Journal of Sustainable Development; Vol. 9, No. 3; 2016
ISSN 1913-9063 E-ISSN 1913-9071
Published by Canadian Center of Science and Education

Foreign Aid and Trade Capacity Development

Recent Evidence from Uganda

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Received: February 3, 2016 Accepted: March 20, 2016 Online Published: May 30, 2016

doi:10.5539/jsd.v9n3p39 URL: http://dx.doi.org/10.5539/jsd.v9n3p39

Abstract

Endemic supply side constraints including fluctuating output levels, deficient trade infrastructure, rampant non-tariff barriers and incapacity to ensure international quality standards continue to thwart the gainful participation of many Least Developed Countries (LDCs) in an increasingly liberal global trade environment. At its 2005 Hong Kong Ministerial Conference, the World Trade Organization launched its Aid for Trade (AFT) initiative aimed at coordinating global financial support for strengthening trade capacity in Least Developed Countries (LDCs). This paper examined the effect of foreign aid, particularly Official Development Assistance, on Uganda's external trade and its AFT component in strengthening the country's trade capacity. Using time series Error Correction Modelling and the World Bank's World Development Indicators and official national statistics, the paper finds small but positive aid influence on Uganda's exports and imports and generally close alignment between aid and national priorities. However, given general aid volatility but more especially following the anti-homosexuality legislation and gross corruption allegations in the case of Uganda, the paper advises that external aid be treated as a supplement rather than a substitute for domestic financial resource mobilization in trade capacity development.

1. Introduction

Trade liberalization is instrumental in enhancing trade between countries. It has been on the agenda at the multilateral level for nearly eight decades initially in the framework of the General Agreements on Tariffs and Trade (GATT) but now under that of World Trade Organisation (WTO). In addition, in the last four to five decades, many countries have implemented World Bank (WB) and International Monetary Fund (IMF) sponsored trade liberalization reforms to boost the role of market forces in their economies. It immediately became clear, however, that many Least Developed Countries (LDCs) lacked the capacity to gainfully participate in liberalized global trade due to a wide range of supply-related constraints in their respective economies. These constraints include variable productive capacities, inadequate trade infrastructure and inability to meet international quality and standards (WTO 2005, Rudaheranwa 2005).

Knowledge of the supply related bottlenecks in LDCs is not new; indeed, as far back as its formation in 1964, the United Nations Conference on Trade and Development (UNCTAD) has provided trade-related capacity development support to LDCs to help facilitate their integration into the global trading system (UNCTAD 2008). In a renewed recognition of the critical role of building trade capacity, the WTO launched the Aid for Trade (AFT) initiative at its Hong Kong Ministerial Conference in 2005 to coordinate global financial support to strengthen trade capacity in LDCs.

Trade capacity deficiency and lack of competitiveness remains an outstanding challenge for LDCs and a source of concern for multilateral trade institutions like the WTO and UNCTAD. Accordingly, to effectively address the problem, an understanding of the key drivers of competitiveness and their mechanism of impact is necessary. Given the WTO's recent aid for trade initiative, one of these key factors is external aid. This renewed effort at external financial resource mobilization but also the lingering controversy relating to aid effectiveness in general lend support to UNCTAD's call for "more in-depth country level analysis" of the impact of aid in recipient countries (UNCTAD 2008).

In attempting to support the development of trade capacity in LDCs, the WTO's AFT initiative aims to mobilize aid for a range of trade related capacity strengthening interventions in LDCs including the formulation of sound trade strategies and incorporating these into national development plans. The effort is aimed at creating the necessary conditions to stimulate export volumes, value added, and diversification by LDCs. In line with this, between 2009 and 2012 approximately USD 0.97 billion was disbursed to Uganda by multilateral and bilateral development partners under the AFT program (OECD 2015).

In general however, the question of the effectiveness of aid remains far from conclusive, even though there is strong *a priori* expectation that aid can help. This inconclusiveness in the discourse may be due to actual lack of impact or our inability to obtain robust evidence of such impact. Given the controversy and the persisting need to redesign aid for more effectiveness now even more imperative given rising levels of non-traditional, often non-western aid (Guloba *et al* 2010), a revisit of the debate is warranted. The analysis will help map out the causal chain from specific aid interventions to impact. The latter will in turn inform the design of more effective aid interventions.

Besides reviews of the Aid for Trade interventions in LDCs undertaken at multilateral level especially by the WTO, the Diagnostic Trade Integration Studies (DTIS) of the World Bank in 2006 and 2013 for Uganda, and the study of aid for trade in Kenya, Tanzania and Uganda by PricewaterhouseCoopers (2009), not much else has been done to evaluate the impact of AFT at country level.

This paper addresses that omission by examining the role of aid in Uganda's external trade performance and in developing national trade capacity and competitiveness. The rest of the paper provides a review of literature on aid, trade liberalization and empirical trends of aid and trade in Uganda (Section 2); methodology of the study (Section 3); the findings of empirical analysis (Section 4); and policy implications (Section 5).

2. Review of Related Literature

Trade constitutes an important component particularly in neoliberal growth paradigms. There is considerable research arguing the "positive effects" of trade openness on growth and development (Wacziarg and Welch 2003, Sachs and Warner 1995, Rodriguez and Rodrik 2000). However, there is relatively less on how LDCs can effectively tap into the beneficial effects of liberalization. Thus, despite its undoubted role in boosting the level of trade, the sufficiency of liberalization as an instrument of economic growth in the context of LDCs has come under serious question.

Accordingly, recent liberalization efforts under the auspices of the GATT and WTO and IMF and the World Bank in LDCs exposed the gross inability of these countries to effectively and beneficially participate in international trade. This poor performance reflects the supply capacity constraints endemic in LDCs. They include low level of technological sophistication, lack of adequate control on production conditions, fluctuating production levels, inadequate trade infrastructure and incapacity to meet requisite quality standards. Under such conditions liberalization is likely to engender unsustainable importation and possible de-industrialization rather than growth. These challenges have been instrumental in the conceptualization of trade-specific development assistance as an integral compliment to trade liberalization in LDCs (UNCTAD 2008).

Although there is widespread belief that aid can positive impact on the growth of recipient countries, the question of whether it actually does so for the most part remains outstanding. In the short-run, excessive aid inflows into a country can lead to Dutch Disease, which among several other things refers to the appreciation of the domestic currency and attendant decline in the competitiveness of traditional sectors with adverse balance of payments effects. Adam and Bevan (2006) find evidence of long run supply side effect of aid beyond Dutch Disease associated with aid-funded public infrastructure expenditure. Their findings show that aid-supported infrastructure investments tend to generate productivity spill-overs in the supply side of the economy.

As a useful backdrop to the discussion of external financing, it is worth noting that Africa in general suffers from low levels of savings and investment. Anyanwu (2006) points out the low levels of domestic, foreign and portfolio investment in much of Africa. On the other hand, neoclassical theory postulates aid as one of the options for filling the savings and foreign exchange gaps that typically constrain growth in low income economies. In addition much of the theoretical literature on the rationale for aid and its effectiveness assumes aid to be potentially beneficial. However, the critics of aid blame it for fuelling dependency and corruption and for undermining democratic accountability especially in poor countries (Moyo 2009). Nunn and Qian (2012) make a similar point in warning that aid can indeed be detrimental without "accountable governance" and Edo (2002) finds external indebtedness to be harmful to investment in Nigeria and Morocco. Uganda became a victim of Western aid suspensions in 2014 due to anti-gay legislation and corruption in managing aid money in the Office of the Prime Minister (Jeanne and Njoroge 2012).

Using OECD creditor reported data on aid, Helble *et al.* (2009) find that aid disbursements for trade facilitation exert a positive influence on the level of trade flows. They find that an increase in aid support for trade policy reform and regulation of USD 11.7 million generates USD 818 million worth of trade flows. Trade facilitation which aims to reduce the cost of trade through the reform of customs procedures represents an important component of AFT. Thus, AFT is an attempt to "level the trade playing field" so that all countries including the LDCs can equitably participate in international trading. Rajan and Subramanian (2005:4) underscore the moral imperative of external aid and its high potential cost effectiveness.

Aid for trade also presumes that trade is mutually beneficial notwithstanding the mixed evidence on the effect of liberalization on trade and growth discussed above. In line with this, UNCTAD (2007) concluded and rightly so, that trade liberalization is a necessary but not a sufficient condition for growth in trade even though it generally appears to have a positive effect on the subsequent integration of economies into the global economy. UNCTAD (2007) particularly underscores the importance of transport connectivity in development of competitiveness and growth. Indeed Francois and Manchin (2007) observe that transport infrastructure appears to have more explanatory power for trade growth than tariff reductions. This underscores the critical role of the non-tariff barriers (NTBs) vis-à-vis tariff barriers. This finding conforms to UNCTAD (2008) which identifies domestic supply capacity rather than foreign market access as a key factor in LDC trade.

Furthermore, UNCTAD (2007) reports mixed results for trade liberalization in many LDCs asserting that many of them "remain marginalized from international trade, attract limited foreign investment (FDI) and are stuck in the supply of a limited range of primary goods and services". Mesghena (2005) find the effect of ODA on FDI to be positive. In view of these divergences, the WTO's Fourth Global Review of Aid for Trade examined the range of strategies that can link developing countries to international value chains, assist them to move up the chain so as to consolidate achievements in line with the post-2015 development agenda.

UNCTAD (2008) argues that there are a number of clear cases of the positive effect of aid on trade and subsequent growth. The report echoes the need for the right conditions for aid to provide "strong impetus" to trade and growth. This view was also put forward by Hoekman and Olarreaga (2007) and Burnside &Dollar (2000) who argued the importance of complimentary policy framework for aid to positively impact trade and growth. Hoekman and Njinkeu (2007) further argue that the efficacy of aid is enhanced when it is targeted into the comparative advantage sectors of the recipient countries. This finding underlines the critical importance of aid targeting.

Uganda receives considerable external financial support. Overall official development assistance (ODA) to Uganda rose steadily from a value of less than USD 500 million in 1985 to approximately USD 1.7 billion in 2013 (Figure 1). Uganda's overall external financial inflow has oscillated between 5% and 25% of its gross national income (Figure 2).

Aid for trade refers to the component of ODA directed into trade related sectors such as infrastructure, tourism, energy, financial services, mineral resources and mining, other business services, trade policy and regulation, industry and others. Table 1 shows the breakdown of aid for trade to Uganda in form of loans and grants over the period 2002-2013. The data shows that Uganda has attracted comparable levels of loans and grants in conformity with its debt sustainability strategy that emphasizes aid concessionality.

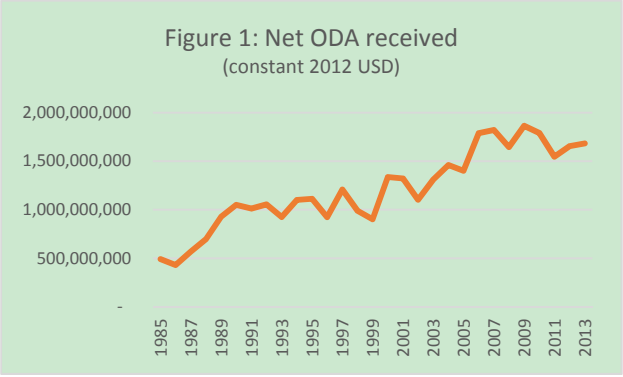

Figure 1. Net ODA received (constant 2012 USD)

Source: World Bank, WDI 2015

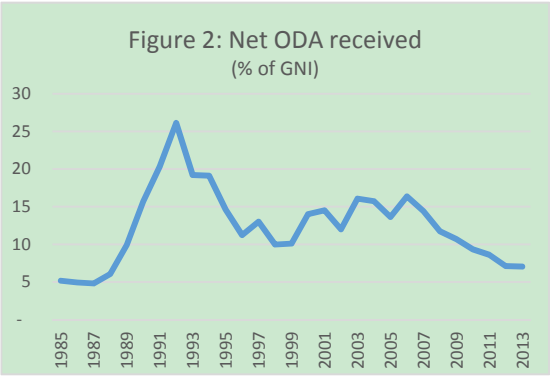

Figure 2. Net ODA received (% of GNI)

Source: World Bank, WDI 2015

Table 1. Aid for trade to Uganda - Grant versus Loans (Constant 2013 USD Millions)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Grants	68	76	161	133	155	171	225	174	198	262	208	275
Loans	61	54	89	85	105	342	213	267	240	195	175	274

Source: OECD CRS 2015

As a proportion of overall ODA, AFT is approximately 20% to 30% (Figure 3 and 4). The sectoral breakdown of the AFT directed into Uganda in recent years (figure 4) shows that a substantial part of the resources went into transport infrastructure, energy and agriculture. A lesser proportion was directed into industry, mineral resource and trade policy capacity building. These disbursements however closely reflect government's recent budgetary priorities (MFPED 2012/13; 2013/14; 2014/15).

As figure 4 shows, from 2002 to 2012, approximately USD 900 million of AFT was directed into Uganda's agriculture sector; USD 0.67 million into improving multilateral trade negotiation capability; USD 0.5 million into regional trade agreements; USD 0.44 million into trade education; USD 10.27 million into technical research and development (R&D); USD 37.8 million into trade policy management; and USD 7.33 million to trade facilitation (OECD 2013). Much of this support was channelled through the Integrated Framework (IF) and the Enhanced Integrated Framework (EIF).

Despite such external financial support with significant proportion for trade related sectors, many LDCs continue to perform poorly in external trading. As pointed out, this dismal performance can be traced to serious supply side constraints including infrastructure bottlenecks, lack of technological sophistication, fluctuating productive capacities, institutional limitations, and inadequate capacity to ensure conformity to international quality standards (WTO 2005, Rudaheranwa 2005, Rudaheranwa and Atingi-Ego 2005).

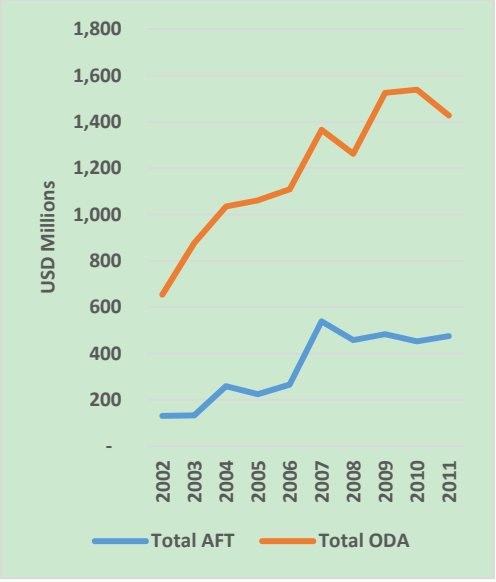

Figure 3. Trends in total AFT and ODA to Uganda

Source: OECD-CRS

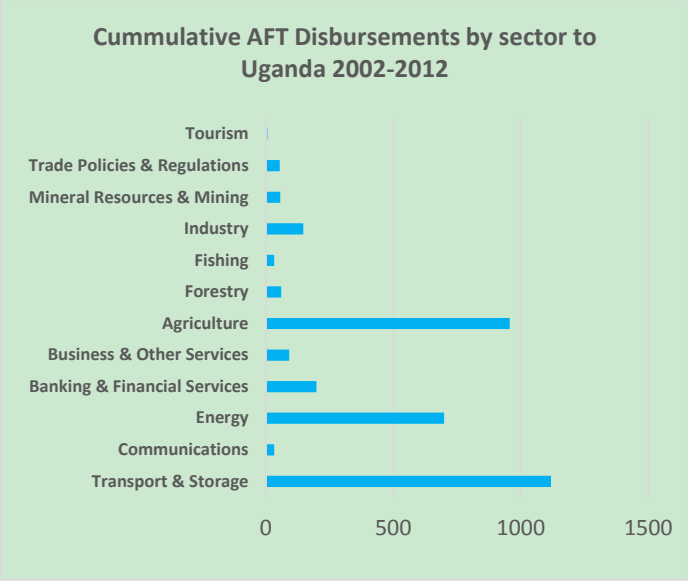

Figure 4. AFT disbursements by broad sector

Source: OECD-CRS

Table 2. Uganda's exports, imports and trade balance (USD '000)

	2010	2011	2012	2013	2014
Imports	4,664,338	5,630,875	6,044,147	5,817,510	6,073,528
Exports	1,618,603	2,159,077	2,357,493	2,407,736	2,261,964
Balance	-3,045,735	-3,471,798	-3,686,654	-3,409,774	-3,811,564

Source: ITC Trade Map and Uganda Bureau of Statistics, 2015

Uganda's external trade sector performance has been no different (Table 2). Imports have risen faster than exports leading to a widening trade deficit that peaked at USD 3.8 billion in 2014. The home-grown nature of this problem is evidenced by the country's inability to fully exploit available trade opportunities including preferential ones such as the African Growth and Opportunities Act (AGOA) of the United States (US), Everything-But-Arms (EBA) of the European Union (EU) and others (Ijjo 2007). This study partly aims to examine the role of aid in the strengthening of LDC trade capacity looking at the case of Uganda.

3. Model Specification

Trade is driven by both supply and demand side factors. Exports are largely driven by foreign demand and domestic supply conditions. Likewise, imports are motivated by domestic demand for foreign goods and foreign supply conditions. Many traditional analyses of export and import trade dynamics have focused for the most part on the drivers of demand (Funke and Holly 1992) to the exclusion of supply side constraints. This has been the practice especially in the neo-classical tradition. In LDCs, however, supply side factors tend to assume a more prominent role in determining export capability (UNCTAD 2004). These issues are normally addressed in the framework of institutional economic theories. The crippling effect of the supply-related constraints in LDCs is evident in view of the grossly unexploited moreover often preferential market opportunities especially true in the case of Uganda (Ijjo 2007). Thus, supply side factors have come to assume critical significance both in trade development strategies and in the modelling of export participation by LDCs.

3.1 Exports Model

Drawing on the works of Majeed and Ahmad (2006), Haider *et al.* (2011), Bahmani-Oskooee (1998), and Warner and Kreinin (1983), this paper hypothesizes exports (X) to be driven by domestic GDP (representing the capacity of the domestic residents to produce goods which may be exported); real effective exchange rate (REER), representing the relative price of domestic goods to foreigners; a measure of the level of infrastructure development proxied by gross fixed capital formation (GFCF) also a critical determinant of the cost of production and subsequently export competitiveness; inward FDI capturing the contribution of export-oriented FDI; ODA (representing foreign aid support often aimed at trade facilitation, technical support and trade capacity building); and the average income of key trading partners (in this case the GDP of Kenya, denoted as KGDP); savings out of the national income (SVG) as percent of GDP; the tax regime prevailing in the country (TAX) as percent of GDP; and manufacturing value added (MVA), as proxy for the level of industrialization. The model is presented as:

$$X = f(GDP, TAX, SVG, REER, ODA, MVA, KGDP, GFCF, FDI) \quad (1)$$

3.2 Imports Model

On the basis of the empirical works of Kotan and Saygili (1999), Bahmani-Oskooee (1998), Warner and Kreinin (1983), Sinha (1997), and Rogers (2000), the paper hypothesizes imports (M) to be driven by domestic income measured by GDP typically representing the purchasing power of domestic residents; the REER, representing the price of foreign goods in terms of domestic resources; and ODA associated with trade liberalization and facilitation through the reform of customs procedures and market infrastructure development. The a priori expectation is that these factors positively influence Uganda's import trade. The model is specified as:

$$M = f(GDP, REER, ODA) \quad (2)$$

3.3 Estimation Procedures

The paper estimates the import and export models using error correction modelling (ECM). The variables were transformed into logarithmic form and tested for stationarity using the Augmented Dickey-Fuller (ADF) and Phillip-Peron (PP) procedures. In constructing the ECM, the long run steady state relationship is combined with the short-run adjustments. The ECM for the export function is specified as:

$$\begin{aligned}\Delta \ln X_t = \alpha + \sum_{i=1}^{2} \beta_i \Delta \ln X_{t-i} + \sum_{i=0}^{2} \gamma_i \Delta \ln GDP_{t-i} + \sum_{i=0}^{2} \delta_i \Delta \ln REER_{t-i} + \sum_{i=0}^{2} \theta_i \Delta \ln ODA_{t-i} + \\ \sum_{i=0}^{2} \epsilon_i \Delta \ln FDI_{t-i} + \sum_{i=0}^{2} \mu_i \Delta \ln SVG_{t-i} + \sum_{i=0}^{2} \pi_i \ln TAX_{t-i} + \sum_{i=0}^{2} \rho_i \ln GFCF_{t-i} + \\ \sum_{i=0}^{2} \tau_i \ln MVA_{t-i} + \sum_{i=0}^{2} \omega_i \ln KGDP_{t-i} + \lambda ECM_{t-1} + \varepsilon \end{aligned} \quad (3)$$

Where, α represents the intercept, β_i the coefficients of the lagged export variables, γ_i the coefficients of the lagged GDP variables, δ_i the coefficients of the lagged REER variables, θ_i the coefficients of the lagged ODA variables, ϵ_i the coefficients of the lagged FDI variable, μ_i the coefficients of the lagged SVG variable, π_i the coefficients of the lagged TAX variable, ρ_i the coefficients of the lagged GFCF variable, τ_i the coefficients of the lagged MVA variable, ω_i the coefficients of the lagged KGDP variable, λ is the error correction term and ε the residual.

For the import model, the error correction model for the long and short-run import relationship is expressed as in equation (4):

$$\Delta \ln M_t = \alpha + \sum_{i=1}^{2} \beta_i \Delta \ln M_{t-i} + \sum_{i=0}^{2} \gamma_i \Delta \ln UGDP_{t-i} + \sum_{i=0}^{2} \delta_i \Delta \ln REER_{t-i} + \sum_{i=0}^{2} \theta_i \Delta \ln ODA_{t-i} + \lambda ECM_{t-1} + \varepsilon \quad (4)$$

Where, α represents the intercept, β_i the coefficients of the lagged import variables, γ_i the coefficients of the lagged GDP variables, δ_i the coefficients of the lagged REER variables, θ_i the coefficients of the lagged ODA variables, λ is the error correction term and ε the residual.

3.4 Data Sources and Description of Variables

To carry out the estimation of the macro-model, we used the World Bank's World Development Indicators (WDI 2013). In particular we extracted annual time series data running from 1988 to 2011 on exports, imports, savings and tax - all as percent of GDP and converted these into quarterly time series using the EViews frequency conversion based on the linear interpolation option. Data on the REER, a weighted average of the bilateral real exchange rate for Uganda with its trading partners were also obtained from the WDI. The REER as employed in the model represents an approximation of the real, inflation-adjusted price of Uganda's exports. A depreciation of the domestic currency makes exports cheaper for foreign consumers and vice-versa. The FDI variable is the net inflow of FDI as percent of GDP. Its effect on exports is largely dependent on the export "orientation" of the FDI. FDI may be aiming at obtaining cheap inputs to produce for export or for the domestic market. The effect of export-oriented FDI is postulated to be positive on export growth, while FDI merely aimed at "tariff jumping" is not likely to stimulate export growth. Finally the AFT data employed in the descriptive analysis is taken from the 2015 edition of OECD's Creditor Reported System and runs from 2002 to 2013.

4. Empirical Results

The ADF tests show that all the variables are largely non-stationary in levels. The ADF and PP unit root tests confirm that all the variables are stationary only after first difference and therefore I(1) at 5 percent. Due to the non-stationarity of the data, the use of Ordinary Least Squares (OLS) is not advisable as it may generate spurious regressions. It was therefore necessary to explore co-integration among the variables.

4.1 Export Model Results

The unrestricted co-integration test results show that the variables in the export function are co-integrated, failing to reject the hypothesis of "at most 6" co-integrating equations at the 5percent level of significance. This indicates that up to 6 co-integrating equations combining the variables are possible. Based on theory and exogeniety tests we select the equation with export as the dependent variable and retain the suggested lag length of 2 in running the estimation. We then estimated the error correction model using EViews.

The estimation of the long-run co-integrating equation yields results (see equation 5 with t-statistics presented in the parenthesis) in which the coefficients of the GDP, ODA, REER, SVG, and MVA variables carry the expected positive signs and are statistically significant. The ODA variable has a positive effect on the export variable suggesting that aid translates positively into export growth. The elasticity of exports with respect to ODA of about 0.7 means that one percentage point rise in ODA generates a 0.7 percent increase in exports.

$$\begin{aligned} \ln X_{t-1} = {} & 24.18 + 3.91 \ln GDP_{t-1} + 0.43 \ln TAX_{t-1} + 0.32 \ln SVG_{t-1} + 2.47 \ln REER_{t-1} + 0.70 \ln ODA + \\ & \quad (35.82) \qquad (8.06) \qquad (24.11) \qquad (33.31) \qquad (23.91) \\ & 0.63 \ln MVA_{t-1} - 5.40 \ln KGDP + 0.12 \ln GFCF_{t-1} - 0.01 \ln FDI_{t-1} \\ & \quad (13.24) \qquad (-26.69) \qquad (1.89) \qquad (-1.20) \end{aligned} \quad (5)$$

Table 2. Error correction model for the export function

Variable	Coefficient	Coefficient	Standard Error	Probability
ECT	λ	-0.256	0.143835	0.0852
$\Delta(\ln X_{t-1})$	$\beta(1)$	1.184	0.200864	0.0000
$\Delta(\ln SVG_{t-1})$	$\mu(1)$	-0.119	0.045292	0.0136
$\Delta(\ln MVA_{t-1})$	$\tau(1)$	-0.259	0.102387	0.0167
Constant	α	0.009	0.018122	0.6265

Source: Computed by the Authors using World Bank's WDI.

The GFCF variable which is a proxy for general infrastructure turned out with the expected positive sign but hardly significant. The theory is clear, however, that economic infrastructure is a key determinant in the cost of production and transportation. Plausible explanations of the observed lack of significance may be due to a range of factors including lack of total fidelity between GFCF and actual trade infrastructure; the relative brevity of time for the effect of the infrastructure investments to filter through and the "noise" from a multiplicity of other factors influencing exports hence confounding the relationship between the two for Uganda.

The results also show that movements in the real effective exchange rates (REER) do tend to influence export demand. Depreciation in the local currency in form of a rise in the REER (the real price of foreign currency in terms of local currency units) makes Uganda's exports cheaper for foreign consumers and vice-versa. The results show that foreign demand for Uganda's exports is strongly elastic with respect to exchange rate changes with one percentage unit depreciation in the value of the local currency raising export demand by approximately 2.5 percentage points.

The results show that growth in the GDP of Kenya, one of Uganda's key trading partners negatively correlates with growth in Uganda's exports. This result seems indicative of the slowly shifting role of Kenya as an important export destination to other export destinations such as South Sudan, Rwanda and Eastern DRC. The coefficient of 5.4 shows Kenya's demand for Ugandan exports to be negatively income elastic.

The effect of the FDI variable turned out negative but not statistically significant. The negative sign is likely to be indicative of the local rather than export market orientation of much of Uganda's inward FDI. A positive influence would be expected if the country's inward FDI were largely oriented towards exports as for example in the case of Export Processing Zones (EPZs) which Uganda is yet to prioritize.

In addition, many of the lagged variables of the model, excepting SVG and MVA turned out insignificant and were dropped to generate a parsimonious model. Overall however the model posted a significant F-Statistics, adjusted R square of 0.59 attributing nearly 60% of export variation to ODA and the other included variables and a Durbin-Watson of 2.38 showing negligible autocorrelation.

4.2 Import Model Results

After a rejection of the null hypothesis of no co-integration of the variables using the Johansen co-integration procedure (see table A4 in the Appendix), the estimate of the long run import model is presented in Table 3 and summarized in Equation (6). The coefficient of the GDP variable bears the expected positive sign and is statistically significant.

Table 3. Error correction model for the import function

	Coefficient	Standard Error	Probability
ECT(λ)	-0.309	0.056479	0.0000
$\ln M_{t-1}$	0.526	0.143363	0.0007
$\ln REER_{t-1}$	-0.404	0.181445	0.0314
$\ln ODA_{t-1}$	-0.063	0.017657	0.0009
$\ln ODA_{t-2}$	-0.027	0.013304	0.0492
Constant	-0.005	0.008249	0.5550

Source: EViews output based on World Bank's WDI.

The *a priori* hypothesis of GDP driven import demand is confirmed by the positive relationship between domestic GDP and imports. The coefficient of 0.685 of the GDP variable represents the import elasticity with respect to national income. It shows that one percent increase in national income translates into approximately 0.7 percentage points of import demand.

$$\ln M = 17.34 + 0.69\ln GDP + 0.90\ln REER + 0.29\ln ODA \quad (6)$$
$$(23.59) \qquad (5.63) \qquad (3.42)$$

The coefficient of the ODA variable carries a positive sign, implying that ODA positively correlates with imports. The following explanations may be offered for this observation. First, the positive relationship may be capturing the trade facilitation effect of external aid. Secondly the observation may also be indicative of aid tying whereby

the aid-recipient nation is required to spend at least part of aid money in the donor nations by through the purchase of project inputs and technical assistance. Thirdly, aid money contributes to the national pool of foreign currency and subsequently import capacity. The elasticity of import growth with respect to aid is approximately 0.3, implying that one percentage increase in ODA translates into approximately 0.3 percentage points of import growth in the long run relationship.

The real effective exchange rate (REER) variable turned out with a positive sign, contrary to *a priori* expectation. However, given that much of Uganda's imports comprise "essential goods" such as petroleum and petroleum products, capital inputs, manufactures and specialized services, one may in fact expect the import demand to be inelastic. This could be a "Giffen-good" type relation that captures the insensitivity of import demand to the REER (representing the price of imports). The positive relation is reflected in the simultaneous growth of imports with depreciation of the local currency.

Table 3 presents the coefficients of the statistically significant variables while all the coefficients are presented in table A10 in the appendix. The error correction term (λ) with value of -0.309 bears the expected negative sign and is strongly significant at 1%. The magnitude of λ (-0.309) shows that the system adjusts toward its long run steady state at the rate of approximately 31% every quarter.

It is also worth noting that the first lagged difference of the import variable ($\Delta \ln M_{t-1}$) has a positive and significant effect on current imports. The coefficient of the second lagged import variable ($\Delta \ln M_{t-2}$) is however not statistically significant. The first and second lagged differences of the GDP variable are not significant implying that the ECM is mainly influenced by the current rather than past levels of GDP. The first lagged difference of the REER variable is significant but the second is not. Finally and importantly, both the first and second lagged differences of the ODA variable are significant at 5% in the ECM, showing that ODA has played a significant role in strengthening Uganda's import capacity.

Finally the adjusted R-Squared of 0.69 suggests approximately 70 percent explanatory power for the model; a Durbin-Watson statistic of 2.0 implying no autocorrelation; and a highly significant F-Statistic showing a reasonably good fit of the model to the data. Thus, while the analysis shows that ODA can positively impact Uganda's capacity to trade through both exports and imports, it is clear that the need to strengthen export competitiveness remains critical given the widening external trade sector deficit in Uganda's case. This is most likely a reflection of the greater challenge of developing export competitiveness vis-à-vis import capacity.

5. Conclusions and Policy Implications

The macro-model estimations suggest a positive influence of aid on Uganda's Export and import trade with the effects on imports slightly stronger than that on exports. This finding represents a tacit endorsement of the global effort at external resource mobilization for trade capacity development in LDCs in general and for the WTO's Aid for Trade initiative in particular.

Uganda's unrelenting poor external trade sector performance reflects the endemic supply side constraints and attendant lack of export competitiveness. It is also evidence of the relatively greater challenge of building export capacity vis-à-vis that of import. Thus, a key policy priority for Uganda is that of investing in the development of national export competitiveness so as to improve the country's external trade sector performance and overall balance of payments.

Although the paper has shown that aid can boost trade, the analysis shows the complex nature of causal chain required to deliver the impact. The model examined the effect of a number of predictors of export performance including GDP, REER, AID and others. There is need for appropriate policy measures to ensure that each of the significant explanatory factors is optimally determined to deliver export growth. Since the paper shows that aid has potential to enhance trade, Uganda will also have to ensure that the conditions for aid effectiveness including choice of an appropriate aid portfolio, ensuring efficient absorption, and eliminating corruption and mismanagement are all critical to the success of an aid supported trade development effort. Although many of these principles are reflected in Uganda's new public finance management policy and debt strategies, proper implementation has lagged grossly behind.

Although the findings show that aid can boost trade, it should not be a substitute for domestic resource mobilization to finance increased control over production conditions especially in terms of production technology and quality and standards capability. In view of its volatility and restrictive conditionality, external aid should be treated as a supplement rather than a substitute for domestic financial resource mobilization for developing a competitive production and standards capability in Uganda.

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Appendix

Table A 1. Description statistics of the variables used in the estimation of the export and import models

	LNFDI	LNGFCF	LNKGDP	LNM	LNMVA	LNODA	LNREER	LNSCH	LNSVG	LNTAX	LNTDFCT	LNUGDP	LNX
MEAN	1.342553	3.036517	23.65310	3.290862	2.066711	2.574668	4.669061	3.005879	2.222993	2.460936	2.561168	22.92031	2.703969
MEDIAN	1.241865	3.049113	23.62470	3.231800	2.052220	2.603040	4.662902	2.966827	2.138434	2.443990	2.457304	22.88796	2.598293
MAX	1.934456	3.207516	23.94326	3.571796	2.416091	3.159378	4.899576	3.350533	2.764290	2.964126	3.190359	23.41118	3.230083
MIN	0.812507	2.659347	23.43595	2.999533	1.825351	2.209591	4.510000	2.439605	1.718390	2.212958	2.176233	22.46210	2.240485
SD	0.344143	0.118913	0.161625	0.175731	0.111928	0.224722	0.087683	0.264079	0.309748	0.138117	0.299909	0.288941	0.330373
SKEWNESS	0.267531	-0.847097	0.264197	0.229423	0.709295	0.266550	0.611868	-0.309566	0.182776	1.242489	0.590523	0.116090	0.448627
KURTOSIS	1.758344	3.830778	1.602034	1.723495	4.180968	2.362934	3.450203	2.226063	1.716426	5.308297	2.128970	1.689217	1.674145
J-BERA	4.265334	8.307805	5.211524	4.293342	7.949857	1.610114	3.967159	2.292043	4.156110	26.84115	5.024978	4.134805	5.980233
PROB	0.118521	0.015703	0.073847	0.116873	0.018781	0.447062	0.137576	0.317899	0.125173	0.000001	0.081066	0.126514	0.050282
SUM	75.18295	170.0450	1324.573	184.2883	115.7358	144.1814	261.4674	168.3293	124.4876	137.8124	143.4254	1283.538	151.4222
SSD	6.513892	0.777713	1.436744	1.698478	0.689035	2.777494	0.422860	3.835560	5.276911	1.049196	4.947004	4.591779	6.003066
OBS	56	56	56	56	56	56	56	56	56	56	56	56	56

Notes: The data are natural logs of Foreign Direct Investment (FDI), Gross Fixed Capital Formation (GFCF), Kenya's GDP (KGDP), Imports (M), Manufacturing Value Added (MVA), Official Development Assistance (ODA), Real Effective Exchange Rate (REER), Secondary School Enrolment (SCH), Savings (SVG), Tax level (TAX), Trade Deficit (TDFCT), Uganda's GDP (UGDP), Exports (X).

Source: Author's own computations.

Table A 2. Correlation matrix for model variables used in the import and export models

Correlation											
t-Statistic	**LNX**	**LNUGDP**	**LNTAX**	**LNSVG**	**LNSCH**	**LNREER**	**LNODA**	**LNMVA**	**LNKGDP**	**LNGFCF**	**LNFDI**
LNX	1.000000										
LNUGDP	0.950078	1.000000									
	22.37600	-----									
LNTAX	0.635076	0.662430	1.000000								
	6.041608	6.498049	-----								
LNSVG	0.812046	0.782293	0.488329	1.000000							
	10.22508	9.228709	4.112104	-----							
LNSCH	0.908391	0.962494	0.604980	0.749117	1.000000						
	15.96488	26.06986	5.583331	8.310005	-----						
LNREER	-0.167441	-0.370642	-0.191888	-0.242756	-0.478224	1.000000					
	-1.248056	-2.932519	-1.436781	-1.838889	-4.001440	-----					
LNODA	-0.094108	0.033283	-0.094710	-0.161805	0.131562	-0.600420	1.000000				
	-0.694634	0.244714	-0.699115	-1.204898	0.975253	-5.517381	-----				
LNMVA	0.002674	-0.141404	0.128693	-0.136738	-0.239517	0.619507	-0.614116	1.000000			
	0.019648	-1.049650	0.953628	-1.014345	-1.812848	5.799343	-5.718095	-----			
LNKGDP	0.952979	0.991779	0.670362	0.773762	0.931542	-0.282679	-0.008641	-0.089698	1.000000		
	23.10924	56.95560	6.638683	8.975819	18.82507	-2.165586	-0.063499	-0.661811	-----		
LNGFCF	0.804616	0.852488	0.651240	0.793171	0.868849	-0.473456	0.012195	-0.119220	0.825461	1.000000	
	9.957456	11.98380	6.306223	9.570767	12.89637	-3.949938	0.089624	-0.882375	10.74635	-----	
LNFDI	0.606996	0.712909	0.504317	0.451530	0.647213	-0.401819	0.283148	-0.232447	0.724993	0.552552	1.000000
	5.612765	7.470571	4.291694	3.718729	6.238965	-3.224524	2.169486	-1.756234	7.735087	4.871639	-----

Source: Author's own computations.

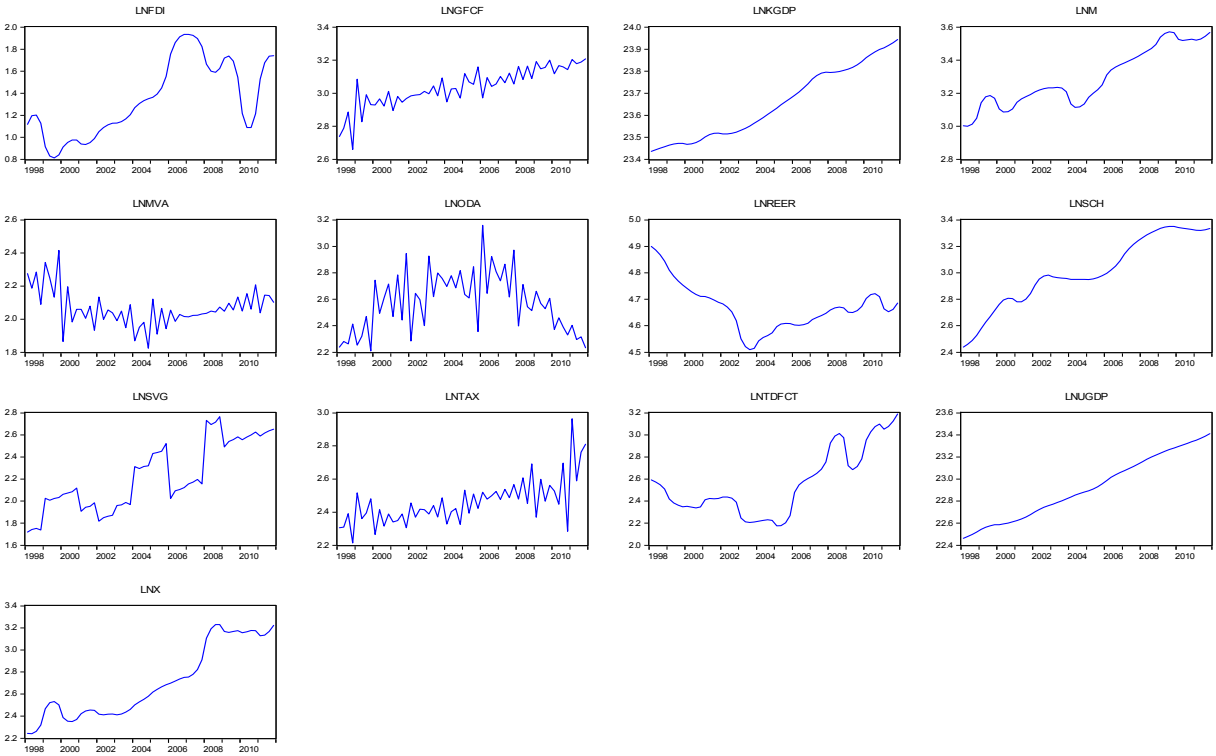

Figure A 1. Graphical illustration of model variables in levels

Source: Author's own computations.

Figure A 2. Graphical illustration of the model variables in first differences

Source: Author's own computations.

Table A 3. Results of ADF and PP stationarity tests

Variable	Order	Variable	Order
Log_EXPORTS	I(1) – ADF	Log_MVA	I(1) – ADF
Log_GDP	I(1) – ADF	Log_FDI	I(1) – PP
Log_ODA	I(1) – ADF	Log_KGDP	I(1) – ADF
Log_GFCF	I(1) – ADF	Log_GNE	I(1) – ADF
Log_TAX	I(1) – ADF	Log_IMPORTS	I(1) – ADF
Log_SVG	I(1) – ADF	Log_TRADE	I(1) – ADF
Log_REER	I(1) – ADF		

Source: ADF and PP Unit Root Test Results

The Export Model

Table A 4. Unrestricted co-integration rant test (Trace) fro the export model

No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**Critical Value (0.05)**	**Prob.****
None *	0.788647	378.5664	239.2354	0.0000
At most 1 *	0.755216	294.6381	197.3709	0.0000
At most 2 *	0.649697	218.6397	159.5297	0.0000
At most 3 *	0.579311	161.9960	125.6154	0.0001
At most 4 *	0.535679	115.2395	95.75366	0.0012
At most 5 *	0.412856	73.81182	69.81889	0.0232
At most 6	0.358214	45.05761	47.85613	0.0895
At most 7	0.239908	21.10862	29.79707	0.3509
At most 8	0.108993	6.295588	15.49471	0.6606
At most 9	0.001182	0.063849	3.841466	0.8005

Notes: Trace test indicates 6 co-integrating equation(s) at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level and **MacKinnon-Haug-Michelis (1999) p-values.

Table A 5. Coefficients of the long-run relationship for the export model

Variable	**Coefficients**	**Standard Error**	**t-Statistics**
lnX(-1)	1.000000		
lnGDP(-1)	-3.908860	0.10914	-35.8159
lnTAX(-1)	-0.431339	0.05354	-8.05608
lnSVG(-1)	-0.320189	0.01328	-24.1087
lnREER(-1)	-2.474323	0.07428	-33.3089
lnODA(-1)	-0.696621	0.02913	-23.9136
lnMVA(-1)	-0.634061	0.04790	-13.2369
lnKGDP(-1)	5.404412	0.20255	26.6815
lnGFCF(-1)	-0.119660	0.06345	-1.88597
lnFDI(-1)	0.013245	0.01105	1.19902
C	-24.17926		

Notes: Sample (adjusted): 1998Q4 2011Q4. Included observations: 53 after adjustments.

Table A 6. Error correction model estimates for the export model

Variable	Coefficient	Coefficient	Standard Error	t-Statistic	Probability
ECT	**C(1)**	**-0.255770**	**0.143835**	**-1.778225**	**0.0852**
$\Delta(\ln X_{t-1})$	**C(2)**	**1.183792**	**0.200864**	**5.893496**	**0.0000**
$\Delta(\ln X_{t-2})$	C(3)	-0.069835	0.266515	-0.262032	0.7950
$\Delta(\ln GDP_{t-1})$	C(4)	-0.008029	1.653572	-0.004856	0.9962
$\Delta(\ln GDP_{t-2})$	C(5)	-1.224124	1.611744	-0.759502	0.4533
$\Delta(\ln TAX_{t-1})$	C(6)	-0.115654	0.066881	-1.729244	0.0937
$\Delta(\ln TAX_{t-2}$	C(7)	-0.067962	0.054261	-1.252519	0.2197
$\Delta(\ln SVG_{t-1})$	**C(8)**	**-0.118509**	**0.045292**	**-2.616584**	**0.0136**
$\Delta(\ln SVG_{t-2})$	C(9)	-0.035865	0.033053	-1.085093	0.2862
$\Delta(\ln REER_{t-1})$	C(10)	-0.101549	0.376694	-0.269580	0.7893
$\Delta(\ln REER_{t-2})$	C(11)	-0.048959	0.407438	-0.120162	0.9051
$\Delta(\ln ODA_{t-1})$	C(12)	-0.100646	0.082304	-1.222852	0.2306
$\Delta(\ln ODA_{t-2})$	C(13)	-0.019572	0.044293	-0.441880	0.6616
$\Delta(\ln MVA_{t-1})$	**C(14)**	**-0.259160**	**0.102387**	**-2.531185**	**0.0167**
$\Delta(\ln MVA_{t-2})$	C(15)	-0.108094	0.082445	-1.311099	0.1995
$\Delta(\ln KGDP_{t-1})$	C(16)	-2.608397	1.823633	-1.430330	0.1626
$\Delta(\ln KGDP_{t-2})$	C(17)	3.793954	2.009930	1.887605	0.0685
$\Delta(\ln GFCF_{t-1})$	C(18)	0.082392	0.099199	0.830579	0.4126
$\Delta(\ln GFCF_{t-2})$	C(19)	0.117933	0.102250	1.153376	0.2576
$\Delta(\ln FDI_{t-1})$	C(20)	-0.052456	0.081655	-0.642403	0.5253
$\Delta(\ln FDI_{t-2})$	C(21)	0.171920	0.087441	1.966132	0.0583
Constant	C(22)	0.008909	0.018122	0.491590	0.6265

Table A 7. Regression diagnostics for the export error correction model

R-squared	0.757924	Mean dependent variable	0.017923
Adjusted R-squared	0.593936	S.D. dependent variable	0.044269
S.E. of regression	0.028209	Akaike info criterion	-4.004432
Sum squared residuals	0.024669	Schwarz criterion	-3.186575
Log likelihood	128.1175	Hannan-Quinn criterion.	-3.689924
F-statistic	4.621845	Durbin-Watson statistics	2.380890
Probability (F-statistic)	0.000065		

Notes: Sample: 1998Q4 2011Q4. Included observations: 53 after adjustments.

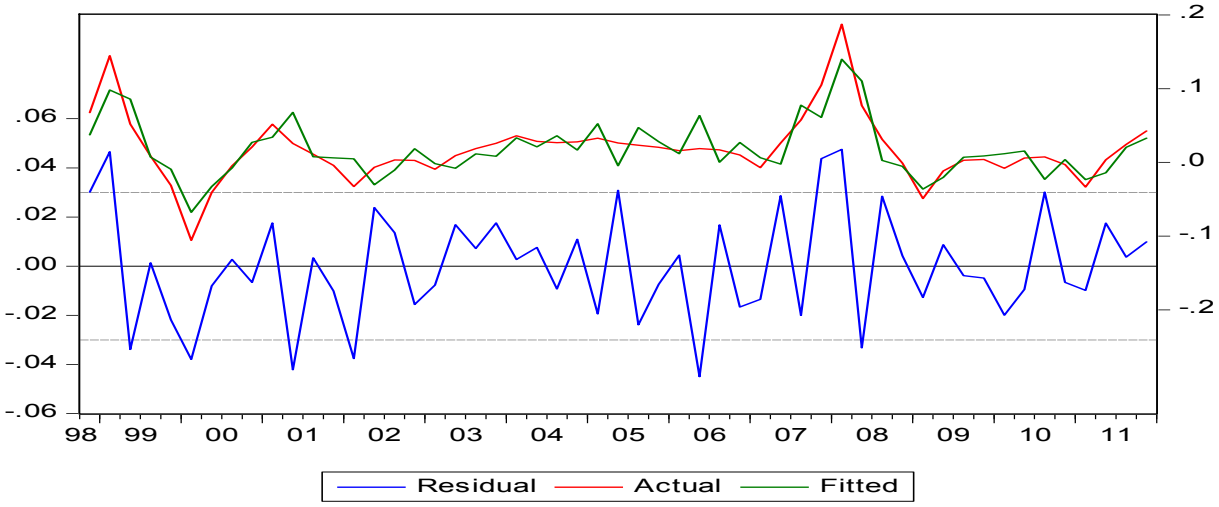

Figure A 3. Plot of actual, estimated and residual for the export model

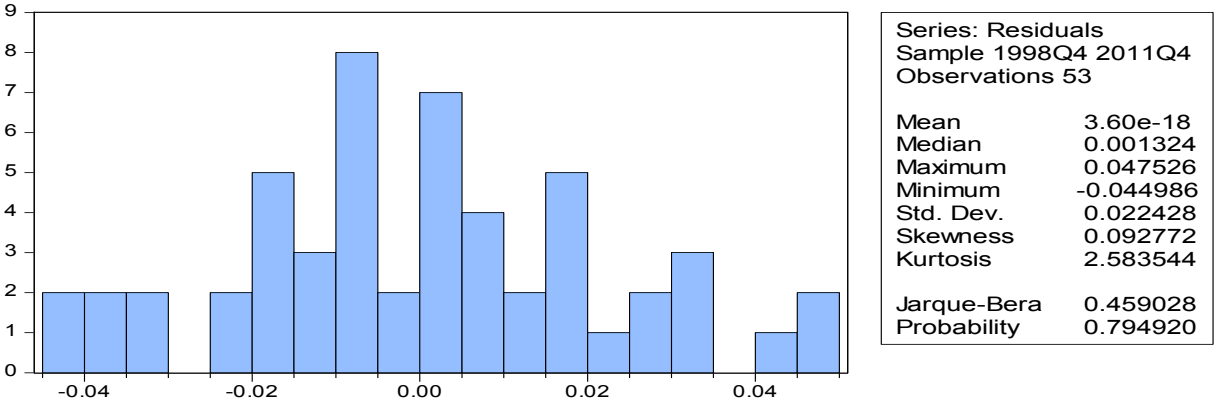

Figure A 4, Test for normality of residuals

The Import Model

Table A 8. Unrestricted co-integration rank test (Trace) for the import model

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.723002	94.88385	47.85613	0.0000
At most 1	0.269455	29.41284	29.79707	0.0553
At most 2	0.176589	13.40064	15.49471	0.1009
At most 3	0.066167	3.491316	3.841466	0.0617

Notes: Trace test indicates 1 co-integrating equation(s) at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p-values. Sample (adjusted): 1999Q2 2011Q4. Included observations: 51 after adjustments

Table A 9. Coefficients of the long-run co-integration equation for the import model

Variable	Coefficients	Standard Error	t-statistic
lnM(-1)	1.000000		
lnGDP(-1)	-0.685034	0.02904	-23.5853
lnREER(-1)	-0.901103	0.16000	-5.63191
lnODA(-1)	-0.286164	0.08372	-3.41813
C	17.34906		

Notes: Sample (adjusted): 1998Q4 2011Q4. Included observations: 53 after adjustments.

Table A 10. Error correction model for the import model

	Coefficient	Standard Error	t-Statistic	Probability
ECT	-0.309008	0.056479	-5.471184	0.0000
$\Delta(\ln M_{t-1})$	0.525633	0.143363	3.666444	0.0007
$\Delta(\ln M_{t-2})$	0.013463	0.140442	0.095859	0.9241
$\Delta(\ln GDP_{t-1})$	0.806256	0.745504	1.081492	0.2855
$\Delta(\ln GDP_{t-2})$	-0.404779	0.733081	-0.552162	0.5837
$\Delta(\ln REER_{t-1})$	-0.403680	0.181445	-2.224803	0.0314
$\Delta(\ln REER_{t-2})$	-0.266732	0.190070	-1.403335	0.1677
$\Delta(\ln ODA_{t-1})$	-0.062951	0.017657	-3.565297	0.0009
$\Delta(\ln ODA_{t-2})$	-0.026932	0.013304	-2.024333	0.0492
Constant	-0.004908	0.008249	-0.594997	0.5550

Table A 11. Diagnostic tests for the import model

R-squared	0.741374	Mean dependent variable	0.010429
Adjusted R-squared	0.687243	S.D. dependent variable	0.025392
S.E. of regression	0.014200	Akaike info criterion	-5.502865
Sum squared residual	0.008671	Schwarz criterion	-5.131112
Log likelihood	155.8259	Hannan-Quinn criterion	-5.359907
F-statistic	13.69593	Durbin-Watson stat	2.006015
Probability (F-statistic)	0.000000		

Dependent Variable: Δ (LNM). Method: Least Squares. Sample (adjusted): 1998Q4 2011Q4. Included observations: 53 after adjustments

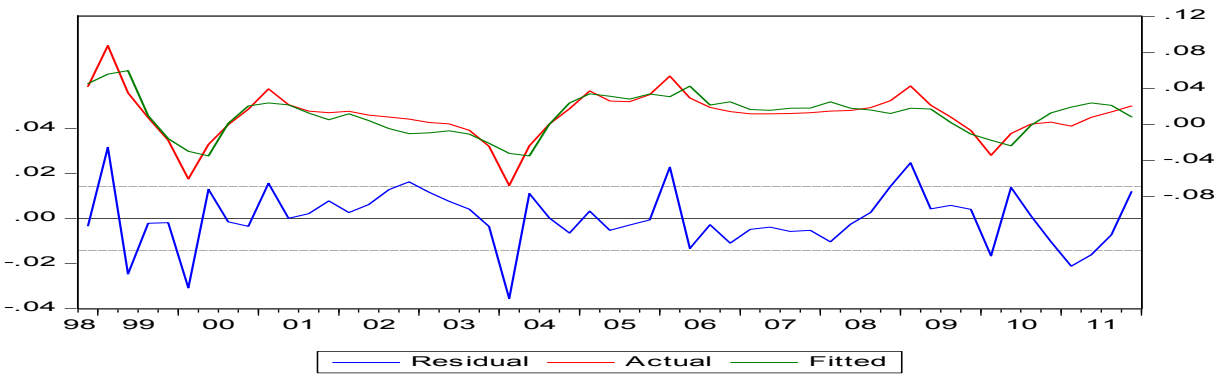

Figure A 5. Plot of the actual, estimated and residual for the import model

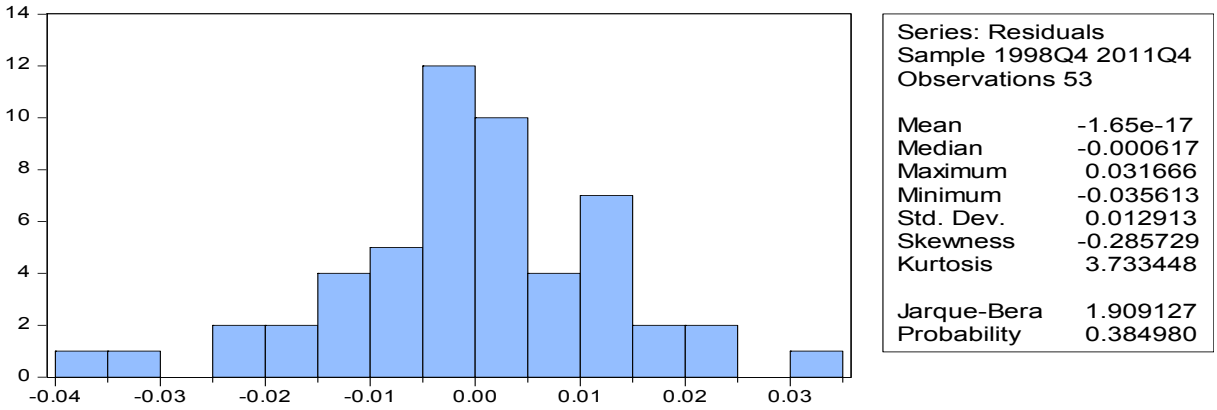

Figure A 6. Testing for normality of the residuals in the import model