

GROWTH AMIDST GROWING TRADE DEFICITS; THE AFRICA EXPERIENCE

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ABSTRACT

Against the backdrop of the quest for increase trade among countries owing to the fact that gains from trade could serve as a boost for sustainable growth and development, this study examined the relationship and impact trade deficit has on economic growth in Africa (comprising forty-two Africa countries) for the period 1996 to 2018. DOLS estimation technique was employed and it was found that trade deficit negatively and significantly impacted on growth in Africa. This was also affirmed by a robustness check using FMOLS estimation technique. Variance inflation factors analysis was conducted and it was founded that there exists no serious multicollinearity amongst the variable while granger causality test revealed a bi-directional causality between trade deficit and growth. The implication emanating from the analysis is that the benefits of international trade to Africa countries is constrain by the incessant growing trade deficit. In the light of the findings recommendations such as increase in local production base and the promotion of policies that encourage the utilization of local input for both consumption and production purposes were proffered. Others includes; trade re- negotiations with institutions such as AfDB, WTO and IMF aimed at curtailing the burden of trade deficit in Africa and that Africa countries should indulge more in intra Africa trade for more resources to be held within the continent especially in light of the implementation of AfCFTA agreement.

Keywords: Trade, economic growth, Time series analysis, Developing country
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1. Introduction

The inter-dependence among countries makes international trade inevitable. The increase in international trade among countries includes; enlargement of consumer choice, access to new technology and productivity enhancement, employment creation and growth (Thirlwall and Nureldin, 1982). International trade also helps to boost domestic investment in an economy (Fosu and Magnus, 2006). However, a major determining factor in the evaluation of gains of trade for a country is its trade balance. This is because trade balance measures net export (value of export less import). When export is higher than imports there is trade surplus but when export is less than import, there is trade deficit.

World Bank (2019 and 2016) and UNCTAD (2018) reports showed that virtually all countries in Africa have been recording significant increase in trade deficit over the years. Specifically, data from World Bank (2018) showed that Africa trade balance was in deficit of (billions) 2000 (\$181), 2005 (\$397), 2010 (\$405), 2014 (\$527) and 2016 (\$536). Data from World Bank (2019) also showed that for the period 1990 to 2018, total trade balance in Africa stood in deficit to the tune of over US1.0 trillion. Also, data from World Bank (2019) shows a fairly upward trend in Africa economic growth for the 1990 and 2018 except for some few years such as 1993, 1998, 2001, 2009, 2015 wherein there was a decline attributed mainly to (though not limited to) economic disturbances such as global economic meltdown. This position was also initially affirmed by Aboulez (2015) and Adamu (2013). Also, United Nations (2020) report shows that Africa real GDP per capital growth rate was -0.1 percent, 2.7 percent and 0.5 percent for the period 1990-1999, 2000-2009 and between 2010-2019 respectively. The eschewing questions are; what is the nature of relationship that exist between trade deficit and economic growth in Africa? Does trade deficit significantly impact on economic growth in Africa?.

A cursory look at previous cross-sectional studies shows that the relationship and impact trade deficit (hereafter refers to as trade balance) has on economic growth seems not to have been given much attention (especially in Africa). Specifically, a survey of the literature shows that there exist country specific studies such as Aung (2017) and Dhar (2016) that relates trade balance to economic growth; and of the cross sectional studies such as Blavasciunaite, Garsviene and Matuzeviciute (2020); Gould and Ruffin (1996), they were either based on fewer countries' or economies outside the shores of Africa. It might thus be misleading to replicate the findings and recommendations emanating from

these studies to Africa. This study employed forty-two (42) Africa countries with spread across the various regional groupings of the continent with the aim of bringing to fore the relationship and impact trade balance has on economic growth. More so, at variance to most of the existing studies in the literature, an econometric methodology (DOLS and FMOLS) that adequately account for endogeneous concerns in cross-sectional studies such as this will be employed.

The rest of the paper is structured as follows. Section 2 provides the background in relation to trade and growth in Africa. Section 3 reviews the literature while Section 4 presents the methodology. Section 5 presents empirical results, implications and recommendations. Lastly, Section 6 concludes the paper.

2. Background to the Study

2.1. Africa Integration and Continental Trade

The African Union (AU) - umbrella body of Africa consists of 55 Member States. Though AU came into operation May 26th, 2001 in Addis Ababa, Ethiopia, it transmuted from the Organisation of African Unity (OAU), established 25th May, 1963 in Addis Ababa, Ethiopia. The priority accorded Africa integration by AU informed the establishment and recognition of Regional Economic Communities (RECs). These includes; Arab Maghreb Union (AMU), Common Market for Eastern and Southern Africa (COMESA), Community of Sahel-Saharan States (CEN-SAD), East African Community (EAC), Economic Community of Central African States (ECCAS), Economic Community of West African States (ECOWAS), Intergovernmental Authority on Development (IGAD) and Southern Africa Development Community (SADC).

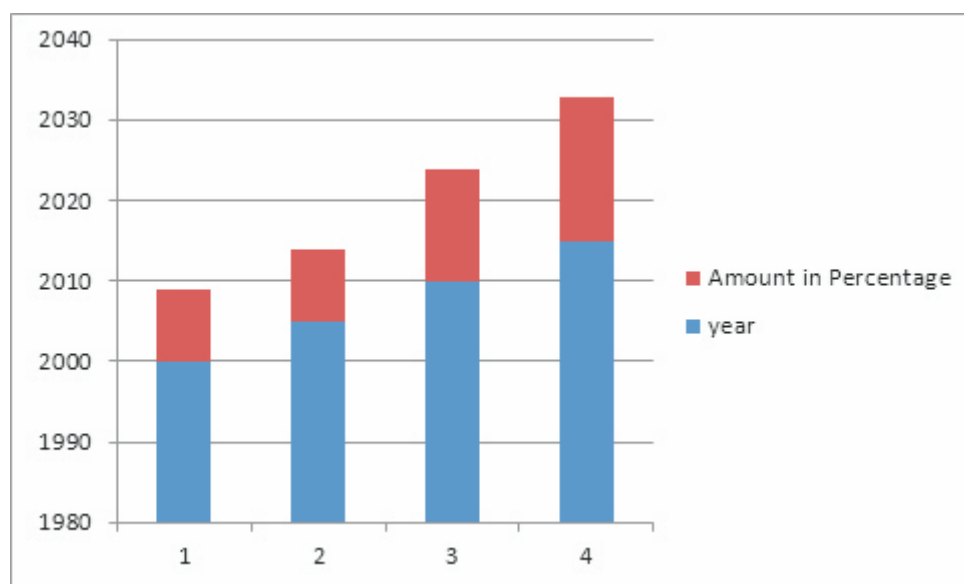
To further address issues relating to integration and trade, policies and programmes had been formulated. Recent amongst these policies and programmes is AfCFTA which was muted in 2012 in Addis Ababa, Ethiopia, at the 18th Ordinary Session of the Assembly of Heads of State and Government of the AU. AfCFTA treaty, one of the flagship projects of the AU Agenda 2063, aimed at creating a single continental market for goods and services. Though AfCFTA in principle affirmed that there can only be a second best solution as against first best solution when there is restriction/impediment to free trade, it is geared towards ensuring that Africa countries benefit/gain more from international trade. It is expected to bring all 55 member states covering market of over 1.2 billion people, including a growing middle class, and a combined

gross domestic product (GDP) of more than US\$2.5 trillion (AU, 2018).

It is also projected that AfCFTA will boost intra-African trade to the tune of over 52 percent by 2022 through the elimination of all forms of barriers to free trade in the continent (AU, 2018). This is because; the current level of trade is below Africa potential, despite efforts through policies and programmes by policy makers in Africa (Soulé and Obi, 2001). UNCTAD (2018) corroborated this position with the assertion that intra-Africa trade has been historically low; with intra-Africa exports approximately at about 16.6 percent of total exports in 2017, compared to about 68 percent in Europe and 59 percent in Asia. Though there exist fears that AfCFTA will not be successful owing to issues relating to dumping, non-adherence to trade agreements, weak industrial base amongst Africa countries (Ubi, 2018); as well as its negative impact on customs revenue. It is however believed that AfCFTA will augment real income for Africa by US\$ 296.7 million as a result of stimulated exports and increase real wages for African workers over the 2022 baseline with unskilled agricultural workers recording the largest increase (AU, 2018).

2.2. Trade in Goods in Africa

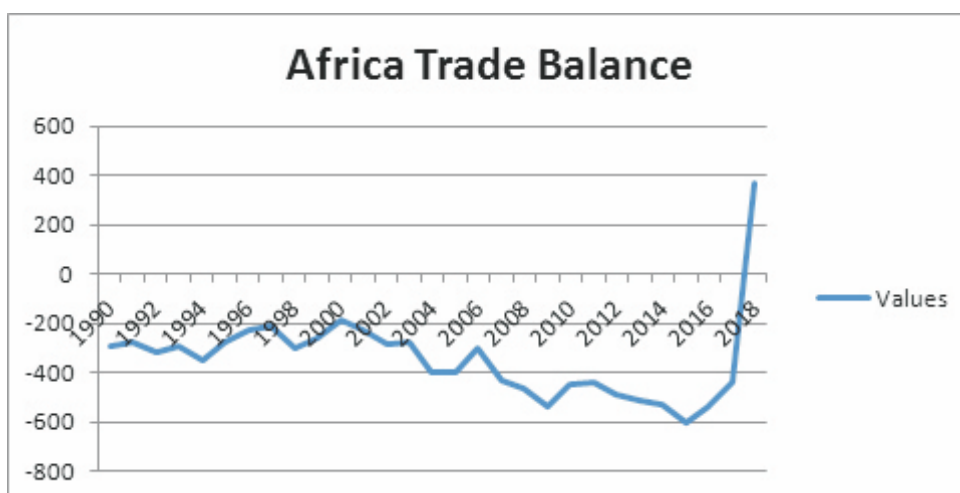
Figure 1: Total Africa exports: Share of intra-African merchandise (2005 to 2017)



Source: Authors' Computation from UNCTAD Data, 2018

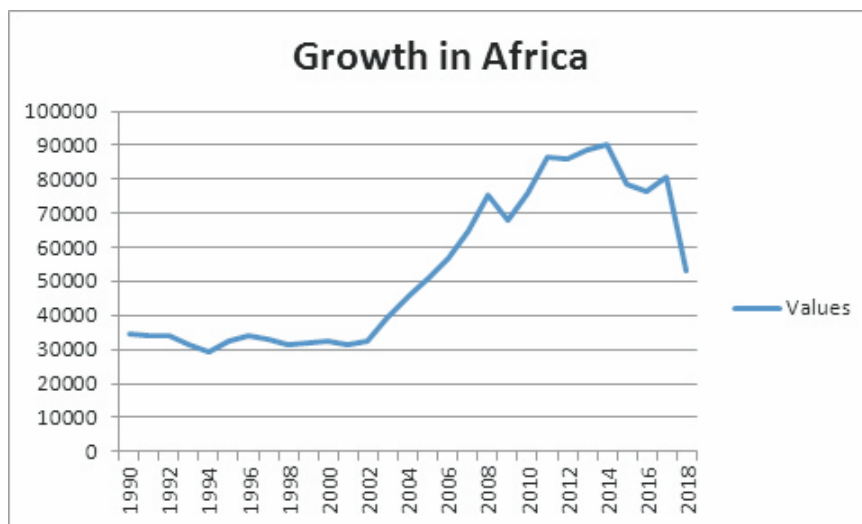
From Figure 1, it can be observed that the share of intra-Africa merchandise trade in total exports recorded a gradual increase for the period 2000 to 2017. Specifically, the share of intra-Africa merchandise trade in total exports in year 2005, 2010, 2015 and 2017 were about 9, 14, 18 and 17 (in percentages) respectively. This implies a gradual increase in intra-trade among Africa countries despite the hindrances pose by the existing trade restrictions. However, this is low compared to what is obtained in Europe and Asia which stood at about 68 percent and 59 percent respectively (UNCTAD, 2018).

Figure 2: Trend in Trade Balance in Africa between 1990 and 2018 (Billions of US Dollars)



Source: Authors' Computation using World Bank, World Development Indicator, 2019

Figure 2 shows the trend in trade balance in Africa from 1990 to 2018. From the Figure, it can be observed that Africa experienced deficit trade balance in virtually all the years. Though some countries may have recorded surplus in trade balance in some years, the huge deficit recorded in most of the countries cancels the surpluses resulting in deficit trade balance for the continent for the period. This may not be far from the fact that most Africa countries are marginal players in international affairs especially with respect to exportable produce. Most Africa countries majorly export primary produce whose price fluctuates in the international market and demand at the mercy of trading partners. This no doubt often manifest in deficit trade balance and low revenue.



Source: Authors' Computation using World Bank, World Development Indicator, 2019

Figure 3 shows the yearly trend in economic growth in Africa between 1990 and 2018. A look at the figure shows an upward trend in growth except for some few years such as 1993, 1994, 1997, 1998 and 2001 wherein there was marginal decline. Major decline in Africa economic growth was however recorded in year 2009, 2015 and 2018. This could be attributed to a number of factors such as the aftermath of global economic meltdown in 2006 and 2008, persistence insecurity and civil disturbances, weak productivity of economy and unstable political environment in some countries within the continent. Generally, it can then be concluded that the economic growth in Africa increase fairly from year 1999 to 2017 before it dip again in 2018.

3. Literature Review

3.1. Theoretical Literature

a. Gravity Model

This model supported by Dunning (1983) ownership, location and internalization framework explains that trade are influenced by the size of an economy and the distance between trading countries. Gravity model also explains that that proximity and market size are major determining factors for trade decisions. The model garnered a lot of interest in analysing trade relations because it is readily applied to multinational corporations and multiproduct world (Enders, Sachsida and Sandler, 2006). The model holds that the values of trade between

or among countries are directly proportional to the product of countries and reduce with the level of distance (Krugman, Obstfeld and Melitz, 2012).

b. Balance of Payment Constraint Growth Theory

This theory explained that no country can attain rate of economic growth that is beyond its balance of payment (BOP) equilibrium rate. This is because BOP disequilibrium (especially deficit BOP) usually results to increase debt/GDP ratio and if not properly manage result to reduction in international confidence and currency crisis (Thirlwall 1979). As summarized by Thirlwall (1979) in 'Thirlwall Wall', if the BOP equilibrium growth rate is below the level allowed by supply factors, a country will be constrain to grow at a low rate. Increase in growth rate of exports by relaxing the BOP constraint allows a faster growth of demand and output. The model has been theoretically modified from single country to two country case with an expansion of the distinction between BOP, supply constraint and policy constraint growth (McCombie, 1993).

c. Solow Growth Model

The Solow growth model is based on the assumption of aggregate production function with some unique features such as constant return to scale in labour, reproducible capital and one composite commodity output. Others includes; marginal productivity of labour and capital, prices and wages flexibility, substitutability of capital and labour, full employment of capital and diminishing returns (Solow, 1956). The model holds that variation in output (Y) over time is subject to changes in inputs (capital (K) and labour (L)) with provision for technical progress (A) which drives capital-labour ratio to converge to equilibrium ratio. This implies that per capita growth rate depends on exogenous growth rate of technical progress.

3.2. Empirical Literature

Countries all over the world make effort to gain from international trade owing to its long term effects on growth. While most advanced countries often records appreciable gains from trade attributed largely to productivity of their economy, this cannot be said for most developing countries for examples most countries in Africa; owing to weak production base amongst others (UNCTAD 2018). Nicole (2016) initially asserted that trade in most sub-Saharan Africa (SSA) countries is accompanied by current account deficits and that the main source of current account deficits is net income payments. An attempt is therefore made here to bring to fore related studies in this light.

Suphian (2018) investigated trade balance determinants in East African Countries. The model was estimated using fully modified ordinary least square (FMOLS) and the Vector Error Correction Model (VECM). The study found that FDI was the major determinant of trade balance in East Africa. Similarly, Osoro (2013) examined the determinants of trade balance in Kenya with annual data spanning the period 1963 to 2012. The study employed Johansen's co-integration and error correction model (ECM) techniques and it was found that trade balance is significantly and positively correlated to budget deficits, FDI and real exchange rates. Examining the determinants of trade balance in Tanzania for the period 1980 to 2012, Shawa and Shen (2013) employed OLS estimation technique and it was found that a significant and positive relationship exist for FDI, human capital development, natural resource, foreign income and trade liberalization while a negative relationship was established for government expenditure and inflation. Hong and Siok (2011) comparatively examined the determinants of trade balances in Australia, Cyprus, Italy, Portugal, United States and Germany, Japan, Singapore, Norway, Switzerland using a generalized method of moment (GMM) estimator technique. The study revealed that reserve accumulation impact on trade balance in countries with current account deficits. It was however found that productivity impacted on trade balances in countries with current account surpluses.

Blavasciunaite, Garsviene and Matuzeviciute (2020) examined the impact of the trade balance on economic growth in a panel study of 28 European Union countries spanning the 1998 to 2018. The result that emanated from the OLS technique employed shows that trade balance impact negatively on economic growth. Vikneswaran and Wai (2019) examined the relationship between trade balance and macroeconomic variables such as domestic income, exchange rates, inflation rates and money supply in Malaysia for the period 2000 to 2015. Auto-regressive distributed lag (ARDL) model and granger causality analysis employed showed that domestic income, inflation rates and exchange rates exhibited significant effect on trade balance while money supply effect on trade balance was found to be insignificant. Aung (2017) examined the Relationship between trade deficit and economic growth in Myanmar for the period 1989 to 2015 with Johansen co-integration and the Vector Error Correction Model. It was found that trade deficits exhibited a negative relationship with economic growth in the short and long-run, though it was only significant in the long run.

This shows that the model assumes that holding constant the level of technology and labour, each additional unit of capital produce positive addition to output, but these addition decreases as the number of fixed factor rises. The same property is assumed for labour.

Secondly, as the marginal product of capital (or labour) approaches infinity, capital (or labour) tends toward 0 and as the marginal product of capital approaches 0, capital (or labour) tends towards infinity; that is;

$$(\delta f / \delta k) = (\delta f / \delta l) = \infty, \lim \text{ as } k \rightarrow 0$$
$$(\delta f / \delta k) = (\delta f / \delta l) = 0, \lim \text{ as } k \rightarrow \infty$$

Other attributes of the Solow Growth model includes; constant return to scale, diminishing marginal utilities, capital and labour substitutability (this allows for variation in capital output ratio and introduction of flexibility into the growth process).

According to Iyoha, Ighodaro and Adamu (2012), if we assumed the Solow growth model is twice differentiable, subject to constant returns to scale and that technical progress is Hicks-neutral, the differentiation of equation (1) with respect to time (t) and dividing through by output (Y) result in the equation as stated below;

$$\dot{Y}/Y = \dot{A}/A + (FKK/Y) \cdot (\dot{K}/K) + (FLL/Y) \cdot (\dot{L}/L) \quad (2)$$

Where; \dot{Y}/Y = continuous time rate of growth; \dot{A}/A = hicks-neutral rate of change of technological progress; \dot{K}/K = growth rate of capital stock; \dot{L}/L = growth rate of labour; FK = marginal products of capital; FL = the marginal products of labour.

The expression in equation (2) shows output growth rate as a function of growth of technical change, capital stock and labour.

This study built on the works of Iyoha, Ighodaro and Adamu (2012), Orji, Uche and Ilori (2014); and Mankiw, Romer and Weil 1992) wherein Solow model was augmented by bringing in other variables into the growth model. The variables of interest are usually brought in through total factor productivity thereby implying that factor productivity helps to explain the growth process (Udah, 2011).

Thus, the number of policy variables is expanded as stated in equation (3);
 $RPCI(t) = f[EDT(t), FDI(t), AIDI(t), PRT(t), TBAL(t), K(t), L(t)]$ (3)

However, to avoid the problem of over parameterization and degree of freedom, focus is on variable of interest resulting in the model as presented in equation (3);

$$RPCI(t) = f[EDT(t), FDI(t), AIDI(t), PRT(t), TBAL(t)] \quad (4)$$

The explicit form of the model in time trend is functionally presented in equation (4);

$$RPCI_{it} = \beta_0 + \beta_1 EDT_{it} + \beta_2 FDI_{it} + \beta_3 AIDI_{it} + \beta_4 PRT_{it} + \beta_5 TBAL_{it} + \epsilon_{it} \quad (5)$$

Where;

RPCI = real per capita income; EDT = external debt as a percentage of GDP; FDI = net FDI inflows as a percentage of GDP; AID = net foreign aid flow as a percentage of GDP; PRT = personal remittances received as a percentage of GDP; TBAL = trade balance (export less import as a percentage of GDP); ϵ = error term.

A priori signs of the variables are indeterminate; that is, they could either be positive (+) or negative (-).

4.2. Estimation Technique and Data

This study employed both dynamic ordinary least squares (DOLS) and fully modified ordinary least square (FMOLS) estimation techniques with the later serving as a robustness check. Though DOLS and FMOLS estimation techniques estimate cointegrating relations directly by taking into account endogeneity and serial correlation, DOLS helps to obtain co-integrating vectors involving deterministic components. In addition, DOLS accommodates different orders of integration and correct for simultaneity among variables (Stock and Watson, 1993).

A total of forty-two (42) Africa countries comprising seven (7) Central Africa countries: Burundi, Cameroun, Central Africa Republic, Chad, Congo Democratic Republic, Congo Republic and Gabon; nine (9) East Africa Countries comprising Comoros, Ethiopia, Kenya, Madagascar, Mauritius, Rwanda, Sudan, Tanzania and Uganda. Others are four (4) North Africa countries of Algeria, Egypt, Mauritania and Morocco; seven (7) South Africa countries comprising Angola, Botswana, Lesotho, Malawi, Mozambique, South Africa and Zambia. Lastly, the fifteen (15) West Africa countries of Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo. The choice of these countries was informed by the need to have a wider spread that approximate Africa while the fairly long period (1996 to 2018 (22

years)) is to ensure that analysis is amenable to DOLS and FMOLS estimation techniques. Annual time series data for the variables were obtained from the World Bank, World Development Indicator (2019).

5. Empirical Result

Empirical analysis conducted includes; descriptive statistics, correlation analysis, stationarity and cointegration test, DOLS and FMOLS estimations, variance inflation factors and causality test.

a. Descriptive Statistics

The descriptive statistics as reported in Table 1 in the appendix shows basic characteristics of variables within the series. From the Table, the mean value of RPCI is approximately 1360. The high standard deviation of approximately 1756 shows a wide spread of observations to the mean. The skewness is however positive implying that RPCI figures lie to the right of the mean. The J-B value is high (over 3000) and passes the significance test at 1 percent indicating that the density function of the series are non-normally distributed. The mean of TBAL is approximately -9.11 while the standard deviation of is 17.94. This also shows a relatively wide spread of observations to the mean. The skewness of -2.55 (negative) indicates that TBAL lie to the left of the mean. The high J-B statistics of over 12569 passes the significance test at 1 percent. This once more shows that the density function of the series is non- normally distributed. The mean value of FDI is about 6.50. The low standard deviation of about 1.50 shows a narrow spread of observations to the mean. The skewness is positive (2.87) indicating that FDI lie to the right of the mean. The J-B of over 11727 passes the significance test at 1 percent. This also shows that the density function of the series is non-normally distributed. Similar explanations holds for other variables employed.

b. Correlation Analysis

This shows cross-relationships among variables. The result of correlational analysis conducted is reported in Table 2 (see appendix). From Table 2, it can be observed that all the variables (EDT, FDI, PRT and TBAL) except AID are positively correlated to RPCI. This means that growth in RPCI could be attributed to the influences of these variables with the exclusion of AID. Also, TBAL is positively correlated to RPCI, EDT, FDI and PRT; but was negatively correlated to AID. Similar conclusion can also be held for each of the other variables except for AID which exhibited negative relationship with each of the variables in the model.

c. Stationarity Test

This is meant to determine the stationarity status of data used owing to the fact that a non-stationary time series is not amenable to generalization to other time periods apart from the present and often result in spurious estimates.

Table 3: Test of Stationarity: Panel Unit Root Test Result

Variables	Homogeneous Unit Root Process				Heterogeneous Unit Root Process			
	Level		1 st Diff		Level		1 st Diff	
	LLC	Breitung	LLC	Breitung	IPS	ADF-Fisher	IPS	ADF-Fisher
RPCI	-1.78	4.36	-11.41	-4.06	-0.16	76.48	-11.27	288.23
EDT	7.2	6.73	-4.34	-3.73	7.75	30.55	-7.02	189.74
FDI	0.73	-1.12	-7.45	-9.86	-2.4	130.79	-14.61	357.55
AID	-8.18	-3.42	-11.11	-11.26	-6.13	201.28	-16.22	392.18
PRT	0.69	2.37	-9.16	-3.12	1.11	62.99	-9.51	300.71
TBAL	-0.58	-1.43	-21.19	-9.34	-1.76	108.01	-16.55	403.13

Source: Authors' Computation

Note: IPS=Im, Pesaran & Shin; LLC=Levin, Lin & Chu

From Table 3, the result indicates that the variables were all non-stationary at level rather they all attained stationarity at their first differences at 5 percent significant level as revealed by homogenous and heterogenous panel unit root tests.

d. Cointegration Test

The result of cointegration test (determination of long run convergence of variables) is reported in Table 4.

Table 4: Panel Cointegration Test Results: Pedroni residual cointegration test

Within Dimension		Between dimension		
	Statistic	Weighted Statistic	Statistic	
Panel v	-4.58	-2.78	Group rho	7.08
Panel rho	6.35	4.36	Group PP	-2.98
Panel PP	3.71	-2.29	Group ADF	0.96
Panel ADF	3.97	1.09		

Source: Authors' Computation

Pedroni residual cointegration test comprising within dimension (panel v, panel rho, panel PP and panel ADF) and between dimension (group rho, group PP and group ADF) was employed. The within-dimension shows the computed value of the statistics based on estimators that pool the autoregressive coefficient across countries for the unit root tests on the estimated residuals while the between-dimension report the computed value of the statistics based on estimators that average individually calculated coefficients for each country. From Table 4, the results of both tests showed that the null hypothesis of no cointegration of the series should be rejected at 5 percent significant level.

e. DOLS and FMOLS Estimations

DOLS and FMOLS estimations conducted are reported in Table 5.

Table 5: DOLS and FMOLS Estimations

	<i>Panel DOLS</i>			<i>Panel FMOLS</i>		
	<i>Coefficient</i>	<i>t-Stat</i>	<i>Prob</i>	<i>Coefficient</i>	<i>t-Stat</i>	<i>Prob</i>
<i>EDT</i>	2.87	6.53	0	1.72	4.37	0
<i>FDI</i>	1.29	2.99	0.003	2.36	9.59	0
<i>AID</i>	-11.93	-2.43	0.015	-16.68	-7.73	0
<i>PRT</i>	8.78	4.07	0	4.74	4.83	0
<i>TBAL</i>	-7.25	-2.41	0.016	-6.3	-1.96	0.04
<i>R-Sq</i>	0.96			0.82		
<i>Adj R-Sq</i>	0.90			0.81		
<i>S.E.E</i>	402.73			757.99		

Source: Authors' Computations

Note: *Dependent Variable is RPCI*

From Table 5, trade balance was statistically significant (at 5 percent) and negatively related to growth in DOLS and FMOLS. In both estimates, a 1 percent rise in trade balance results in over 7 percent and 6 percent decrease in growth for DOLS and FMOLS respectively. Other variables such as external debt, FDI and remittances show a significant and positively relationship with growth in both estimates with the exception of net aid flow which was significantly negatively related to growth in both estimates. The coefficient of determination and the adjusted coefficient of determination of 96 percent and 90 percent for DOLS and 82 percent and 81 percent for FMOLS shows that the regressors has over 80 percent explanatory power with respect to variations in the dependent variable (real per capita income).

f. Variance Inflation Factors

The VIF estimates which ranges from one (1) upwards, measures how much the variance of a regression coefficient is inflated due to multicollinearity. How large VIF has to be before it causes issues is a subject of debate, however, a higher VIF indicates the presence of multicollinearity and thus less reliable the regression estimate thereof. As a rule of thumb, any variable with VIF greater than 1.5 is avoided in a regression analysis, though, this condition is often relaxed to 2, 5 or 10 in some cases. The VIF for this study is reported in Table 6 (see appendix). From Table 6 and with reference to the uncentered VIF, the values for each of the variables fall within the range of 1.04 and 1.23 for DOLS and 1.02 and 1.20 for FMOLS. This suggests that there exist no serious presence of multicollinearity among the variables in the model.

g. Granger Causality Test

Granger causality test is usually employed to know the causal relationship between two variables. This was conducted and reported in Table 7 (see appendix). As can be observed in Table 7, granger causality test was only reported for the key variables (TBAL and RPCI) in the study. From the Table, it can be observed that a bi-directional causality exist between TBAL and RPCI considering that each of the probability passes the statistical significant level at 5 percent.

5.1 Implications of Findings and Recommendations

The implication of the above findings is that the continuous increase in trade deficit recorded by Africa weakens growth. This is similar to the findings by Blavasciunaite, Garsviene and Matuzeviciute (2020) and Aung (2017). With the prevailing conditions, gains that accrue to Africa from international trade are constrained by the incessant deficit which can be largely attributed to weak productivity of the economy of most countries in Africa.

In the light of the findings, the following recommendations are suggested;

- i. Africa countries should increase local productive base so as to curtail the increasing trade deficits in the continent.
- ii. As a follow-up to (i), Africa countries should promote policies that encourage utilization of local input for both consumption and production purposes.
- iii. Through the instrumentality of AU, Africa countries should embark on trade re-negotiation with institutions such as World Trade Organisation (WTO), Africa Development Bank (AfDB), International Monetary

Fund (IMF) on ways to reduce the burden of trade deficit among countries of the continent.

- iv. Being one of the basic tenets of AfCFTA, Africa countries should indulge more in intra Africa trade in other to ensure that more resources are retained in the continent.

6. Conclusion

Owing to the fact that the world is becoming a global village and countries are making efforts at maximizing gains from the new global economic order especially as it concern trade among countries, this study examined the relationship and impact trade balance has on economic growth in Africa (comprising forty-two Africa countries) for the period spanning 22 years (1996 to 2018). To this end, a model was drawn and the estimates from DOLS revealed that trade balance is negatively and significantly related to economic growth. This was affirmed by a robustness test conducted using FMOLS estimation technique. Other variables employed such as external debt, FDI, remittances were significant and positively related to economic growth with the exception of foreign aid. VIF analysis shows that there was no serious case of multicollinearity among the variables while granger causality test shows the existence of bi-directional causality between the key variable (TBAL and RPCI). The implications of the findings were brought to fore, and this was followed by relevant suggestions.

Declaration

Competing Interests:

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Appendix

Table 1: Descriptive Statistics: Pooled Sample

	RPCI	EDT	FDI	AID	PRT	TBAL
<i>Mean</i>	1359.81	8.94	6.49	10.18	8.69	-9.11
<i>Median</i>	656.83	3.52	1.32	8.03	1.02	-8.15
<i>Maximum</i>	10716.2	1.76	1.16	94.95	2.37	36.68
<i>Minimum</i>	111.36	0	-7.40	-0.26	11470.97	-161.43
<i>Std. Dev.</i>	1755.85	1.61	1.50	10.83	2.91	17.94
<i>Skewness</i>	2.55	5.33	2.87	2.95	5.57	-2.55
<i>Kurtosis</i>	10.07	42.32	18.99	17.38	35.58	19.84
<i>Jarque-Bera</i>	3090.42	67417.2	11727.68	9814.58	48158.65	12569.59
<i>Probability</i>	0	0	0	0	0	0
<i>Sum</i>	1325815	8.72	6.32	9926.25	8.47	-8885.21
<i>Sum Sq. Dev.</i>	3.00	2.51	2.21	114202.1	8.27	313533.6
<i>Observations</i>	975	975	975	975	975	975

Source: Authors' computations

Table 2: Correlation Analysis

	<i>RPCI</i>	<i>EDT</i>	<i>FDI</i>	<i>AID</i>	<i>PRT</i>	<i>TBAL</i>
<i>RPCI</i>	1	0.34695	0.209883	-0.41134	0.129911	0.303055
<i>EDT</i>	0.34695	1	0.479254	-0.30537	0.340004	0.183419
<i>FDI</i>	0.209883	0.479254	1	-0.21866	0.58721	0.045819
<i>AID</i>	-0.41134	-0.30537	-0.21866	1	-0.20353	-0.54017
<i>PRT</i>	0.129911	0.340004	0.58721	-0.20353	1	0.086394
<i>TBAL</i>	0.303055	0.183419	0.045819	-0.54017	0.086394	1

Source: Authors' computations

Table 3: Variance Inflation Factors (VIF)

Variable	DOLS		FMOLS	
	Coefficient Variance	Uncentered VIF	Coefficient Variance	Uncentered VIF
EDT	2.87	1.07	2.31	1.02
FDI	1.18	1.23	1.57	1.20
AID	463.59	1.04	54.78	1.08
PRT	2.68	1.18	6.19	1.18
TBAL	187.33	1.05	16.93	1.09

Source: Authors' Computations
 Included observations: 919

Table 4: Granger Causality Test
Pairwise Granger Causality Tests (Lags: 2)

Null Hypothesis:	Obs	F-Statistic	Prob.
TBAL does not Granger Cause RPCI	877	3.22527	0.0402
RPCI does not Granger Cause TBAL		8.66221	0.0002

Source: Authors' Computations