UNISA ECONOMIC RESEARCH
WORKING PAPER SERIES

EXAMINING THE DETERMINANTS OF IMPORT DEMAND IN TANZANIA: AN ARDL APPROACH

Nomfundo P. Vacu
Nicholas M. Odhiambo

Working Paper 30/2021

December 2021

Nomfundo P. Vacu
Department of Economics
University of South Africa
P. O. Box 392, UNISA
0003, Pretoria
South Africa
Emails: n.vacu@yahoo.com

Nicholas M. Odhiambo
Department of Economics
University of South Africa
P. O. Box 392, UNISA
0003, Pretoria
South Africa
Emails: odhianm@unisa.ac.za / nmbaya99@yahoo.com

UNISA Economic Research Working Papers constitute work in progress. They are papers that are under submission or are forthcoming elsewhere. They have not been peer-reviewed; neither have they been subjected to a scientific evaluation by an editorial team. The views expressed in this paper, as well as any errors, omissions or inaccurate information, are entirely those of the author(s). Comments or questions about this paper should be sent directly to the corresponding author.

©2018 by Nomfundo P. Vacu and Nicholas M. Odhiambo

EXAMINING THE DETERMINANTS OF IMPORT DEMAND IN TANZANIA: AN ARDL APPROACH

Nomfundo Portia Vacu[1]

Nicholas M Odhiambo

ABSTRACT

This study estimates the determinants of import demand in Tanzania using time-series data for the period from 1985 to 2015.The study applied the ARDL approach on Tanzania's time-series data to examine the key drivers of import demand. The study used both aggregate import demand model (i.e., Model 1) and disaggregated import demand models, i.e., Model 2 (for consumer goods), Model 3 (for intermediate goods) and Model 4 (for capital goods) to examine this linkage. The study found that in Model 1, aggregate imports in Tanzania are positively influenced by investment and exports, and negatively determined by trade policy. In Model 2, it was found that imports for consumer goods to are positively influenced by consumer spending and foreign reserves, but negatively influenced by trade policy. In Model 3, imports for intermediate goods were found to be positively influenced by exports in the long run. Finally, in Model 4, the study found imports for capital goods to be positively influenced by exports (in the short- and long-run), but negatively influenced by investment (in short run). The study recommends that policymakers in Tanzania should strengthen their macroeconomic policies to ensure that their imports are not consumption based and have an enhancing effect on the country's economic activities.

Key words: Aggregate Imports, Disaggregated Imports, Tanzania, ARDL, Error Correction Model

JEL Codes: F14

[1] *The study is based on my PhD thesis titled "Analysing the Determinants of Import Demand: Evidence from Three Selected African Countries".*

1. INTRODUCTION

Both theoretical and empirical literature confirm a strong link between total trade and growth in developing and developed countries. The role of total trade in growth is stimulated by the increased interdependence between countries (Huang & Chang, 2014; Mishra, 2012). Trade openness enables economies to explore potential benefits of the increasing returns to scale through specialisation (Alesina & La Ferrara., 2000; Bond *et al.*, 2005 cited in Zahonogo, 2016).

Tanzania is one of the developing economies that benefit significantly from trade. Over the period 1985 to 2016, Tanzania's total trade as a share of economic growth has increased rapidly from 13% to 42%, respectively. This is driven by the participation in different trade agreements at country level, regional level and globally, and the gradual implementation of different reforms and trade liberalisation policies (Msaraka & Hongzhong, 2015). According to Busse and Koeniger (2012), trade policies promote improved resource allocation, allow accomplishment of economies of scale and competition in international markets. Tanzania's participation in trade has been predominantly on the import side, resulting in a constant recording of trade deficits. Over the period from 1985 to 2016 the country experienced a general increase in imports as a share of economic growth from 9% to 23%, respectively (United Nations Conference on Trade and Development database, 2016).

Literature provides no consensus on the imports-growth nexus, as some argue that imports are detrimental to economic growth and the country's balance of payments (BOP), while others argue that, depending on the nature of the imported goods, imports may have positive effects on economic growth (Bakari & Mabrouki, 2017). According to Bakari and Mabrouki (2017), imports are considered to be a source of economic growth if they include hardware and electronic equipment to help and contribute to the increase and improvement of the investment. According to World Bank (2016) Tanzanian imports are dominated by manufactured good and fuels, accounting for an average of 68% and 15.3%, respectively. This raises questions on the key drivers of the country's import demand, as it is dominated by manufactured goods, which may have no influence on economic development. Although numerous studies have examined the determinants of import demand in various countries, most of those studies only examined the determinants of aggregate import demand. The current study, therefore, aims to analyse the main drivers of import demand in Tanzania and contributes to the body of knowledge by examining both aggregate and disaggregated import demand.

The remainder of the study is organised as follows: The Literature Review section provides an overview of previous studies that have been conducted on the key determinants of import demand in various countries. The Methodology section deals with model specification, estimation techniques and empirical analysis. The final section (Conclusion) concludes the study.

2. LITERATURE REVIEW

Numerous studies on the imports have been carried out for both developing and developed countries. These studies found different factors depending on the type of imports used as a dependent variable. This includes studies such as that by Narayan and Smyth (2005), who analysed the drivers of import demand in Brunei Darussalam during the 1964 – 1997 period. The explanatory variables used in the study includes GDP, exchange rate, petroleum price and population. The study confirmed that population and exchange rate are the main drivers of import demand, while GDP and petroleum price have no significant effect.

Adam *et al* (2011) emphasised the importance of inequality for import demand. To validate this, they assessed the effect of inequality on aggregate import demand for 59 selected developed and developing countries. For empirical analysis the authors used OLS on panel data during the period from 1970 to 1997. The results revealed a highly significant impact of inequality on import demand. Also, a negative impact in low-income countries and a positive link in high income countries were found. The study asserts that the nature of the impact of income inequality is also determined by a country's level of development.

Arize and Malindretos (2012) studied the link between foreign exchange reserve and import demand in five Asian countries. To estimate this, the study applied OLS on quarterly data during the period 1973-2005. The findings of the study shows that foreign exchange reserve, relative prices and income do matter for import demand.

In 2012, Hameed and Arshad employed the ARDL-bounds test to estimate the import function for palm oil in five leading countries, that is, India, China, Bangladesh, Pakistan and the USA. The study used data from the period from 1979 to 2010 for Bangladesh, 1978 to 2010 for Pakistan and 1977 to 2010 for the rest of the countries. The import demand for these countries was specified as a function of income, palm oil price, and the price of a substitute oil. The results from the study showed that the palm oil and its substitute prices are major determinants of palm oil demand in the studied countries, except for India. On the other hand, GDP was found to be an important determinant of palm oil demand in India. Trade liberalization policies,

exchange rates and health concern-induced government rules were also found to be among the main drivers of import demand for palm oil in the studied countries.

Yahia (2015) evaluated Libya's import demand function using data from 1975 to 2008. The model expressed imports as a function of economic performance (GDP), relative import prices, investment spending, managerial spending, population size and fluctuations in oil prices. The findings showed that the main determinants of Libyan imports include the GDP, oil price fluctuations and partial adjustment of imports. Furthermore, the author emphasised the need to consider the structure break problems and long-term relationship in estimating the import function.

Mansi and Nteegah (2016) studied the main determinants of import demand in Nigeria using data for the period 1980 - 2014. The authors used the ordinary least squares and ECM to estimate the effects of income, exchange rate, external debt, investment spending, price level and trade openness. The results confirmed that income, price level, exchange rate, trade openness and external debt are the key determinants of import demand in Nigeria. Based on these findings, the study further recommended an increase in income and trade restriction, and a review of investment climate to stimulate growth in the Nigerian economy.

Hossain *et al*. (2019) examined the impact of gross domestic product, relative prices, and exchange rate on import demand using three panels of eight frontier countries, eight emerging countries, and ten developed countries from 1980 to 2016. The study employed panel cointegration tests and the results confirmed that import demand is determined by gross domestic product, relative prices, and exchange rate, both in the long run and the short run.

Other studies that have examined the key drivers of imports in African countries include studies such as Razafimahefa and Hamori (2005) for the case of Madagascar and Mauritius; Chimobi and Ogbonna (2008) for the case of Nigeria; Bathalomew (2012) for the case of Sierra Leone; Narayan and Narayan (2010) for South Africa and Mauritius; Fatukasi and Awomuse (2011) for the case of Nigeria; and Omoke (2012) for the case of Nigeria, among others.

3. RESEARCH METHODOLOGY

3.1. Model Specification

This study estimates the key determinants of aggregate and disaggregated import demand in Tanzania. The general import demand model as follows[2]:

IMD = f (FER INVS EXP RIP GS CS TP) ……...…… (1)

[2] See also Yahia (2015), Dutt and Ahmend (2004), Anaman et al. (2001), among others

Where IMD = aggregate imports (Model 1), imports of consumer goods (Model2), imports of intermediate goods (Model3) and imports of capital goods (Model4).

FER = foreign exchange reserves

INVS = investment spending

EXP = exports

RIP = relative import price

CS = consumer spending

GS = government spending

TP = dummy (for trade liberalisation policy)

Table 1. Definition of Key Variables

Variable	**Description**
Foreign exchange reserves (FER)	FER refers to foreign currency deposits held by a country's central bank.
Consumer spending (CS)	CS is measured as total private spending.
government spending (GE)	GS is measured as total public spending.
Investment spending (INVS)	INVS is measured through gross domestic fixed capital formation.
Exports of goods and services (EXP)	EXP is measured through spending on exports.
Trade liberalisation (TP)	TP is measured through a dummy, where '1' represents a period where there was an import policy change, while '0' is used where there was no policy change.
Relative import price	RIP this variable is measured through import price as a share of domestic price
Imports of Capital goods (IMDCP)	IMDCP Includes imports of machinery and other capital equipment, and transport equipment, etc.
Consumption goods (IMDCON)	IMDCON Includes imports of consumer goods such as food and beverages for household consumption, non-industrial transport, and other consumer goods.
Intermediate goods	This includes goods such as food and beverages for industry, fuel and lubricants, parts and accessories for capital goods and other industrial supplies.

Source: Own Computation based on literature

3.2.Stationarity Test

Although the ARDL approach does not require all variables to be I(1), it is necessary to first perform the stationarity test to ascertain whether all variables are either I(0) or I(1). To test for stationarity, the study employs the DF-GLS, Phillips-Parron and KPSS tests.

4. Empirical results

4.1.The ARDL Bounds Test

The ARDL method is preferred in this study because, unlike the other normally used econometric co-integration methods, it does not require all the series be of the same order of integration. Based on the ARDL approach, the general model specified in equation 1 can be reparametrized as follows:

$$\begin{aligned}\Delta LIMD_t = {} & \pi_0 + \sum_{i=1}^{n} \pi_{1i} \Delta LIMD_{t-i} + \sum_{i=0}^{n} \pi_{2i} \Delta LFER_{t-i} + \sum_{i=0}^{n} \pi_{3i} \Delta LINVS_{t-i} \\ & + \sum_{i=0}^{n} \pi_{4i} \Delta LEXP_{t-i} + \sum_{i=0}^{n} \pi_{5i} \Delta LCS + \sum_{i=0}^{n} \pi_{6i} \Delta LGS_{t-i} + \sum_{i=0}^{n} \pi_{7i} \Delta LRIP_{t-i} \\ & + \sum_{i=0}^{n} \pi_{8i} \Delta TP_{t-i} + \Omega_1 LIMD_{t-1} + \Omega_2 LFER_{t-1} + \Omega_3 LINVS_{t-1} \\ & + \Omega_4 LEXP_{t-1} + \Omega_5 LCS_{t-1} + \Omega_6 LGS_{t-1} + \Omega_7 LRIP_{t-1} + \Omega_8 TP_{t-1} \\ & + u_t \ldots (2)\end{aligned}$$

Where:

Δ = 1st difference; i = number of lags; L = logarithm; u_t = error term; π_0 = constant, $\pi_1 - \pi_8$ = long-run coefficients; $\Omega_1 - \Omega_8$ = short-run coefficients.

The general Error Correction model (ECM) of the general model in equation 1 can be presented as:

$$\Delta LIMD_t = \pi_0 + \sum_{i=1}^{n} \pi_{1i} \Delta LIMD_{t-i} + \sum_{i=0}^{n} \pi_{2i} \Delta LFER_{t-i} + \sum_{i=0}^{n} \pi_{3i} \Delta LINVS_{t-i}$$
$$+ \sum_{i=0}^{n} \pi_{4i} \Delta LEXP_{t-i} + \sum_{i=0}^{n} \pi_{5i} \Delta LCS + \sum_{i=0}^{n} \pi_{6i} \Delta LGS_{t-i} + \sum_{i=0}^{n} \pi_{7i} \Delta LRIP_{t-i}$$
$$+ \sum_{i=0}^{n} \pi_{8i} \Delta TP_{t-i} + \delta_1 ECM_{t-1} + u_t \ldots\ldots\ldots\ldots\ldots\ldots (3)$$

4.2. Data Sources

The data on disaggregated import variables were obtained from the World Bank database and Quantec easy data, while the data on aggregate imports, consumer spending, foreign reserves, investment, government spending and exports were collected from the UNCTAD database.

5. RESULTS AND DISCUSSION

Table 2 gives a summary of the unit root test results.

Table 2. Stationarity Tests

Variable	DF-GLS				PP				KPSS			
	Level		**Difference**		**Level**		**Difference**		**Level**		**Difference**	
	No Trend	**Trend**	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend	No Trend	Trend
LFER	-2.732**	-5.907**	_	_	-5.884	-11.089**	_	_	0.397	0.156**	_	_
LINVS	0.481	-1.698	-4.329**	-4.348**	-0.837	-1.797	-4.097**	-4.070**	0.403	0.146**	0.130**	_
LEXPP	0.026	-3.552	-6.572**	-6.949**	-2.610	-4.582**	-5.331**	_	0.409	0.169**	0.307	_
LCS	-0.704	-1.991	-3.293**	-3.337**	-1.332	-1.790	-2.923**	-2.977	0.408	0.173**	0.287**	_
LGS	1.818	-1.741	-2.365**	-2.776**	0.799	-1.147	-2.913**	-3.253	0.385	0.167**	0.161**	_
LRIP	-0.425	-1.055	-3.411**	-3.324**	-4.843**	-4.326**	_	_	0.413	0.250**	0.304	._
LAIMD	-0.068	-2.792	-4.830**	-5.247**	-1.527	-2.334	-4.666**	-4.934**	0.406	0.157**	0.214	_
LIMDINT	-1.899	-4.542**	-5.322**	_	-2.164	-4.135**	-8.653**	_	0.379	0.203**	0.385	_
LIMDCON	-0.209	-1.714	-3.109**	-3.256**	-0.251	-2.498	-3.320**	-3.321**	0.340**	0.150**	_	_
LIMDCP	-1.107	-3.016	-4.716**	-4.860**	-0.764	-2.909	-6.467**	-6.553**	0.385**	0.179**	_	_

*Note: ** denoted statistical significance at the 5% level.*

PP – Phillips-Perron

Source: Own computation based on the results

The results from the unit root tests confirm that the variables included in Models 1, 2, 3 and 4 are either I(0) or I(1), which permits the use of the ARDL approach to analyse the key drivers of imports in the studied countries.

5.2. COINTEGRATION TEST

The cointegration results for all the models are presented in Table 3.

TABLE 3. Co-integration results – ARDL Bound Test[3]

Model		**F-statistic**	**Conclusion**
Model1	AIMD = f(AIMD|FER INVS EXP CS GS RIP TP)	6.658***	Co-integrated
Model2	IMDCON= f(IMDCON| FER INVS EXP CS GS RIP TP)	8.302***	Co-integrated
Model3	IMDINT = f(IMDINT| FER INVS EXP CS GS RIP TP)	3.832***	Co-integrated
Model4	IMDCP = f(IMDCP| FER INVS EXP CS GS RIP TP)	3.947***	Co-integrated

*Note: ***indicates statistical significance at the 1% level.*

Source: Own computation based the results

The cointegration results show that all the variables included in all the four models, i.e., Models 1,2,3 and 4 are cointegrated. The F-statistics for Model 1-4 are 6.658, 8.302, 3.832 and 6.658, respectively. These F-tests have been found to be greater than the upper bound critical values provided by Pesaran *et al.* (2001).

5.3.Short-Run and Long-Run Results

Table 4 presents the short-run and long-run results for Models 1-4.

Table 4. Long-Run Results

Panel A: Long-Run Results				
Regressor	**Model 1**	**Model 2**	**Model 3**	**Model 4**
LCS	-0.435(-1.022)	1.795(1.824)*	-0.612(-0.676)	0.175(0.142)
LEXP	0.536(3.557)***	-0.080(-0.149)	0.999(1.934)*	1.119(2.277)*
LFER	0.198(0.871)	0.635(2.064)*	0.087(0.282)	-0.244(-0.296)
LGS	-0.318(-0.998)	-0.109(-0.231)	-0.410(-1.245)	-0.040(-0.034)

[3] The critical values used in this analysis were obtained from Pesaran *et al.* (2001).

LINVS	1.157(3.165)***	0.717(1.049)	0.341(0.795)	0.569(1.175)
LRIP	-0.227(-0.571)	-0.897(-0.887)	0.342(0.604)	0.922(0.651)
TP	-0.520(-1.856)*	-1.397(-2.734)**	-1.320(-2.838)*	-1.189(-1.281)
INPT	-1.032(-0.292)	-14.781(-2.133)**	7.345(0.884)	-9.364(-1.246)
Panel B: Short-Run Results				
dLIMDCON1		0.627(4.537)***		
dLIMDINT1			0.634(4.266)***	
dLCS	-0.292(-1.135)	1.240(1.755)*	-0.583(-0.740)	0.127(0.140)
dLEXP	0.359(3.688)**	0.304(0.847)	-0.025(-0.085)	0.815(2.351)**
dLEXP1			-0.418(-1.423)	
dLFER	-0.087(-0.928)	0.439(2.132)**	-0.114(-0.462)	0.414(1.273)
dLGS	0.273(1.442)	-0.075(-0.231)	-0.391(-1.151)	-0.177(-0.300)
dLINV	0.776(3.723)**	0.175(0.402)	0.324(0.750)	-1.342(-1.741)*
dLRIP	0.012(0.032)	-0.620(-0.951)	0.326(0.624)	0.671(0.620)
dTP	-0.349(-2.082)*	-0.965(-2.855)**	-1.257(-3.360)***	-0.866(-1.429)
ECM(-1)	-0.671(-5.333)***	-0.691(-5.441)***	-0.728(-4.409)***	-0.728(-4.409)**
R-Squared	0.901	0.850	0.896	0.705
DW-statistic	1.760	1.969	1.977	1.604
F-Statistics	20.5059 [0.000]	10.7362 [0.000]	13.7970 [0.000]	5.9651[0.000]
Serial Correlation	0.706[0.401]	0.458[0.499]	0.003[0.958]	1.813[0.178]
Functional Form	4.070[0.044]	8.271[0.004]	0.770[0.380]	11.459[0.001]
Normality	0.425[0.808]	0.007[0.996]	1.211[0.546]	1.317[0.518]
Heteroscedasticity	0.008[0.929]	0.172[0.990]	0.464[0.983]	1.168[0.280]

*Note: *, **, and ***denote statistical significance at the 10%, 5% and 1% levels, respectively.*

Source: Own computation based on the results

The results for Model 1 (reported in Table 4) show that exports (LEXP) and investment (LINVS) have a positive impact on aggregate imports, while trade policy (TP) has a negative impact. It is found that a one percent increase in LEXP and LINVP results in a 0.54 percent and 1.16 percent long-run increase in aggregate imports, respectively, while a one percent

increase in TP results in a 0.52 percent decrease. The results also show that, in the short run, a one percent increase in DLEXP and DLINVS results in a respective 0.35 percent and 0.78 percent increase in aggregate import demand, while a one percent increase DTP results in a 0.35 percent decrease.

In the case of Model 2, the results suggest that imports for consumer goods are positively influenced by consumer spending (LCS), foreign reserves (LFER) and lagged imports (LIMCON1) and negatively influenced by trade policy (TP). The results show that in the long run, a one percent increase in LCS and LFER results in a 1.71 percent and 0.64 percent increase in imports for consumer goods, respectively, while a one percent increase in TP results in a 1.31 percent decrease. In the short run, the results show that a one percent increase in DLCS, DLFER and DLIMCON1 results in a 1.24 percent, 0.44 percent and 0.63 percent increase in the demand for consumer goods, respectively, while a one percent increase in DTP results in a 0.97 percent decrease.

In the case of Model 3, the findings confirm that the demand for imported intermediate goods is positively related to exports (LEXP) and lagged imports for intermediate goods (DLIMDINT1), but negatively related to trade policy (TP). The findings show that a one percent increase in LEXP and TP result in a 0.91 percent increase and 0.32 percent decrease in imports, respectively. The short-run coefficients presented in Panel B confirm that a one percent increase in DLIMDINT1 and DTP respectively results in a 0.63 percent increase and 1.23 percent decrease in imports for intermediate goods.

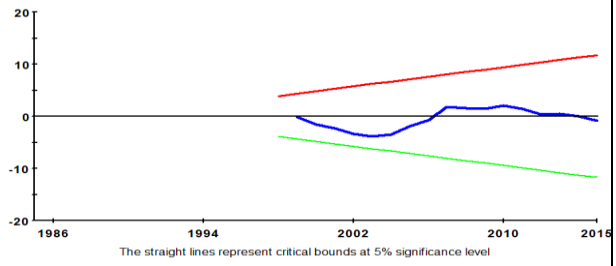
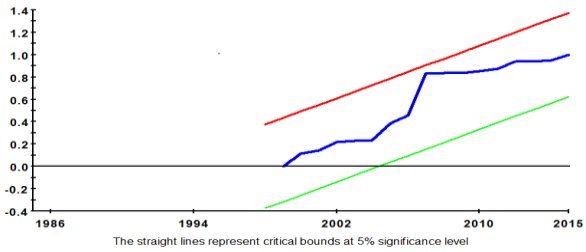
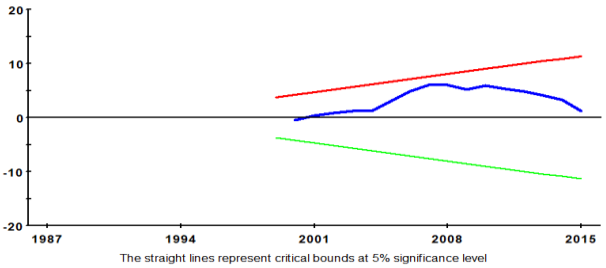
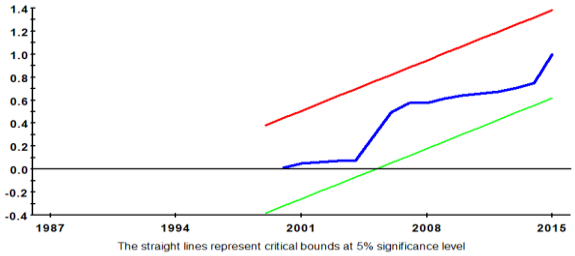
For Model 4, the findings show that capital goods are positively determined by exports (LEXP) in the short run and in the long run, but negatively influenced by investment (DLINVS) in the short run. In the long run, one percent increase in LEXP results in a 1.12 percent increase in imports for capital goods. The short-run results, however, reveal that a one percent increase in DLEXP leads to a 0.82 percent increase in capital goods imports, while a one per cent increase in DLINVS results in a 1.34 percent decrease.

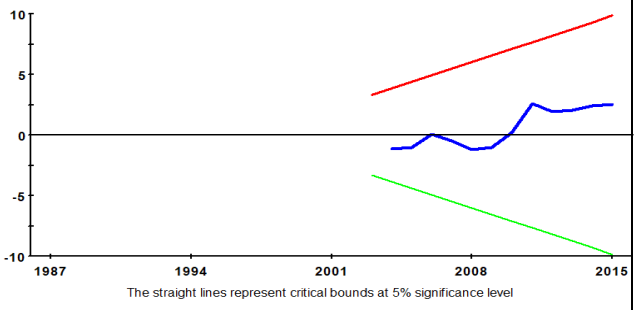
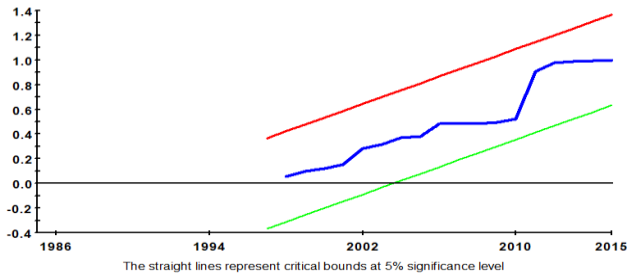
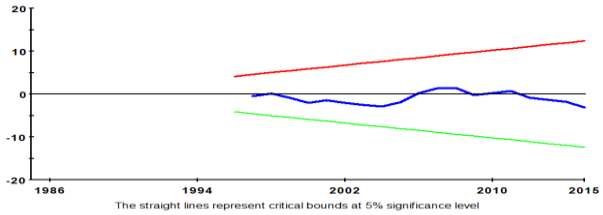
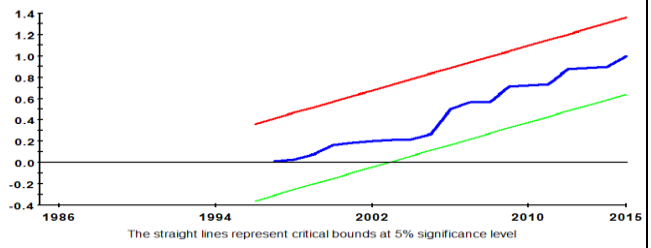
Based on these results, it can be concluded that import demand in Tanzania is positively determined by exports of goods and services, foreign exchange reserves, investment spending and consumer spending, but negatively determined by trade policy. The positive impact of these variables on import demand is supported by theory and is in line with the results from previous studies, such as those by Fukumoto (2012), Agbola (2009), and Bartholomew (2010).

Furthermore, the positive impact of these variables implies that economic policies regulating these variables in Tanzania encourage imports. However, it is recommended that, to address the negative impact of investment spending on capital good, the government should design fiscal policies in a manner that encourages import substitution, boosts domestic production capacity, and discourages consumption-oriented imports. The negative effect of trade policy is inconsistent with theory; however, it is supported by findings in previous studies, such as Narayan and Narayan (2005) and Samuel (2015).

Figure 1 shows the results of CUSUM and CUSUMSQ tests.

Figure 1. The CUSUM and CUSUMSQ tests

<table>
<tr><th colspan="2">Aggregate Imports (Model 1)</th></tr>
<tr><td>Plot of Cumulative Sum of Recursive Residuals
 
</td><td>Plot of Cumulative Sum of Squares of Recursive Residuals
 
</td></tr>
<tr><th colspan="2">Imports of Consumer Goods (Model 2)</th></tr>
<tr><td>Plot of Cumulative Sum of Recursive Residuals
 
</td><td>Plot of Cumulative Sum of Squares of Recursive Residuals
 
</td></tr>
<tr><th colspan="2">Imports of Intermediate Goods (Model 3)</th></tr>
</table>

Plot of Cumulative Sum of Recursive Residuals	Plot of Cumulative Sum of Squares of Recursive Residuals
	
Imports of Capital Goods (Model 4)	
Plot of Cumulative Sum of Recursive Residuals	Plot of Cumulative Sum of Squares of Recursive Residuals
	

Source: Own computation based on the results

The results of CUSUM and CUSUMSQ confirm that the four import demands models estimated in this study are stable.

6. CONCLUSION

In this study, the key drivers of import demand in Tanzania are examined for the period 1985-2015 using the ARDL approach. The study used both aggregate (Model 1) and disaggregate imports (Models 2, 3 and 4) to examine this linkage. The disaggregated imports include import demand for consumer goods – Model 2, intermediate goods – Model 3 and capital goods – Model 4. The estimated determinants include foreign reserves (FER), investment (INVS), exports (EXP), government spending (GS), consumer spending (CS), import price (RIP), and trade policy (TP). The results for Model 1 confirmed that aggregate imports are positively influenced by exports and investment, but negatively influenced by trade policy. For Model 2, consumer spending and foreign reserves were found to have a positive impact on consumer goods imports, while trade policy was found to have a negative effect. In the case of Model 3,

the findings show that imports for intermediate goods are is positively influenced by exports in the long run, but negatively influenced by trade policy in the short run. In Model 4, the results suggested that imports for capital goods are positively influenced by exports both in the short- and long-run, but negatively influenced by investment in the short run. Overall, the results confirmed that exports and trade policy are the main drivers of import demand in Tanzania. The results further confirm that each of these variables significantly affect import demand in at least two models and exports appear to be more influential.

Although efforts have been made to ensure that the study is empirically defensible – our study like other previous studies – still suffers from some limitations. The main limitation of our study mainly relates to data unavailability. For example, annual time series data was used in the study, which has been found to have some weaknesses for some variables when compared to quarterly data. Also, the study covered the period from 1985 to 2015, which translates to only 30 observations. The use of annual data and the selection of this period was based on data unavailability. This has also affected the proxies used for each of the employed variable. Future studies on this subject can examine the determinants of import demand for Tanzania or other countries using data covering a longer period when data becomes available. It would also add value to compare the results from those studies with the findings in this study. Also, the study examined the key determinants of import demand, and did not examine the causality between import demand and its determinants, as that was beyond the scope of the current study. Future studies may explore this analysis further and may examine whether there is a feedback effect between import demand and its determinants.

7. REFERENCES

Adam, A., Katsimi, M., & Moutos, T. (2011). Inequality and the import demand function. *Oxford Economic Papers, 10*(1), 367-384. DOI:10.2307/41683139

Agbola, F. W. 2009. Aggregate Imports and Expenditure Components in the Philippines: An Econometric Analysis. *Indian Economic Review, 44 (2), 155-170. https://www.jstor.org/stable/29793938.*

Alesina, A., & La Ferrara, E. (2000). Participation in heterogeneous communities. *Quarterly Journal of Economics, 115* (3), 847–904. https://doi.org/10.1162/003355300554935

Anaman, K. A., & Buffong, S. M. (2001). Analysis of determinants of aggregate import demand in Brunei Darussalam for 1964 to 1997. *Asian Economic Journal 15*(1), 61-70. https://doi.org/10.1111/1467-8381.00123

Arize, A. C., & Malindretos, J. (2012). Foreign exchange reserves in Asia and its impact on import demand. *International Journal of Economics and Finance, 4*(3), 21-32. http://dx.doi.org/10.5539/ijef.v4n3p21

Bakari, S., & Mabrouki, M. (2017). Impact of exports and imports on economic growth: new evidence from Panama. *Journal of Smart Economic Growth, 2*(1), 67-79.

Bathalomew, D. (2012). An econometric estimation of the aggregate import demand function for Sierra Leone, *Journal of Monetary and Economic Integration, 10*(4), 5-24.

Budha, B. (2014). The role of expenditure components in Nepal's import from India. *South Asia Economic Journal, 15*(1), 37-54. https://doi.org/10.1177%2F1391561414525720

Busse, M., & Koeniger, J. (2012). Trade and economic Growth: A re-examination of the empirical evidence. *SSRN Electronic Journal.* http://dx.doi.org/10.2139/ssrn.2009939

Chimobi, O. P., & Ogbonna, B. B. C. (2008). Estimating aggregate import-demand function in Nigeria: a co-integration approach. *Journal of Research in National Development, 6*(1), 170 – 182. DOI:10.4314/jorind.v6i1.42411

Dutta, D., & Ahmed, N. (2004). An aggregate import demand function for India: a co-integration analysis. *Applied Economic Letter, 11*(10), 607-613. http://dx.doi.org/10.1080/1350455042000271134

Fukumoto, M. (2012). Estimation of china's disaggregate import demand functions. *China Economic Review, 23*(2), 434-444. https://doi.org/10.1016/j.chieco.2012.03.002

Fatukasi, B., & Awomuse, B. O. (2011). Determinants of Import in Nigeria: Application of Error Correction Model. *Centrepoint Journal, Humanities Edition, 14 (1), 52-72. ID: 153395750.*

Hossain, S., Sen, K. K., Abedin, T., & Chowdhury. M. S. R. (2019). Revisiting the import demand function: a comparative analysis. *Dynamic econometric models, 9*, 5-27. DOI:10.12775/DEM.2019.001

Huang, L. C., & Chang, S. H. (2014). Revisit the Nexus of Trade Openness and GDP Growth: Does the financial System Matter? *The Journal of International Trade & Economic Development, 23,* 1038–1058. https://doi.org/10.1080/09638199.2013.830638

Mishra, P. K. (2012). The dynamics of the relationship between imports and economic growth in India. *South Asian Journal of Macroeconomics and Public Finance, 1*(1), 32-45. DOI:10.1177/227797871200100105

Msaraka, S. S., & Hongzhong, Z. (2015). Economic growth and trade performance in Tanzania. *Developing Country Studies 5*(18), 142-149.

Narayan, P., & Smyth, R. (2005). The determinants of aggregate import demand in Brunei Darussalam: an empirical assessment using a cointegration and error correction approach. *The Singapore Economic Review, 50*(2), 197–210. https://doi.org/10.1142/S0217590805001974

Narayan, S., & Narayan, D. (2010). Estimating import and export demand elasticities for Mauritius and South Africa. *Australian Economic Papers, 49*(3), 241-252. https://doi.org/10.1111/j.1467-8454.2010.00399.x

Mansi, N., & Nteegah, A. (2016). Analysis of factors influencing import demand in Nigeria. *International Journal of Arts Humanities and Social Sciences , 1*(5), 33-42.

Omoke, P. C. (2012). Aggregate import demand and expenditure components in Nigeria. *AUDCE, 8*(1), 150-163.

Pesaran, M. H., & Pesaran, B. (2009). *Time Series Econometric using Microfit 5.0.* Oxford University Press: Oxford.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics, 16*(3), 289-326. https://doi.org/10.1002/jae.616

Razafimahefa, I. F., & Hamori, S. (2005). Import demand function: some evidence from Madagascar and Mauritius. *Journal of African Economies, 14*(3), 411-434. http://dx.doi.org/10.1093/jae/eji014

Samuel, G. M. (2015). Trade liberalization and disaggregated import demand in Uganda. *Modern Economy, 6*(3), 317-337. http://dx.doi.org/10.4236/me.2015.63030

United Nations Conference on Trade and Development database (2015). Retrieved from http://www.unctadstat.unctad.org , October 2018.

World Bank (2016). *World Bank Indicators*. Retrieved from http://www.worldbank.org/indicators, September 2017.

Yahia, A. F. (2015). An econometric estimation and evaluation of the import function in the Libyan economy. *Journal of Economics, Business and Management, 3*(10), 995-998. http://dx.doi.org/10.7763/JOEBM.2015.V3.322

Zahonogo, P. (2016). Trade and economic growth in developing countries: evidence from Sub-Saharan Africa. *Journal of African Trade, 3*(1–2), 41-56. https://doi.org/10.1016/j.joat.2017.02.001