International Journal of Multidisciplinary Research and Development
Online ISSN: 2349-4182, Print ISSN: 2349-5979
Impact Factor: RJIF 5.72
Received: 04-04-2018; Accepted: 09-05-2018
www.allsubjectjournal.com
Volume 5; Issue 5; May 2018; Page No. 14-18

The impact of the duty drawback scheme on exports: The case of Zambia

Jonathan Msoni
Member of the Economics Association of Zambia

Abstract
This study investigated the impact of the duty drawback scheme on exports in Zambia using monthly data covering the period M1 2008 to M12 2016. The Autoregressive distributed lagged (ARDL) bounds approach was used to test for cointegration. The Bound tests suggested that there was evidence of a long run relationship between duty drawback and exports. The short run and long run results revealed that duty drawback did not contribute to export promotion in Zambia. This could be attributed to the rent seeking behavior of the exporters and the inefficiencies in the administration of the duty drawback scheme.

Keywords: duty drawback scheme, autoregressive distributed lagged model

1. Introduction

Export promotion has appropriately been an important policy objective of the Zambian government for many years. This has been done through many incentive programs designed to attract more firms into exporting by offering help in product, market identification and development. From 2001, the government embarked on a path of export-led industrialization through the introduction of the Export Processing Zones (EPZs). Export processing zones (EPZs) were aimed at achieving the goal of economic development through boosting the manufacturing industry in a bid to increase and promote export. This was to be achieved by setting up or designating various areas or warehouses as free zones to create an environment that was friendly to manufacturing for exports. Incentives such as tax exemptions for the import of required raw materials were given in these zones.

That being the case, raw materials and intermediate goods imported into the zone was exempted from paying import taxes on the understanding that outputs from the zone would be exported. However, considering that the scheme was introduced when companies had already been set, it was not feasible to declare a geographical area as an EPZ since some of the entities in the areas were not producing goods for export. That complication brought out the challenge of control leading to government shelving the scheme.

In 2007, Zambia modified and updated the previous EPZ act of 2001 by introducing the Multi Facility Economic Zone (MFEZ) under Section 18 of the Zambia Development Agency act. The implementation of the MFEZs in Zambia was designed to make Zambia competitive through increased activity in the trade and manufacturing sectors, which has numerous positive spillover effects in other sectors such as utilities, transport, agriculture and services. The MFEZs were envisaged as special industrial zones for both export-oriented and domestic-oriented industries.

Despite having these policies around to boost investment and exports, Zambia has another scheme that seeks to subsidize and expand exports through government intervention. This policy is a duty drawback scheme facilitated through the Zambia Revenue Authority. Although most export promotion measures are regarded as prohibited subsidies under the current World Trade Organization (WTO) system, one of the non-prohibited export promotion measures is the duty Drawback (International Monetary Fund (IMF), 2002) [9]. Despite the duty drawback scheme not being a direct export subsidy, it may have the same effect as export subsidies and for this reason is strictly regulated by the WTO (Gandolfo, 2006) [4].

A duty drawback is an export subsidy determined as a percentage of the tariffs paid on the imported inputs used in its production. As with an export subsidy, a duty drawback will stimulate exports by offsetting the export-restraining effects of tariffs on the imported inputs. A full duty drawback allows export industries to obtain imported inputs at world prices (Krueger & Rajapatirana, 1999) [10]. Tariff on input acts like a tax on exports in the sense that tariffs imported inputs raise the cost of export production, thereby damaging competitiveness of the export sector. Many countries have tried to eliminate source of the tax on exports by instituting duty drawback schemes, which provides exporters with access to imported inputs at world prices (International Monetary Fund (IMF), 2002) [9].

Duty drawbacks instituted are expected to lower the cost of imported and, consequently, to increase the exporting firms' competitiveness (Ianchovichina, 2005) [8]. The duty drawback systems are also justified in the sense that they correct the anti-trade bias imposed by high tariff levels (Cadot, Jaime, & Marcelo, 2003) [1]. Unlike developed countries whose import duty rates are low, there is much room for application of duty drawback to promote export developing countries where average input duty rates are high (Thomas & Nash, 1991) [15].

It is widely accented that, growth of exports increases technological innovation, covers the domestic and foreign demand and also increases the inflows of foreign exchange,

which could lead to greater capacity utilization and economic growth (Shihab, Soufan, & Abdul-Khaliq, 2014) [14].

The present paper seeks to establish the impact of the duty drawback scheme on export growth in Zambia. The aim is to help contribute to the public debate about duty drawback scheme in Zambia. By deepening the understanding on the impact of duty drawback on exports this will contribute to the knowledge base and help policymakers in their policy making. It is against this background that this study has being carried out that despite this incentive being offered by the government and the recent growth of the non-traditional exports in Zambia, the real extent of the duty drawback on exports is not known with certainty.

2. The Duty drawback System of Zambia

Although duty drawback scheme had been, in theory, available to exporters in Zambia, it had not been functioning effectively until 1st April 1998. The administrative arrangements to implement the provisions of the law meant that the scheme became practically inoperable. Many companies did not bother to apply on the basis that the costs of successfully obtaining a refund were greater than the rebate when staff time was factored in to the equation. Those who successfully negotiated the system found that the 9 to 18 months wait to receive a refund eroded the real value of the refund. The alternative scheme, which came into effect on 1st April 1998, minimized the bureaucracy of the existing implementation while capturing the spirit that the law aimed to achieve. A duty drawback system based on input-output coefficients at the exporting firm or sector level was put in place. A feature of the system made administrative simplicity. The system also took account of the impact on prices of domestic supplies from tariffs on imports in the cost structure of exporters (ZRA, 2002) [16].

The scheme has currently 36 registered companies. These companies are mainly from the manufacturing sector with a few from the agro processing sector. The inputs used in production consist of wholly obtained or produced either locally or foreign. The inputs wholly obtained or produced in the COMESA or SADC region are accompanied with certificates of origin which makes the customs duty zero.

The scheme has challenges that affect it. The processing system is manual. This has the potential to open up fraud, related to misuses of the duty drawback system. The time taken to process duty drawback coefficients usually takes long making the applicant loss out on the refund during that time period which it could have being used in production. The scheme can also be subject to rent seeking purposes. It is difficult to check whether funds that have been obtained are being used for the intended purpose.

3. Literature Review

Many studies have focused on other determinants of export performance which have received widespread attention from policy makers and researchers. Despite many developing countries implementing the duty drawback scheme not much empirical work has being done in this area.

Mah (2007) [11] examined the effectiveness of the duty drawback system in the promotion of exports in China, using the Pesaran and Shin's autoregressive distributed lags model (ARDL). The annual data set in the study covered the period from 1979 to 2001 with the following variables; export, foreign income, foreign price, domestic price and the amount of duty drawback. The unit root tests showed that all concerned variables were integrated of order one. The findings showed that duty drawback was not significant in export promotion. The author concluded that the inefficiencies in administering the duty drawback such as the prevalence of the practice of over-reporting of imported inputs may have accounted for its ineffectiveness in export promotion.

In another study, Mah (2007) [12], examined whether or not the duty drawback system had contributed to promoting Korea's exports. The results showed that there were strong evidences of the positive effect of export subsidy in terms of duty drawback on export supply. This was attributed to the viewpoint of export-led economic growth strategy that the Korean government had pursued since the 1960s, regarded as a very valuable policy instrument. Furthermore, the fact that imposition of import tariff and then administering the duty drawback scheme may have led to resource allocational inefficiency for the national economy as a whole. That is, the efficiently managed duty drawback system may have contributed to export promotion significantly.

In addition, Haque and Kemal (2007) [6] evaluated the impact of export subsidies on Pakistan's exports using the ARDL approach. This was done by estimating the impact of two schemes-export financing and rebate/refund schemes—on export performance. The analysis revealed that, over the long run, the export financing scheme had a negative effect on exports while the rebate/refund scheme affected exports insignificantly. In the short run, the rebate/refunds scheme seemed to have a small positive impact. Subsidy schemes clearly did not seem to work, yet they had been retained for many years. It was concluded that the subsidy schemes did not achieve their objective to increase exports, suggesting that one or all the conjectures put forward by economists which are that these schemes mostly were not well targeted, not easy to administer, and open to rent-seeking, could be operative.

Hinkle *et al.* (2001) [7] showed that of thirteen African countries examined, none of the countries for which data were available had a duty drawback scheme that functioned efficiently. They showed that in Cameroon, the scheme was inefficient in its administration, and in Uganda, South Africa, Tanzania and Zimbabwe, uncertainties of payment and delays of up to a year in the reimbursement of import duties were major problems. Therefore, they concluded that the perceived value of these schemes to exporters of those developing countries was very low.

A large body of empirical work done on the impact on exports in Zambia has not focused on the export subsidy of duty drawback. For Zambia, this is to our knowledge the first study that has examined the impact of duty drawback on exports.

4. Data and Methodology

4.1 Data

In this study, the time series data is monthly and is from the period M1 2008- M12 2016. The percentage of non-traditional exports over total exports is used as a proxy of exports while the percentage of the duty drawback refunds over non-traditional exports is used as a proxy of duty drawback. The

data is collected from the central statistical office and Zambia Revenue Authority respectively. The choice of this sample is based on the availability of the data.

4.2 Method

The study employed the Auto-Regressive Distributed Lagged (ARDL) model approach. This approach was used because it helps in establishing the short and long-run relationships or dynamics among the variables and it incorporates both demand and supply factors. The advantage of using this approach compared to other methods such as Engel-Granger (1987) [3] and the Gregory and Hansen (1996) [5] is that it is applicable regardless of the order of integration of the variables used in the model.

The other advantage cited by Pesaran, Smith, and Shin (2001) [13] is that when there is a single long run relationship, the ARDL procedure can distinguish between dependent and explanatory variables. That is, the ARDL approach assumes that only a single reduced form equation relationship exists between the dependent variable and the exogenous variables.

Hence, the general ARDL representation is specified as:

$$\Delta Exports_t = \beta_0 + \sum_{t=1}^{p} \delta_i \Delta Exports_{t-1} + \sum_{t=1}^{q} \omega_i \Delta Drawback_{t-1} + \varphi_1 Exports_{t-1} + \varphi_2 Drawback_{t-1} + \varepsilon_t \quad (1)$$

Where Δ and ε_t are the difference operator and the error term respectively. To test for the existence of a long-run equilibrium relationship, the Bounds testing approach developed by Pesaran *et al.* (2001) [13] is utilised. The test is performed under the following hypothesis;

$$H_0: \delta_1 = \delta_2 = 0 \; vs \; H_1: \delta_1 \neq \delta_2 \neq 0 \quad (2)$$

The bounds testing procedure is based on the joint F-statistic or Wald statistic. The computed F-statistic is compared to the two asymptotic critical values developed Pesaran *et al.* (2001) [13]. The lower bound assumes variables are I(0) whilst the upper bound assumes I(1) variables. The null hypothesis of no cointegration is rejected if the computed F-statistic is greater than the upper critical value bound; otherwise the null hypothesis is not rejected.

Based on equation (1) the following ARDL based error correction model required for the short run result is specified as follows:

$$\Delta Exports_t = \beta_0 + \sum_{t=1}^{p} \delta_i \Delta Exports_{t-1} + \sum_{t=1}^{q} \omega_i \Delta Drawback_{t-1} + \theta_1 ECT_{t-1} + \mu_t \quad (3)$$

Where δ_i, and ω_i represent the short run coefficients and θ_1 the extent of disequilibrium correction.

5. Empirical Results

Before we proceed with the ARDL bounds test, we test for stationarity for all the variables to determine their order of integration. In this study we used the conventional Augmented Dickey Fuller unit test and the Dickey-Fuller generalized least square (DF-GLS) de-trending test proposed by Elliot et al (1996) [2]. This is to ensure that the variables are not I(2) so as to avoid spurious results. In the presence of variables integrated of order two, we cannot interpret the values of the F statistics provided by Pesaran *et al.* (2001) [13]. As can be seen from table 1, all the variables in the model become stationary at level making them I(0) variables. While in table 2, exports become stationary after first difference.

Table 1: Unit Root Test using Augmented Dickey Fuller (ADF)

Variables	ADF Stat	5% Critical Value	Order of integration
Log Duty drawback	-7.087610	-2.888669	I(0)
Log Exports	-4.079676	-2.888669	I(0)

***Source*:** Author's computation using E-views

Table 2: Unit Root Test using Dickey Fuller Generalized Least Square (DF-GLS)

Variables	DF-GLS Stat	5% Critical Value	Order of integration
Log Duty drawback	-3.182205	-.943853	I(0)
Log Exports	-11.17280	-.943912	I(1)

***Source*:** Author's computation using E-views

The calculated F-statistics for the bound test are present in Table 3, which also include the critical values for the upper and lower bounds. The calculated F- statistic is 6.616, which is higher at all the levels of significance. This implies that the null hypothesis of no cointegration is rejected and therefore there is a long run relationship between exports and duty drawback.

Table 3: Bounds test for Cointegration

Significance	Lower Bound Value	Upper Bound Value
10%	4.04	4.78
5%	4.94	5.73
2.5%	5.77	6.68
1%	6.64	7.84
Calculated F-statistic = 6.616329, K=1		

***Source*:** Author's computation using E-views

Since the cointegration results reveals that there exists a long run equilibrium relationship, the long run and short run estimates are reported in table 4 and table 5 respectively. The ARDL (4, 1) was used for the model. The lag structure of the ARDL model was determined by the Akaike Information Criterion, and the lag structure was obtained as the appropriate lag structure.

From the long run estimates in table 4, the coefficient for duty drawback was found to be negative and statistically significant. The partial elasticity of exports in respect to duty drawback was found to be -0.28077. This meant that a 1 per cent increase in duty drawback would result in a 28.1 per cent decrease in exports. This result implied that duty drawback did not contribute to export growth in Zambia in the long run. In the case of Haque and Kemal (2007) [6] they found the coefficient to be positive but insignificant in the long run suggesting that the scheme did not seem to work in Pakistan.

Table 4: Long- Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log Duty drawback	-0.28077	0.128715	-2.18133	0.0316**
Constant	3.036054	0.11665	26.02698	0.0000

** denotes 5% level of significance

Table 5: Short- Run ARDL-ECM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Log Exports (-1))	-0.24898	0.101145	-2.46158	0.0156**
D(Log Exports (-2))	-0.25189	0.09407	-2.67769	0.0087*
D(Log Exports (-3))	-0.13563	0.090504	-1.4986	0.1372
D(Log Duty drawback)	-0.08962	0.018758	-4.77785	0.0000**
CointEq(-1)	-0.20248	0.066617	-3.03949	0.0030
R^2 = 0.655445, Breusch Godfrey LM test (Prob >Chi square) = 0.0906 Breusch- Pagan-Godfrey (Prob > Chi square) = 0.8689				

*, ** and *** denotes 1%, 5% and 10% level of significance, respectively

The Breusch Godfrey test and the Durbin Watson statistic confirmed that the model was not faced with autocorrelation or with heteroscedasticity. The coefficient of the error correction term as expected was negative and significant thereby confirming the existence of a long run relationship between the variables. The results implied that about 20.3 per cent of disequilibrium was corrected within a month as the frequency of the data is monthly.

From the short run model, it was found that the one month past exports did not contribute to the export growth. Furthermore, duty drawback was found to negatively influence export growth since the coefficient was found to be negative and significant. On average, when there was a percent increase in duty drawback in one month, exports were expected to reduce by 8.96 percent. The result implies that duty drawback does not contribute to exports promotion in the short run. Mah (2007) [11] found the coefficient to be positive but insignificant and concluded that the duty drawback did not contribute to export promotion for China while Haque and Kemal (2007) [6] found that in the short run, the rebate/refunds scheme had some positive impact on exports in Pakistan.

6. Conclusion and Suggestions

The paper sought to find the impact of the duty drawback scheme on the export growth for Zambia using monthly data for the period 2008-2016. The ARDL (4, 1) was used to estimate the impact of the duty drawback on export growth. The ARDL bounds test approach for cointegration revealed that the concerned variables were cointegrated, implying an existence of a long run relationship. The regression results from both the short and long run estimates showed that the duty drawback scheme did not contribute to export promotion in Zambia. This could be attributed to the rent seeking behaviour of exporting companies and the inefficiencies in the administration of the duty drawback scheme. The processing of the duty drawback claims are manual and this has the potential of fraud and collusion. It is worth noting that some of the export products on the duty drawback scheme are semi processed such as cotton lint, sawn timber, and raw tobacco. The government should only allow finished products to be on the scheme this is to counteract the effect of supporting certain imports that are produced by raw materials exported out of Zambia on the duty drawback scheme. The government should therefore reveal the whole scheme and strengthen its duty drawback administration.

7. References

1. Cadot O, Jaime D, Marcelo O. The Protectionist Bias of Duty Drawbacks: Evidence from Mercosur, Journal of International Economics. 2003; (59):161-182.
2. Elliot G, Rothenberg T, Stock J. Efficient tests for autoregressive unit root, Econometrica. 1996; (64):813-836.
3. Engel R, Granger C. Co-Integration and Error Correction: Representation, Estimation and Testing, Econometrica. 1987; 55(2):251-276.
4. Gandolfo G. International Trade: Theory and Policy, Berlin, Springer-Verlag, 2006.
5. Gregory A, Hansen B. Residual based co-integration tests in models with regime shifts, Journal of Econometrics. 1996; (70): 99-126.
6. Haque N, Kemal M. Impact of Export Subsidies on

Pakistan's Exports. Pakistan Institute of Development Economics, 2007.
7. Hinkle LE, Herrou-Aragon A, Kubota K. How Far Did Africa's First Generation Trade Reforms Go? Mimeo, World Bank, 2001.
8. Ianchovichina E. Duty Drawbacks, Competitiveness and Growth: Should China Reform Its Duty Drawback System? World Bank policy research working paper, 2005, 3498.
9. International Monetary Fund (IMF). The Cases for and against Tax Incentives. IMF Survey, 2002,182-185.
10. Krueger, A. O., & Rajapatirana, S. The World Bank Policies towards Trade and Trade Policy Reform. World Economy, 1999, (113), 717-740.
11. Mah, J. S. Duty drawback and export promotion in China, The Journal of Developing Areas, 2007,133-140.
12. Mah, J. S. The effect of duty drawback on export promotion: The case of Korea. Journal of Asian Economics, 2007,18(6), 967-973.
13. Pesaran, M., Smith, R., & Shin, Y. Bounds Testing Approaches to the Analysis of Level Relationships. Journal Of Applied Econometrics, 2001, (16), 289-326.
14. Shihab, R., Soufan, T., & Abdul-Khaliq, S. The Causal Relationship between Exports and Economic Growth in Jordan, International Journal of Business and Social Science, 2014, 5(3).
15. Thomas, V., & Nash, J. Best Practices in Trade Policy Reform, A World Bank and Oxford University Press,1991.
16. Zambia Revenue Authority (ZRA). Duty drawback Scheme Guide, Unpublished, 2002.