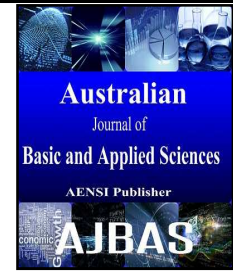




AUSTRALIAN JOURNAL OF BASIC AND APPLIED SCIENCES

ISSN:1991-8178 EISSN: 2309-8414
Journal home page: www.ajbasweb.com



The Impact of trade Liberalization on Tax Revenue: A study on Libya economy from 1982-2012

¹Samia M. M Alhammali and ²Sohail Ahmed

¹Faculty of Accounting and Finance, Management & Science University (MSU), Malaysia

²Faculty of Business (FBM), University Technology MARA (UiTM), Malaysia

Address For Correspondence:

Samia M. M Alhammali, Faculty of Accounting and Finance, Management & Science University, Malaysia,
Phone number: +60173473406; E-mail: lgen1919@gmail.com

ARTICLE INFO

Article history:

Received 26 July 2016

Accepted 21 September 2016

Published 30 September 2016

Keywords:

Tax revenues, Trade liberalization, Libya.

ABSTRACT

Background: The issue of the impact of trade liberalization has been the subject of intense debate, furthermore, there is ambiguity in the literature on the impact of trade liberalization on tax revenues. For developing countries, the main concern is the potential adverse fiscal due to major of trade liberalization by reduction of tariffs and this tends to be one of the major attention of developing countries in opening up their economies. **Objective:** This paper discusses whether trade liberalization is a major determinant of tax revenues in Libya utilizing time series data from the period 1982-2012. The ARDL bound test approach was applied to investigate the co-integration relationship between trade liberalization and tax revenues. **Results:** The finding revealed trade liberalization has an insignificant p-value while it has a negative impact on tax revenues. Whilst, both exchange rate and inflation have a significant negative effect on tax revenues. Finally, the tariff tax displays a significant positive effect on the dependent variable in the applied model in this in the long run.

INTRODUCTION

For the latter part of the twentieth century, the Trade reforms have been a major economic feature of the world trade system. For developing countries, the main concern is the potential adverse fiscal due to major of trade liberalization by reduction of tariffs (Keen and Baunsgaard, 2005). In theory and empirical literature both there is an ambiguous relationship between tax revenue of trade and trade liberalization (Gabriel and Obeng, 2008). Trade liberalisation in the form of converting quantitative restrictions to tariffs can initially lead to an increase in trade tax revenue. Further liberalisation in the form of tariffs cut can cause trade tax revenue loss on one hand, but can also amount to an increase in the volume of imports, and hence the tax base and revenue. The net effect of trade liberalisation depends on many factors, including the structure of liberalisation and the elasticity of demand for imports (Gabriel and Obeng 2008).

Just like many other developing countries, in Libya trade is considered as a sign of growth and it is believed to expand trades, create more job opportunities, and increase the earning for both, the people and the government (WTO, 2005). The aforementioned motivational factors have led Libya to be engaged in trading for the last few decades. The interdependency between the Libyan economy and the rest of the world, the percentage of trade openness has reached about 58% in 2009. In order to cater for this vulnerable situation, since 2002 the Libyan government further improved the trade liberalization policy by facilitating import procedures. In addition, the system of import licenses was eliminated to promote more economic freedom, Libyan dinar exchange rate was revised, and tariffs were lowered considerably on imports which helped to cater with protectionism. It is anticipated that due to trade liberalization on the basis of theory, trade liberalization may lead to a reduction in the individual tax base, and the decline in individual tax revenue. However, in the

Open Access Journal

Published BY AENSI Publication

© 2016 AENSI Publisher All rights reserved

This work is licensed under the Creative Commons Attribution International License (CC BY). <http://creativecommons.org/licenses/by/4.0/>



Open Access

ToCite This Article: Samia M. M Alhammali and Sohail Ahmed., The Impact of trade Liberalization on Tax Revenue: A study on Libya economy from 1982-2012. *Aust. J. Basic & Appl. Sci.*, 10(14): 132-136, 2016

context of Libya, the echoes of tax to this trade liberalization policy are not clearly evident. This absence can be detected in the fluctuation, a rise was noted in exports from 3.3743 million in 1999s to 6185.6 million in 2000s and then declined again to 5563.1 million in 2001s. On the other hand, a rise in taxes was noted from 112.29 million in 1999s to 159.03 million in 2000s and continued to rise to 196.27 million in 2001s. It was noted that after 2002s, the exports increased from 18431.8 million to 39955.2 million in 2005s. On the contrary, individual tax lowered from 304.65 million in 2003s to 160.96 in 2005s.

Therefore, it is evident that the effect of trade liberalization on the taxes and individual tax base is still not known completely and due to this ambiguity a gap has evolved between application of this policy and its anticipated impact. As already discussed above, there might be negative implications of trade liberations on different tax types which may result in the weakening of the performance of the overall tax system of a country. Keeping in mind the conflicting evidence found in the existing literature, this study attempts to explore the effect of trade liberalization on trade, tax revenue in the context of Libya. The study takes into account the periods between 1982 and 2012. Moreover, this study investigates that whether trade liberalization is a major determinant of trade tax revenue in Libya.

Literature Review:

1. Theoretical literature:

Theoretically, the relationship between tax revenue and trade liberalization is considered to be an indirect outcome derived mainly from the response of consumption and production decisions to price changes occasioned by trade policy changes (Blejer and Cheasty, 1990). The relation existing between trade tax rate reduction and overall tax revenue is not simple. Some of the complications are as follows: (1) The imposed tax rate could be so high that it can result in a "Laffer-curve" type effect meaning that the reduction might actually soar the revenues from trade taxes, (2) It is possible that trade liberalization amplifies economic growth resulting in increased overall tax revenues, and (3) The government can take initiatives to make readjustments to transfer tax burden on other sources to balance and stabilize the fiscal position (Moore & Zanardi, 2010).

For the case of the link between trade liberalization and tax revenue, including domestic revenue is also complicated in nature. It depends on many different factors, including tax system structure and administrative capabilities (Keen and Ligthart, 2002). Different assumptions are stated based on relationships between different macroeconomic variables, including inflation and exchange rates, and tax revenues are also reported to be influenced by macroeconomic variation (Agbeyegbe et al., 2006).

According to theory, the depreciation in exchange rates makes an impact on international trade tax revenue through two different effects, namely valuation and volume effects. The effects may result in reinforcing or offsetting any changes in one on the other in a way that the trade revenue outcome will be determined depending on both, import demand elasticities and, the response from an export supply. In addition, depreciation in exchange rates can also facilitate higher inflation coupled with a decline in import demand. Higher inflation tends to maximize the tax liability. However, practically the real value of tax revenues is reduced due to the poor performance of assessment and collection (Khattri and Mohan, 2002).

Ebrill et al., (1999) mentioned that implications of trade liberalization can have various effects on the revenue based on the imposed restrictions and other economic policies of a country. These effects on revenue can be positive, negative and neutral. It is a critical issue which carries significant importance for developing nations, however, to date lesser attention has been gained on the relationship between trade liberalization and tax revenues.

2. Empirical Literature:

Existing studies considerably vary with their conclusions due to differences in country, timeline of samples, and revenue data taken into consideration. The study by Tanzi (1989) covers several hypotheses based on the relationship amongst different macroeconomic variables. Besides other variables, the study includes inflation, exchange rates, and tax revenue. He mentioned that usually an inverse relationship exists between tax revenue and the actual level of a country's exchange rate. Overvaluation plays a significant role in suppressing import and export bases measured in domestic currency terms. This results in the decline of revenue collection from international trade taxes, sales taxes and excise taxes. According to Khattri and Rao (2002), the effect of trade liberalization on revenue is negative. The study considered the period between 1978 -1999, for a total aggregate sample of 80 countries (including, developed and developing). For economic analysis, the study opted to use a fixed-effects regression framework. Agbeyegbe et al (2004) examined the relationship between trade liberalization, exchange rate changes and tax revenue in Sub-Saharan Africa using a panel of twenty-two countries for the periods spanning 1980 to 1996. Utilizing a General Method of Moment Regression technique the study found that the relationship between trade liberalization and tax revenue is sensitive to the measure used to proxy trade liberalization but that in general trade liberalization is not strongly linked to higher income tax revenue. The study therefore concluded that trade liberalization accompanied by the appropriate macroeconomic policies can be undertaken to enhance overall revenue yield. In different study, Mushtaq et al.

(2012) used time series data spanning between 1975-2010 to estimate determinants of tax revenue during the period of trade liberalization for Pakistan. The study used econometric methods to estimate the impact of different variables on trade tax revenues. The findings from the study showed that exchange rate manifested a negative relation to tax revenues. In addition, trade openness, trade share and GDP manifested a positive relation with tax revenues. A recent study by Karimi et al (2016) by used a panel 79 developing countries over the period 1993-2012 to investigated the effect of trade liberalization on tax, they found that trade liberalization in the form of trade openness has not a strong impact on major tax sources of developing countries.

MATERIALS AND METHODS

This section briefly summarizes the main theoretical and empirical approaches that are used in identifying the most influential variables for our analysis. The estimated empirical model that tends to capture the effect of the main tax determinants that are still mostly used in the literature today, namely: fiscal variables, Gross Domestic Product (GDP) per capita on Tax Revenues builds on original tax model developed by Heller (1975), Sen Gupta (2007), Khattri and Rao (2002), have used a variety of methods to estimate tax revenue performance. The most ordinarily utilized approach is the behavioural approach or to regress the tax performance on variables that serve as proxies for a country's tax performance. This means that the dependent variables in the regression analysis are taken as tax revenue performance while the variable that serves as proxies for a country's tax revenue performance are taken as independent variables. The set of variables includes the major determinants of tax revenues of a country. In a functional form which is represented as follows:

$$TR = f(OPEN, RER, INF, IMP, TT)$$

The variables used in this study are drawn from literature and that have been suggested by economic theory and previous empirical studies, the variables are selected owing to their ability to influence the level of tax revenue performance. Consequently, using a simplified regression estimate, the tax revenue equation that estimates the Determinants of Tax Revenues is econometrically specified based on the formula of Alfaro et al. (2004), which is expressed as follows:

$$TR_t = \alpha_0 + \alpha_1 OPEN_t + \alpha_2 RER_t + \alpha_3 INF_t + \alpha_4 IMP_t + \alpha_5 TT_t + \varepsilon_t$$

Where (t) is the time index, *OPEN* denotes trade liberalization which is import + exports, *RER* denotes real exchange rate, *INF* denotes inflation, *IMP* denotes imports goods, *TT* denotes tariff taxes, and ε is the error term.

RESULTS AND DISCUSSION

Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) (1988) unit root tests are estimated for individual series to detect the stationary or unit root situation of each variable.

Table I: Augmented Dickey-Fuller (ADF) and PP Tests

Variable	Augmented Dickey-Fuller Test				Phillips-Perron Test			
	ADF Statistic	1%	5%	10%	PP Statistic	1%	5%	10%
TR	-4.836	-4.343	-3.584	-3.230	-5.617	-4.334	-3.580	-3.228
Open	-3.903	-4.343	-3.584	-3.230	-6.619	-4.334	-3.580	-3.228
ATR	-4.537	-4.343	-3.584	-3.230	-4.199	-4.334	-3.580	-3.228
Exchange	-6.051	-4.343	-3.584	-3.230	-4.138	-4.334	-3.580	-3.228
Inflation	-5.102	-4.343	-3.584	-3.230	-6.258	-4.334	-3.580	-3.228
IMP	-5.27	-4.343	-3.584	-3.230	-5.996	-4.334	-3.580	-3.228
TT	-5.09	-4.343	-3.584	-3.230	-5.435	-4.334	-3.580	-3.228

Table I displays the unit-root test estimation through ADF and PP tests for the model. In the result of time series data were showed that the null hypothesis of non-stationary characteristics rejected at level one for almost all variables. Tax revenue, Exchange rate, Inflation rate, Import and Tariff Tax rate are stationary in (1%) a level one and OPEN is stationary at 5% level of significant. After preparing variables stationary, the relationship between the independent variables (in terms the Macroeconomic variables) and dependent variable (Tax Revenues) for the model was estimated using econometric techniques.

Table II: Lung-Run Coefficients for Libya's Tax Revenues

Variable	ARDL(2,0,0,0,0,0)			
	Coefficient	Std. Error	t-Statistic	Prob.
OPEN	-0.009423	0.048041	-0.196147	0.8464
RER	-5.807139	1.839274	-3.157299	0.0048
IMP	0.038136	0.087349	0.436598	0.6669
TT	0.961110	0.535455	1.794941	0.0871
INF	-0.161459	0.061057	-2.644395	0.0152
C	12.484596	2.765513	4.514388	0.0002

Note: The dependent variable is (TR), for estimation used 31 observations over 1982-2012.

After investigating the best ARDL specification for the model of TR, long-run parameters were assessed. The static long-run steady state parameters of the model were obtained. Identifying TR as a proxy for the Tax revenue model, the long-run ARDL parameters were assessed based on the wide-ranging to a specific approach. Then, the ARDL parameters of a Long-run steady state are gained; hereafter the standard errors are not related directly to the stated elasticities. The long-run estimations diagnostic tests are also displayed. Based on the long run model and coefficients tables, OPEN has an insignificant p-value and hence it does not have an effect on Tax Revenue in this model while it has a negative coefficient which can be supported by latest studies in this scope such as (Karimi et al., 2016) since both of them reached a negative coefficient of OPEN on the tax revenue. On the other side, this output totally contradicts the finding of (Lutfunnahar, 2007), (Chaudhry & Munir, 2010) who show a positive correlation between OPEN and tax revenue. In the case of RER, it has a significant p-value and hence it has a negative effect on Tax Revenue in this model. A 1% increase of RER tends to decrease Tax revenue by 5.80% respectively. In addition, this output of the ARDL estimation indicated a negative effect of RER on the tax revenue which can be supported by findings of (Gaalya, 2015) that examined the relationship between RER and tax revenue. Regarding the next determinant of TR, the probability of IMP is more than 0.1 which lead to the insignificance of this variable while it has a positive coefficient in the same line as tax literature and economic theory says and can be certified by the output of (Stotsky & WoldeMariam, 1997) since both of them lead to a positive coefficient of IMP on the tax revenue. Likewise, the p-value of TT display a significant effect and hence, it has meaningful effect on the dependent variable in the applied model in a long run. Hence, a 1% increase of TT will lead to increase TR by 0.96% in a long run that shows the similar reaction as it is seen in previous studies such as (Gaalya, 2015) that investigate the relationship between TT and tax revenue. While the result of this study rejects the findings of (Sen Gupta, 2007) who proved a negative influence of TT on tax revenue. Finally, the significant probability of INF reveals that this variable has meaningful role in determining the dependent variable (TR). Therefore, a 1% increase of INF tends to decrease TR by 0.16% in long run which is in the same direction as literature said. In the case of Inflation, its negative coefficient result can be verified by the output of (Gaalya, 2015) since both of these studies reached a negative effect of Inflation on tax revenue. On the contrary, the output of the current study totally different with finding of (Chaudhry & Munir, 2010) who showed that the Inflation positively correlated with tax revenue.

Conclusion:

This present study has employed the bound test approach (ARDL) method to define the impact of trade liberalization on tax revenues in Libya by utilizing time series data. The study revealed the following findings: there was a negative relationship between trade liberalization (OPEN) and tax revenues in Libya over 1982-2012. Hence, OPEN had an insignificant p-value and did not have an effect on tax revenues. This an insignificant negative relationship was due to the high percentage of oil exports, this main that a rise in revenues of oil leads to decrease the need high revenues of tax. Further, exchange rate (RER) has the greatest negative impact on tax revenues. Likewise, the significant probability of inflation (INF) reveals that this variable has a meaningful role in determining the dependent variable (tax revenues). There was an insignificant positive relationship between import (IMP) and the tax revenue. Regarding the next determinant of TR, the p-value of tariff taxes (TT) displays a significant effect and hence, it has a meaningful effect on dependent variable (tax revenues). The combination effect will more than compensate the lower tariff rates and hence result in higher tariff tax' revenue then increase the tax revenues. Finally, these finding show more evidence of the presence of a stable long-run level co-integration relationship between tax revenues (dependent variable) and independent variables. As a conclusion, Libya needs to enhance the tax revenues over time by taking some steps like an intact tax system, convenient technology lastly, research and development.

REFERENCES

- Abhijit Sen Gupta, 2007. Determinants of Tax Revenue Efforts in Developing Countries. IMF Working Paper.
- Agbeyegbe, T.D., J.Stotsky and A. WoldeMariam, 2006. "Trade liberalization, exchangerate changes, and tax revenue in Sub-Saharan Africa. *Journal of Asian Economics*, 17(2):261-284.
- Baungsaard, T. and M. Keen, 2005. Tax Revenue and (or?) Trade Liberalization. IMF Working Paper, IMF, Fiscal Affairs Department.
- Blejer, M. and A. Cheasty, 1990. Fiscal implications of trade liberalization. *Fiscal Policy in Open Developing Economies*, pp: 66-81.
- CBL Central Bank of Libya, Economic Reports, Various Issues.
- Chaudhry, I.S. and F. Munir, 2010. Determinants of low tax revenue in Pakistan. *Pakistan Journal of Social Sciences*, 30(2): 439-452.

Ebrill, Liam, Janet Stotsky and Reint Gropp, 1999. Revenue Implications of Trade Liberalization. IMF Occasional Paper 99/80 (Washington: International Monetary Fund).

Gaalya, M.S., 2015. Trade Liberalization and Tax Revenue Performance in Uganda. *Modern Economy*, 6(02):228.

Gabriel, w. Brafo Insaiddoo and C.K. Obeng, 2008. Effect of Trade Liberalisation on Tariff Revenue in Ghana. *African Economic and Research Consortium Research Paper*.

Gupta, A.S., 2007. Determinants of tax revenue efforts in developing countries. *International Monetary Fund, IMF. Working, WP/07/184*.

Heller, P., 1975. A Model of Public Fiscal Behaviour in Developing Countries: Aid, Investment and Taxation. *The American Economic Review*, 65(3): 429-445.

Karimi, M., S.R.Kaliappan, N.W.Ismail and H.Z. Hamzah, 2016. The Impact of Trade Liberalization on Tax Structure in Developing Countries. *Procedia Economics and Finance*, 36: 274-282.

Keen, M. and J.I. Lighthart, 2002. Coordinating Tariff Reduction and Domestic Tax Reform. *Journal of International Economics*, 56(2): 489-507.

Khattry, B. and J. Mohan Rao, 2002. Fiscal faux pas?: an analysis of the revenue implications of trade liberalization. *World Development*, 30(8):1431-1444.

Lutfunnahar, B., 2007. A Panel Study on Tax Effort and Tax Buoyancy with Special Reference to Bangladesh. Working Paper 715: Policy Analysis Unit (PAU) Research Department Bangladesh Ban.

Moore, M.O and M.Zanardi, 2010. Does trade liberalization affect the composition of government spending in developing nations? (No. 2010_013). ULB--University Libre de Bruxelles.

Mushtaq, S., K.Bakhsh and S. Hassan, 2012. Estimating Impact of Trade Liberalization on Tax Revenue in Pakistan. *Journal of Social Sciences (Pakistan)*. Musgrave, R. A. 1969. *Fiscal systems*, v.10. New Haven: Yale university press.

Stotsky, J.G. and A. WoldeMariam, 1997. Tax effort in sub-Saharan Africa.

Tanzi, V., 1989. The Impact of Macroeconomic Policies on the Level of Taxation and the Fiscal Balance in Developing Countries. *Staff Papers, International Monetary Fund*, 36: 633-56.