

The Impact of Trade Liberalization on Economic Growth in Tanzania

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Abstract

The broad objective of this study is to analyze the effect of trade liberalization on economic growth in Tanzania. The impact of trade liberalization on economic growth has raised a great attention to many researchers in the international trade arena. Various studies have been conducted however the literature still has the mixed bag of results. Thus, the researchers were motivated to pursue this study so as to fill the gap in the International Trade in Tanzania. The study adopted a simple linear regression model where real GDP was the dependent variable while trade openness was the independent variable. Annual time series data was used covering the period 1970-2010. This overall period was then subdivided into a closed economy period (1970-1985) and an open economy period (1986-2010). OLS technique was used to estimate the regression model twice, regarding the two sub-periods.

The empirical findings indicated that trade openness had a positive and significant effect on economic growth in Tanzania. However, this effect was relatively greater during the closed economy compared to the open economy period. It has been indicated that since late 1980s

Tanzania experienced continuous trade deficits in her accounts. This has been the contributing factor in the obtained results. Thus, the study recommended that there is a need for the country to put strong initiative on adding value on her exports so as to compensate for imports. There is a need of developing more domestic industries and attracting more investors in the economy. Also the elimination of unnecessary tariffs is required.

Keyword: Trade Liberalization, Economic Growth, Tanzania

1. Introduction

Background of the Study

As seen in many countries, the principal motive of governments especially in recent years has been to obtain high and sustainable economic growth so as to prevail in a challenging world of trade relations (Manni and Afzal, 2012). In attaining this principled goal, countries have embarked themselves in popular economic policies that allow reduction and removal of barriers to trade such as tariffs, quotas and import controls as to mention but three. Among many policies that most countries including Tanzania have decided to opt-for is trade liberalization of economies (Herath, 2010).

According to Kazungu (2009), over the last two decades or so, influenced partly by the prevailing wisdom in the academic and policy circles, the government of Tanzania like many other developing countries adopted a series of trade liberalization measures. Trade liberalization has among other things, entailed substantial reduction in the role of government in production and marketing, abolition of controlled prices, removal of export taxes, relaxation of foreign exchange and import controls; and bolstering the participation of the private sector in the economy. Unquestionably, these reforms also arose as a response to address the protracted economic crisis that hit hardest the country in the 1980s. The severity of crisis was pronounced in slow and negative growth, drastic fall in the share of Tanzanian export in the world trade, decline in manufacturing output and unfavorable balance of trade.

However, the response of exports to the incentive structure built into the trade liberalization program has been unsatisfactory in terms of the values of export earnings and absence of export diversifications. Indeed, the available evidence from various literatures indicates that the economic performance has been rather disappointing. Between 1990 and 2003, the Tanzanian economy registered negative current account balance to GDP ratio. The GDP per capita in constant US\$ dropped from \$267 in 1990 to \$262 in 1999 before rising to \$308 in 2003. Trade to GDP ratio also declined consistently from 50% in 1990 to 39% in 1999 before rebounding to 45% in 2003 (Kazungu, 2009). Although some literatures have reported that export to GDP ratio increased from the low level in the 1990, it started to decline in a roller coaster fashion after 1995.

Thus, the role of trade and trade policy reforms in Tanzania not only remains questionable but it also poses serious questions on development strategy. To this extent, some researchers argue that trade liberalization has failed due to a combination of internal and external problems. But other researchers have retained that trade liberalization has achieved the biggest outcomes in Tanzanian history. As a result, there was a need for this study to assess the impact of trade liberalization on economic growth of Tanzania. The interest of the researcher was to clear the contradicting part among researchers as to whether trade liberalization in Tanzania was that significant at all.

Statement of the problem

According to Manni and Afzal (2012), trade liberalization policies open up the opportunity for countries' economies to enhance growth and foster overall development. Moreover, as noted from Thirlwall (2000), generalized trade liberalization in form of unilateral tariff reductions or the reduction of non-tariff barriers to trade improves growth performance.

However, according to Salinas and Aksoy (2006), there is yet no conclusive evidence about the economic impact of trade liberalization on economic growth of countries. Additionally, researches that have been done in this field have been noted to produce a mixed bag of results all over the world (Herath, 2010). To this end, there was a need for this study to examine the impact of trade liberalization on Tanzania's economic growth. This study therefore promised to fill the gap in literatures on International Trade studies in Tanzania. The general objective of this study is to examine the impact of trade liberalization on economic growth in Tanzania. The study develop the following hypotheses;-

There is a positive impact of trade liberalization on economic growth in Tanzania. H_0

There is a negative impact of trade liberalization on economic growth in Tanzania. H_1

2. Relevant Literature Review

Theoretical Framework

Trade Liberalization

Trade liberalization is the removal or reduction of restrictions or barriers on the free exchange of goods between nations. This includes the removal or reduction of both tariff (duties and surcharges) and non-tariff obstacles (like licensing rules, quotas and other requirements). The easing or eradication of these restrictions is often referred to as promoting "free trade." It is a policy by which a government does not discriminate against imports or interfere with exports by applying tariffs (to imports) or subsidies (to exports) or quotas. According to the law of comparative advantage, the policy permits trading partners mutual gains from trade of goods and services (Ikenson, 2006).

Under a trade liberalization policy, prices emerge from the equilibration of supply and demand, and are the sole determinant of resource allocation. 'Free' trade differs from other forms of trade policy where the allocation of goods and services among trading countries are determined by price strategies that may differ from those that would emerge under deregulation. These governed prices are the result of government intervention in the market through price adjustments or supply restrictions, including protectionist policies. Such government interventions can increase as well as decrease the cost of goods and services to both consumers and producers (Bhagwati, 2010). Since the mid-20th century, nations have increasingly reduced tariff barriers and currency restrictions on international trade. Other barriers, however, that may be equally effective in hindering trade include import quotas, taxes, and diverse means of subsidizing domestic industries. Interventions include subsidies, taxes and tariffs, non-tariff barriers, such as regulatory legislation and import quotas, and even inter-government managed trade agreements such as the North American Free Trade Agreement (NAFTA) and Central America Free Trade Agreement (CAFTA) (contrary to their formal titles) and any governmental market intervention resulting in artificial prices

Trade liberalization however, is opposed by many anti-globalization groups, based on their assertion that free trade agreements generally do not increase the economic freedom of the poor or the working class, and frequently makes them poorer. Where the foreign supplier allows de facto exploitation of labor, domestic free-labor is unfairly forced to compete with

the foreign exploited labor, and thus the domestic "working class would gradually be forced down to the level of helotry" (Panagariya, 2000). To this extent, free trade is seen as nothing more than an end-run around laws that protect individual liberty, such as the Thirteenth Amendment to the United States Constitution (outlawing slavery and indentured servitude).

Trade Liberalization in Tanzania

In the late 1960s, Tanzania embarked on a development strategy of substituting domestically produced goods for imports, based on the concept of "socialism with self-reliance" articulated in the 1967 Arusha Declaration. This import-substitution strategy had among its key economic objectives promoting heavy industry and achieving self-sufficiency in food production. Two main instruments were employed in implementing the strategy.

First, a series of ambitious investment programs, embodied in five-year plans, targeted mainly at the expansion of the capital intensive industrial sector and infrastructure projects; and second, a set of large public enterprises that dominated most industries; had legal monopolies in the pricing, marketing, and processing of agricultural crops; and, by the mid-1970s, had become the country's largest importers and exporters.

Throughout the 1970s, the government used trade restrictions as key tools for achieving its development priorities. Producers of export cash crops (mainly coffee, cashew nuts, sisal, tea, and tobacco)—traditionally Tanzania's main source of export earnings— had to sell their products to marketing parastatals (quasi-governmental organizations), which offered prices well below world prices.

Exporters of other, nontraditional exports had to surrender most of their foreign exchange earnings and cope with a cumbersome and nontransparent system of export permits, which required exporters to obtain a license for each consignment and effectively gave individual ministries the right to regulate a wide range of exports on an ad hoc basis. Similarly, all imports were regulated through administrative allocations of foreign exchange and an import-licensing system, both of which became increasingly restrictive toward the end of the 1970s as foreign exchange earnings declined.

Producers of export cash crops were faced with procurement prices that declined steadily, in relation to both the consumer price index and world prices. Those declines resulted from the appreciating real exchange rate, the increasing inefficiency of the marketing boards, and the government's policy shift to favoring food crops over export crops. Tanzania also experienced economic shocks that were beyond its control, such as drought and declining terms of trade. The overall result was that per capita output of export crops fell by about 50 percent during 1970–82 as the share of food production in agricultural output increased. Other (nontraditional) exports also contracted sharply during this period, owing to the pervasive administrative restrictions imposed on them. Falling export earnings soon led to foreign exchange shortages, and the consequent drop in imports of intermediate goods and raw materials led to sharp cutbacks in production, especially in the highly import-dependent industrial sector, and to deterioration in the country's infrastructure.

The distorted incentive structure in the tradable goods sector and its consequent contraction worsened Tanzania's fiscal position. Contracting international trade eroded revenue and significantly changed its structure, with the share of import duties in total budgetary revenue

falling to 11 percent in fiscal year 1979/80 (July 1979–June 1980) from 22 percent in 1969/70. The government was becoming increasingly dependent for revenues on transfers from public enterprises, whose profitability was being undermined by import shortages and rising operating costs. On the expenditure side, subsidies and transfers to public enterprises accelerated sharply and essential expenditure on operations and maintenance had to be curtailed, leading to a degrading of the country's capital stock and infrastructure. The rising fiscal imbalances created strong inflationary pressures and both an accumulation of external payments arrears and an increased reliance on external borrowing.

Tanzania suffered from large financial imbalances throughout the early 1980s, and its external payments situation continued to be precarious, with recurrent foreign exchange shortages and a heavy reliance on balance of payments support. During 1980–85, the real effective exchange rate increased by about 16 percent, and real exports decreased by about 10 percent, annually (Kanaan, 2000).

Large imbalances in the country's fiscal and external accounts emerged, and gross official reserves fell to the equivalent of less than one week of imports by the end of 1985. By the mid-1980s, it was generally recognized that Tanzania's overly restrictive external trade policies and the consequent reduction in its exports were seriously undermining its economic performance. To address these issues, the government's 1996 Economic Recovery Program sought to reinvigorate the export sector by eliminating cost-price distortions and introducing import liberalization measures.

One important objective of the reform program was to increase the profitability of cash crops by introducing multiple channels for marketing them and allowing farmers to receive a higher share of the proceeds from export sales. Although the government attempted to restructure the marketing boards and improve their efficiency, including through the replacement of parastatals by "cooperatives" that had some flexibility in setting producer prices, a complete dismantling of marketing boards' monopsonistic power—that is, the power a sole buyer has in dealing with many sellers—did not occur until 1994, when regulations were issued allowing private sector competition in the marketing and processing of cash crops.

Restrictions on the exports of nontraditional crops were also slowly relaxed, beginning with the introduction in fiscal year 1985/86 of a scheme allowing exporters to retain an increasing share of their export proceeds to finance their import requirements. By 1993/94, the system of export licensing, including for traditional crops, was abolished, the requirement of registration of exporting companies eliminated, and foreign exchange surrender requirements dropped. By the end of 1999, virtually all export restrictions had been eliminated (Kanaan, 2000).

The gradual recovery in Tanzania's exports led to a steady relaxation of foreign exchange constraints and facilitated the liberalization of imports. An important step was the 1988 rationalization of import tariff rates, which reduced the trade-weighted average tariff rate to 23 percent from 35 percent in 1986. This reduction in the tariff burden was complemented during 1988–90 by two key liberalization measures: introduction of an open general license system under which import licenses were provided automatically for eligible imports; and creation of the Own Funds Facility, under which import licenses were provided freely to importers that used their own foreign exchange holdings to pay for specified imports. The

scope of these facilities remained limited, however, until a major intensification of liberalization efforts in 1991–93 eliminated all administrative allocations of foreign exchange and abolished import licensing.

The relaxation of trade restrictions was supported by strong macroeconomic stabilization measures, which brought about a substantial fall in inflation, as well as steps to correct the exchange rate misalignment, reflected in a sharp depreciation of the real effective exchange rate. Owing to the increasingly favorable incentives to exporters, the average annual rate of growth of commodity exports also rose steadily in real terms. These increases, in turn, contributed to the steady relaxation of the foreign exchange constraint, as evidenced by the increase in Tanzania's gross official reserves and the rebound in its commodity imports. The rapid expansion in trade and the associated economic recovery took place despite deterioration in the country's terms of trade that continued until 1993.

The liberalization of imports slowed markedly in 1993/94 as emerging fiscal imbalances led the authorities to increase customs duty rates (in both fiscal years 1993/94 and 1994/95) to compensate for shortfalls in domestic tax revenues. This slowdown reflected, to a large extent, the steady erosion of the tax-to-GDP ratio, as well as the government's increased dependence on trade taxes for revenue.

The sweeping exchange and trade liberalization measures described earlier had a pronounced effect on the level and composition of budgetary revenues through the following key channels:

- The removal of agricultural price controls and the liberalization of marketing arrangements significantly shifted agricultural income from marketing boards to small farmers;
- The liberalization measures led to rapid growth in the informal sector; and
- The economic weight of public enterprises, which had previously been subject to frequent and discretionary increases in taxation, was reduced substantially.

The erosion of the tax-to-GDP ratio could have been moderated if the shift in income from the public sphere to farmers, small enterprises, and the informal sector had been accompanied by adequate improvements in tax and customs administration and by reductions in the scope of exemptions. While the tax ratio was gradually being eroded, trade taxes came to account for an increasing proportion of tax revenue. The liberalization of the trade and exchange system caused imports, and thus customs duties, to grow rapidly while revenue from domestic taxes—in particular from sales and income taxes—was shrinking.

Both the erosion of the total tax ratio and the increased weight of trade taxes in total revenue led the Tanzanian authorities to delay further reductions in tariff rates until measures were put in place that improved tax and customs administration, reduced the scope of exemptions, and broadened the domestic tax base. Still, it is clear in retrospect that Tanzania has come a long way in liberalizing its trade regime over the past two decades, as reflected by the decline of its IMF trade restrictiveness index rating to 6 (moderate) from 10 (restrictive). During 1980–86, nontariff barriers covered more than 50 percent of imports, and the average simple tariff rate was about 40 percent; but by 1999, nontariff barriers were largely confined to restrictions on imports of petroleum products (owing to physical constraints at port facilities), and the simple tariff rate was between 15 and 20 percent. With the removal of all nontariff barriers,

progress toward which continues to be made in 2000, the country's trade restrictiveness index rating is expected to decline further, to 3.

Theoretical Literature Review

Theories regarding trade relations to economic growth of countries mostly owe their basis from the Ricardian Comparative Advantage theory and Heckscher-Ohlin Factor Endowment theory.

In his book of 1817, David Ricardo advocated that two countries will conduct a mutual beneficial trade if they specialize and trade commodities which they produce at lowest opportunity cost. With free trade and elimination of trade, global trade will be promoted with effective utilization of resources given the state of technology. However, this theory of comparative advantage has encountered empirical problems.

On the other hand, Heckscher-Ohlin (H-O) theory advocated that trade between countries depends on relative factor abundance. There will be a great mutual beneficial trade if the trading countries have larger differences in technology and factor endowments. Little trade is expected between the countries with similar factor endowments. This theory describes what we call a pattern of "North-South" trade pattern. However, the empirical findings from USA by Wassily Leontief deviated from the theory and criticized H-O theory and gave rise to a problem of Leontief Paradox. This occurs when a capital abundant country is exporting more in labor intensive commodities and vice versa.

The main conclusions of the free trade model are that all countries gain from trade and world output is increased; that the countries will tend to specialize in products that use their resources abundantly; and given identical technologies and production throughout the world, factor prices will equalize across trading countries. By enabling countries to move beyond their production possibility frontiers trade is assumed to stimulate growth by securing capital as well as consumption goods from other parts of the world. Trade thus stimulates economic growth, promotes and rewards those activities in which the country has relative abundance of factors of production. As developing countries possess labor in abundant supply their wages will rise and the majority of the population will be better off compared to no trade scenario.

The criticism against international trade theory arises from the validity of some of the assumptions made by the proponents of the theory. For example, it is not obvious that all productive resources have identical quality or are perfectly mobile within and across the trading countries. Neither is the technology of production similar nor the markets are always competitive seeking cost minimization and profit maximization. Under these circumstances the realized benefits from trade may diverge from the intended benefits.

Moreover, even if trade is found to stimulate growth it is not obvious if growth can automatically translate into poverty reduction. Growth is necessary but not sufficient condition for poverty reduction. It should also be recognized that Poverty and Income inequalities are in themselves two different concepts and outcomes. Anti-globalization and anti-growth thinking that dominates among non-economists today stems largely from the considerations of income inequalities and disparities. The distributional effects of trade have not been necessarily positive or benign.

Development Economics literature on trade got embroiled in the controversy between Import Substitution and Export promotion. Prebisch-Singer theorem based on export pessimism, the Big Push theory and other similar thinking argued forcibly that the developing countries should embark on a strategy of substituting imports by domestic production of those goods. Inward orientation and protection of domestic industry were therefore advocated in the 1950s and 1960s as tools of economic development. The weakness of this strategy became apparent when several Development economists started systematic examination of the import substitution strategy in the 1970s and 1980s and found it flawed as well as inhibiting to growth. They concluded that the countries pursuing Export Promotion and Outward Oriented strategies were more successful in achieving rapid economic growth. The collapse of the Soviet economic model and the advent of globalization gave further impetus to this particular line of thinking. What have been the results of this new way of thinking?

As the trade theory predicted, world trade has consistently expanded more rapidly than World output. During the last fifty years, the volume of world exports has raised twenty fold while output growth only seven fold. In 2006, for example, world economic output grew by 5.4 percent while world trade volume expanded by 9.2 %. Of the \$ 43 trillion global economy, the US, Europe, and Japan still account for the bulk of the purchasing power. Access to these advanced markets provided opportunities to developing countries for earning higher incomes by selling goods and services at scales that were not available locally. The foreign exchange earned by these exports relaxed the constraint of physical and financial capital availability and net exports increased output levels in the economy. The poor and small countries with limited market size and inadequate resources realized that they could not aspire to achieve even modest growth unless they were linked to international trading and financial system. The least developed countries with a host of natural and man-made problems could not afford to remain isolated as they had to secure goods and resources from outside their borders for their survival (Husain, 2007).

In light of this growing importance of trade and growth the elimination of barriers to access to developed economies which enjoy relatively higher incomes and consequently higher demand for goods and services assumes a critical role. The World trading environment has improved considerably over time and lowering tariffs has been helpful to developing countries. But the current difficulties in the conclusion of Doha Development Round suggest that the interests of the developing countries have also become highly differentiated and diverse. The traditional dichotomy of developed versus developing countries in trade negotiations is no longer applicable and a more nuanced approach that is also more complex underpins the negotiating position of different groups of developing countries. What may appear to be a concession by developed countries to a least developed country (LDC) may in fact become a barrier for an emerging economy. It is also paradoxical that while developing and emerging countries are unilaterally liberalizing their trade regimes the protectionist sentiments are becoming stronger in the US, Europe and Japan. Despite these difficulties, the empirical evidence on the relationship between trade and growth is quite robust and therefore trade liberalization should be pursued as part of continuing reform agenda by developing countries.

2.2 Empirical Review

In examining the relationship and impact of trade on growth of economies especially in developing countries, many researchers have done their job.

Sachs and Warner (1995) who studied relationship between Openness and Growth combined multiple policy criteria (namely Tariff and non-tariff measures, black market exchange rate premium, state export monopolies and the monopolization of exports) into a single dummy variable, classifying countries either as open or closed. Their results found out that the openness index was strongly and positively related to growth as variations in openness index accounted for up to 2% point's annual growth over 1970 – 89.

Greenway et al (1998; 2002) used the same Sachs and Warner openness index as an indicator of openness and two other dummies aggregating various measures of trade protection in order to identify when liberalization occurred. Their study found out that, in the long run, liberalization increased growth by 2% and then open economies were about 50% richer in terms GDP per capita than closed economies. In the short run, however, the results suggested that liberalization negatively affects growth in the first year and then has a positive impact.

Wacziarg and Welch (2003) also replicated the same work of Sachs and Warner but through using an updated database. Their study first analyzed the within-country liberalization dynamics and found out that liberalization had strong and robust impact on growth. However, their study showed that despite the similar impact as seen in Sachs and Warner's study, yet the positive relationship seemed to break down in the 1990s. This was because of the changing nature of protectionist measures.

Bessonova et al (2002) studied the effect of liberalization of imports and foreign direct investment on Russian firms. Using the firm-level data from 1993-2000, their paper found that competition with imports and with FDI exerts positive effect on domestic firms. Prior to the 1998 crisis, this effect is weaker in the case of firms located in complex industries. Increased availability of imported inputs or inputs produced by foreign owned firms helped to improve productivity of domestic firms in the mid-1990s, although the devaluation of the ruble in 1998 temporarily made firms relying on foreign-produced inputs less competitive. Finally, entry of foreign-owned firms in some cases leads to improvements in TFP of the firms that produce inputs for foreign owned firms. This effect also weakened after 1998, possibly because of the negative effect of devaluation on foreign-owned firms.

Herath (2010) examined impact of trade liberalization on economic growth of Sri Lanka. In identifying the impacts of trade liberalization on growth and trade balance, data were collected on a specific time interval before and after the trade liberalization. The time period selected was from 1960 to 2007. Using regression analysis and Chow test to the variables, findings of the study confirmed a significant positive relationship between trade liberalization and economic growth of Sri Lanka. The result of Chow test proved a clear change of economic growth before and after trade liberalization of the country.

Moreover, one of the recent literatures was that of Khan (2011) who did a study on the impact of trade liberalization on economic growth in Pakistan. His study confirmed the conclusions of the earlier economists by supplementing it with some of the much-debated national and international aspects and predicts that trade liberalization can have a positive and beneficial effect on economic growth if supported by appropriate sequencing of prudent

macroeconomic policies including good management, integrated and strengthened efforts made by domestic institutions, focused and targeted flow of foreign direct investment (FDI's) towards export-oriented industries and services, and improved market access.

Manni and Afzal (2012) used Ordinary Least Square (OLS) technique to study the effects of trade liberalization on economic growth of developing countries using a case of Bangladesh economy between 1980 and 2010 through analyzing important variables namely exports, imports, growth and inflation. Findings from the study suggested that, both real exports and imports had increased with greater openness, which in turn, had eventually led to economic growth after 1990s. Concerning other variables on the other hand, growth and inflation were reported to increase consequent to liberation and unaffected by liberalization respectively.

Lastly, among literatures on Tanzania economic growth as impacted by trade liberalization was that of Kazungu (2009) who studied trade liberalization and the structure of production in Tanzania. His study used parametric and non-parametric tests to evaluate the impact of liberalization policies on the growth rate of exports. He also used OLS and instrumental variable to test the "inverse relationship hypothesis" and then estimated the effect of liberalization on land productivity. He lastly employed the cointegration technique to evaluate the effects of openness on economic growth.

His findings suggested that despite the marked variation in the composition of traditional exports especially during the late 1990s; the contribution of trade liberalization in fostering export growth is rather weak. Second, although the volume of food crops during the post reform period was much higher than before the reforms, there were no symptoms of increased growth overtime. The empirical evidence from econometric analysis showed the existence of diminishing returns to land in the agricultural sector. On the other hand, the impact of trade liberalization on land productivity was mixed; while in some traditional exports its impact was negative and significant, in others the impact was positive but not significant.

3. METHODOLOGY

Study Design

The purpose of the study is to analyze the impact of trade liberalization on economic growth in Tanzania. Annual time series data was used covering the period 1970-2010. Ordinary Least Squares (OLS) approach has been adopted to estimate the regression equations. In this study the unity of analysis is Tanzania economy since Tanzania is among the developing countries which embraced trade liberalization since mid 1980s. Also, since Tanzania is highly endowed with various resources, trade liberalization will promote more trade and investment.

The study examined the effect of trade liberalization on economic growth in Tanzania. Secondary data of annual time series was used covering the period 1970-2010. This period was then subdivided into two sub-periods i.e. during the closed economy (1970-1985) and during the open economy (1986-2010). Data for real GDP, exports, and imports were collected from the Bank of Tanzania. Time series data helps the researcher to understand the behavior of the variables over time.

Specification of the Model and Variable Definitions

The objective of this study is to analyze the impact of trade liberalization on economic growth in Tanzania. A simple linear regression model was applied in this study. All variables were transformed into a natural logarithmic form so as to improve efficiency during estimation. Consider a linear model below:

$$\text{LnGDP}_t = \beta_0 + \beta_1 \text{LnOPEN}_t + \xi_t \dots (1)$$

Where:

GDP_t denotes the real GDP at time t

OPEN_t denotes trade openness time t as a proxy for trade liberalization. It is measured a ratio of total sum of exports and imports over GDP

ξ_t denotes a disturbance error term.

The model above was estimated twice to cover the closed economy period (1970-1985) and the open economy period (1986-2010). Later, the results were compared.

Data Analysis and Estimation Technique

Descriptive statistics were provided in this study so as summarize the basic information for each variable in the analysis. The OLS was applied to estimate two separate simple regression models. The first model was estimated to capture the effect of closed economy alone while the second model was estimated to capture the effect of open economy alone. The tests for heteroskedasticity and autocorrelation were performed and the results are promising. The statistical package, STATA 11.0 has supported data analysis in this study.

The study expects trade openness to have a positive impact on economic growth in Tanzania. This is due to the fact with eliminated trade barriers, more trade is allowed which promotes both exports and imports. This in turn promotes economic growth, therefore, we expect $\beta_1 > 0$

4. RESEARCH FINDINGS AND DISCUSSION

Descriptive Statistics

Descriptive statistics offer the researcher with prior understanding of the data is dealing with. It is very important to examine and understand the data before any estimation. Thus, descriptive statistics provides the basic summary of each variable used in the analysis based on the mean and standard deviation. Consider a table 4.1 below:

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	41	7305253	3536407	3430465	1.68e+07
LnGDP	41	15.70654	.4326438	15.04821	16.63859
OPEN	41	.1718637	.2523637	.001203	.9600209
LnOPEN	41	-3.511198	2.328881	-6.7229	-.0408002

Source: Researcher's Field Data Analysis, 2012.

Table 4.1 above presents the summary statistics for each variable used in this study. There are 41 observations which cover the period 1970-2010. It can be seen that during that period the mean income was Tshs 7,305,253 million while the mean for trade openness was 0.172. The variables seem to be less deviated from their means.

Correlation Analysis

Correlation measures the linear relationship between the variables. This relationship can be positive or negative; strong or weak. The correlation coefficient ranges between -1 and +1. Thus, if the correlation coefficient approaches either -1 or +1 it indicates strong relationship between the variables and vice versa. Consider table 4.2 below:

Table 4.2: Correlation Matrix

	LnGDP	LnOPEN
LnGDP	1.0000	
LnOPEN	0.9414	1.0000

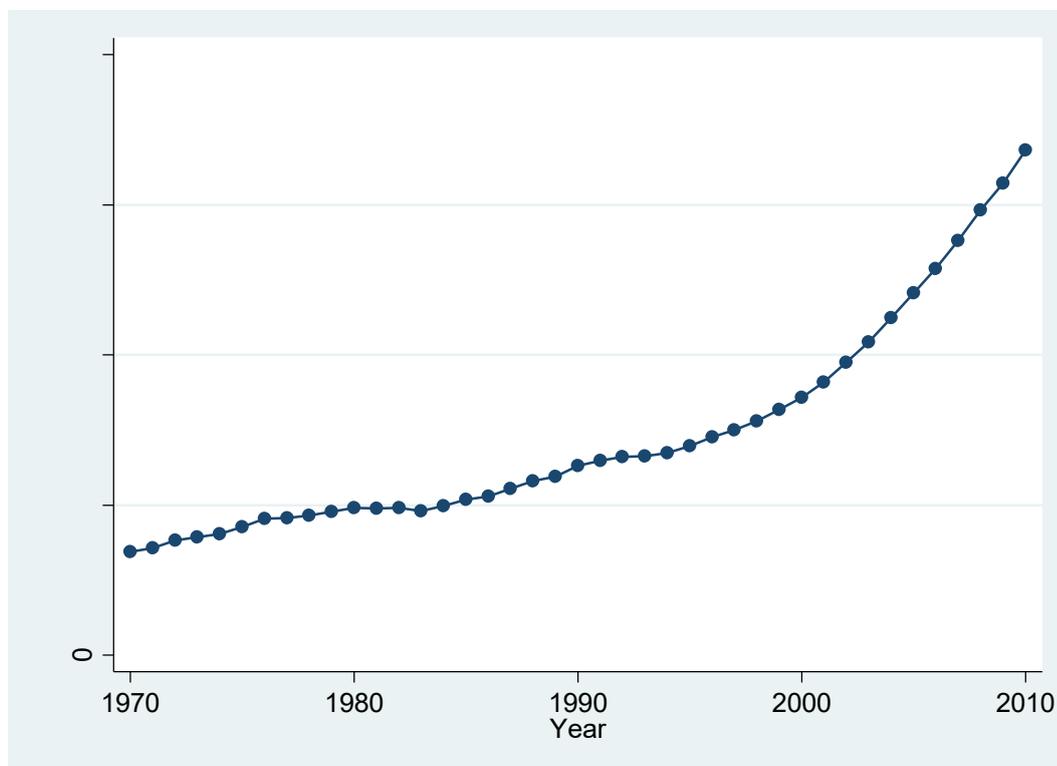
Source: Researcher’s Field Data Analysis, 2012.

The above correlation matrix indicates that income and trade openness are highly correlated by 94%. This strong correlation may be due to fact that trade liberalization promotes more trade which has a significant impact on economic growth. Thus, it is very important for the country to eliminate barriers to trade so as to expand trade with the rest of the world.

Graphical Analysis

In a graphical analysis, the researcher can understand the behavior of each variable through graphs. A graph provides a clear demonstration of the trend of the variable over time. Consider the figures below:

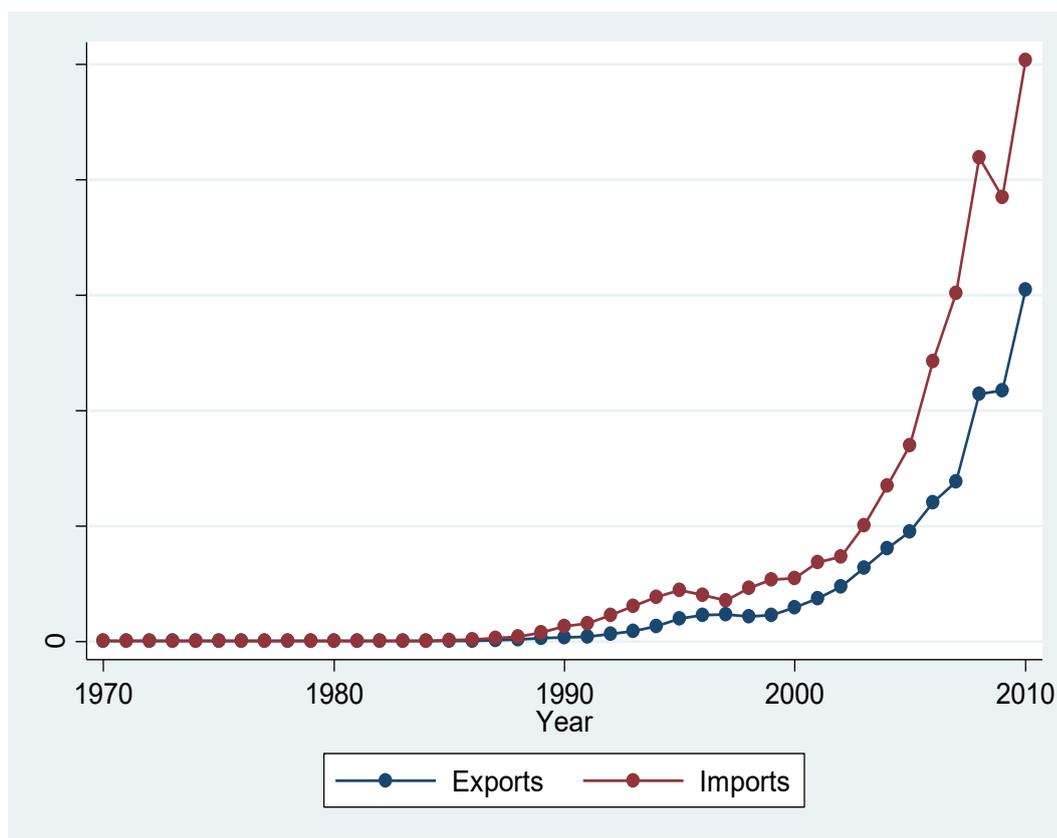
Figure 4.1: Trend of Real GDP in Tanzania (1970-2010)



Source: Researcher’s Field Data Analysis, 2012.

Figure 4.1 above indicates an upward trend of real GDP in Tanzania. This is due to the fact that economy expands when economic activities increase over time. Also, due to the implementation of sound macroeconomic policies, economic growth has experienced an upward trend. Tanzania has been implementing various poverty eradication strategies which have been the contributing factor promoting economic growth in the country. In addition, since the country opened up her economy, it attracted many foreign investors and promoted more trade with other countries. This also has contributed in the upward trend of the real GDP in the economy. More exports and more imports were enhanced as it can be shown in the figure 4.2 below.

Figure 4.2: Trend of Exports and Imports (Million Shs) in Tanzania (1970-2010)



Source: Researcher’s Field Data Analysis, 2012.

Figure 4.2 above has shown an increasing trend of both exports and imports over time. Trade liberalization has promoted more trade in terms of more exports and imports. However, there has been a persistent trade deficit since imports are greater than exports since late 1980s. This is due to the fact that the country has been exporting primary goods which are of low value while importing manufactured goods. Thus, in terms of monetary value, the trade has been unfavorable to Tanzania economy.

Regression Analysis

In regression analysis, we predict the values of the unknown dependent variables based on the known values of the independent variable(s). In this study, the dependent variable was the real GDP while trade openness was the independent variable. However, regression does not necessarily imply causation. In this study we divided the overall time period into two sub-periods i.e. during the closed economy (1970-1985) and during the open economy (1986-2010). The estimated results were used for comparative analysis of before and after trade liberalization impact on economic growth in Tanzania. OLS technique has been adopted to estimate the regression model. Consider the table 4.3 below:

Table 4.3: Regression Analysis Results (Closed Economy)

Source	SS	df	MS			
Model	.232045085	1	.232045085	Number of obs =	16	
Residual	.011007378	14	.000786241	F(1, 14) =	295.13	
Total	.243052463	15	.016203498	Prob > F =	0.0000	
				R-squared =	0.9547	
				Adj R-squared =	0.9515	
				Root MSE =	.02804	

LnGDP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
LnOPEN	.3557378	.0207072	17.18	0.000	.3113252	.4001503
_cons	17.47108	.1264865	138.13	0.000	17.1998	17.74237

Durbin-Watson d-statistic(2, 16) = 1.807598

Source: Researcher's Field Data Analysis, 2012.

Table 4.3 above presents the regression results based on the period when the economy was closed i.e. 1970-1985. However, closed economy does not mean total trade barriers to entry. During this period the economy was centralized in the sense that all major means of production were controlled by the government. The penetration in the economy by the foreign and private investors was very minimal. The results indicated that even during the closed economy period trade is positive and significant as it was expected. A percent increase in trade will increase real GDP by 0.36%.

The F-statistic indicated that the model in general was significant. The adjusted R-square indicated that trade openness has succeeded to explain the variation in real GDP by 95%. This indicates that our model fits well our data. The d-statistic is very close to 2.0, thus indicating that our model does not suffer from autocorrelation problem. Also in conducting OLS it is very important to ensure that the error variance is homoscedastic. Consider table 4.4 below:

Table 4.4: Heteroscedasticity Test (Closed Economy)

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of LnGDP

chi2(1) = 1.38

Prob > chi2 = 0.2397

Source: Researcher’s Field Data Analysis, 2012.

The test indicates that our model does not suffer from heteroscedasticity problem, since the test failed to reject the null hypothesis as it can be shown by the p-value which is greater than 0.05.

The study also performed a regression analysis based on the period of open economy (1986-2010). Consider table 4.5 below:

Table 4.5: Regression Analysis Results (Open Economy)

Source	SS	df	MS	Number of obs =	25
Model	2.42954221	1	2.42954221	F(1, 23) =	109.79
Residual	.508966434	23	.022128975	Prob > F =	0.0000
Total	2.93850865	24	.12243786	R-squared =	0.8268
				Adj R-squared =	0.8193
				Root MSE =	.14876

LnGDP	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
LnOPEN	.2483223	.0236992	10.48	0.000	.1992967 .2973479
_cons	16.42644	.053084	309.44	0.000	16.31662 16.53625

Durbin-Watson d-statistic(2, 25) = .1238944

Source: Researcher’s Field Data Analysis, 2012.

The regression table above indicated that during the period of open economy, trade openness had a positive and significant impact on real GDP. As it was anticipated, by opening the economy, more trade is promoted which also affect economic growth. It can be seen that after opening the economy, a percent increase in trade led to an increase in real GDP by 0.25%. This increase is less compared the other increase during the closed economy. It has been indicated that in figure 2 that after trade liberalization Tanzania has experienced persistent trade deficit since imports surpassed exports. This is the main contributing factor in these results.

The adjusted R-square indicated that trade openness has explained th variation in real GDP by 82%. Also this indicates that the model fits well the data. In addition, the F-statistic indicated that the ,model in general was significant. Moreover, the model was tested if it suffers from the heteroscedasticity problem. Consider table 4.6 below:

Table 4.6: Heteroscedasticity Test (Open Economy)

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of LnGDP

chi2(1) = 0.19

Prob > chi2 = 0.6605

Source: Researcher's Field Data Analysis, 2012.

The test above concludes that the estimated model does not suffer from heteroscedasticity problem. It can be seen that the test failed to reject the null hypothesis, since the p-value is greater than 0.05.

5. CONCLUSION AND RECOMMENDATION

Conclusion

Many researchers in the arena of International Trade have been in the inconclusive debate regarding the impact of trade liberalization on economic growth. Various studies have been conducted by adopting different econometric approaches; however, the empirical findings are still ambiguous. Some studies concluded that trade liberalization has a positive impact on economic growth while other study concluded the vice versa.

The study used two variables and adopted a simple linear regression model. The dependent variable was the real GDP while trade openness was the independent variable. Annual time series data were collected covering the period 1970-2010. The source for these data was the Bank of Tanzania. This study divided the overall period into two sub-periods i.e. the closed economy (1970-1985) and open economy (1986-2010).

The study adopted Ordinary Least Square approach to estimate the model twice. First estimation considered the closed economy alone while the second estimation considered the open economy alone. However, the two results were used in comparative analysis. The findings indicated in both estimations trade openness has a positive and significant impact on economic growth. As it was anticipated that with trade openness more trade is developed in terms of exports and imports which in turn enhance economic growth. However, this impact was found to be relatively lower during the open economy compared to the closed economy period. This is due to the fact that since the late 1980s Tanzania has been importing more than exporting (in monetary terms). This has made the country to suffer from persistent deficit in her balance of payments. Thus despite trade liberalization has increased trade and economic growth in Tanzania, the country still experienced unfavorable balance of payments. The models in general were found to be statistically significant according to F-statistic. The adjusted R-square indicated that the models fitted well in the data. Also the results indicated that the models did not suffer from both autocorrelation and heteroscedasticity problem.

Recommendation

Based on the research findings, trade openness has significant positive effect on economic growth in Tanzania. However, this effect was relatively higher during the closed economy compared to the open economy period. The country has been importing more than exporting which led the country to suffer continuous trade deficits. So in order Tanzania to enjoy fully the benefits of trade liberalization, the study recommends the following:

There is a need for improving balance of trade by increasing exports as possible. The exportation of manufactured goods is highly recommended since manufactured goods fetch higher prices in the market. More industries need to be developed so as to expand production and export supply capacity in the country.

Trade and investment policies require some reforms to adjust with changing economic environment. The policies should gear towards more free trade and the elimination of trade barriers. This will help the country to attract more trade and investments which promote growth. More incentives should be provided to the qualified investors who are interested in investing in Tanzania.

In addition, the government should also improve the agriculture sector which employed about 70% of the total population in the country. Agriculture is the backbone of the economy however the sector itself is very poor. There is a need for modernizing and commercializing the agriculture sectors so as to be market-oriented. The rural population can be given subsidies in terms of agriculture infrastructures so as to add value to the produced agricultural commodities. The farmers should be given more access to markets so as to obtain income.

Moreover, there is need for improving transport and communication facilities so as to facilitate trade. The existing infrastructure are relatively not sufficient and less developed. Rehabilitation of roads and railways is very important so as to reduce transportation and transaction cost during delivery. With free trade and improved infrastructures, trade will increase rapidly and hence promoting higher economic growth.

Lastly, modern technology is highly recommended in order to promote efficiency and competition. There is a need of imparting innovations and modern technology in production. The produced goods will be price competitive and of high quality which will ensure higher value in the market. Over time, this will help the country to eliminate the existing trade deficit.

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