (2001) global competitiveness is a region or country capacity to achieve and improved standards of living as well as create a sustained employment opportunity for its citizenry. In the 21st Century where the world is increasingly becoming a global village, nations compete to produce goods and services that could be exchanged at the international market in order to earn foreign exchange and retain a resilient domestic value of their currency against foreign ones. This is evidence from the 2023 report from countries such as Denmark, Ireland, and Switzerland, who were ranked 1st, 2nd, and 3rd, respectively, on the global competitive index with scores of 100, 99.71, and 99.13, respectively, due to higher export indices (Richter, 2023).

This shows that improving institutions, building infrastructure, attaining and maintaining macroeconomic stability, and improving human capital and goods markets substantially contribute to the global competitiveness of a country (World Economic Forum [WEF], 2023; Medeiros, Godoi, & Teixeira, 2019)**.** Usually, global competitiveness is measured using different indices such Global Competitiveness Index (GCI), Economic Complexity Index (ECI), and Real Effective Exchange Rate (REER) among others (Ahemen, Asue, & Ikyaator, 2023; and Velichkovska & Ramadani, 2022). REER measures the value of a country's currency relative to a basket of other currencies, adjusted for inflation, and it is used to assess a nation's overall level of global competitiveness at the international markets.

To achieve high level of global competitiveness, many nations of the world resort to external borrowing in order to improve their level of domestic investment. Thus, domestic capital deficiency provides viable grounds for external borrowing as postulated by Chenery and Strout (1966). External debt for investment often enhances a nation's productive capacity and economic growth. Several

scholars have highlighted how external debt, when channelled into investment, strengthens global competitiveness of a country (Adewale & Meyer, 2021; Ehikioya, Omankhanlen, Osuma, & Inua, 2020). In this regard, some advanced economies such as the United States, Japan, and China increased their domestic savings for investment to maintain competitiveness at the global market (WEF, 2022).

They leverage external debt to attain higher levels of national output and improve their level of global competitiveness. For instance, United States, with external debt of approximately 128.13% and a debt service exceeding US$808 billion, remains the world's largest economy (WEF, 2023; World Economic Outlook [WEO], 2023). Similarly, China, with a national debt exceeding US$10 trillion and a debt service of US$15,627.13 billion, holds its position as the second-largest economy, driven largely by industrial production and manufacturing exports (World Bank, 2022). This underscores how these nations strategically leverage external debt to fuel economic expansion and maintain their global competitiveness.

Equally, investment is crucial in accelerating growth, improving the production capacity, and promoting the economic diversification and increased labour productivity (Kakaj & Ahmeti, 2016; Ouedraogo & Kouaman, 2014). Countries with substantial long-term investment are often classified as developed nations and are usually ranked top in the global market (Hausmann, Hidalgo, & Morrison, 2021). However, countries with insufficient funds often resort to external borrowing to finance their investment needs. This implies that external debt, when used for the purpose of investment, can boost national productivity, improve exchange rates, increase foreign exchange reserves, address balance of payments deficits, and contribute to export growth, output growth, trade balance improvement as well as solve various macroeconomic challenges, such as mitigating the effects of exchange rate fluctuations (Varughese, Duangta, Asawin, & Nithiphong, 2017). Consequently, in achieving higher levels of global competitiveness, nations with insufficient capital often require external support to supplement low domestic savings and enhance a nation's prosperity through investment (Agyeman, Sakyi, & Oteng-Abayie, 2022).

External debt can enhance a nation's productive capacity by financing critical sectors such as infrastructure, education, healthcare, technology, and trade. Strategic investment in these areas not only boosts economic output but also strengthens a country's position in the

global market (World Economic Forum, 2022). However, borrowing without a well-defined investment strategy can have detrimental effects, leading to excessive debt burdens and high interest payments that hinder economic performance (Joy & Panda, 2020). Dagher and Kazimov (2017) argued that substantial level of government revenue be channelled towards debt obligation, while the rest of the resources be invested in education, infrastructure, and technology which are critical pillars of global competitiveness.

West African countries have historically relied on external debt to supplement domestic savings in funding investment and infrastructural needs. According to statistics, external debt in West Africa stood at around US$628.5 billion in the year 2021 (World Bank, 2021). External debt in west Africa increase consistently with Nigeria, Ghana, Cote d'Ivoire, Senegal, and Mali who are the largest economies, recorded the highest level of debt in the region, with an average of U$70 billion, U$37 billion, U$21.91 billion, U$19 billion, U$19 billion, and U$5 billion between 2015 and 2022 (World Bank, 2022). Equally The Gambia, Benin, Burkina Faso, Cabo Verde, Guinea, Guinea-Bissau, Liberia, Niger, Sierra Leone, and Togo recorded average total external debt of U$820 million, U$4 billion, U$10 billion, U$1 billion, U$3 billion, U$673 million, U$1 billion, U$3 billion, U$1 billion, and U$2 billion, respectively, between 2015 and 2022 (African Development Bank [AfDB], 2022).

However, the situation in region, seem to be different. This is because countries of the region, have contracted external debts due to capital deficiency in financing their infrastructural and investment needs (Kakaj & Ahmeti, 2016). But the region appears to still wallows in low levels of economic growth, high external debt burden, poor domestic investment and generally weak level of global competitiveness. This state of affairs in West Africa arouses one's curiosity when Denmark, Ireland, Switzerland, the USA, and China are highly indebted yet globally very competitive globally. This raises a question as to whether external debt accumulation has influenced the West African region's ability to enhance productivity and compete effectively in the global market. Existing studies have extensively examined the impact of external debt and investment on economic growth among West African countries (Jilenga, Xu, & Gondje-Dacka, 2016; Elkhalfi, Chaabita, Kamal, & Ghoujdam, 2024). However, they have not pinned it down to global competitiveness as well as examined interactive effect of external debt and investment on global

competitiveness among West African countries. This study therefore, investigated the combined effect of external and investment on global competitiveness in West Africa.

2. Review of Literature

2.1 Conceptual Clarification

For ease of understanding and proper conceptualization of the basic concepts used in this study, this subsection explains the concepts of external debt, domestic investment and global competitiveness.

2.1.1 External Debt

International Monetary Fund [IMF], (2021) defined external debt as, the total amount of outstanding debt at a specific moment in time, which necessitates future obligations of both principal and interest to foreign countries. To World Bank (2021) external debt refers to the total of debt both principal repayments and accrued interest, owed by residents of an economy to non-residents and repayable in foreign currency, goods, or services. Didia and Ayokunle (2020) described external debt as the total amount owed at a specific moment by a nation's residents to non-residents, encompassing disbursed funds and outstanding contractual obligations. Aderemi, Fagbola, Sokunbi, and Ebere (2020) conceptualized external debt as resources acquired from foreign sources for investment purposes. It is a debt obligation acquired by a nation from foreign sources (Alam & Taib, 2013). Ogbeifin (2007) explained that external debt arises due to the disparity between domestic savings and investment. As this gap widens, debt accumulates, compelling the country to borrow increasing amounts to maintain financial stability.

2.1.2 Domestic Investment

Domestic investment refers to the allocation of resources within a country's borders. This includes investments in infrastructure, education, healthcare, and business enterprises. According to Brown and Davis (2023), domestic investment is crucial for sustaining economic growth and improving living standards. This involves acquiring additional capital-producing assets and assets capable of generating income within the domestic economy. Physical assets, in particular, contribute to the total capital stock and contribute to improvements in economic performance. To Lean and Tan (2011), domestic investment plays two crucial roles in an economy. Firstly, it

serves as a significant driver of demand and contributes to the accumulation of valuable assets within a country. Secondly, domestic investment is recognized to have a significant impact when explaining economic advancements. Therefore, domestic investment serves as a vital indicator of economic growth, making the process of achieving and sustaining modern economic growth faster and more manageable.

Pettinger (2019) opined that domestic investment is volatile because it depends on many variables such as interest rate, inflation, exchange rate, savings, government policies, and political instability. It encourages economic diversification among countries. Instead of depending solely on traditional sectors such as agriculture or raw materials, these countries can develop new sectors such as manufacturing, services, and information technology, which helps reduce their economic dependence and create a stronger foundation for sustained growth in a nation (Yedder, Weriemmi, & Bakari, 2023). In this study, domestic investment is measured as gross fixed capital formation in United States dollars.

2.1.3 Global Competitiveness

The concept of global competitiveness is often used in analyzing countries' macroeconomic performance. It refers to the ability of a country, region, or organization to compete effectively in the global market in areas such as economic productivity, innovation capacity, technological readiness, infrastructure, education and workforce skills, regulatory environment, and the overall business climate (WEF, 2016). Again, WEF (2022) defined global competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. This definition emphasizes the importance of institutional quality, policy effectiveness, and productivity-enhancing factors in shaping a country's competitiveness.

Similarly, the World Bank (2022) defined competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The competitiveness is influenced by factors such as regulatory efficiency, market access, human capital development, infrastructure quality, innovation capacity, and macroeconomic stability. Global competitiveness is measured using economic complexity, the global competitiveness index, and the real effective exchange rate. However, this study measures global competitiveness among countries using real effective exchange rates,

which measure the average value of a country's currency in terms her trading partners by also incorporating the inflation factor of the country (IMF, 2022). This study conceptualized global competitiveness as a nation's capacity to increase its export earnings at the international market so as to improve her real effective exchange rate.

2.2 Theoretical Review

The debate on external borrowing is grounded in different economic theories. The Classical school of economic thought, led by Smith (1776) and Ricardo (1817), argued that government borrowing should be minimal and limited to emergencies, such as war, to avoid inefficiencies and debt burdens on future generations. However, Howard (1972) contended that developing nations, facing capital deficiencies, require external borrowing to finance essential investments. This argument is reinforced by Chenery and Strout (1966) in their dual gap theory, which highlights two critical constraints in developing economies; a savings gap (insufficient domestic savings for investment) and a foreign exchange gap (limited foreign reserves to finance capital goods imports). According to this theory, external borrowing is necessary to bridge these gaps and support long-term development.

In addition, Porter (1985) proposed a theory of competitive advantage which states that global competitiveness of a nation is determined by factors such as productivity, innovation, and investment in infrastructure development. Thus, with capital deficiency in developing countries, external debt can be used for investment, to boost productivity, improve exports and foreign exchange earnings for improved global competitiveness.

2.3 Empirical Review

Empirically, studies that examined external debt, investment, and global competitiveness revealed diverse perspectives on the effect of external debt in an economy. Yusupov, Alfira, and Bakhrom (2023) investigated the relationship between foreign investment and a country's competitiveness, using data from the period of 2010-2020. The study utilized fixed-effects and random-effects regression models for the analysis and found that government support, market conditions, technological advancements, and social and cultural factors all play a role in attracting foreign investment and increasing a country's

competitiveness. Tadevosyan (2023) examined the interaction between innovations and international competitiveness in European Union using Cross-country panel data analysis over the period of 1993-2020. The employed Random effect model. The results show that patents have a positive impact on global competitiveness though its extent is not so significant.

Also, Apostu, Panait, Gigauri and Vasile (2023) examined the impact of foreign direct investment and competitiveness from Romanian economy using competitiveness index for the time period of 2007-2018. The study employed Granger Causality method of econometric and found that there is a unidirectional causality, flowing from Competitiveness Index to foreign direct investment. Gigamon and Ofori (2022) studied the impact of external debt on foreign direct investment in Ghana using data covering the period from 1991 to 2019. The study utilized the ARDL model of analysis and found that external debt indicators have a negative long-run influence on foreign direct investment inflows. The implication is that when funds borrowed are well utilized for economic purposes, it neutralizes the negative consequences of the debt obligation, and the improves economic performance. However, none of the studies interacted the effect of external debt and domestic investment to weigh the outcome on global competitiveness.

Akpan, Awujola and Impalure (2023) explored the relationship between public debt and private domestic investment in Nigeria, utilizing time series data spanning 1981 to 2021. Employing the Auto-Regressive Distributed Lag (ARDL) and Error Correction Model (ECM) techniques, their findings revealed a negative relationship between both public external debt and public domestic debt with private domestic investment. Wazir and Syed (2023) investigated the interplay between private investment, public external and domestic debt in Pakistan from 1980 to 2021, utilizing a VAR model for their analysis. Their findings revealed a negative and significant relationship between private investment and public external debt in Pakistan. The results suggest that reliance on external debt may undermine domestic economic activity, whereas domestic debt appears to offer more stability and growth potential. Building on these insights, the current study expands the scope by exploring the role of external debt in shaping investment dynamics and global competitiveness across West African countries.

Adamu and Mani (2023) examined the impact of external debt on the economic growth of some selected West African countries using the Panel Autoregressive Distributed Lag (PARDL) model spanning the period of 1983 to 2020. The study revealed, among other things, that external debt has a negative impact on the economic growth of West African countries, while in the short run it revealed that external debt has a positive and significant impact on economic growth. From the findings, the current study extends the analysis to a regional level, examining how external debt influences investment and global competitiveness among West African countries.

Fumeyi, Bekoe, and Imoru (2022) empirically examined the effects of external debt servicing on capital formation in Ghana from 1980 to 2019. The study employed an Autoregressive Distributed Lag (ARDL) model and revealed a negative effect in both the short and long run due to the tax disincentive effect. This suggests that high debt servicing can discourage long-term investment, which is vital for economic growth. In contrast, the current study shifts the focus from debt servicing to how external debt and investment influence global competitiveness in West African countries, offering a broader regional perspective on the economic implications of debt and investment.

Thai and Lan (2022) explored the impact of external debt on economic growth among economies over the period 1990–2020, employing panel analysis. Their findings revealed that external debt exerts a negative effect on economic growth, with no evidence supporting a non-linear relationship. Interestingly, the study uncovered an inverted-U-shaped influence of external debt on the speed of economic convergence, suggesting that moderate levels of debt may accelerate convergence before becoming detrimental. These results highlight the dual-edged nature of external borrowing, where debt levels must be carefully managed to avoid hampering long-term growth and convergence goals. Drawing from this foundation, the present study extends the discourse by examining the interplay between external debt, investment, and global competitiveness in West African countries. This approach seeks to shed light on the broader implications of debt management strategies for regional integration and global positioning.

Fonchamny, Dinga, and Ngum (2021) investigated the effects of external debt and foreign direct investment (FDI) on domestic investment in sub-Saharan Africa (SSA) from 1990 to 2017. The study employed the pooled mean group ARDL technique and panel Granger

causality test for the analysis. The result indicates that FDI exerts a positive and statistically significant effect on domestic investment in the short run, whereas external debt has an insignificant negative effect in the long run. Omotor (2021) examined the debt sustainability among Economic Community of West African States (ECOWAS) member countries using the Country Policy and Institutional Assessment debt policy assessment ranking and solvency ratio of external debt for the period 2010 and 2017. The findings revealed that most ECOWAS countries are already turning to the unsustainable debt path and may renege on their debt obligations, thus creating a vicious cycle of external borrowing that could lead to capital flight.

Adekunle, Adeniyi, and Orekoya (2021) explore the nonlinear connection between external debt and economic growth in Nigeria spanning from 1981 to 2015. Utilizing threshold regression analysis, the study revealed that economic growth reacts differently to various measures of external debt. Notably, the study emphasized only the relationship between external debt and economic growth, which differs from the focus of the current study. The present study is focused on interactive effect of external debt and investment on global competitiveness in West Africa.

These empirical works suggest that while external debt can provide necessary capital for development, its mismanagement can negatively affect investment and economic growth. The relationship between external debt, investment, and global competitiveness varies across regions, highlighting the importance of strategic borrowing and debt utilization to enhance economic performance and competitiveness in West African economies.

3. Methodology

The study adopted an *ex post facto* research design to allow the data to speak for itself. The study utilizes panel data which span the period of 1986 to 2022. This study employed Dynamic Panel Data Model to examine the interactive effective of external debt and investment on global competitiveness amongst West African Countries. The study employed the Mean Group (MG) and Pooled Mean Group (PMG) estimator in line with similar studies conducted by Abdullah (2015); and Bun and Sarafidis (2013).

3.1 Sources of Data

The study primarily utilized secondary data obtained from various sources, such as the World Development Indicators, World Bank, CBN as well as World Economic Forum (WEF). Cross-sectional time-series data is compiled for many nations in West Africa, encompassing all variables spanning from 1990 to 2023 (a 34-year period).

The study considered six variables to include, domestic investment (measured as gross fixed capital formation at 2015 constant US dollars), total external debt stocks (measured in terms of current US dollars), external debt service (measured in terms of current US dollars), real effective exchange rate (real effective exchange rate index, using 2010 as base year), GDP per capita (as a measure average income at 2015 constant US dollars), and trade balance (using balance of payment at current US dollars).

3.2 Model Specification

From the theoretical propositions of Chenery and Strout (1966) and Porter (1985) external debt can foster global competitiveness when invested strategically. Thus, it can be expressed in a functional form that:

$$GLOB = f\left(EXDT\right) \tag{1}$$

Where GLOB = Global competitiveness, EXDT = external debt

However, Real Effective Exchange Rate (REER) is a good measure of global competitiveness whose data is also available for all the countries of the West African Region and hence the model can be re-stated as:

$$REER = f\left(EXDT\right) \tag{2}$$

In addition, external debt accumulation comes with external debt service (EXDS) obligations and this also affects the level of global competitiveness of nations. Thus, incorporating EXDS, equation (2) becomes.

$$REER = f\left(EXDT, EXDS\right) \tag{3}$$

Equally, global competitiveness measure also affected by indicators such as domestic investment (which is measured as Gross Fixed Capital Formation (GFCF), GDP Per Capita (GDPC) and Trade

Balance (TBAL). Incorporating these as additional variables, equation (3) can be expressed as:

$$REER = f\left(EXDT, EXDS, GFCF, GDPC, TBAL\right) \quad (4)$$

The stochastic form of the model can be specified as:

$$\ln REER_{it} = \beta_0 + \beta_1 EXDT_{it} + \beta_1 EXDS_{it} + \beta_2 GFCF_{it} + \beta_3 GDPC_{it} + \beta_4 TBAL_{it} + \mu_t \quad (5)$$

Where $\varepsilon_{it} = \mu_i + \eta_{it}, \beta_0$ is the intercept, $\beta_1 - \beta_4$ are the parameters to be estimated, μ_i is the individual-specific effect, η_{it} is the idiosyncratic error, and *i*=1,…,*n* (for all countries in each region), *t*=1990,…,2023.

Finally, the interactive effect variable that combines the influences of external debt (EXDT) and domestic investment (GFCF) can be added to the model to obtain:

$$\ln REER_{it} = \beta_0 + \beta_1 EXDT_{it} + \beta_2 GFCF_{it} + \beta_1 EXDS_{it} + \beta_3 GDPC_{it} + \beta_4 TBAL_{it} + \beta_5 \phi EXDT * GFCF_{it} + u_t \quad (6)$$

The parameter estimates are expected on theoretical basis to have an inverse relationship with REER so as to improve it except. Recall that, positive values entail increasing effect on REER which means depreciation and vice versa. Marginal effect of external debt on investment is $\left(\phi_{5it}\right)$ in the above equation. The reliance on marginal interpretations of the constitutive terms rather than on unconditional marginal effects $\left(\phi_5\right)$. The hypothesis posits that the effect of external debt in West Africa is contingent on external debt levels, domestic investment, or their interaction. As such, the estimated coefficients in this study are not interpreted as the average effect of changes in investment in West Africa.

4. Results and Discussion

4.1 Presentation of Results

Table 1: Descriptive Statistics

Var.	Obs	Mean	Std. Dev.	Min	Max	Skew.	Kurt.
REER	544	6.257	0.218	5.517	7.219	1.09	5.601
GFCF	544	6.748	1.462	1.36	9.93	-0.209	3.083
EXDT	544	7.944	1.275	4.89	11.56	0.503	2.993
GDPC	544	5.589	0.523	3.99	6.70	0.071	2.406
TBAL	544	579.48	514.61	-164	459.69	5.992	44.08
EXDS	544	6.918	1.803	0.631	11.458	0.108	3.096

Source: Extracts from STATA 15 output.

It can be inferred from Table 1 that, real effective exchange rate (REER) as a measure of global competitiveness has a mean of 6.26 with a standard deviation of 0.22, indicating minimal variation around the mean. The minimum and maximum values of 5.52 and 7.22, indicate a minimal spread, suggesting relative stability in REER over time among West African countries during the period of the study. However, the skewness of 1.09 reveals a positive skew, indicating that some values are clustered on the left while majority of the values are clustered to the right. The kurtosis of 5.60 indicates a leptokurtic distribution, characterized by a sharp peak and heavy tails. This suggests that while REER is generally stable, there are occasional upward spikes, which could signal temporary overvaluation of the currency, impacting global competitiveness.

Gross Fixed Capital Formation (GFCF) has a mean of 6.75 with a standard deviation of 1.46, reflecting moderate variation in domestic investment. The values range widely from 1.36 to 9.94, indicating the periods of both low and high investment in the region. The skewness of -0.21 shows a slight negative skew, suggesting a tendency toward lower values. The kurtosis value of 3.08 indicate normal distribution threshold, reflecting moderate peakedness. The result of external debt (EXDT) among West African countries also revealed an average of 7.94 and a standard deviation of 1.26, suggesting variation in external debt within the region. On countries basis, Nigeria had a highest average of $4.338 Billion external debt and is closely followed by Ghana with $2.06 million. This is in line with AfDB (2023) report that Nigeria owed approximately $10 million in external debt to another region. The result again show that West African region recorded a minimum debt of $13.375 million followed by a maximum external debt of approximately 10 billion within the

region. The range of values, from 4.89 to 11.57, indicates differences in debt burdens across observations. The skewness of 0.50, indicate a slightly right-skewed distribution, meaning some debt levels are moderate with some rightly skew. The kurtosis of 2.99 indicate mesokurtic, suggesting a relatively balanced distribution with no extreme peaks or outliers. This reflects a consistent trend in external debt levels over time.

Furthermore, the findings regarding GDP per capita (GDPC) among West African countries revealed that an average of 5.589 and a standard deviation of 0.523, indicating low variability with a minimum and maximum values of 3.992 and 6.708 respectively. On countries basis Benin recorded the higher average of 2628 in GDP per capita followed by Cape Verde with GDP per capita of 2453 within the region while Niger, recorded the lowest average of 447 in GDP per capita during the study period. The study further revealed that West African as a region recorded a minimum 218 of GDP per capita followed by a maximum of 3699 during the study period. On country basis, Maurtania recorded the highest GDP per capita of approximately 883 while Cote d'Ivoire recorded the minimum value of approximately (-175) in GDP per capita during the study period. This distribution shows a minimum value of 3.992 and a maximum value of 6.708 among the variable during the study period. The skewness of 0.071 indicates that the distribution is positively skew. The kurtosis of 2.406 reflects a platykurtic distribution, characterized by a flat peak and thin tails. This implies that GDPC values are highly stable, with few extreme observations, reflecting consistency in per capita economic performance.

Regarding trade balance (TBAL), the result revealed the mean of 579 and a standard deviation of 514.616 with the minimum and maximum values of -164 and 459 across observation respectively. At the country level, the study revealed that on average Nigeria has the highest trade balance of approximately $1.3 billion while Ghana had the lowest average at approximately -103 billion trade balance. The findings also showed that West African countries witness a wide spread of approximately 530 trade balance indicating a wide gap in trade balance among the countries of the region. On country basis, Nigeria again recorded a maximum trade balance of approximately $ 4.79 billion followed by the minimum trade balance of approximately -164 billion respectively. The value of 5.99 indicates positive skewness, with the majority of values on the lower end and a long right

tail driven by a few exceptionally high trade surpluses. The kurtosis value of 44.09 confirms an extremely leptokurtic distribution, meaning the data is heavily peaked. This highlights significant volatility in trade balance values, likely driven by economic shocks or large trade imbalances during specific periods.

The result of External Debt Service (EXDS) among West African countries indicates an average value of approximately 6.91 and a standard deviation of 1.80 which indicate variation in debt service obligations. The result also revealed that West African countries had a minimum debt service of $0.63 billion and a maximum of approximately $11.46 billion reflecting the periods of both low and high debt service. On the basis of individual countries, Nigeria service external debt of approximately $3 billion on average, followed closely by Ghana with external debt service of approximately $1 million while Guinea Bissau recorded debt service of approximately $15 million during the study period. However, the skewness of 0.108 indicates a nearly symmetrical distribution, while the kurtosis of 3.09 suggests the variables are normally distributed.

Table 2: Panel Unit Root for REER, GFCF and EXDT

Panel Result	REER	D.REER	GFCF	D.GFCF	EXDT	D.EXDT
Harris-Tzavalis test	-4.5607 (0.0000)*aa	0.0364 (0.0000)**b	0.8862 0.1056	-0.0877 (0.0000)**b	0.9715 0.9946	0.0783 (0.000)**b
Breitung test	0.6172 0.7314	-13.183 (0.0000)**b	6.009 1.0000	-11.712 (0.0000)**b	3.8708 0.9999	-14.033 (0.0000)**b
Levin-Lin-Chu test	-4.6989 (0.0000)*a	-10.165 (0.0000)**b	2.9565 0.9984	-11.5221 (0.0000)**b	0.9263 0.8229	-8.2862 (0.0000)**b
Im-Pesaran-Shin test	4.4594 (0.0000)**	-12.068 (0.0000)**	4.5683 1.0000	-12.5619 (0.0000)**b	4.3982 1.0000	-12.101 (0.0000)**b
Fisher-type test	34.7997 0.3361	5.1159 (0.0000)**	-1.8949 0.9709	1.0000 0.1586	-1.8432 0.9674	0.5169 0.3026
Hadri LM test	30.387 (0.0000)*a	0.2471 0.4024	54.7411 (0.0000)**a	-1.2631 0.8967	59.2981 (0.0000)**a	0.8789 0.1897

Note: The unit root test is conducted against the null hypothesis that the series has unit root at 1%, 5% and 10% level of significance and the asterisks (**) denote rejection of the null hypothesis implying the series is free from unit root problems. Letters "a" and "b" indicate stationarity at levels and first difference respectively.
Source: Author's Computations from STATA 15.

It is clear from Table 2 that, while REER was found to be stationary at levels, GFCF and EXDT became stationary only when they were differenced once. The overall implications of the results showed that the variables were free from unit root problems and as such have exhibited random walk and were fit for panel data analysis.

Table 3: Panel Unit Root for GDPC, TBAL and EXDS

Panel Result	GDPC	D.GDPC	TBAL	D.TBAL	EXDS	D.EXDS
Harris-Tzavalis test	0.9491 (0.939)	0.2785 (0.000)**b	0.7954 (0.000)**a	0.158 (0.000)**b	0.8074 (0.000)**b	-0.1692 (0.000)**b
Breitung test	7.2185 (1.000)	-9.7353 (0.000)**b	0.1821 (0.5723)	-15.711 (0.0000)**b	-1.1409 (0.1269)	-11.423 (0.000)**b
Levin-Lin-Chu test	1.1799 (0.881)	-8.066 (0.000)**b	1.9176 (0.9724)	-14.5552 (0.000)**b	1.5477 (0.9392)	-11.712 (0.000)**b
Im-Pesaran-Shin test	5.2955 (1.000)	-11.253 (0.000)**b	0.6821 (0.7524)	-13.4717 (0.000)**b	0.4716 (0.6814)	-14.195 (0.000)**b
Fisher-type test	0.871 (0.191)	2.8719 (0.002)**b	-1.4638 (0.9284)	2.3786 (0.0087)	-2.638 (0.995)	3.8229 (0.0001)**b
Hadri LM test	64.781 (0.000)**a	1.5453 (0.061)	10.982 (0.000)**a	-1.7731 (0.9619)	40.593 (0.000)**a	-2.4045 (0.9919)

Source: Extract from STATA 15 Output.

Following the same principles that applied in Table 2; the results in Table 3 showed that, while TBAL was stationary at levels, both GDPC and EXDS were stationary at first difference. This also show that the variables possess random walk and are fit for panel analysis.

Table 4: Correlation Test Result

Variables	REER	EXDT	GFCF	GDPC	EXDS	TBAL
REER	1					
EXDT	-0.174	1				
GFCF	-0.196	0.632	1			
GDPC	-0.11	0.479	0.458	1		
EXDS	-0.139	0.851	0.714	0.573	1	
TBAL	-0.039	0.324	0.000	0.205	0.284	1

Source: Author's computation from STATA 15 Output.

The correlation analysis indicated that the independent variables exhibit weak interrelationships across all three models. Multicolineary refers to the high correlation between predictor variables, which can hinder the accurate estimation of their individual effects on the dependent variable. The observed low relationships among the independent variables suggest that, all the variables are relatively independent and do not redundantly convey the same information. This is favourable for the reliability of the models' coefficients and predictions, as the presence of multicolinearity can make the results of estimate indeterminate. The results from the correlation test provide evidence that the variables are free from severe issues of multicolinearity, reinforcing the credibility of their analytical outcomes and enhancing the models using the informed decision making.

Table 5: Cointegration Test Result

Kao test for cointegration	Statistic	p-value
Modified Dickey-Fuller t	-0.3304	0.3706
Dickey-Fuller t	-1.5196	0.0643
Augmented Dickey-Fuller t	-2.8918	0.0019**
Unadjusted modified Dickey-Fuller t	-4.8348	0.0000**
Unadjusted Dickey-Fuller t	-4.09	0.0000**
Pedroni test for cointegration	**Statistic**	**p-value**
Modified Phillips-Perron t	4.0498	0.000**
Phillips-Perron t	0.5294	0.2983
Augmented Dickey-Fuller t	-0.6216	0.2671

Note: The asterisk (**) denotes rejection of the null hypothesis of no cointegration at 5% and level of significance.
Source: Author's Computation from STATA 15

Cointegration result presented in Table 5 indicate weak cointegration where Kao test yields mixed results, with some significant ADF-based statistics. The Pedroni test also shows inconsistency, but the Modified Phillips-Perron statistic confirms cointegration at 5% level. These findings confirm the existence of a stable long-run relationship among the variables; underscoring the need for policies that address both short-term fluctuations and long-term economic stability.

Table 6: Interactive Effect Result

Variables	**MG**	**PMG**
Short-Run Result	**Interactive Effect Model**	
ECT	-0.3343	-0.2570
	(0.0688)**	(0.0534)**
D.EXDT	0.8789	0.0451
	(0.5007)	(0.2026)
D.GFCF	2.4043	-0.0788
	(1.5520)	(0.5775)
D.GDPC	0.1840	0.2344
	(0.1824)	(0.1546)
D.TBAL	-0.0285	-0.0041
	0.0161	(0.0249)
		-0.0119
		(0.0095)
EXDT_GFCF	-0.1029	0.0036
	0.0666	(0.0256)**
_cons	5.8469	0.9963
	3.9568	(0.206)
Long-run results	**MG**	**PMG**
EXDT	-2.1247	0.1283
	(1.1081)**	(0.0825)
GFCF	-6.0535	0.6309
	3.3979	(0.2292)**
GDPC	0.8416	-0.1739
	0.6382	(0.1038)
TBAL	-0.0016	1.8600
	0.0131	(9.1300)
EXDS	-0.0917	0.0526
	0.2767	(0.0197)**
EXDT_GFCF	0.2731	-0.0280
	0.1562	(0.0105)**
Hausman Test Result		**0.0868**

Standard errors in parentheses ** p<0.01, **p<0.05, p<0.1

Source: Author's Computation from STATA 15

On the basis of the Hausman test result (0.0868), the emphasis in this paper is placed on the Pooled Mean Group (PMG) estimator. Note that if the P-value of the Hausman test is greater than 0.05, the PMG is preferred otherwise use the PM. It also very important to note that, to examine the interactive effect of external debt and investment on global competitiveness in West Africa, the preferred coefficients are those with negative signs. In this context, a negative coefficient reflects a preferred association with global competitiveness. This is because in the calculation of real effective exchange rate (REER), lower REER indicates currency appreciation while a higher REER suggests depreciation. Therefore, any explanatory variable that has the capacity to reduce the 'numerical value' of REER is in turn assisting it to appreciate.

Table 6 revealed that the Error Correction Term (ECT) is negative and statistically significant in both models (MG: -0.3343; PMG: -0.2570), indicating the existence of a long-run equilibrium relationship in which short-run deviations are gradually corrected over time. However, the direct impact of external debt (D.EXDT) on global competitiveness is statistically insignificant in both models. Similarly, investment (D.GFCF) shows mixed effects, being positive but insignificant in MG and slightly negative in PMG. GDP Per capita demonstrates increasing impact across both models, while trade balance (D.TBAL) and the interaction between external debt and investment (EXDT_GFCF) also show inconsistent and insignificant effects.

The MG model shows a significantly negative effect of external debt (-2.1247, $p<0.05$), suggesting that increasing debt levels reduce global competitiveness. However, in the PMG model, the effect is positive but statistically insignificant (0.1283). Domestic Investment (GFCF) has a strong negative effect in the MG model (-6.0535) but is significantly positive (0.6309, $p<0.05$) in the PMG model, implying that investment contributes to competitiveness in the long term under the PMG approach. GDP per capita (GDPC) has a positive but insignificant effect in MG, while it is negative and also insignificant in PMG. The trade balance (TBAL) does not show significant effects in either model, while external debt service (EXDS) is positive and significant (0.0526, $p<0.05$) in PMG. This actually implies that external debt service worsens the level of global competitiveness in the study area. This is because, it has a tendency to increase REER which in real terms stands for currency depreciation.

External debt services take away foreign exchange rate from the debtor nation there by reducing her competitiveness.

The interactive term (EXDT_GFCF) is significantly negative in PMG (-0.0280, $p<0.05$), suggesting that the combination of external debt and investment enhances competitiveness in West Africa. Recall that, the negative coefficient of the interactive effect between foreign debt and domestic investment on global competitiveness imply that a combination both are linked to improve global competitiveness in the study area. The long-term findings show that external debt has a negligible and detrimental effect on West African nations' ability to compete globally. This suggests that, when used properly, external debt gradually improves a nation's economic potential and competitiveness.

In order to finance infrastructure, technological developments, and other productivity-boosting investments; all of which support economic growth and increase global competitiveness where external debt offers the much-needed funding. It must be noted however, that beneficial effects of external debt are contingent upon its careful utilization. Over-reliance on debt without commensurately positive results could jeopardize fiscal sustainability and erode its long-term gains. Overall, the findings imply that while external debt alone does not consistently harm competitiveness, its interaction with domestic investment could make the gains far better if properly channelled.

4.2 Discussion of Findings

From the results of the study, result of the ECM is negative and statistically significant indicating that there exists mean reverting ability of the variables in an event any temporary disequilibrium. It was also found that in the short run, external debt, domestic investment, trade balance and GDP per capita had no significant effect on global competitiveness. However, similar studies in the past like Apostu et al (2023) and Tadevosvan (2023) who focused on effect of global competitiveness on foreign direct investment. While the former found that global competitiveness Granger caused FDI; the latter found the effect of global competitiveness to be insignificant on FDI.

Equally, in the long run analysis of the it was found that the influences of external debt, GDP per capita, and trade balance on global competitiveness in west Africa were not significant. It was however found that external debt service has a significant worsening

effect on the real effective exchange rate (REER) which is the measure of global competitiveness in this study. This finding is in tandem with the findings of Ahemen, *et al* (2023) who found that increasing external debt service weakens real effective exchange rate in Nigeria.

Finally, the interactive effect variable that measures a combined effect of external debt and domestic investment on global competitiveness was found to be negative and statistically significant. This produced the desired results since higher REER indicate worsening competitiveness it is expected that variables that decreases it improves global competitiveness. Incidentally, none of the studies reviewed here has interacted external debt and domestic investment and how they affect global competitiveness.

5. Conclusion and Recommendations

The study also concludes that while external debts and domestic investment do not significantly affect global competitiveness on individual basis; a combination of the two has a potential to improve the level of global competitiveness among West African countries. The study also concludes that external debt service constitutes a serious problem and waters down global competitiveness in the West African sub-region. Thus, on the basis of the findings of this research, the study recommends as follows:

i. West African countries must manage improve their exports and curtail on their imports by adopting exports led growth strategies and consuming home-made products. This will improve their trade balance so as to improve their global competitiveness.

ii. The deteriorating impact of external debt service on global competitiveness calls for serious reflections. It is time for West African countries to work as modalities as independent nations and even as a block to renegotiate their terms of debt obligations and also curtail on their borrowing. This will reduce the amount of foreign exchange often used in debt service obligations and would improve the real effective exchange rate of the countries of the region.

iii. Overall, the study underscores the importance of effective debt management and strategic investment allocation to enhance competitiveness. While investment is critical for growth, its benefits may be undermined if financed through excessive borrowing without proper utilization. Policymakers in West Africa should focus on ensuring that external debt is channelled into productive investments in critical sectors to enhance economic efficiency, innovation as well

as long-term global competitiveness. This will help maximize benefits of external borrowing and reduce the impact of high external debt servicing on global competitiveness among West African countries.

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