THE IMPACT OF TRADE LIBERALISATION ON IMPORT GROWTH IN BOTSWANA

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ABSTRACT

The main objective of this paper was to find out if trade liberalisation had a positive impact on the import growth in Botswana for the period 1989-2013. To achieve this, the study adopted the Zakaria(2014) Generalized Method of Moments model and modified it to fit for the data available in Botswana. The main hypothesis of the study was that trade liberalisation has a positive impact on the growth of imports. This was empirically shown to be true as trade reforms,a proxy for liberalisation was found to have positive and significant impact on import growth. Import duties were also found to negatively and significantly affect import growth. This, therefore, means that as trade is liberalised through reduction of import duties, import growth becomes higher for Botswana.

Keywords: Trade liberalization, imports, exports, import growth.

1. INTRODUCTION

Trade liberalization is the removal or reduction of restrictions or barriers on the free exchange of goods between countries which includes the removal or reduction of both tariff and non-tariff obstacles. Tariffs are taxes that are levied on imports while non-tariff barriers are government policies which are not tariffs but aim at reducing imports just like tariffs, for example quotas (Dunn & Mutti, 2004). The main idea behind trade liberalisation is to foster economic growth through enhancing the growth of exports. Hence trade liberalisation is embarked on by many developing countries to enhance economic growth from the supply side of the economy. When exports are exposed to foreign competition, they gain comparative advantage and if countries exploit that, then promotion of exports and productivity can be gained through trade liberalisation (Jayanthakumaran, 2002).This enables countries to increase production of exports, leading to economic growth.

However, trade liberalisation also has an impact on importsthatmakes the objective for trade liberalisation which is to increase exports and enhance

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economic growthto be difficult to achieve.The impact on imports tends to be ignored as the assumption is that trade liberalisation will only increase the import growth of the inputs thereby increasing growth of exports through enhancing production. Since trade liberalisation decreases the tariffs imposed on imports, it increases the demand for importsgiven thatthey will now be relatively cheaper, hence imports seem to grow with trade liberalisation. Studies have shown that trade liberalisation does indeed have a positive impact on imports which tends to be more than the impact on exports. This tends to leave countries with balance of payment problems post liberalization, as countries are faced with trade deficitsas well as constrained economic growth of some countries in the long run (see Pacheco-Lopez & Thirlwall, 2005; Pacheco-Lopez, 2004& Ghani 2011).

In Africa trade liberalization tends to impact relatively more on imports than exports but the former tends to be ignored. Kassim (2013) found that in sub-Sahara Africa (SSA) trade liberalisation caused imports to grow by two percentage points more than exports (Kassim, 2013). Furthermore, one of the main findings was that most SSA countries are faced with a trade conundrumpost liberalisation. This is whereby trade liberalisation causes imports to grow by a larger magnitude relative to exports hence causing countries to be faced with balance of payment problems.

2. BACKGROUND

Trade liberalisation continues to be one of the important policy advises given by international institutions such as the World Bank to developing countries hence the need to examine its impact on import growth. Like other developing countries, Botswana also liberalized trade to improve export competitiveness and enhance economic growth. The case for developing countries such as Botswana has been that trade liberalisation causes imports to grow relatively faster than exports (Pacheco-Lopez & Thirlwall, 2009). Hence, trade liberalisation doesn't only enhance export growth but import growth as well.

Despite liberalising trade with the aim of improving export performance in order to foster economic growth, Botswana is still a net importer. This is evident in the value of merchandise imports that seem to mostly increase and in most cases found to be higher than the value of merchandise exports. In 2012, the value of merchandise imports had increased by a substantial 10.4% to reach $8 billion while the value of merchandise exports was only at $6 billion (United Nations, 2013). Most of the literature on trade liberalisation is centred on the positive impacts trade liberalisation has on exports, while the impact on the imports tend to be ignored. Studies have shown that trade liberalisation impacts more on imports than exports and therefore post liberalisation, most countries are faced with a trade deficit

which they have to finance. Like most countries, Botswana has also been faced with this problem as evidenced by the trade deficits she has been faced with over the years. In 2009, Botswana had a trade deficit of P4, 563million, P6, 511milion in 2010 and P862million in 2012(Bank of Botswana, 2013). This study therefore seeks to explore if Botswana has been a victim by examining how the liberalisation of trade in Botswana has affected the growth of total imports.

3. REVIEW OF LITERATURE

Theoretically, trade liberalisationis expected to influence the long term growth of the economy positively (UNCTAD, 2008). This is because the expectation is that, through trade liberalisation export performance is enhanced which implies growth of exports in turn leading to economic growth since trade liberalisation implies the removal or reduction of trade barriers such as tariffs. When tariffs are removed, this helps exports to gain competitiveness over trading partners' commodities thus enhancing more production of the exports as comparative advantage is gained. It also allows countries to exchange technological experiences.

According to the orthodox theory of International trade, whether a country benefits from trade or not will be determined by the structure of trade for each respective country. The theory is concerned with what causes international trade and which goods a country will export and import and why. Among other things, the theory also deals with the effects of tariffs, quotas and other impediments to trade, international specialisation and the effects of domestic economic growth on international trade. The orthodox theory of international trade includes the Ricardian theory of comparative advantage; the Heckscher-Ohlin theory and the neoclassical model (see Gandolfo, 2002; Salvatore, 2011; Manni& Afzal, 2012)

Most of the empirical literature on trade liberalisation is centred around its impact on exports and on economic growth. Only a few authors have looked at trade liberalisation on trade balance, balance of payments and import growth and have come across some rather interesting points (Table 1). These studies have shown that trade liberalisation impacts more on imports as compared to exports.

Most of these studies used import duties and a liberalisation dummy to measure trade liberalisation. The dummy takes the value of 1 for the period of liberalisation and thereafter and zero beforehand. The dummy variable used is a measurement that was used by Wacziarg and Welch (2003) and it does not assume reversal in the liberalisation periods. Therefore when a country was liberalised in a certain year, it remains liberalised for the coming years after that. This is because most countries move towards liberalisation and not away from it (UNCTAD, 2008).The difficulty in determining the

Table 1
Empirical Review of Literature

Author and Year	Region	Methodology	Main Results
Kassim (2013)	Sub Saharan Africa	Generalised Method of Moments using panel data	Post liberalisation, imports grew by two percentage points more relative to exports hence leaving countries with balance of payment problems.
Pacheco-Lopez (2004)	Mexico	Autoregressive Distributed Lag	Trade liberalisation impact on export and import growth was the same though imports responded earlier.
Santos-Paulino (2007)	Least developed Countries	Generalised Method of Moments using panel data	Trade liberalisation had a higher impact on import growth than on export growth which led to trade deficits.
Manni and Afzal (2012)	Bangladesh	Ordinary Least Squares	GDP growth increased consequent to liberalisation. Both real exports and imports increased with greater openness.
Zakaria (2014)	Pakistan	Generalised Method of Moments using time series data	Terms of trade had a positive impact on import growth while trade liberalisation caused imports to be less price and income elastic.
United Nations Conference in Trade and Development (2008)	Africa	Generalised Method of Moments	Imports seem to have grown by roughly three percentage points post liberalisation which proved to be smaller than the increase in non-African developing countries. This might have been due to the high ratio of imports as a share of GDP in African countries.
Thirlwall and Penelope Pacheco-Lopez (2005)	Latin America	Qualitative study	Though growth performance had improved post liberalisation, trade balance had deteriorated since imports had grown by a substantial amount relative to exports.
Ghani (2011)	Organisation of the Islamic Conference member countries	Generalised Method of Moments	Trade liberalisation had impacted on imports by a relatively larger amount to exports. The large increase in the income elasticity of demand for imports post liberalisation inhibited economic growth in the long run.

exact date of liberalisation in a country led to many studies using a measure which was developed by Sachs and Warner (1995). The measure highlights the main policy thrusts of trade liberalisation(UNCTAD, 2008).It also encompasses different aspects of trade liberalisation beyond the traditional analysis which is based on tariff barriers.

4. METHODOLOGY

The relationship between trade liberalisation and import growth is examined using a simple method adopted from Zakaria (2014). A standard import demand function is adopted where the level of imports depend primarily on domestic real income and international competitiveness as measured by the relative prices domestically and internationally denominated in common currencies. The equation was then modified to include two measures of trade liberalisation to measure how imports react to trade liberalisation. These are the rate of change of import duties and a liberalisation dummy which takes the value of 1 from the year significant trade reforms began in Botswana and zero beforehand. Two interaction variables were also included to examine the impact of import liberalisation on price and income elasticities of demand.

Initially, an import demand function modelled by Zakaria (2014) is adopted where:

$$m_t = \beta_0 + \beta_1 \, rer_t + \beta_2 \, y_t + \varepsilon_t \tag{1}$$

To measure the effect of trade liberalisation, two variables were added namely: the ratio of import duty revenue to the value of imports and a trade liberalisation dummy which takes the value of 1 for the year when significant trade reforms took place and 0 beforehand. Since trade liberalisation may also affect the price and income elasticities of imports, two interaction variables were also included. According to Melo and Vogt (1984), liberalising trade will increase the price and income elasticities of demand for imports as import substitution is expected to be easier with trade liberalisation(Melo & Vogt, 1984). Therefore, two slope dummies are included in the model to examine this hypothesis. Because of the variation in time series data, the natural logarithms of the variables are obtained. Hence the modified equation for this study is as outlined below:

$$\ln m_t = \beta_0 + \beta_1 \ln rer_t + \beta_2 \ln y_t + \beta_3 \ln impd_t + \beta_4 D_t + \beta_5 D_t \ln rer_t + \beta_6 D_t \ln y_t + \varepsilon_t \tag{2}$$

In the above, import demand function, m_t is the growth rate of imports in millions of Pula, rer_t is the growth rate of real exchange rate, y_t is the growth rate of domestic output, $impd_t$ is the ratio of the customs revenue to the total value of imports, D_t is the liberalisation dummy, $D_t \, rer_t$ is the interaction variable between the liberalisation dummy and the real exchange rate and $D_t y_t$ is the interaction variable between the liberalisation dummy and the domestic output.

Expected Signs, Justification and Measurement of Variables

Table 2 briefly outlines the variables used in the model namely: the real exchange rate measuring the competitiveness of imports; domestic real

income to assess how the change in national output affects the growth of imports thus the real growth of output; average import tariffs as a measure of trade liberalisation; a trade liberalisation dummy which encompasses many aspects of trade liberalisation besides tariff barriers; interaction variable between the liberalisation dummy and real exchange rate to measure the effects of trade liberalisation on price elasticity of demand; interaction variable between the growth output and the liberalisation dummy to examine the impact of trade liberalisation on the income elasticity of demand for imports. The a priori expected signs and implications (remarks) are also included.

Table 2
Expected Signs, Justification and Measurement of Variables

Variable	Expected sign	Measurement	Remarks
rer_t	-	Real exchange rate in million Pula. Calculated as the nominal exchange rate multiplied by the ratio of the relative prices	Appreciation of the exchange rate makes imports more competitive hence increasing the growth of imports
y_t	+	Domestic Real income	An increase in domestic real income causes imports to grow
$impd_t$	-	Average import tariffs	Reduction of import duties enhances the growth of imports
D_t	+	Dummy variable which takes the value of 1 from the year significant trade reforms began in Botswana and 0 beforehand	Trade liberalisation decreases barriers to trade, thereby increasing imports
$D_t rer_t$	-	Interaction variable between the liberalisation dummy and the real exchange rate	Trade liberalization increases import substitution
$D_t y_t$	+	Interaction variable between the growth in output and the liberalisation dummy	Removal of trade barriers increases income elasticity

Source: Melo and Vogt 1984, Sachs& Warner 1995, UNCTAD 2008.

5. ESTIMATIONAND INTERPRETAION OF THE RESULTS

The paper uses secondary data obtained from the Central Statistics Office, Bank of Botswana Annual Reports, Botswana Unified Revenue Services and the World Development Indicators. The data coverage was from 1989-2013. The Ordinary Least Square method was used to make an analysisfor Botswana.The results as presented in Table 3 are discussed thereafter.

Unit root tests were carried out using the augmented Dickey Fuller test and the variables were found to be stationary after first differencing. The long run relationship which was shown to exist empirically between the dependent and explanatory variables is well defined by economic theory

and the a priori expectations save for the interaction variable between the liberalisation dummy and the growth in output/income which was negative instead of positive.

Since the variables were not stationary at levels, a cointegration test was carried out using the Johansen Cointegration test. Thereafter, an error-correction model (ECM) was then estimated for the cointegrating variables namely: the growth of imports, the liberalization dummy, the real exchange rate, import duties and the interaction between the dummy and national income.

The ECM shows the speed of adjustment of the endogenous variables back to the long run equilibrium. It therefore corrects for any disequilibrium that may shock the system from time to time. The ECM picks up such disequilibrium and guides the variables of the system back to equilibrium.

Table 3
Regression Analysis (Error Correction Model-ECM)

Variable	Coefficient	Probability
Constant	0.0000000172	0.0007
ECM(-1)	-0.637156	0.0000
*Log real exchange rate	-3.116118	0.0000
*Interaction variable (income and liberalization dummy)	-0.0000358	0.0000
*Log National Income	2.478088	0.0000
*Interaction variable (real exchange rate and liberalization dummy)	-0.028885	0.0000
*Log import duties	-0.235589	0.0000
*Liberalization dummy	2.392161	0.0000
R-squared	0.0824033	
Adjusted R-squared	0.772709	
Prob(F-statistic)	0.000000	
Durbin Watson Statistic	2.161848	

*Variables at first difference level
Source: Author's calculations from the data compiled from various sources used.

From the results presented in the Table 3, the coefficient of the ECM is negative and statistically significant at the 1% level of significance. This coefficient represents the speed of adjustment of endogenous variables towards long run equilibrium for any shock in the system. Since the coefficient is negative and significant, it shows that the model indeed moves towards equilibrium. In this model, 63.7% of errors are corrected from time to time.

The regression results above indicate that the F-statistic is significant. The F-statistic tests for the overall significance of the independent variables in explaining the model. The null hypothesis for the test was that the

explanatory variables are jointly equal to zero hence implying that they are insignificant in explaining the model. The alternative hypothesis was therefore that the explanatory variables are not jointly equal to zero hence meaning that they are significant in explaining the model. Since the F-statistic was significant, this implied robustness in the model.

Since the explanatory variables are not jointly equal to zero, this means they are all important or significant in explaining the model. This is in in line with the goodness of fit results. The R-squared and adjusted R-squared are both measures of goodness of fit.The adjusted R-squared therefore shows that 77% of the variation in import growth was explained by the explanatory variables during the period of study i.e. 1989-2013.In terms of autocorrelation, the Durbin Watson (DW) statistic was 2.16 implying that there is no autocorrelation.

As expected, the real exchange rate is negatively related with the growth of imports. An increase in the real exchange rate which is a depreciation of the Pula means that Botswana's exports become more competitive, therefore imports decline as exports increase. Hence, a 1% increase in the real exchange rate will cause the imports to decline by 3.12 percentage points. This is also similar to Pacheco-Lopez (2004) who found the real exchange rate to be negatively related to imports. The real exchange rate is also statistically significant at the 1% level of significance which implies that it is important in determining the growth of exports.

The growth rate of national incomewas positive and statistically significant. This means income is important in determining the growth rate of output. According to economic theory, since an increase in income increases consumption, it means consumers are able to import more with an increase in income. This therefore attributes to the positive relationship between income and imports which was expected. In this case a 1% increase in national income increases imports by 2.48 percentage points. This is consistent with Kassim (2013) who found the relationship between import growth and domestic income to be positively related. National income was also statistically significant in explaining growth in the imports.

Import duties are negatively related to the growth of imports and statistically significant at the 1% level of significance. Import duties are the trade restriction imposed on imports such as tariffs and quotas. With trade liberalization, import duties are reduced or totally removed. This therefore implies that consumers can freely import without incurring extra costs. Hence with a reduction in import duties, the growth of imports is enhanced. A 1% decline in import duties causes the imports to increase by 0.24 percentage points. This is consistent with Pacheco-Lopez and Thirlwall (2009) who also found trade duties to have a negative and significant effect on the growth of imports. Similarly, Kassim (2013) found import duties to

impact negatively on the growth of imports for the Sub-Saharan African countries. Unne and Afzal (2012) also found that import duties have a negative impact on the growth of imports in Bangladesh.

With regard to the trade reforms, trade liberalization increases import growth by 2.39 percentage points for Botswana. The trade liberalization dummy as expected has a positive relationship with the growth of imports. This therefore implies that, import growth increases with trade reforms meant to liberalise trade.These trade reforms may be in the form of becoming a part of multilateral trade agreements for example. This can enhance imports since they imply competition for local producers. In turn, people will have various options to choose from. These findings are similar to Pacheco-Lopez and Thirlwall (2005) and Ghani (2011). It can be concluded that for the periodbetween 1989 and 2013, trade reforms embarked on by Botswana led to an increase in the growth of imports.This finding is consistent with that of Zakaria (2014) where it was found that trade reforms do have a positive and significant effect on the import growth of Pakistan.

As was theoretically expected, trade liberalization negatively affects the price elasticity of demand. This is because with liberalisation, people import more as they can easily substitute domestic goods for imports. Which therefore means that, as Botswana liberalizes trade herimport demand decreases at a higher rate with the depreciation of the local currency. This is consistent with economic theory because depreciation of a local currency benefits exporters while importers are disadvantaged.

Contrary to the expectations, trade liberalization negatively impacts the income elasticity of demand for imports. The expectation was that with liberalisation, the income elasticity will automatically increase. However, since they are negatively related, the implication is that when liberalisation increases, the demand for imports becomes less income elastic.That is, when trade liberalization increases in Botswana, the income elasticity for imports will decline given the simultaneous depreciation of the domestic currency which is not surprising because when the local currency depreciates, local products become cheaper relative to imports which implies that it would be cheaper to buy local goods than to import. This finding is consistent with Pacheco-Lopez and Thirlwall (2009) who also found the income elasticity of demand for imports to be negatively affected by trade liberalisation in Latin America.

6. CONCLUSION

Empirical evidence has shown that trade liberalization has a significant impact on the growth of imports. Whether it's through trade reforms or reduction of import duties, trade liberalisationincreases import growth. Therefore government has to bear this in mind when embarking on trade

reforms. In light of this, Botswana should ensure an effective import substitution policy. This is a trade and economic policy that supports replacing imports with domestic products. If imports are replaced with domestic products, then the negative impact of trade liberalisationdue to having imports that far exceed exports would not be felt.To enhance herexports, Botswana can also ensure that its imports are productive. That is, imports should mainly be made up of productive inputs that will assist the producers/economy to add value to the existing products that the country currently exports, and also help in the production of goods and services (other than the primary products) that can be exported to other countries thus increasing exports leading to an increase in revenue. In turn, this will eliminate the balance of payments deficit problem.

Further, Botswana has been preaching diversification for over ten years with very slow progress. Diversifyingtheeconomy would help solve the problem of enhancing import growth through trade liberalisation. This is because, despite having gained independence over fifty years ago and having liberalized trade, Botswana is still a net importer. Diversifying the economy would help reduce foreign dependency for imports.To enhance diversification Botswana canfocus on the development of new manufacturing industries. It should be noted that initially, these industries may struggle to compete against foreign competitors. Consequently, tariffs will assist in providing a domestic market for the new corporations. In turn, this will enable the new industries to get established. They will be able to profit from economies of scale as they become more efficient over time. When this occurs then the tariffs can be reduced to allow some competition.

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