



The Dilemma of Trade and the Nexus of Benefits and Costs (Trade or No Trade)

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	ABSTRACT
<p>2016 Research Leap/Inovatus Services Ltd. All rights reserved.</p> <p>DOI: 10.18775/jibrm.1849-8558.2015.41.3001 URL: http://dx.doi.org/10.18775/jibrm.1849-8558.2015.41.3005</p>	<p>Many economists and governments are now of the view that promoting trade in general and exports, in particular, are the solution to poverty reduction and balance of payment problems and eventual development. In the modern era, most economies have adopted the theory of comparative and specializing in goods for which they have comparative advantage and trading for much needed foreign exchange earnings. While most studies have evaluated the impact and benefits of international trade, few have focused on the costs associated with the trade. This paper reviews both benefits and costs associated with trade, in order to strike a balance and provide a complete overview of trade for, especially developing economies. A model of cost and benefit analysis of trade (MCBAT) is subsequently developed. In order to achieve the objectives of the study, the paper uses an empirical method of study and uses empirical data for costs and Granger causality tests, error correction models, Least squares (Gauss-Newton / Marquardt steps) and Wald tests in Eviews statistical software to determine impact. Theoretical and empirical analysis prove that has both benefits and costs, and whilst trade provides quality, cheaper and variety of goods, and may promote economic growth, it may harm developing economies in terms of deficit balance of payments and debts, resource depletion and domestic industries.</p>
<p>Keywords: International trade, Comparative advantage, Exports, Imports, Trade benefits and costs</p>	

1. Introduction

The world economy is now integrated than ever in the history of humanity. Globalization has increased integration and interaction between and among nations, people and businesses. Besides investment, international trade has been deemed as an important driver of globalization, fueled by information technology.

On trade, the issue of the policy of trade as well as trade openness has become important to policymakers and analysts, and the majority of literature suggests an openness to trade contributes positively to economic growth. In recent times the World Trade Organization's (WTO) encouragement of the creation of a more open trade environment has helped in eliminating some aspects of protectionism. As global tariff levels gradually declined, more and more developing countries have also abandoned Import Substitution (IS) trade and investment policies and moved towards more liberal regimes of trade promotion and open borders.

According to trade theory, openness to trade can affect economic growth through; gains accruing from the exchange, consumer benefits because of cheaper imports. Further,

importation of raw materials and inputs at cheaper prices benefits producers and resource diversification from sectors previously protected to those that maximize value is again. As a result of specialization and economies based on comparative advantage, the output is expanded leaving to a positive impact on firms and economies.

The effects of trade as part of globalization does not impact only the economy and economic development, but on political systems, culture, environment, and physical wellbeing of people across the globe. Further, whilst the effects are largely deemed positive, good for economies, there are also negative costs for such economies including; depletion of natural resources and a negative impact on domestic industries. Some economies such as those in Sub-Sahara Africa, for example, whilst endowed with natural resources continue to languish in poverty, resources depletion, environmental degradation mainly due to in gold mining, and deficit balance of payments. The double-edged sword nature of trade thus calls for an inquiry that highlights benefits and costs, and present solutions to maximize the benefits associated with trade and minimize the associated costs.

1.1 Problem Statement

The problem of research arises from the nature of trade itself and the dilemma associated with it. International trade, on the one hand, has contributed to the development of many economies. A typical example of such economies is China that has experienced astronomical growth and development in the last 40 years since opening up. If the success story of China is anything to go by, then the benefits of trade enumerated as increased output, foreign exchange earnings, improved consumer wellbeing through imports; proves that it pays for nations states to engage in trade expansion. On the other hand, countries such as those in Sub-Saharan Africa, parts of South America and Asia have experienced a different case of seemingly engaging in trade openness and expansion, declining export earnings, environmental degradation and resources depletion.

The problem of this study is thus how to estimate the impact of trade and associated costs as well as how to decide whether to trade or not to trade.

1.2 Aim of the Study

The aims of this paper derived from the problem statement are split into three parts. First, the paper aims to determine whether trade impacts positively on the economy. Secondly, we determine the negative impacts of trade and lastly, the ultimate aim of the paper is to make a decision on whether it pays for a country to trade in the face of such adverse effects. The study also aims to make some policy recommendations for governments and policymakers on the subject matter of trade in the 21st-century globalized world.

2. International Trade

This section of the paper examines the various scholarly articles on trade, benefits of trade and the negative impact of trade. The paper examines published works of authors, working documents and articles with a view to providing an expose on scholars view of trade and its impact on the economy: both positives and negatives.

2.1 International Trade

Hibbert (1990) describes trade as based on the concepts of "absolute" and "relative" comparative advantage as developed by Ricardo (1817). According to Todaro (2000) trade as involves much more than the exchange of goods as well resources of financial nature in a sense, it involves the invitation of foreign inflow. As submitted by Weil (2008), for the period 1965 to 2000, the growth rate of GDP on average for economies that were open was 3%, as compared to 1.5% for those that remained closed.

2.2 Benefits of International Trade

Numerous studies by scholars such as Kruger (1997) and Edwards (1992) all favor trade liberalization. Wacziarg and Welch (2003) submitting that trade liberalization and openness

impacts positively on the growth of GDP as well as investment. Wacziarg and Welch (2003) submit further, GDP growth increase after liberalization of trade; with investments likewise seeing effects in the positive. Sukar and Ramakrishna (2001) studies show that trade has enhanced economic growth of Ethiopia. Eggert (2002) notes that minerals, in general, can impact positively on the livelihoods of the citizenry. According to Helpman and Krugman (1985), exports, for example, causes growth through foreign technological adoption and the benefits accruing to large scale economies. Barriers to foreign markets could also be eliminated through exports (Esfahani 1991). As submitted by Chenery and Strout (1966), foreign exchange build-up and improvement in the balance of payment conditions can accrue from export expansion; and importation of needed goods and production technologies are enhanced. Using cross –country analysis, Michaely (1977) writes that exports contribute to development in developing countries.

2.3 Costs of Trade

On the contrary, Rodriguez and Rodrick (1999) submit that there is an overstatement of positivity between openness and GDP growth; long-run productivity and output, for example, is reduced by imports. On service importation, Li (2003) uses a dynamic panel approach to assess the role of imports of services on economic growth with a panel of 82 countries and finds that imports of services worsen developing countries' economic growth. Zafar Ali (2007) submits that oil/resource importation led to a boost in GDP of most African countries; however, oil importation leads to upward swing of prices to the detriment of poor oil importing economies on the continent. According to Kaplinsky et al (2006), benefits relating to the booming prices of exports to China are accompanied by increasing, conflicts, corruption and exchange rates and are ambiguous. Ibrahim (2017) submits that China African trade relations affect domestic textile industries negatively in terms of loss of jobs. Tull (2006) submits that lower prices of Chinese products render African products uncompetitive. According to Hilson et al (2014), trade relations have resulted in presence of foreigner's illegal gold mining in Ghana. Hilson et al. (2014) adds involvement has also led to an adverse effect on the environment. Illegal small scale mining also affects food and agricultural products (Essumang et al 2007). Roulet et al (1998) submit that chemicals left in soils are washed into water bodies when it rains and thus affects water security. Aryee et al (2003) submit that illegal gold mining results in water and soil contamination, degradation of land as well as flora and fauna contamination.

2.4 The Paradox of Trade

Greenway, Morgan, and Wright (1999) in their studies write about the essence of the composition of a basket of exports. In terms of export commodities and export earnings, Thirwall (1995) submits that 80% of all export earnings of African countries are from primary raw commodities with prices of these commodities declining at 0.5% annually. Export of

primary products, resultant vulnerability to external shocks, deteriorating prices as well as their terms of trade leads to worsening terms of trade of developing economies as submitted by Sakar (1986). Srinivasan and Bhagwati (2001) state that manufacturers are less vulnerable to external shocks and cyclical change. Authors such as Chenery (1979) and Agosin (2007) are of the view that vertical diversification of exports from raw or primary commodities to manufactured goods is essential in promoting economic growth through exports. According to Michaely (1962), export earnings can help in the long run to stabilize export earnings. Rodrik (2006) writes further that as long as export commodities are composed of low value, diversification, as well as specialization, will not lead to economic growth. Examining the relationship between export diversification and economic growth from 1962 to 2000, Hesse (2008) found that whereas developed countries perform better with specialization of exports, export diversification benefited developing economies.

2. Research Methodology

This empirical paper, its attempt to highlight the double-edged sword nature of trade uses theoretical and quantitative methods in analysis. The Paper employs Granger causality tests, error correction models, Least squares (Gauss-Newton / Marquardt steps) and Wald tests in Eviews statistical software for estimation of impact.

3.1 The theory of comparative advantage

The theory of comparative advantage by David Ricardo (1817); the foundation of trade submits that economies around the world differ in terms of their resource endowments and/or technological know-how; such as Ghanaian cocoa production and American plane manufacturing technology. Further, countries face an opportunity cost of production due to resource constraints. An economy has comparative advantage in producing a good over other countries if it can do so at a relatively lower opportunity cost. Gains from trade will arise if the economy with a comparative advantage specializes in producing that particular good and trades it for other goods for which it has a comparative disadvantage. Consider an example of two countries: Ghana and China. Both produce two goods; cocoa and clothes. Assume China requires 40 hours of labour for 1 unit of cocoa and 30 hours for 1 unit of clothes, while Ghana requires 50 hours for cocoa and 70 hours for clothes, respectively. China is more efficient in producing both cocoa and clothes, as it takes less man hours than Ghana. Without trade, Ghana would need 50 man-hours to produce one unit of cocoa or 50/70 unit of clothes, whereas China would need 40 man-hours to produce one unit of cocoa or 40/30 units of clothes. Hence, Ghana will need 120 man-hours in the production and consumption of a unit of both, while China on the other hand will need 70 man-hours for both. Thus, Ghana has a comparative advantage in cocoa production whereas China's efficiency lies in clothes. With both countries specializing in goods, they have a comparative advantage in,

world output increases as Ghana can now use 120 hours of labour to produce 2.4 units of cocoa, whereas China can produce 2.3 units of clothes with 70 hours of labour. Furthermore, both countries with their ratios of 50/70 and 40/30 units for clothing production can benefit from the consumption of a unit each of cocoa and clothe, 0 to 0.4 units of cocoa and 0.3 units of clothes remaining to be exported. It thus pays if Ghana specializes in producing cocoa and, China in clothing.

3.1.1 Granger Causality Tests

The variable x is said to cause the variable y in the Granger sense if the forecast for y improves when lagged variables for x are taken into account in the equation, *ceteris paribus* (Charemza and Deadman, 1997). In other words, the standard Granger causality procedure is based on past changes in one variable explaining actual changes in another variable.

This study uses Granger-causality propounded by Granger (1969) to test the impact of trade on economic growth for positive impact and trade on environment as negative impact. We select the economy of Ghana as our model economy.

3.2 Econometric Model

The appropriate formulation of a Granger-type test of causality (which must be applied to stationary series) is:

$$\text{Economic growth } t = \beta_0 + \beta_1 X_{t-1} + \dots + \beta_j \text{ economic growth } t-j + \theta_1 \text{ exports } t-1 + \dots + \theta_j \text{ exports } t-j + \mu_t \quad (1)$$

$$\text{Exports } t = \delta_0 + \delta_1 \text{ FDI } t-1 + \dots + \delta_j \text{ Exports } t-j + \gamma_1 \text{ economic growth } t-1 + \gamma_j \text{ economic growth } t-j + \nu_t \quad (2)$$

$$\text{Economic growth } t = \phi_0 + \phi_1 \text{ economic growth } t-1 + \phi_j \text{ economic growth } t-j + \alpha_1 \text{ imports } t-1 + \alpha_j \text{ imports } t-j + \sigma_t \quad (3)$$

$$\text{Imports } t = \psi_0 + \psi_1 \text{ imports } t-1 + \dots + \psi_j \text{ imports } t-j + \xi_1 \text{ economic growth } t-1 + \dots + \xi_j \text{ economic growth } t-j + \tau_t \quad (4)$$

$j = 1, 2, N$

Where X is economic growth, μ_t , ν_t , σ_t , and τ_t are error terms with zero mean. In equation (1), the null hypotheses 'exports and imports does not Granger cause imports' ($\theta_1 = \dots = \theta_j = 0$) is tested using a standard F-test (Wald test). It is rejected if the θ s are jointly significantly different from zero. Similarly, in equation (2) the null hypotheses 'economic growth does not Granger cause exports and imports' ($\gamma_1 = \dots = \gamma_j = 0$) is rejected if the γ s are jointly significantly different from zero. The same procedure applies for equations (3) and 4. Subsequently, an error correction model based on the above equation is developed as below.

Based on the ARDL model developed by Pesaran and Shin (1997), an error correction model for each of the four equations is derived:

$$\Delta y_t = \lambda_0 + \sum_{i=1}^r \beta_{yi} \Delta y_{t-i} + \sum_{i=1}^s \beta_{xi} \Delta x_{t-i} + \pi \rho_{t-1} + \varepsilon_t$$

Where ρ_{t-1} is the lagged error correction term obtained from the residuals in each equation (equations 1 to 4) and ε_t is the random disturbance term. From equation (5) the null hypothesis that 'x does not Granger cause y' would be rejected if the lagged coefficients of the β_{xi} 's are jointly significantly different from zero, using a standard F-test (Wald test). In case of cointegration between x and y, changes in one variable towards its long run equilibrium value may be a result of variations in the other variable. As well, the causality between x and y could be identified if the error term (ρ_{t-1}) is statistically significant. Notice that the Granger test results only indicate that the changes in x must come before the changes in y (Murkherjee et al., 1998). A statistically significant coefficient on ρ_{t-1} (π) shows how the short run coefficients of the endogenous variable adjust towards the long run equilibrium in reaction to changes in the exogenous variables.

3.3 Estimation procedure

The testing procedure includes the following:

3.3.1 The Augmented Dickey-Fuller test (ADF)

ADF unit roots are used to find the order in which the variables are integrated. The procedure for testing for the ADF test is basically the same as that of the Dickey-Fuller test, how we apply it to the model stated as:

$$\Delta y_t = \alpha + \beta_t + \gamma_{yt-1} + \delta_1 \Delta y_{t-1} + \dots + \delta_{p-1} \Delta y_{t-p} + I + \varepsilon_t \quad (1)$$

Where α is a constant, β the coefficient on a time trend and p is the order of lags of the autoregression process. If the constraints $\alpha = 0$ and $\beta = 0$ are imposed, corresponds to a random walk modeling and using the constraint $\beta = 0$ equals to the modeling of a random walk with a drift. Dickey-Fuller developed the Augmented Dickey-Fuller test as shown in three instances.

First instance of intercept only

$$\Delta y_t = \alpha_I + Z y_{t-1} + \alpha_i + \varepsilon_t, \quad (2)$$

where α_I is the intercept

Second instance where there is a trend and intercept

$$\Delta y_t = \alpha_I + \beta_2 t + Z y_{t-1} + \alpha_i + \varepsilon_t, \quad (3)$$

where α_I is the intercept and $\beta_2 t$ is the trend, and the last instance is where there is no trend and no intercept.

$$\Delta y_t = Z y_{t-1} + \alpha_i + \varepsilon_t \quad (4)$$

we must satisfy these three models in order to make a decision about unit root testing; that is whether a particular variable has unit root or not.

3.3.2 Johansen's Cointegration Test

Subsequently, on the basis of the above unit-root tests, a cointegration test is performed. If after conducting unit root test, the variables are integrated in the same order, then we can apply the Johansen-Juselus maximum likelihood method of cointegration to obtain the number of co-integrating vector(s). Johansen-Juselus Multivariate Co-integration equation is given as below.

$$\Delta X_t = \sum \Gamma_i \Delta X_{t-1} + \Pi X_{t-1} + \varepsilon_t$$

Where X_t is the vector (Exports, Imports, FDI) respectively, Δ is a symbol of the difference operator, ε_t is the vector of residuals. The VECM model has information about the short run and long-run adjustments to changes in X_t , via the estimated parameters Γ_i and Π . Here the expression ΠX_{t-1} is the error term and Π can be factored into two separate metrics of α and β such as $\Pi = \alpha\beta$ where β denotes the vector of cointegrating parameters while α is the error-correction coefficients measuring the speed of convergence to the long run steady state. If after conducting the test the variables are found to be con-integrated, it implies they share a common stochastic trend and grow proportionately that is they move together in the long run or they have a long run relationship.

3.3.3 Error Correction Models

After performing Co-integration tests, the paper uses error correction models and least squares method to determine long-run relationship between the independent variable trade and dependent variable s. The formula for error correction model is as stated in section 3.2, equation (5).

3.4 Data and Sources

Analyzing the impact of trade made use of qualitative and quantitative data from varied sources such as the government of Ghana policy documents, intentional organizations such as the IMF, World Bank Development Indicators, CIA World Factbook. Objectives called for a longer time horizon as suggested by Diamantopoulos et al (1993), Nyberg (1987) and Seringhaus (1987b). Data collected seeks to shed light on the positive and negative impacts of trade. The study uses time series data from the World Bank country indicators database on Ghana from 1960 to 2016 using Eviews 9 statistical software for the calculation.

3.4.1 Independent variable-Trade

Independent variable trade includes exports and imports. Exports sourced from the World Bank defines as Goods and services exports represent the value of all goods as well as other market services that are received by the rest of the world. These include the value of royalties, merchandise, insurance, freight, transport, travel, license fees, and other services, such as communication, information, construction, financial, business, personal, and government services. They, however, exclude

compensation of employees and investment income and transfer payments. Data are in current United States dollars.

Imports, in dollars measured in billion U.S. dollars sourced from the World Bank, defined as goods and services imports include the values of all goods as well as other market services that world supplies to the economy. These include values of freight, merchandise, transport, license fees. Insurance, travel, royalties, other services, such as personal services, construction, information, and government services, communication, financial. They, however, exclude employee's compensation, transfer payments, and investment income and. Data are in current United States dollars.

3.4.2 Dependent variable: Economic growth

The paper estimates the impact of trade on economic growth of Ghana as a means of determining impact. Economic growth is the percentage annual GDP growth rate at constant market prices of the local currency, measured in constant 2010 USD, in terms of aggregates.

4. Data Analysis and Interpretation

In this section of the paper, the study takes a look at empirical data to interpret the effects of trade. In the second section, the paper estimates the impact using statistical tools.

4.1 Empirical analysis of the impact of trade

The benefits of trade have been widely documented. Generally, trade is deemed beneficial to nation states that engage it as postulated by the theory of comparative. While there is the admission that trade does not always benefit positively and that the impact of trade may be negative, many economists believe costs of not trading will be far devastating than doing so and redistribution of income, in the long run, will compensate losers of trade. There are gains and losses of trade and this section takes a theoretical expose.

4.1.1 Positive impact

International trade serves as an avenue for nations to exchange goods and services using money as a medium of exchange. International trade benefits have been the major drivers of growth for the 21st century.

1) Cheaper and variety of imports Benefits consumers

International trade contributes to varieties of products from various countries. Consumers thus, have a variety of choices, resulting in improvement of the quality of life as well as economic growth.

International trade increases access to cheaply priced goods. Cheaper imports, from China especially, have eased inflationary pressure other countries. Quality of life is also improved as a result.

Further, since free trade occurs on international markets, consumers benefit from the variety of goods in the market. Competition at the market place can also lead to lower prices which benefit consumers.

2) Promotion Efficiency and Quality in Production:

International trade promotes efficiency in production as countries will try to adopt better methods of production to keep costs down in order to remain competitive. Countries that can produce a product at the lowest possible cost will be able to gain a larger share in the market. As a result, the incentive to produce efficiently arises. This will help to increase the standards of the product and consumers will have a good quality product to consume. In other words, increased trade leads to increased competition among nations. As a result, businesses seek new ways to create comparative advantage. Innovation increases leading to superior quality products and services. Free trade, working with other markets can shift resources and workers to areas that are productive, and this allows industries that are more efficient to be successful. This can, in turn, lead to investment in areas such as infrastructure, higher wages, dynamism in the economy and new and better opportunities are all benefits of trade.

3) More Employment:

International trade can boost employment due to output expansion through trade. Trade can help boost employment by establishing new industries in order to meet the demands of various countries. Trade thus benefits countries by reducing unemployment rates.

4) Reduces Friction among Nations

As nations work to interact with each other, there is an increase in mutual respect. Trust and cooperation lead to multilateralism and interdependence, likely to reduce wars. Peace in itself can lead to development.

5) Economic growth and development

International trade can lead to growth. Trade reduces imported-input costs, leading to a reduction in costs of production and promotion of economic growth. International trade promotes jobs through imports and exports. Higher productivity leads to a rise in wages. People can, therefore, improve their standard of living. As a result of trade, real incomes and economic growth are enhanced. Further, efficient allocation and better utilization of resources occur since countries tend to produce goods in which they have a comparative advantage. When countries produce through comparative advantage, wasteful duplication of resources is prevented. It helps save the environment from harmful gases being leaked into the atmosphere and also provides countries with better marketing power.

6) Empirical Evidence

Table 1: Ghana Gold production contribution to GDP and Employment

Year	Contribution to GDP (%)	Employment Total
1990	4.83	N/A
1995	5.63	19,557
2000	5.56	15,120
2005	5.02	13,766
2008	5.58	17,829
2009	5.76	17,332

Source: Ghana Minerals Commission

Ghana exports increased by 6.3 % (per annum). In 2016 Ghana exports increased from 2872 US Dollars in the third quarter to 3126.10 Million US Dollars. Minerals in Ghana contributed 5% of the Gross Domestic Product (GDP) and accounted for about 38% of Ghana's total export in 2014. Gold currently lead exports at a rate of 41.2%, followed by Cocoa beans with 18.8%. In 2012 Ghana exported 3.3% of world gold worth 5.64 billion US Dollars, and Ghana ranked second after South Africa in Africa. This statistics makes Ghana a giant in gold exports in Africa and the World. Minerals and gold, in particular, contribute to economic growth as shown in Table 1 above.

4.1.2 Negative impact

International trade aims to reduce barriers and enhance economic development. Trade can, however, have many negative effects. These include the following:

1) Loss of jobs

International trade and agreements have seen resistance in the U.S. for decades as a result of perceived job losses to overseas countries with cheap labor such as China. Proponents of International trade, however, submit that trade and agreements can improve the economy and redistribution of income will compensate losers. The WTO acknowledges that trade does cause job losses. At the World Economic Forum in Davos in 2017, Azevêdo Roberto, admitted: trade causes 2 out of ten job losses. Though his argument was that 80% of job losses are caused by other factors, his admission of 20% attributable to trade is enough evidence that trade does indeed lead to job losses Job losses is one of the reasons for the trade war between the US and China.

2) Harsh Working Conditions

Most developing countries are attempting to cut costs to gain a price advantage, as a result, most workers in such countries

experience low wages, harsh working conditions and in some cases forced and child labor. Barbaro, Steven Greenhouse, and Michael report in "New York Times" article entitled "An Ugly Side of Free Trade; Sweatshops in Jordan" that manufacturing of apparel was booming in Jordan and exports to the U.S. soared twenty-fold over a five year period. As the paper reports, there is a negative side to this development. There were reports of maltreatment of foreign workers, poor and harsh working condition and unpaid salaries for months.

3) Environmental Effects

Some economists submit that international trade can harm the environment, and that saving the planet and promoting trade are opposite sides of the same coin.

According to Professor Alf Hornbor, of Lund University in, Sweden, trade has for centuries led to global inequality and environmental degradation. Trade is deemed to be driving growing global issues of greenhouse gases, as workers in developing countries have to produce goods lower costs as well as in inferior conditions, using old, and dirty sources of energy such as coal and oil. Further, developing economies that export raw materials and natural resources do not only experience resources depletion but environmental degradation such as in gold mining.

4) The collapse of infant industries

The worst effect of foreign trade on backward countries is the destruction of their handicrafts and cottage industries. In India, such industries had reached a high stage of perfection. However, the flood of cheap British manufactures swept them before it. In recent times, Japan tried to crush our cotton industry by flooding Indian markets with cheap goods and protection had to be granted to save it. Industrially weak countries have to suffer like this. Cheap textile imports into Ghanaian markets have harmed the textile industry of that country

5) Overdependence is dangerous

Extreme specialization which makes a country depend on one or two industries only is terrible. This is like putting all one's eggs in one basket. If a substitute is discovered or the industry otherwise suffers, the economic life of the people would be endangered.

Countries which sell primary commodities and buy manufactured goods in return are losers. The standard of living of the people in such countries remains low. Moreover, the pity is that this state of affairs tends no persist. Foreign trade under such conditions leads more to discontent and unrest than to peace and goodwill.

6) Empirical evidence

In Ghana, employment in the Textile industry does not only involve factory workers but a chain of people including distributors, wholesalers, retailers, artisans, advertisers etc. Indeed, various aspects of the economy are affected by the

textile industry regarding employment. The textile industry in Ghana in 1977 employed about 25,000 people; accounting for 27% of total employment in manufacturing. By 1995, however, employment in the sector had decreased to just 7,000, falling further to 5000 in the year 2000. Employment in the sector, though very important, has been reducing and as of March 2005, the four main textile manufacturers in Ghana employed a combined 2961 workers. The survey shows that most companies have cut down or laid off workers rendering them.

Table 2: Employment within Ghanaian Textile Industry

	1975	1995	2000
Output (million Yards)	129	46	65
Employment	25000	7000	5000

Source: Ministry of Trade and Industry-Ghana, November 2002

Secondly, Textile exports serve as a significant foreign exchange source for the economy and revenue to textile firms. In 1992, textile exports earnings totaled 27.2 million dollars increasing to \$179.7 million, however decreasing constantly and falling to US\$ 3.173 million by 1998.

4.2 Estimating the Impact of Trade

This section uses econometric statistical tools to prove the arguments for and against trade.

4.2.1 Overview

Exports of Ghana are mainly composed of gold (4.43bn USD), cocoa (1.89bn USD), cashews, nuts (987m USD), crude oil (960m USD), and timber (367m USD). Generally, the lowest exports were recorded in the 1st quarter of 2003 (565.06m USD) and reaching an all-time high in 2012 first quarter (4118.830m USD). Exports have generally been rising as shown below:

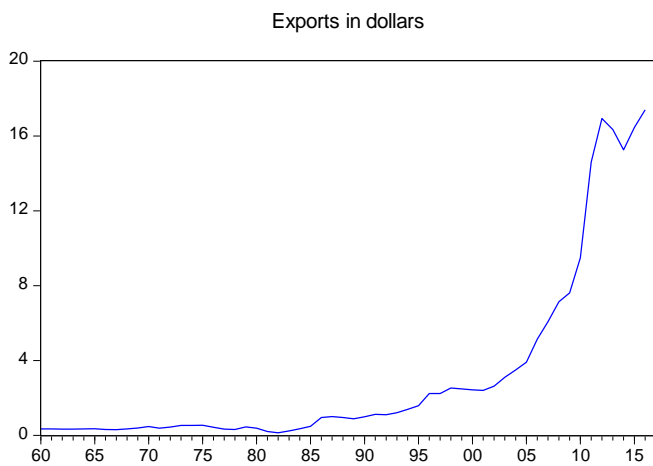


Figure 1: Exports in US Dollar for Ghana from 1960 to 2017
Source: Author

In contradistinction to Ghana’s primary exports, it imports manufactured goods of higher value than it exports, including cars (\$881m), trucks (481m USD), cement (389m USD), rice (287m USD) and frozen fish (263m USD). Imports over the years have seen an upright surge as seen below:

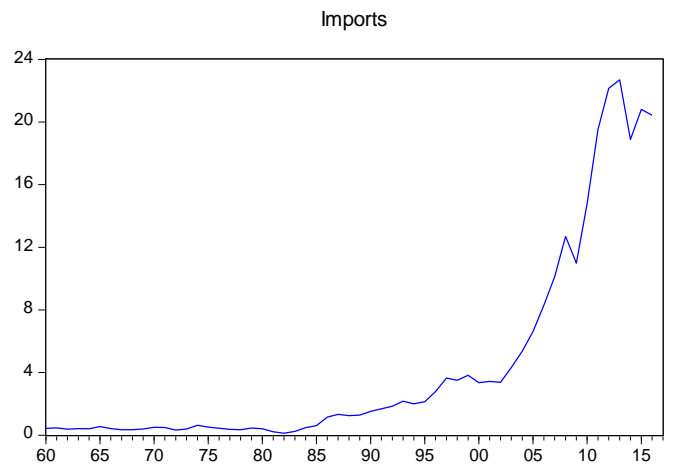


Figure 2: Imports in US Dollar for Ghana from 1960 to 2017
Source: Author

Whereas Ghana imports 11billion (bn) USD, it exports stood at 10.5bn USD as at 2016 with a deficit of 508million(m) USD As shown in the figure below, from 1995 to 2016, imports denoted by the red have outweighed exports, and through exports undertook imports in 2011/2012, it was short-lived as they fell below imports again in 2013/2014. Exports versus import graph are shown below:

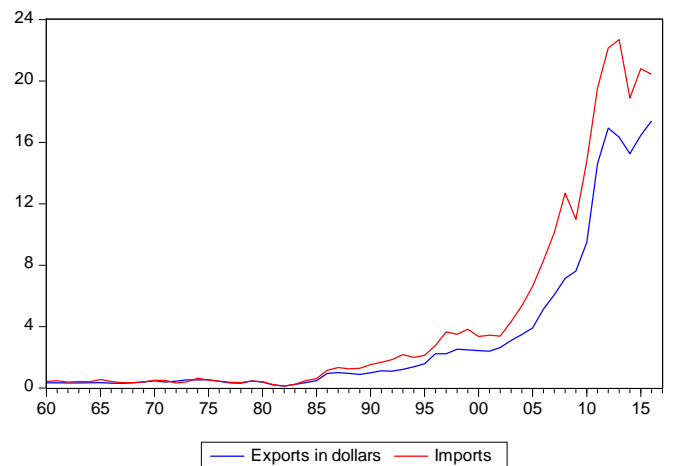


Figure 3: Exports and Imports in US Dollar for Ghana from 1960 to 2017
Source: Author

It can be seen from the graph above imports denoted, by the red line, have outweighed exports which are denoted by the blue line. This has resulted in a negative balance of payments as shown below:

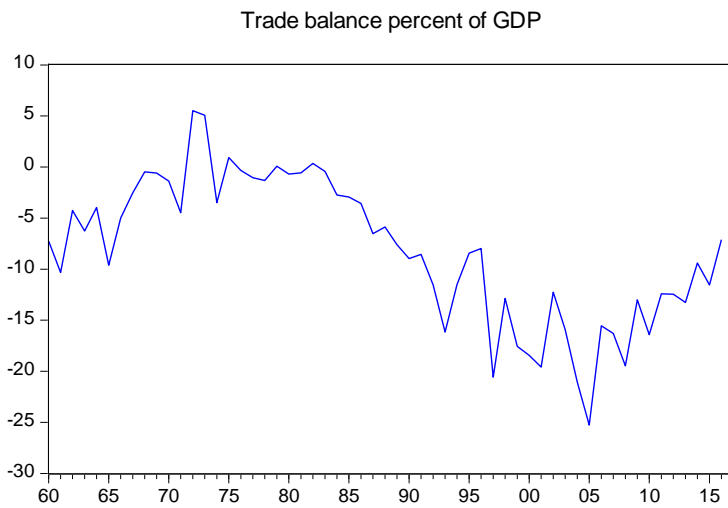


Figure 4: Trade balance for Ghana from 1960 to 2017
Source: Author

A comparison of exports, imports and trade balance is shown in the figure below.

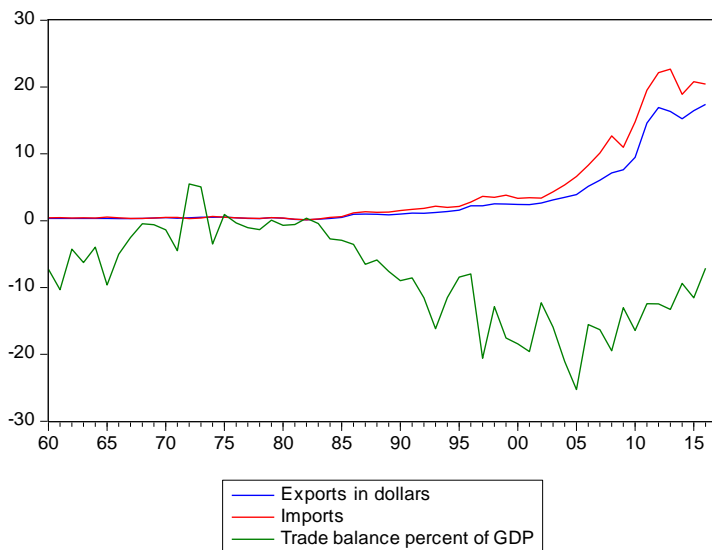


Figure 5: Exports, imports and trade balance for Ghana from 1960 to 2017

Source: Author

Given that the economy of Ghana imports more than it exports and does earn less from export trading, but spends more on trading through imports, the country has seen a generally low growth that has been either stagnant or fluctuating from the period 1960 to 2017, as shown below.

Subsequently, the government has over the years tried to make up for the negative trade deficit through IMF loans that came with the structural adjustment programs (SAPs) and Economic Recovery Programs (ERPs), as well as loans from development partners.



Figure 6: Economic growth for Ghana from 1960 to 2017

Source: Author

Although these loans and support have helped the economy, it has led to a swelling of government external debt as shown below.

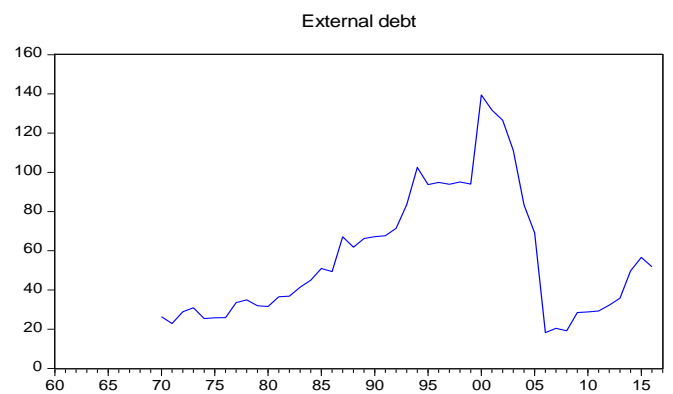


Figure 7: External debt for Ghana from 1960 to 2017

Source: Author

In the next section, we estimate the double-edged nature of trade by calculating the effects of exports and imports on economic growth.

4.2.2 Estimating Effects of exports and imports trade on Economic growth

1) ADF TEST

The paper starts with conducting ADF test to determine the order in which the variables are integrated. In order for the variables to be used in the estimation process, they have to be stationary. We conduct tests at the level and finds the variables not stationary, however stationary at 1st differencing.

Table 3: ADF Tests at Level and 1st Difference

Variable	Indicator	Level			1 st difference		
		ADF t-stat	Critical value	Decision	ADF t-stat	Critical value	Decision
Economic growth	Trend	-2.757026	-2.919952	Not stationary	-5.727487	-2.922449	Stationary
	Trend/intercept	-2.703095	-3.502373	Not stationary	-5.660289	-3.504330	
	None	-0.637447	-1.947520	Not stationary	-5.737115	-1.947665	stationary
Exports	Trend	-0.718802	-2.918778	Not stationary	-3.449865	-2.921175	
	Trend/intercept	-1.549392	-3.498692	Not stationary	-3.541475	-3.513075	Stationary
	None	-0.230147	-1.947248	Not stationary	-3.178152	-1.947520	Stationary
Imports	Trend	-2.176348	-2.919952	Not stationary	-3.717046	-2.917650	Stationary
	Trend/intercept	-2.941340	-3.500495	Not stationary	-4.658886	-3.496960	Stationary
	None	-1.615932	-1.947381	Not stationary	-3.282655	-1.947119	Stationary

Source: Author

2) Cointegration Tests

Subsequently, on the basis of the above unit-root tests, a cointegration test is performed. If after conducting the unit root test, the variables are integrated in the same order, then we can apply the Johansen-Juselius maximum likelihood method of co-integration to obtain the number of a co-integrating vector(s). At least one cointegrating vector is needed to conduct the vector error correction model (VECM) test, otherwise, we conduct unrestricted Vector Auto-Regression (VAR). Cointegration tests results are shown below.

Table 4: Johanson Cointegration Tests

Number Cointegrating vectors	Probability		Decision
	Trace Test	Max-Eigenvalue	
≤0	0.0000	0.0000	Reject null
≤1	0.0398	0.0270	Reject null
≤2	0.6413	0.6413	Accept null
Result of test	Both Trace test finds 2 cointegrating equations at 0.05 level		

*Significance level is 0.05

*Reject null if probability value is less than 0.05

Source: Author

3) Vector Error Correction Models

From the Johansen Cointegration test, we found 2 co-integrating equations at 0.05 level and thus the variables economic growth, exports and imports are co-integrated. We there conduct the VECM tests and use Least squares and Wald tests to estimate both long run and short run impact of trade(exports and imports) on economic growth. Results are shown below.

Table 5: VECM/Least Squares (Gauss-Newton / Marquardt steps)

	Coefficient	Std. Error	t-Statistic	Prob
C(1)	-1.107895	0.322425	-3.436130	0.0015
C(2)	-5.588300	3.511578	-1.591393	0.1203
C(3)	0.370322	0.290280	1.275739	0.2102
C(4)	0.258284	0.250631	1.030538	0.3096
C(5)	0.199994	0.205327	0.974030	0.3365
C(6)	0.348942	0.162284	2.150194	0.0383
C(7)	5.075241	3.184302	1.593831	0.1197
C(8)	3.724224	4.412839	0.843952	0.4043
C(9)	1.702401	3.657478	0.465458	0.6444
C(10)	0.554806	3.235809	0.171458	0.8648
C(11)	-4.224760	2.410435	-1.752696	0.0882
C(12)	-3.778845	2.874680	-1.314527	0.1970
C(13)	-1.450413	3.106275	-0.466930	0.6434
C(14)	-1.443509	2.418267	-0.596919	0.5543
C(15)	0.876526	0.736232	1.190557	0.2416

R-squared	0.927324	Mean dependent var	0.449474
Adjusted R-squared	0.896576	S.D. dependent var	0.995221
S.E. of regression	0.320059	Akaike info criterion	0.811468
Sum squared resid	2.663386	Schwarz criterion	1.328600
Log likelihood	-3.417892	Hannan-Quinn criter.	0.995460
F-statistic	30.15911	Durbin-Watson stat	1.575828
Prob(F-statistic)	0.000000		

Equation; $C(1)$ is the error correction term or the speed of adjustment. If the $C(1)$ is negative and significant (less than 0.05) then there is long run causality from the independent variable(s) to the dependent variable. Here the coefficient is -1.107895 and p-value is 0.0015 meaning a long run causality from independent variables exports and imports jointly to dependent variable economic growth.

Table 6: Wald tests for Short run relationship between exports and economic growth

Test Statistic	Value	Df	Probability
F-statistic	0.966384	(4, 36)	0.4378
Chi-square	3.865536	4	0.4245
Null Hypothesis: $C(7)=C(8)=C(9)=C(10)=0$			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(7))	5.075241	3.184302	
C(8)	3.724224	4.412839	
C(9)	1.702401	3.657478	
C(10)	0.554806	3.235809	

*Null hypothesis: $C(7) = C(8) = C(9) = C(10) = 0$; no short run relationship

*If P-value > 5% accept null, <5% reject null.

With Chi-square having probability value of 0.4245, more than 5%, we accept the null hypothesis and thus there is short-run relationship between exports and economic growth

Table 7: Wald tests for Short run relationship between exports and economic growth

Test Statistic	Value	Df	Probability
F-statistic	0.919713	(4, 36)	0.4631
Chi-square	3.678852	4	0.4512
Null Hypothesis: $C(11)=C(12)=C(13)=C(14)=0$			
Null Hypothesis Summary:			
Normalized Restriction (= 0)	Value	Std. Err.	
C(11))	-4.224760	2.410435	
C(12)	-3.778845	2.874680	
C(13)	-1.450413	3.106275	
C(14)	-1.443509	2.418267	

Null hypothesis: $C(11) = C(12) = C(13) = C(14) = 0$ no short run relationship

*If P-value > 5% accept null, <5% reject null

With Chi-square having a probability value of 0.4512, more than 5%, we accept the null hypothesis and thus there is a short run relationship between imports and economic growth.

4) Granger Causality Tests

Having determined both short run and the long run relationship between exports and economic growth, as well as imports and economic growth, the paper conducts Granger causality tests to determine whether exports and imports as caveats of trade of Ghana have caused economic growth. The results of the tests are shown below.

Table 8: VEC Granger Causality/Block Exogeneity Wald Tests
DEPENDANT VARIABLE: D(ECONOMIC GROWTH)

Excluded	Chi-square	df	Prob	Decision
D(exports)	3.865536	4	0.4245	Accept Null
D(imports)	3.678852	4	0.4512	Accept Null
All	8.618267	8	0.3755	Accept Null

*Null hypotheses: Exports does not granger cause economic growth, imports does not granger cause economic growth.

* Accept Null if Probability value is more than 0.05(5%)

From the results, we accept both null hypotheses that export does not cause economic growth and imports does not cause economic growth. This is in line with our earlier analysis that the economic growth of Ghana has not been fueled by trade but by other sources such as loans from the IMF and other partners which was proven by the external debt curve which shows an upward trend.

5. Conclusion and Recommendations

This section of study draws conclusions from the study and makes recommendations as regards the double-edged nature of trade.

5.1 Conclusion

From this study, it has been revealed that trade indeed has two sides of benefits and costs. This paper found that whilst most scholars believe that trade is beneficial, others are of the view that trade is detrimental to some economics and that the benefits of trade outweigh. This paper thus concludes that from an empirical review that trade benefits the economy in terms of providing a variety of goods for consumers, promoting innovation, efficiency and economic growth, in line with studies by Wacziarg and Welch (2003), Sukar and Ramakrishna (2001), Eggert (2002). The study concludes further than trade harms certain economics, in terms of importation of goods

harming domestic industries, in line with studies by Tull (2006) and Li (2003), as well as depletion of natural resources, environmental effects and balance of payment deficits for poor developing economies. Based on the econometric analysis of Ghana trade it is fair to say that developing economies that face heavy BOP deficits should probably refrain from trading.

However, given that these economies cannot survive with trade, depending on other nations for much need goods such as automobiles, electronics, food, and other essential items, it will be unwise for such countries not to trade.

The overall conclusion of this paper is thus taking steps to benefit from trade, whilst reducing the negative effects (cost) of trade.

5.2 Recommendations

Based on the conclusions drawn from above, developing economies that are adversely affected by trade need to adopt strategies that minimize the cost of trading. As regards Balance of payment problems, for example, these economies will do well to move away from exporting raw materials and goods of low value to value-added products. Developing economies will need to expand their manufacturing base in order to add value to goods exported. Furthermore, attracting foreign direct investment (FDI) is a valuable way to promote industrialization as governments of such countries lack the resources to do so. Finally, since imports should be channeled towards needed equipment and machinery for industrialization, which will eventually expand output and exports. Better regulation is also essential to avoid the environmental impacts of trade.

5.3 Further Study

Future study will look at ways through which developing economies adversely affected by trade can reap the full benefits of trade such as the role of foreign direct investment in trade promotion.

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