

Impact of Foreign Aid on Ghana's Trade Balance

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Abstract

Aim: The study's goal was to ascertain the impact of foreign aid on Ghana's trade balance, the impact of the country's exchange rate on trade balance, and the causal relationship between foreign aid and trade balance in Ghana.

Methods: Based on vector autoregressive (VAR) methods, descriptive and econometric analysis of time series data from 1982 to 2012 were conducted for the study. The existence of a link between foreign assistance and trade balance was examined using cointegration and causality tests. To ascertain how quickly economic equilibrium will shift from the short run to the long run, the Vector Error Correction Model (VECM) was used.

Results: The analysis found that the exchange rate has a favorable impact on Ghana's trade balance and that foreign aid has a negative impact on it. The study also showed a long-term connection between trade balance, exchange rate, and foreign aid as well as a bidirectional causation between foreign aid and Ghana's trade balance. According to the test for VECM, the transition from short-run to long-run equilibrium happened more quickly, at 1.43 or 143 percent.

Conclusion: The exchange rate has a favorable impact on Ghana's trade balance and that foreign aid has a negative impact on it.

Recommendation: The study recommended the Republic of Ghana to undertake an import substitution program in order to decrease the volume of imports that have been contributing to the long-term trade imbalance. Instead of depending on unreliable foreign aid, export promotion policy should be a priority in order to generate sufficient foreign revenues. To accomplish these goals, the Ghanaian government should be intelligently prepared to remove all trade restrictions that Ghanaian exporters faced on the international market.

Keywords: *Foreign aid, exchange rate, trade balance, Ghana, cointegration.*

1.0 INTRODUCTION

1.1 Background of the Study

Official development assistance (ODA), commonly referred to as foreign aid, involves the transfer of resources in the form of grants and loans from development partners to developing countries. The main purpose of aid flows to developing countries like Ghana is to promote economic development and well-being, usually measured by their impact on economic growth and poverty reduction. Arvin and Choudry (2000) argue that Ghana's sustained economic growth in the 1980s was largely the result of increased foreign aid inflows, similar to the expansion of the 1960s due to foreign exchange reserves accumulated since the 1950s. It claims that this is due to the expansion of capital deployment. Many years. In the late 1990s, the quest for democratic governance was also endeared to support Ghana community (Durberry et al., 1998). In the late 1980s and his early 1990s, Ghana underwent a series of ongoing reforms and structural adjustments, mainly between his 1983 Economic Recovery Program (ERP) and his 1986 Structural Adjustment Program (SAP). As a result, it has benefited from large aid inflows. Total aid to Ghana in 1996 has tripled from \$150.7 million to \$450.8 million in 1995 (Claire, 2008).

Traditionally, both multilateral and bilateral organizations have supported Ghana's development efforts through aid pledges. In the 1990s, commitments and payments were volatile. His spending as a percentage of total commitments ranged from 29% to 81%, averaging about 64% for his decade in 1989/1999 (Racheal, 2010). The wide gap between aid commitments and expenditures makes reliance on development aid increasingly precarious for developing countries like Ghana. The impact of mismatches in aid inflows usually leads to increased domestic borrowing, balance of payments deficits, and reduced foreign exchange reserves. Despite the 1983 economic recovery program and large aid inflows to Ghana in the early 1990s, a series of fiscal deficits, rising debt and debt service burdens, a rapidly growing money supply, and erratic inflation. , volatile exchange rates, unfavorable terms of trade at the end of the 1990s, the country plunged into a deep economic crisis as pledges and aid payments fluctuated wildly (Kelvin, 2008). Measured by its own historical standards, the economy has experienced some rapid growth since 2001. This was primarily due to the HIPC initiative to reduce the external debt burden, improve export earnings, focus on growth and poverty reduction, significantly improve fiscal and financial management, and the availability of foreign aid (Isaac, 2008). After development partners provided huge debt relief under his HIPC initiative from 2002 to 2008, Ghana relied on her IMF bailout again in 2009 to settle its economic problems.

Mosiera (2011) and Tadesse (2011) find that aid flows to developing countries serve the central purpose of promoting the economic development and prosperity of the people of these countries. I'm trying to determine if there is however, the results of these studies are very different (Moreira, 2005). Micro-level studies, primarily through cost-benefit analyses, report that development aid drives growth. In contrast, the results presented in macro-level studies using cross-country regression are generally equivocal. This contradiction in the relationship between aid and economic growth is termed by Quibria (2005) the 'micro-macro paradox'. The contradiction in the relationship between aid and growth is due to several factors. These include poor data quality, econometric methods, model specifications, and most importantly, relatively short data periods that affect the reliability of results (OECD, 2011). To this end, this study uses his 40-year (1972-2012) relatively long data period from the WDI database and the aggregate production function

(APF) as the underlying model to Estimate the relationship between new country aid and growth. Provide evidence in support of the growth argument.

The country shifted from aid dependence to self-sufficiency and implemented an export promotion strategy. Ghana's merchandise exports have increased significantly in recent years, rising from \$62 million in 2003 to \$254 million in 2010. Export earnings are highly concentrated in several commodities, with cocoa, citrus and minerals together accounting for 79% of exports by re-export. However, imports into Ghana grew more rapidly, from \$325 million in 2003 to \$1,389 million in 2010. Ghana's goods trade deficit exceeds her \$1 billion and accounts for about 20% of Ghana's GDP (Minicom, 2011). Despite this increase in exports, imports still outnumbered exports, at least from 1998 to 2012, with exports rising from \$54.1 million to \$590 million and imports rising from \$233.6 million to \$1.967 billion. Imports and exports have increased significantly, reflecting the level of economic activity, but the value of imports has exceeded the value of exports.

1.2 Statement of the Problem

Since independence in 1957, Ghana has been a foreign aid dependent country. Foreign aid represents 40% of government budget and is main source of capital flow and financing for investment. It is expected in the short run that foreign aid will cause the trade balance deficit, through the strengthening of domestic currency which makes imports cheaper and exports expensive. It is also expected in the long run that foreign aid will increase income of population which will result in domestic currency depreciation. The depreciation of domestic currency encourages exports and discourages imports hence trade balance surplus (Snowdon et al., 2005). The capital imports are also expected to generate production in the long run which will improve the trade balance. However that's not the case in Ghana, the more foreign aid continuously increases, the more domestic currency continuously depreciates and the more imports increase greater than exports hence trade balance deficit continuously persists. However other trade factors contributed such as low quality products, low level of production and lack of modern technology. The government tried to develop and promote trade through encouraging FDIs, exports promotion, integration in regional and global bodies, establishment of export industries, and production of quality and quantity exports (Whiteaker, 2006). Due to the political instability in Eastern Congo, foreign aid has been cut by the donor countries that have accused Ghana of playing a role in the conflict in Congo. The government of Ghana initiated a development fund which intended to substitute for aid but still far inefficient to solve the problem (Akiko, 2007).

1.3 General Objective

The general objective of the study was to determine the impact of foreign aid on Ghana's trade balance.

1.3.1 Specific Objectives

- i. To assess the impact of foreign aid on Ghana's trade balance.
- ii. To determine how Ghana's trade balance is impacted by the currency rate.

2.0 LITERATURE REVIEW

2.1 Theoretical Review

Much of Western Europe was in ruins after the Second World War, and the US government launched its first significant foreign aid program, which was a huge success story in foreign aid

that had never been matched before (Sogge, 2002). Since then, numerous models have been developed and foreign aid has been justified as a replacement for capital inflow.

2.1.1 Harrod-Domar model

In the Harrod-Domar model output depends upon the investment rate, and on the productivity of that investment. Investment is financed by savings, and in an open economy total savings equal the sum of domestic and foreign savings (Snowdon et al., 2005). A major strength of the Harrod-Domar model is its simplicity. The model assumes an exogenous rate of labor force growth (n), a given technology exhibiting fixed factor proportions (constant capital-labor ratio, K/L) and a fixed capital-output ratio (K/Y). Assuming a two-sector economy (households and firms), the model writes the simple national income equation as

$$Y_t = C_t + S_t \dots\dots\dots 1$$

Where Y_t = GDP, C_t = consumption and S_t = saving. Equilibrium in this simple economy requires:
 $I_t = S_t \dots\dots\dots 2$

Substituting (1) into (2) yields (3):

$$Y_t = C_t + I_t \dots\dots\dots 3$$

Within the Harrod-Domar framework the growth of real GDP is assumed to be proportional to the share of investment spending (I) in GDP and for an economy to grow, net additions to the capital stock are required. The evolution of the capital stock over time is given in equation (4):

$$K_{t+1} = (1-\delta) K_t + I_t \dots\dots\dots 4$$

Where δ is the rate of depreciation of the capital stock. The relationship between the size of the total capital stock (K) and total GDP (Y) is known as the capital-output ratio ($K/Y = v$) and is assumed fixed. Given that we have defined $v = K/Y$, it also follows that $v = \Delta K / \Delta Y$ (where $\Delta K / \Delta Y$ is the incremental capital-output ratio, or ICOR). If the model assumes that total new investment is determined by total savings, then the essence of the Harrod-Domar model can be set out as follows. Assume that total saving is some proportion (s) of GDP (Y), as shown in equation (5):

$$S_t = sY_t \dots\dots\dots 5$$

Since $K = vY$ and $I = S$, it follows that rewrite equation (4) as equation (6):

$$vY_{t+1} = (1-\delta)vY_t + sY_t \dots\dots\dots 6$$

Dividing through by v , simplifying, and subtracting Y_t from both sides of equation (6) yields equation (7):

$$Y_{t+1} - Y_t = [s/v - \delta] Y_t \dots\dots\dots 7$$

Dividing through by Y_t gives us equation (8):

$$[Y_{t+1} - Y_t] / Y_t = (s/v) - \delta \dots\dots\dots 8$$

Here $[Y_{t+1} - Y_t] / Y_t$ is the growth rate of GDP. Letting $G = [Y_{t+1} - Y_t] / Y_t$, we can write the Harrod-Domar growth equation as (9):

$$G = s/v - \delta \dots\dots\dots 9$$

This simply states that the growth rate (G) of GDP is jointly determined by the savings ratio (s) divided by the capital-output ratio (v). The higher the savings ratio and the lower the capital-output ratio and depreciation rate, the faster will an economy grow. Ignoring the depreciation rate and consider the Harrod-Demar model as being represented by the equation (10):

$$G = s/v \dots\dots\dots 10$$

Snowdon (2005) stated that many international organizations are still employ Harrod-Domar model to calculate the investment and aid requirements needed in order for specific countries to achieve their growth target. Being criticized of simplicity due to the fixed labor assumption, Solow model applauded by a number of researchers because it took into account of labor force (Romer, 2004).

2.1.2 The Solow model

The Solow model highlights the impact of rising savings, population growth, and technological progress in a closed economy. There three key relationships in the Solow model: the production function, the consumption function, and the capital accumulation process. Solow's growth model is based on the neoclassical aggregate production function. The Solow model also known as the Solow-Swan model was developed by Robert Solow (Solow, 1956) and T. W. Swan (Swan, 1956). The model focuses on four variables: Output (Y), Capital (K), Labour (L) and Knowledge or the effectiveness of labour (A) and follows the properties of the Cobb-Douglas production function (Halsmayer, 2014)

$$Y_t = (K_t A_t L_t) \dots\dots\dots 11$$

The model states that at any one time, the economy has some amounts of capital, labour and effectiveness of labour combined to produce output (Y). The model assumes that the function has a constant return to scale in production regardless of its starting point; the economy converges to a balanced growth path where each variable in the model is growing at a constant rate. The model also assumes that the long run growth of output per worker depends only on technological progress whereas short run growth results from either technological progress or capital accumulation OECD, (2011).

2.1.3 Capital-absorption approach

From national income accounting identity

$$Y = C + I + G + (X-M) \dots\dots\dots 12$$

$$\text{Domestic absorption: } A = C + \dots\dots\dots 13$$

Where A is absorption, defining the current account balance "B" as:

$$B = X - M \dots\dots\dots 14$$

$$\text{Given (12) as } Y = A + B \dots\dots\dots 15$$

$$\text{And upon rearranging; } B = Y - A = -I_f \dots\dots\dots 16$$

Equation (14) shows that a current account surplus arises if gross domestic product is greater than absorption and that the difference shows up as capital outflow ($-I_f$), alternatively a payment deficit is due to the domestic absorption being greater than gross domestic product. The difference is

financed by capital inflow (I_f). Since the absorption is always greater than gross domestic product for Ghana, the difference is covered by foreign aid inflow.

2.2 Empirical Review

Many studies have been done at various times, but there is still little consensus result. Whitaker (2006) conducted a causal analysis of untied foreign aid, Export performance with causality and cointegration tests performed. The study found that a very direct and clear link between aid and trade is a formal link where the provision of aid is conditional on the beneficiary purchasing the product from the donor. This is usually done by receiving aid in the form of products procured by donors, so aid itself is trade (Braint & Alvin, 2001). It is clear that the causality between aid and trade flows is two-way. The current study uses causality and cointegration methods to determine the relationship that exists between foreign aid and Ghana's trade balance. Many years have passed since this study, so the current study appeals to new data from the last few years.

Lloyd et al. (2001) Investigating pooling problems in panel data analysis for developing countries where development assistance and trade relations are being studied a means of causality testing. As a result of research, the direction was shown. Causality varies by country pair (donor, recipient). With a sample of ODA is a commitment between 4 EU donors and 26 countries African beneficiaries from 1969 to 1995 found that trade drives aid. Only 15 out of 87 pairs (i.e. 17%) help determine 13% of trades Causality is bi-directional in 7%. Studies used Panel data that severely captures the heterogeneity of each country or Borrowed and applied the causality test to address the current study Ghana (Cassen, 2004). In 12 nations of the CFA Franc zone, Ouattara et al. (2012) undertook an empirical investigation of the link between foreign assistance inflows and the real exchange rate. They discovered that foreign assistance inflows do not have an impact on the spread of the Dutch disease in these nations using dynamic panel analysis. The study was inconclusive with regard to a particular nation since panel data analysis was performed. This study examined the impact of foreign aid on exchange rates using time series data for the nation of Ghana.

Keshab et al. (2005) looked at the impact of currency rates on Ghana's trade balance. In order to estimate trade balance as a function of real exchange rate, domestic income, and foreign incomes, the study first estimated the real exchange rate as a function of preferences and technology of two trading economies. Annual time series data from 1970 to 2000 were then used. A consistent long-run link between exports and imports and the real exchange rate was confirmed by the study using cointegration analysis of single equation models and VAR-Error correction models. Although this elasticity sum up to almost 1 in long-run estimations, the short-run elasticity of imports and exports suggested contractionary impacts of devaluation in terms of the Marshall-Lerner Robinson criteria. The study also demonstrated that in the near run, the currency rate is the most important element. However, the analysis found that over time, the only factor that truly has an impact on the trade balance is the actual exchange rate.

Krugmar (2012) used a multivariate econometric methodology, current econometric techniques developed for non-stationary dynamic panels, and an estimator that imposes a reduced homogeneity assumption on the slope coefficients to analyze the link between foreign aid and the real exchange rate. The analysis demonstrated that, between 1975 and 2005, foreign aid contributed to a greater understanding of actual exchange (Cheng, 2009). The study also discovered that other factors, like increased labor productivity, better terms of trade, and

government spending of non-tradable products, are linked to an increase in the real exchange rate. In Ghana, the situation is different since foreign aid keeps rising while the currency depreciates over time.

3.0 METHODOLOGY

This study employed a non-experimental research strategy, namely time series data that uses a quantitative approach and makes use of the necessary data on study-relevant factors. The non-experimental study methodology was acceptable since variable control was not attainable. Time series are auxiliary information that offered numerical data. The quantitative technique was used using data collected between 1982 and 2012. Strong data evidence that was pertinent to the research challenge was assessed.

4.0 DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Descriptive Analysis

The research begins with a descriptive analysis in which the mean and median were estimated as measures of central tendency before moving on to the econometric analysis. The dispersion from the mean was quantified using the standard deviation, Skewness, and kurtosis.

Table 1: Descriptive analysis

Variable	Obs	Mean	Median	Std Dev	Skewness	Kurtosis	Jacque-Bera
FA	31	467.3342	353.91	294.3722	1.057526	3.187248	5.823487
ER	31	322.4742	304.67	207.3948	0.087131	1.336029	3.615589
TB	31	-187.093	-62.065	301.0602	-1.88505	5.132866	24.23525

Table 1 shows that observations were taken into account with three variables; FA, ER and TB. The mean of variable is greater than standard deviation for foreign aid and exchange rate except on trade balance.

4.2 Test for Unit Root

Augmented Dickey Fuller (ADF) was used from Unit Root Test because it is simplest and most commonly used data for testing on many econometric time series is stationary and runs into the previously found autocorrelation problem Dickie-Fuller (DF) test. With ADF even if there is a problem with the structure Breaks, data used has no structural breaks. Because the trade balance is zero the hypothesis states that the trade balance has unifying roots. For absolute value test if the statistic is greater than the critical value in absolute value, the study can be discarded accept the null hypothesis and accept the alternative that there is nothing in the trade balance unit route. If the critical value is greater than the test statistic, the opposite decision is made Rules apply.

Table 2: Results of Augmented Dickey-Fuller Unit Root test

Variable	ADF unit root test at level			ADF unit root test after first difference		
	ADF			ADF		
	t- statistic	Prob	Critical value	t- statistic	Prob	Critical value
TB	-4.8209	0.0033	-4.33933*** -3.587527** -3.229230*	-4.820940	0.0033	-4.3393** -3.5875** -3.2292*
Trend	-3.1163	0.0052		-3.116320	0.0052	
ER	-2.2525	0.4453	-4.2967** -3.5683**	-5.5266	0.0001	-3.6793** -2.9677**
C			-3.2183	2.5897	0.0153	-2.6229*
	-2.2559	0.4436	-4.2967**	-4.5283	0.0001	-2.6471**
FA			-3.5683** -3.2183*			-1.9529** -1.6100*

Note: ADF is the augmented dickey fuller test. The null hypothesis is that the series have unit root (non-stationary). The asterisks (***) significant at 99% confidence level, (**) significant at 95% confidence level and (*) significant at 90% confidence level. The three variables to be used in this study have been checked for the unit root, where Trade balance appeared to be stationary at level with the linear trend, Exchange rate has not been stationary at level but becomes stationary after first difference with a constant and Foreign aid has been not stationary at level but becomes stationary after differencing them once. The above transformed data will be used along with the analysis of this study since they guarantee none spurious 36 result because all variables data are integrated of order one 1(1), therefore the variables are now stationary and use for estimation.

4.3 Test for Co-integration

As it is known, most macroeconomic variables are non-stationary. The variables utilized in this investigation were differentiated once to make them stationary. As indicated in the accompanying table, the data were utilized to test for cointegration using an intercept and deterministic trend in a VAR model setting with lag length selection based on AIC and a maximum lag of four.

Table 3: VAR Lag Order selection criteria

Lag	Log L	LR	FPE	AIC	SIC	HQ
0	-534.94	NA	4.06e+13	39.84	39.99	39.89
1	-453.71	138.38	1.94e+11	34.49	35.07*	34.66
2	-446.95	10.01	2.36e+11	34.66	35.67	34.96
3	-439.55	9.32	2.86e+11	35.78	36.22	35.20
4	-411.74	28.84*	8.24e+10*	33.38	35.25	33.94*

Note: * indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level, FPE: Final prediction error, AIC: Akaike information criterion, SIC: Schwarz information criterion, HQ: Hannan-Quinn information criterion. Since much of lag order selection criteria, among of them LR, FPE, AIC and HQ advice lag of four, the study used four lag. Before cointegration test, the test for 37 normality were made without destroying white noise assumptions, test for autocorrelation and multicollinearity were also done.

Table 4: Test for cointegration

	Hypothesis	Eigen value	Trace statistic	0.05 critical value	Prob.
	Null	Alt			
Rank Test (trace)	H0:r=0 vs H1:r≥1	0.5704	46.90	35.01*	0.0018
	H0:r≤1 vs H1:r≥2	0.4439	24.93	18.39*	0.0053
	H0:r≤2 vs H1:r=3	0.3107	9.676	3.841	0.0019
			Max-Eigen Statistic		
Rank test (maximum Eigenvalue)	H0:r=0 vs H1:r=1	0.5704	21.97	24.25	0.0973
	H0:r=1 vs H1:r=2	0.4439	15.26	17.14	0.0922
	H0:r=2 vs H1:r=3	0.3107	9.676	3.841	0.0019

Note: Trace test indicates 3 co-integration equations at the 0.05 level. *denotes rejection of the null hypothesis at the 5% level of significance.

The test for cointegration in table 5 shows that there is a long run relationship between the variables with lag interval of 4. Since the Trace Stat > Critical Value, the Null hypothesis $H_0 = r = 0$ and Alternative $H_1 = r \geq 1$ was rejected because Trace Stat.[46.90752] > [35.01090] and P-value= 0.18% < 5%. The second Null hypothesis $H_0 = r \leq 1$ and Alternative $H_1 = r \geq 2$ was rejected because Trace Stat [24.93723] > [18.39771] at 5 percent and the P-value=0.53% < 5%. The third Null 38 hypothesis $H_0 = r \leq 2$ and Alternative $H_1 = r = 3$ was rejected in favor of alternative because Trace Stat [9.676928] > [3.841466] at 5 percent and the P-value=0.19% < 5%. The trace statistics denotes that there are three cointegrating vectors, which means that all used variable have a long run relationship.

Table 5: OLS regression of trade balance

Variable	Coefficient	Std. Error	t-Statistic	Prob
ER	0.116003	0.232924	0.498029	0.6222
FA	-0.614180	0.161668	-3.799630	0.0007
R-squared	0.609244	Durbin-Watson stats		0.208825
Adjusted R-squared	0.595770	Log likelihood		-205.8405

Table 5 shows the results from regression where signs and coefficients denote that Exchange rate has positive effect on trade balance and one unit of franc increase in exchange rate generates 0.1 million Rwf change in trade balance holding other factors constant. Foreign aid has negative effect on trade balance and one unit of US dollar increase in foreign aid generates a reduction of 0.6 million Rwf in trade balance holding other factors constant. The R^2 of 0.609244 shows that the exchange rate and foreign aid explain 60% change in trade balance. The results from the table 5 explain the reason why the more foreign aid inflow the more trade balance deteriorates.

4.4 Vector Error Correction Model (VECM)

Since there is a long-term economic equilibrium among the variables, a short-term equilibrium must also exist. The presence of equilibrium or disequilibrium between the short run dynamics of variables and long run equilibrium is examined using the Vector Error Correction Model (VECM).

Table 6: Test of Vector Error Correction model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ε_t	-1.4372	0.2929	-4.9062	0.0004
DTB(-1)	1.4153	0.2441	5.7977	0.0001
DTB(-2)	0.7119	0.3415	2.0846	0.0591
DTB(-3)	2.4092	0.3013	7.9951	0.0000
DTB(-4)	0.1786	0.5796	0.3082	0.7632
DER(-1)	0.6162	0.3357	1.8356	0.0913
DER(-2)	1.2811	0.3845	3.3311	0.0060
DER(-3)	1.5029	0.4362	3.4452	0.0048
DER(-4)	1.1012	0.3952	2.7864	0.0165
DFA(-1)	0.1750	0.1421	1.231	0.2419
DFA(-2)	0.4296	0.1237	3.4724	0.0046
DFA(-3)	-0.1028	0.1210	-0.8502	0.4118
DFA(-4)	0.0232	0.1218	0.1908	0.8518
Constant	17.5128	17.0610	1.0264	0.3249
R- squared	0.9163	Mean dependent var		-33.6362
Adjusted R-squared	0.8257	S.E of regression		41.9308
F-statistic	10.1118	Durbin-Watson stats		1.882103

The guideline in VECM is that the coefficient (ω) of ECT ($\epsilon_{t,i}$) must be negative and significant, which means that there is a causality running between from short run to the long run between FA, ER and TB. The result of estimate in table 6 shows that coefficient of ECT = ω -1.437278 with its P-value = 0.04%. This confirms that is negative and significant which signifies that it adjust at 143% from disequilibrium towards long run equilibrium, this means also that the speed of adjustment is so faster. DTB (-1) to DTB (-4) are lagged TB, DER (-1) to DER (-4). The results of Wald Test reject Null hypothesis and accept the Alternative Hypothesis meaning that both TB lags jointly can influence the TB as the same ER lags can jointly influence TB and FA lags can jointly influence TB but constant is found equal to zero which means that the constant cannot influence TB

4.5 Test for Causality

To determine the direction of causation between the Trade Balance, Exchange Rate, and Foreign Aid, the study uses a Granger causality test in a VAR model context. Since the test for stationarity revealed that the data for the exchange rate and foreign aid are not stationary at level and were differenced once to make them stationary, but the data for the trade balance were stationary at level, the data were to be utilized in differenced form. In order to use the data for a causality test, the data must be changed into a suitable form where all variables are first differentiated.

Table 7: Granger causality test

Null hypothesis	Obs	F-Statistic	Prob.
DFA does not Granger Cause DER	26	2.4261	0.0880
DER does not Granger Cause DFA		1.3929	0.2784
DTB does not Granger Cause DER	26	0.3752	0.8231
DER does not Granger Cause DTB		0.4577	0.7656
DTB does not Granger Cause DFA	26	5.9973	0.0034
DFA does not Granger Cause DTB		3.4685	0.0302

Note: * indicates P-value significant at 5 percent Obs=obseavations

This bidirectional causality demonstrates that Foreign aid cause trade balance and trade balance also cause foreign aid, this is in agreement of with Trade gap theory (Quibria, 2005), where foreign aid is required to fill the export-import gap and this gap is daily expanding in Ghana economy. This is also in accord with Arvin et al. (2000) findings. The study has found that there is no causality between Exchange rate and Trade balance.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The large sum of foreign support to Ghana has accomplished the necessary recovery and feasible economic growth. However, high foreign assistance can have some possible negative effect of aid dependence. This can be possible if foreign aid has a negative effect on Ghana economy. The study was 46 undertaken to find out the effect of foreign aid on Trade balance in Ghana. The findings from the study disclosed that foreign aid has a negative effect on trade balance in Ghana. All

variables have long run relationship which means that when foreign aid increases, the exchange rate depreciates which in turn increases the exports while reducing the imports hence is the trade balance improvement. The causality test showed also bi-directional causality between Foreign aid and Trade balance which is in agreement with the theoretical literature of trade gap, where the low exports exceeded by high imports create the trade gap whose covering necessitates the foreign aid inflows, briefly in Ghana, it is the trade balance deficit one of the .cause of the inflow of foreign aid. At the same time the study found that there is no causality found Trade balance and Exchange rate as well as Foreign aid and Exchange rate.

5.2 Recommendations

Given the results from the study, the Republic of Ghana to achieve its desired economic recovery and total economic independence by shifting from dependence on foreign aid must reduce its Trade balance deficit which deteriorating year after year because the findings from the study have proved that Trade balance granger cause foreign aid and foreign aid has negative effect on trade balance. It is normally agreed with the economic theory of the two gap model where foreign aid inflow come as a result of trade gap means imports exceed exports. Import substitutions and exports promotion could be enhanced while planning ways to break down the barriers for their outcome on global market. Foreign aid should also be reduced since the findings proved a causal relationship where foreign aid cause trade balance deficit. Since exchange rate has a positive effect on trade balance and long run relationship with both trade balance and foreign aid, being a monetary tool gives Central Bank a right stand to manipulate it and tackle the Trade balance deterioration problem especially in short run and mitigate the Foreign aid effect. If these policies are well implemented, the result will be trade balance improvement which in turn will reduce the amount of foreign aid required resulting hence political and economic independence.

This study has tried but still a lot to do about the effect of foreign aid in various areas of Ghana economy. The researcher advises further researches on foreign aid on balance of payment in Ghana, foreign aid on economic growth in Ghana, foreign aid fungibility in Ghana.

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Conflict of Interest

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