# The Relationship between FDI flows and Tax Revenues in Ethiopia: an Evidence based on ARDL Model with a Structural Break

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**Abstract**

*The present study is an attempt to investigate the relationship between FDI flows and tax revenues in Ethiopia both at aggregate and disaggregate tax revenue levels such as income tax, corporate tax, trade taxes and business profit tax. There exist contending views among the researchers not only on the provision of fiscal incentives to attract foreign direct investment but also on the efficacy of the foreign direct investment in augmenting tax revenues. To verify the aforementioned objective, the study uses time series methods and cointegration analysis using Auto-Regressive Distributed Lag model and error correction model for the period 1974-2014 using a structural break for the year 1989. The results suggest that both foreign direct investment and gross domestic product had negative impact on the aggregate tax revenue both in the short run and long run. At disaggregated tax revenue components level mixed results have been observed. In view of these empirical findings, the study recommends that the provision of tax incentives need to be carefully assessed and monitored in Ethiopia. The costs and benefits related to these incentives need to be evaluated. The monitoring and evaluation system should be developed and implemented properly so as to enhance the tax revenues.*

## I Introduction

Sustainable and rapid economic growth of an economy depends significantly on the size and rate of investments. This requires usually large doses of investment both in terms of domestic as well as foreign investments along with increased amounts of capital and changes in technology. However many developing economies including Ethiopia suffer from low domestic saving levels leading to a huge gap between savings and investments. In fact, the domestic savings and investments in Ethiopia are not in the long run equilibrium, necessitating large capital flows into the country. In addition, Ethiopia witnessed severe debt burden as its burden increased phenomenally since 1982 though, recently all its debt indicators showing a decline mainly due to SIDC initiative and due to prudent debt management. This necessitated the inflow of foreign direct investment (FDI) as an alternative source of capital. FDI considered as an engine of growth as it can potentially generate productivity spillovers for the host economy, increase the volume of investment and its efficiency, expand the existing stock of knowledge, facilitate the access to leading technology, generate chains of new local suppliers, and open access to new markets. Consequently; in recent decades, there has been increasing competition among countries to attract FDI by offering a wide range of tax incentives (IMF, 2006).

The literature on tax competition has long been suggesting that increasing international integration might impose a growing pressure on tax policies, as increasing taxes on a mobile base (such as capital) in one country creates an incentive for tax payers to relocate abroad (Zodrow and Mieszkowski, 1986).

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Because tax base relocation is not the same to all countries, small countries have stronger incentives than large ones to cut taxes, (Wilson, 1991), and that they can initiate a "race to the bottom". This competition may lead to revenue losses necessitating a decline in the welfare through tax imposition on others.

FDI is widely considered to be beneficial for the host country as it provides new growth opportunities. However, there is an increasing concern about its efficacy of increasing the welfare of a developing country where a sufficient absorptive capability of the advanced technologies is either limited or not available. The reason is that the welfare of the host country depends on the impact of FDI on improving total tax revenues as well as augmenting factor incomes mainly labor. Ethiopia has been providing tax incentives to encourage private investment and to promote the inflows of foreign capital since 1992. Ethiopian Government has been providing extensive tax incentives to attract FDI. These include tax holidays, exemption of raw material and machinery import duties and exemptions of export duties on most export goods, etc. However, the evidence that is available suggests that these initiatives led to revenue losses than the positive economic effect (IMF, 2006). More importantly, the research on impact of FDI on tax revenues is scanty and is limited on Ethiopia using long period data. Hence, the purpose of this paper is to investigate the impact of FDI on Ethiopian tax revenue both at aggregate and disaggregate levels using long period data in a time series frame work. The paper is organized as follows: Section two is on brief review of theoretical and empirical literature available on the topic. The third section is on Ethiopian experience relating FDI and the tax incentives. The fourth section discusses the data collection methods and the econometric model used. The fifth section is about data analysis and empirical findings, and the final section comes out with the summary and conclusion.

## II Review of Theoretical and Empirical literature

Developing countries perceive FDI as a panacea for addressing their foreign exchange shortages, low investments, and tax revenue gaps, etc. and providing a wide range of incentives to attract the FDI inflows among which tax incentives assume important place. In general, there are several theoretical and empirical evidences available on the role and impact of FDI and a few on tax revenues. This section attempts to review some of these theoretical and empirical evidences briefly.

Foreign direct investment is considered as an alternative source to fill the gap between savings and the required investments in the developing countries. Foreign firms bring not only financial capital but also managerial techniques as well as entrepreneurial and technological skills that lack in least developed countries (LDCs). The government's budget deficits can also be filled by profit taxes collected from transnational companies. In addition, FDI is considered to promote employment generation; productivity spillovers; technology transfer; backward and forward linkages; skill transfer and development; and infrastructure development. However, FDI can also have negative impacts for the host countries through crowding out the local firms; repatriation of profits; and creating dependency on foreign investments. FDI might also inhibit the development of indigenous skills as the result of multinational companies' dominance over local enterprises (Todaro 1992). Similar to this, Hornberger, Battat & Kusek (2011) argue that empirical evidence over the last 15 years has not provided a universal net positive impact of FDI. Markusen (2001) modeled the welfare effects with a choice between FDI, exporting and licensing and found that FDI had the highest level of welfare effect on the host country. In the Knowledge-Capital Model, welfare effects of FDI with high trading cost was positive for skilled labor abundant countries. Welfare effect of FDI was also positive for large countries and for skilled labor abundant small countries with low trading cost (Markusen et al. 1996; Markusen 1997; Markusen 2002).FDI is beneficial to host countries and the

world through the transmission of technology, ideas, designs, taste, better management etc. The benefits also include filling saving resources gap, foreign exchange gap and balance of payments. On the other hand it has a potential to damage host countries' economies by suppressing domestic entrepreneurship, introduction of unsuitable products and technology, subjecting host countries to exploitation and stimulating class conflict leading to negative contribution (Badeji and Abayomi 2011). Certainly, initial investment of foreign firms improves the current and the capital account of the host country. However, in the long run, substantial import of intermediate and capital goods, repatriation of profit, interest, royalties and management fees may harmfully affect the foreign exchange position of the host country (OECD 2002). Economic welfare could be increased for host countries through tax revenue generated from the profits of foreign investment and larger capital stocks (MacDougall 1960). Kemp (1962) suggested that countries could introduce the optimal tax rate on foreign investment to increase welfare from FDI rather offering subsidies to attract FDI. Foreign investment generated government revenue and helped in filling saving and foreign exchange gaps (Streeten 1969). Caves (1971) claimed that foreign investment had a positive impact of welfare through collection of corporate income taxes. However, the flow of FDI to developing countries is subject to controls exercised by the host country over the condition of entry of foreign capital, regulations of the operations of foreign capital, restrictions placed on the remittance of profits and the repatriation of capital (Meir 1964). Lahiri and Ono (1998) in their investigation on FDI, local content requirement and profit taxation in developing countries posited that host countries must strike a balance between costs and benefits of FDI in formulating appropriate policies.

Several empirical studies have come out with the determinants of FDI that vary from study to study and from country to country. For instance, In Dunning (1998); Caves 1982 and 1996 identified four categories of motives for FDI: resource seeking (to access raw materials, labor force, and physical infrastructure resources), market seeking (horizontal strategy to access the host country domestic market), efficiency seeking (vertical strategy to take advantage of lower labor costs, especially in developing countries), and strategic-asset seeking (to access research and development, innovation, and advanced technology) (Cleeve 2008). According to UNCTAD (1998) as a general principle, host countries whose policies are most conducive to MNC activities, stand a good chance of attracting FDI. Thus MNCs look for the three categories of FDI determinants, namely, The Policy Framework for FDI (includes economic, political and social stability, rules regarding entry and operations, trade policies, tax policy etc.), The Economic Determinant includes (Market-seeking, Resource/asset-seeking and Efficiency-seeking determinants) and The Business Facilitation determinant includes (investment promotion, investment incentives, hassle costs (related to corruption, administrative efficiency, etc.), social amenities (bilingual schools, quality of life, etc.). Many studies proved that domestic market size is an important determinant of foreign direct investment (Shamsuddin 1994; Asiedu 2006). Usually it is proxied by GDP and per capita GDP. Natural resource is also found by many studies as important factor affecting the location decision of multinational enterprises. FDI flows to developing country mostly influenced by resource endowment of the host country. (Asiedu 2006; Onyeiwu and Shrestha 2004). Level of infrastructure was also found to determine flows of FDI. Since good infrastructure minimizes transaction cost countries with good infrastructure were able to attract more FDI. Political stability and Human capital are also among an important factor determining the inflows of FDI to developing countries. (Biswas 2002; Asiedu 2006; Noorbakhsh, Paloni and Youssef 2001). The growth of real GDP, export orientation and liberalization promotes the inflow of FDI while macroeconomic instability and poor infrastructure deter the inflow of FDI (Astatike and Assefa 2006).

Investment incentives in the form of tax reductions & exemptions, special tax allowances, low interest loans, subsidies and repatriation of capital and transfer of profits are also found to affect the inflows of FDI (Woldemeskel 2008). However, there is evidence that small enterprises are generally

more responsive to tax incentives than larger firms (Coyne, 1994). Studies of whether generous tax policies can compensate for weaknesses in the commercial environment and attract MNCs have led to the broad conclusion that tax exemptions can influence some of the investors, some of the time, but are generally only marginal factors (Morisset & Pirnia 2000). In the words of one investor cited by Morisset & Pirnia (2000) "tax exemption is like a dessert; it is good to have, but it does not help very much if the meal is not there". However the efficacy of these policy variables in determining FDI generated a considerable debate. (Zee, Stotsky and Ley 2002). Despite the fact that only quantitative factors are being considered, it is necessary to acknowledge that qualitative factors in terms of fiscal or investment incentives do also exist. "Investment incentives include *direct instruments* (grants or subsidies, tax holidays, investment tax credits, depreciation allowances etc.) used in order to reduce the fixed costs of making an investment and *indirect* instruments, such as trade tariffs and quotas and foreign exchange restrictions, that affect the decision to invest"**(**Pigato 2000**).** A tax policy of a country can have attraction or distraction effect on FDI (UNCTAD 2007). Tax incentives have been used by countries to promote investment specially FDI with the belief that it facilitate growth through creating employment and technology transfer.

Theoretical frameworks used to analyze the impacts of tax policy on investments are the OLI framework, the neo-classical investment model and the new economic geography. Under OLI framework firms must have ownership advantage like specific technology, managerial skill, trade mark etc.; locational advantage like shipping costs, tariffs, low wages and specific resource which is not available in home; and internalization advantage to FDI in order to operate profitably abroad. This theory emphasizes also the need to consider tax aspects. The capital market theory which is a widely used theoretical framework in most literature, the main argument of this theory is that firms accumulate capital as far as the benefit exceeds the costs. FDI theory by economic geography is also developed to explain the effects of tax policy on investment. This theory challenge the direct or linear relationship between tax policy and investment which is taken for granted. The model also emphasized the self reinforcing nature of business concentration in the core and the nonlinearity of the relationship between tax policy and investment due to capital stickiness in the core (OECD 2007).

In this paper we have based our explanation on capital market and economic geography theory regarding the relationship between tax policy and investment. These theories are preferred on the basis that both incorporate tax parameter in to the investment model explicitly. According to these theories, firms base their investment decision on their optimization problem: profit maximization given costs and benefits. Firms invest up to the point net present value of capital equals its costs. The effects of tax policy on investment behavior enter the investment function through the user cost of capital. Change in tax policy affect investment through its impact on user cost of capital (OECD 2007).

As per theoretical literature, the countries can introduce the optimal tax rate on foreign investment to increase welfare rather than offering subsidies to attract FDI and FDI can increase a host country economic welfare through taxation from the profits of foreign investment and larger capital stocks. However; incentives as a main tool of attracting foreign direct investment, have gained attention only recently. Literature indicates that multinational corporations have been basing their overseas investment decisions on economic fundamentals of the host country mainly depending on market size, level of real income, skill level, infrastructure, resources, trade policies, and political and macroeconomic stability (Blomstrom and Kokko 2003). The view that FDI gets attracted by the strong economic fundamentals in the host country, the most important being market size and the

level of real income; it is now the importance of incentives provided is getting wider attention. These incentives broadly take two forms: fiscal incentives and financial incentives. The acceptance of this view is apparent from the increase of investment incentives across the world. There are substantial theoretical arguments in favors of public support to FDI through fiscal incentives like tax holidays and lower taxes, and financial incentives such as preferential loans, infrastructure and monopoly rights. The main reason, for the prominence of incentives as a way to attract FDI, is globalization which had made it easy for MNCs to sell their output to international customers and increased regional integrations that has reduced the focus on market size as the major determinant of FDI flows. As a result of this change of dynamics, incentives became the main competition tools for attracting FDI (Blomstrom and Kokko 2003). The developing countries tend to base their incentive schemes on tax holidays and other fiscal measures that do not require direct payments as public funds are scarce ( Cleeve 2008). In addition, Dunning's underlying theory of FDI does suggest that pull factors lie as the foreground to injecting investment in an economy in terms of the OLI paradigm. Thus, fiscal incentives may be thought as secondary - as confirmed by Morisset (2003.) The work of Krever (2005) reiterates the latter fact by admitting that tax ranks low in the long list of factors considered by investors since they will go for a two stage process whereby they will first start by "screening countries based on fundamental determinants" and only those economies which satisfy the first stage requirements will go through the later one of being "evaluated in terms of tax rates, grants or other incentives as considered."

Empirical literatures about the impact of FDI on tax revenue have shown contrasting results. Earlier studies have pointed out that host countries may generate additional tax revenue from FDIs profits, employment, indirect taxes and the like. Few recent studies suggested that countries may losses significant amount of tax revenue in the form of tax incentives. According to (Tax Justice Network 2012) Increased competition over FDI and growing pressure to provide investment incentives such as tax holidays and other indirect taxes to attract investors could result in a 'race-to-the-bottom' that would eventually hurt the host countries. Transnational companies contribute to close the gap between locally collected tax and targeted revenue. However, governments often enter in to exclusive agreements with foreign firms and provide tax holidays, tariff protections, and investment allowances. Due to these reasons, the taxes that can be collected become quite small. Moreover, these firms can avoid local taxation by transfer pricing techniques a method used to reduce local profit level by paying artificially inflated prices to the intermediate products purchased from abroad subsidiaries (Thomas and Peter 2000).

FDI could increase general welfare in the host country through increase in the tax revenue. The welfare decreases when a country offers relaxation in the tax for foreign investment or if there had been a transfer pricing from foreign firms to their mother countries (Kopits 1976). Markusen (1984) claimed that welfare effect of FDI was uncertain. Foreign investment increased welfare through an increase in competition and tax on their profits and reduced welfare through transfer of profits earned by local enterprises to the foreign enterprises. According to Bond and Samuelson (1986) suggested that host countries could lose some tax revenue in short run if tax holidays were given to attract FDI in early period. Tax revenue could increase in the long run because foreign investment would not pull out after that tax holiday period. Brander and Spencer (1987) stated that host countries could attract FDI by imposing tariff on imports and relaxing the tax on local production. It was stated that FDI could enhance national welfare by reducing unemployment, rising productivity through technology transfers and raising government revenue through taxation. Horstmann and Markusen (1987) analyzed the welfare effect through government revenue, change in consumer surplus and trade policy. The host country government might impose tax on imports and might relax foreign investors from tax. As tariff increased government revenue, so it had better welfare effect than foreign

investment with tax concession. So, welfare depended on whether foreign investment took place or imports were continued with tariff. Horstmann and Markusen (1992) found that countries with a single domestic producer had higher level of welfare than two-firm duopoly from which one firm was domestic and the other one was MNE. A country with a single firm (MNE) had lowest level of welfare. Government of the host country could affect welfare through trade policy, supporting education and R&D by offering tax concessions.

Many papers (McLure 1999; Dunning 1993) have demonstrated that incentives rarely attract additional investment since they bring about a high fiscal cost along with the fact that they create distortions in the allocation of resources. Wells and Allen (2001) grouped two arguments against tax incentives stating that:

i) Fiscal incentives may not be the first best mechanism for attracting FDI as they merely create a net transfer from tax payers to investors.
ii) The costs exceed the benefits that are provided by the investments.

A fiscal incentive in the form of tax directly affects country's tax revenue. Emmanuel Cleeve (2008) found that among fiscal incentives tax holidays were the most effective in attracting FDI and while the other concessions seem to cause an adverse effect, especially in countries that offered too many concessions. According to this study all fiscal incentives may not benefit the economy through attracting FDI, because some fiscal incentives may result in economic distortions. The study recommended that countries should be selective in their fiscal incentives. Dunning (1993) observed that welfare effects of FDI in host county depended on bargaining power of host country with foreign investors, either it offered the tax rebates on energy or labor cost to attract foreign investment or imposed tax. Raff and Srinivasan (1998) claimed that government should sacrifice some tax revenue to attract foreign investment because FDI could create employment, local labor's training, transferred technology and better management skills.

A joint study by justice network Africa and Action Aid international on tax competition in east Africa has indicated Kenya, Uganda, Tanzania and Rwanda are losing up to USD 2.8 billion a year because of the tax incentives they offer to FDI companies. Hence, they suggest these kinds of incentives should stop because they are costly and inefficient. In addition, the report also shows that though Kenya and Tanzania provide greater tax incentives than Uganda, Uganda was able to attract higher level of FDI than Kenya and Tanzania) (Tax Justice Network 2012). Alvin Mosioma conclude that tax incentives and the ensuing competition have largely benefited foreign multinational at the expense of Government revenue, local authorities, domestic enterprise, Workers, and the environment (Tax Justice Network for Africa 2012). For instance, Gropp and Kostial (2000) used the panel data of nineteen OECD countries to find relationship between FDI and tax revenue. They found a weak correlation between FDI and corporate income tax and found a strong positive impact of FDI inflows on the profit tax and on the total tax revenue. Mahmood and Chaudhary (2013) also conducted a study to capture the impact of FDI on Pakistan tax revenue and conclude the positive contribution of foreign direct investment.

## III FDI and tax incentives: Ethiopian Experience

In the Pre 1974, Emperor Haile Selasie period, a liberal policy was followed to encourage the establishment of private industries and import substitution strategy was promoted. The liberal policies were able to attract few investments though the amount is not significant. (Melese and Waldkirch 2011).
From 1974 - 1991, when Derg came to power the liberal policy of imperial era was replaced by command system of economic management that discouraged market economy and private property. During this time land, private large and medium scale enterprises were nationalized. Average GDP growth in period was

about 2% and average per capita GDP was negative. The environment was not encouraging for private investment in general and FDI in particular. Political instability, insecurity, and the nationalization of major industries made the environment unattractive for private investment. As a result there were no foreign direct investment inflows during that time, (Astatike and Assefa 2006). However based on the annual world report data (1970-2013) there were annual inflow and out flow of FDI.

In post 1991 Ethiopian Peoples' Revolutionary Democratic Front (EPRDF) has governed Ethiopia ever since. EPRDF replaced the command system to free market system and undertaken many macroeconomic reforms. The government implemented a series of reform measures like deregulation, privatization, liberalization of foreign exchange market, elimination of export tax except for coffee, lowering of maximum import duties from 230% to 60% and Provision of adequate incentives in order to increase private sector participation in the economy which is believed to have an important role in the development process of the national economy. (Astatike and Assefa 2006).

In recognition of the role of private sector in the economy and to make the investment climate attractive the government has revised the investment code five times in the last twenty three year (1992-2014). As a result of the implementation of the above mentioned reforms, policies and strategy, agricultural and industrial production, investment and export trade has improved. The investment legislation has also started offering fiscal incentives and investment guarantees to foreign and domestic investors.

Ethiopia has implemented Economic Reform Program (ERP) and has been modernizing tax and custom administration by overhauling the legislations and improving administration since 1992/93 with the aim of encouraging trade, investment and hence development. Given the important role of FDI in the development process of developing countries, Ethiopian tax policy is geared towards promoting investment, supporting industrial development and broadening the tax base and decreasing the tax rate in the view of financing the need of government expenditure. With the view of creating investment friendly environment and attract foreign direct investment, Ethiopian government have been providing a wide range of fiscal incentives.

Transitional Government of Ethiopia (TGE) issued the first investment code (Proclamation No. 15/1992) on May, 25 1992 with the aim of encouraging private investment under this code areas eligible for investment incentives were limited to manufacturing and Agriculture sectors. The incentives provided were 100% exemption from custom duty on importation of capital goods and income tax exemption (tax holiday) ranging from 1-8 years depending on type and location of the investment. This proclamation had been in force for four years and replaced by Proclamation No. 37/1996 in June 1996.The revised Investment Code of 1996 extended areas eligible to incentives to Education, health, tourism and construction sectors. Capital entry requirements for joint ventures reduced from US$500,000 to US$300,000 and for technical consultancy services reduced to US$100,000. This code was opened the real estate sector and Electricity and water supply to foreign investors, extended the losses carried forward provision, and cut the capital gains tax from 40% to 10%.

Furthermore Proclamation No. 37/1996 improved and replaced by proclamation No.116/1998 in June 1998. The major changes introduced in this proclamation were Defense and telecommunication sectors allowed to private sectors to invest jointly with government which was reserved for government only in the earlier codes. The investment code was also amended in July 2002 (Proclamation No. 280/2002) and in September 2012 (Proclamation No. 769/2012) and further liberalized the investment regime and removed most of the remaining restrictions. In general all areas of investments are open for foreign investors except Banking, insurance and microcredit and saving services; forwarding and shipping agency services; broadcasting services; and air transport services using aircraft with a seating capacity of up to 20 passengers which are reserved for government, domestic investors and Ethiopian nationals.

Investment incentives provided in the investment codes are free repatriation of capitals; Duty free importation of goods and vehicles related to the investment; Tax holidays up to eight years; Opening and operating foreign currency accounts; owning immovable property for the purpose of the investment, Loss carry forward, duty drawback scheme and voucher scheme. Among the fiscal incentives given the most popularly used are custom duty exemption and income tax exemption (tax holiday).

**Tax holiday (exemption from income tax)**

Any investors who invest to establish a new enterprise in manufacturing, agro-processing, production of agricultural products and information and communication technology development are entitled to income tax exemptions. Any income tax derived from approved new investment shall be exempted for periods of 1 to 8 years, depending upon the priority area of investment activities and the geographical location of the investment. Conditions for income tax exemption eligibility are:

- If at least 50% of its production is to be exported; Profit Tax Exemption Years is 5 Years, if the Investment is made in relatively under-developed regions, the exemption period is 6 years.
- If at least 75% of its production will be an input for the production of export items; Profit Tax Exemption Years is 5 Years, if the Investment is made in relatively under-developed regions, the exemption period is 6 years.
- If the project is evaluated under a special circumstance by the BOI; Profit Tax Exemption Years is no longer than 7 Profit Tax Exemption Years. If the Investment is made in relatively under-developed regions the exemption is No longer than 8 years. However, the granting of income tax exemption for a period longer than 7 years requires the decision of the Council of Ministers.
- If less than 50% of the production is to be exported; Profit Tax Exemption Years is 2 Years, if the Investment is made in relatively under-developed regions the exemption shall be 3 years.
- If the production is for the local market; Profit Tax Exemption Years is 2 Years, if the Investment is made in relatively under-developed regions it will be 3 years.

In addition investors that establish new enterprise in the regions of Gambella, Benshangul, Afar, Somali, Guji and Borena and South Omo Zone are entitled to an income tax deduction of 30% for three consecutive years after the expiry of income tax exemption.

For expansion or upgrading of enterprises that increases the existing production by 25% in value and 50% of the production is to be exported; the Profit Tax Exemption granted is 2 years. Notwithstanding the information given above, directives issued by the Board may prohibit exemption from income tax with respect to an investor who supplies his products only to the domestic market. Moreover, an investor who exports hides and skins after processing up to crust level is not entitled for income tax holiday. The period of exemption of profit tax begins from the date of commencement of production or provision of services, as the case may be.

**Custom Duty exemption**

To encourage private investment and to promote the inflows of foreign capital the government of Ethiopia provide an incentive of custom duty exemption for investors engaged in eligible new enterprise or expansion project. The eligible sectors are Agriculture, manufacturing, construction, education, health, electricity and water supply and hotel and tourism. These incentives include:

- 100% exemption from the payments of custom duties and other taxes levied on imports granted to all capital goods, such as plant, machinery and equipment and construction material.
- Spare parts worth up to 15% of the total value of the imported investment capital good, provided that the goods are also exempt from the payments of custom duties.

- An investor granted a custom duty exemption will be allowed to import spare parts duty free within five years from the date of commissioning of a project.
- With the exception of few products (e.g. semi processed hide and skins 150%) no export tax is levied on export products of Ethiopia.
- Any investors who export or supplies to an exporter as a production or service input, at least 60% of his product or service shall be entitled to income tax exemption for 2 years in addition to the exemption period provided.
- Duty paid at the port of entry or locally, on raw materials used in the production of commodities is refunded, 100%, upon exportation of the commodity processed.

In addition three duty incentive schemes are available for exporters. They are Duty Draw-Back Scheme, Voucher Scheme and Bonded Warehouse Scheme. Taxes and duties paid on raw materials are drawn back at the time of export of finished products. The duty draw back scheme applies to all taxes at the time of importation, and those paid on local purchases.

**Other incentives**

In addition to the above stated the most popular incentives the following incentives are also given to investors in order to promote private investment.

- Business enterprises encountering losses during the tax holiday period can carry forward such losses following the expiry of the exemption period for 3 to 5 years
- Free repatriation of profits and dividends
- Expenditures for training and research are tax deductible.

**Table 1: Principal Taxes currently in effect in Ethiopia**

| No. | Types of Taxes | Rate |
|---|---|---|
| 1 | Corporate income Tax | 30% |
| 2 | Turn over Tax | 2% and 10% |
| 3 | Excise Tax | 10% up to 100% |
| 4 | Custom Duties | 0% up to 35% |
| 5 | Income Tax from Employment | 0% up to 35% |
| 6 | Withholding Tax | 2% |
| 7 | Value added Tax (VAT) | 15% |
| 8 | Export Tax | 0 (with exception of hide and skins-150%) |
| 9 | Royalty Tax | 5% |
| 10 | Dividend Tax | 10% |

Source: Ethiopian Customs and Revenues Authority, 2014

## IV Data collection methods and Econometric Model

This section presents the data collection methods and the econometric model used. The variables on which data collected are disaggregate tax revenues, FDI, GDP and GDP per capita. The tax revenue is the dependent variable and is measured as a percentage of GDP (total tax revenue in US$ / Nominal GDP in US$). The explanatory variables are measured as shown in table 2.

**Table 2: Explanatory variables and the expected signs**

| Variable | Measure | Data Source | Expected Sign |
|---|---|---|---|
| FDI as a percentage of GDP | (Net inflow of FDI in US$)/ (Nominal GDP US$) | Ethiopian Investment Agency, UNCTAD Statistics and NBE | Positive |
| GDP per person | (Nominal GDP US$) (population of Ethiopia) | National Bank of Ethiopia | Positive |

This research is essentially an empirical one and depends only on secondary data published in different sources. The study period chosen is from 1975 to 2014 which broadly covers the two regimes, Derg (1974-1991) and the present regime( 1991 onwards). The data Foreign Direct Investment were collected from Ethiopian investment agency for the years after 1992 and from World investment report (2014) for the years before 1992; GDP per capita has been measured using the data on GDP collected from National Bank of Ethiopia; tax incentive directives were collected from Ethiopian Customs and Revenue Authority and Corporate Income Tax Revenue secondary data were collected from Ministry of finance and economic development. The econometric method employed in this study refers to ARDL cointegration model and the model specified is as follows:

$TRG_t = f ( FDIG_t , GDPE_t )$ (1)

Where, $TRG_t$ = Tax Revenue as percentage of GDP at time t.
$FDIG_t$ = Foreign Direct Investment inflow as percentage of GDP at time t. $GDPPd_t$ = GDP per person employed at time t.

As TRGt = ∑ (DITRGt, CITRGt, FTTRGt, PITRGt), the study used the same model to find out the impact of FDI across each tax types. The specific models are as follows:

DITRGt = f ( FDIGt , GDPPt ) (2)
CTRGt = f ( FDIGt , GDPPt ) (3)
FTTRGt = f ( FDIGt , GDPPt ) (4)
PITRGt = f ( FDIGt , GDPPt ) (5)

Where, DITRGt = Domestic Indirect Tax Revenue as a percentage of GDP at time t.
CTRGt = Corporate Income Tax Revenue as a percentage of GDP at time t.
FTTRGt = Foreign Trade Tax Revenue as a percentage of GDP at time t.
PITRGt = Personal Income Tax Revenue as a percentage of GDP at time t

However, before estimating the specified model we have verified the time series properties of the model in terms of testing for unit roots.Unit root testing is a well-known and one of most debated issues in econometrics. There are lots of economic and econometric implications of existence of unit root in time series data, including the incidence of spurious regression (Atiq-ur-Rehman 2011; Libanio 2005). Due to its importance, many tests and testing procedures were developed for testing unit root. However the size and power properties of unit root tests have always been subject to debate.

In this study we have carried out unit root test based on three types of testes. These are ADF, PP and NG and Perron tests. The ADF and PP tests are asymptotically equivalent but may differ substantially in finite samples due to the different ways in which they correct for serial correlation in the test regression. The ADF and PP tests are severely size distorted and that the PP tests are more size distorted than the ADF tests. Recently, Perron and Ng (1996) have suggested useful modifications to the PP tests to mitigate this size distortion.

At first, the study discusses the Augmented Dickey-Fuller (ADF) test; it was developed by Dickey and Fuller (1981). It checks the unit root problem in the time series. It proposed the following equation with intercept to detect the unit root problem.

$\Delta Y_t = \alpha + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-2} + \gamma_2 \Delta Y_{t-2} + ..... + \gamma_m \Delta Y_{t-m} + u_t$ (6)

Where, Δ is a difference operator, and $u_t$ is a residual at time period t. $Y_t$ denotes the time series. $\gamma_1 \Delta Y_{t-2} + \gamma_2 \Delta Y_{t-2} + ..... + \gamma_m \Delta Y_{t-m}$ is used to correct the serial correlation. Equation (6) includes

intercept $\alpha$ only and it can also be assumed with both intercept and time-trend T. Then, the test is as follows:

$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + \gamma_1 \Delta Y_{t-2} + \gamma_2 \Delta Y_{t-2} + \ldots\ldots + \gamma_m \Delta Y_{t-m} + u_t$ (7)

ADF test checks the null hypothesis ($\boldsymbol{\delta}$=0). That means, the time series has unit root problem and rejection of null hypothesis proofs the stationarity of a time series.

The Phillips-Perron (1988) developed a number of unit root tests that have become popular in the analysis of financial time series. The Phillips-Perron (PP) unit root tests differ from the ADF tests mainly in how they deal with serial correlation and heteroskedasticity in the errors. PP tests ignore any serial correlation in the test regression that is $\boldsymbol{\gamma_1 \Delta Y_{t-2} + \gamma_2 \Delta Y_{t-2} + \ldots\ldots + \gamma_m \Delta Y_{t-m}}$ from ADF equation (3). It removes the serial correlation by giving ranks to the residuals. Equation of PP test is as follows:

$\Delta Y_t = \alpha + \lambda T + \delta Y_{t-1} + u_t$ (8)

PP test uses the modified statistic $Z_t$ and $Z_\delta$ which are as follows:

$$Z_t = \left(\frac{\hat{\sigma}^2}{\hat{\pi}^2}\right)^{1/2} \cdot t_{\delta=0} - \frac{1}{2}\left(\frac{\hat{\pi}^2 - \hat{\sigma}^2}{\hat{\pi}^2}\right) \cdot \left(\frac{T.SE - (\hat{\delta})}{\hat{\sigma}^2}\right), \quad (9)$$

$$Z_\delta = T\hat{\delta} - \frac{1}{2}\frac{T^2.SE(\hat{\delta})}{\hat{\sigma}^2} \cdot \hat{\pi}^2 - \hat{\sigma}^2, \quad (10)$$

Where, $SE(\hat{\delta})$ is the standard error of $\hat{\delta}, t_{\delta=0}$ is the test statistic under the estimates of $\hat{\sigma}^2$ and $\hat{\pi}^2$. The terms $\hat{\sigma}^2$ and $\hat{\pi}^2$ are consistent estimates of the variance parameters, which are given below:

$$\hat{\sigma}^2 = \lim_{n\to\infty} T^{-1} \sum_{t=1}^{T} E[u_t^2] \quad (11)$$

$$\hat{\pi}^2 = \lim_{n\to\infty} T^{-1} \sum_{t=1}^{T} [T^{-1} S_t^2] \quad (12)$$

Where $S_T = \sum_{t=1}^{T} u_t$. and T is the time-trend. Under the null hypothesis that $\delta$=0, the PP $Z_t$ and $Z_\delta$ statistics have the same asymptotic distributions as the ADF t-statistic and normalized bias statistics. PP test has an advantage over ADF test that it robust heteroskedasticity in the error term ($u_t$). Another advantage is that user does not have to specify a lag length for the test regression.

Ng and Perron (2001) developed efficient and a modified version of PP test by combining generalized least square detrending data with spectral density. The proposed test consists of a suite of four tests, namely MZa, MZt, MSB and MPT. This procedure is also efficient for large negative errors and can do better estimation than PP test. The efficient and modified tests are as follows:

$MZ_\alpha^d$ =(T^(-1) (y_T^d )$^2$-$f_0$)/2k (13)

$MSB^d = (k/f_0)^{1/2}$ (14)

$MZ_t^d = MZ_\alpha^d * MSB^d$ (15)

$MPT_T^d = \left((\bar{c})^2 k + (1-\bar{c})T^{-1}\right)(y_T^d)^2/f_0$, (16)

Where, the statistics $MZ_\alpha^d$ and $MZ_t^d$ are efficient versions of PP test and

$K = \frac{\sum_{t=2}^{T}(y_{t-1}^d)^2}{T^2}, \bar{c} = -13.5.$ (17)

$$f_0 = \sum_{j=-(T-1)}^{T-1} \theta(j).k\left(\frac{j}{l}\right), \quad (18)$$

Where $l$ is a band width parameter (which acts as a truncation lag in the covariance weighting) and θ(j) is the $j$-th sample auto covariance of residuals.

After testing the unit root problem in the time-series variables, the co-integration test might be applied to find the long-run relationship among the variables. Co-integration states the long-run equilibrium among variables, which may have the shock of disequilibrium in the short-run from long-run, but it will move again in long-run equilibrium (Harris and Sollis 2003). As mentioned above, the study uses Auto-Regressive Distributive Lag (ARDL) / Bound testing methodology. The ARDL Testing of Pesaran and Shin (1999) and Pesaran *et al*. (2001) have a number of features that many researchers feel give it some advantages over conventional co-integration testing. For instance: It can be applied if variables have mixed order of integration i.e. some are I(1) and some may be I(0). It involves just a single-equation set-up, making it is simple to implement and interpret. Different variables can be assigned different lag-lengths as they enter the model. The study uses the Schwarz Bayesian Criterion (SC) to find the optimum lag length for the ARDL model, as it is a consistent model selector.

The study first make sure that none of the variables are I(2), as such data will invalidate the methodology. Second formulate an "unrestricted" error-correction model (ECM) for all general and specific objectives. This will be a particular type of ARDL model. Following these estimate the equation and ensure the errors of each model are serially independent and stable. Then perform a "Bounds Test" to see if there is evidence of a long-run relationship between the variables. And if the outcome is positive, then the study estimate a long-run "levels model", as well as a separate "restricted" ECM. To find the co-integration amongst tax revenues, FDI and GDP per person employed, ARDL model is as follows:

$$\boldsymbol{\Delta TRG_t = \delta_0 + \delta_1 TRG_{t-1} + \delta_2 FDIG_{t-1} + \delta_3 GDPP_{t-1}} + \sum_{i=1}^{p} \beta_{1i} \Delta TRG_t + \sum_{i=0}^{q} \boldsymbol{\beta_{2i}} \Delta \boldsymbol{FDIG_{t-i}} + \sum_{i=0}^{r} \boldsymbol{\beta_{3i}} \Delta \boldsymbol{GDPPd_{t-1}} + \boldsymbol{\lambda D_{TRG}} + \boldsymbol{\varepsilon_t} \quad (19)$$

In equation (19), first difference of TRG is the dependent variable, the null hypothesis is there is no co-integration and alternate hypothesis is there is co-integration which shows existence of long run relationship in the model, $\delta_0$ is a constant and $\varepsilon_t$ is error term. $D_{TRG}$ is included in the equation for possible structural break and to complete the information. Error correction model is as follows:

$$\Delta TRG_t = \gamma + \sum_{i=1}^{p} \beta_{1i} \Delta TRG_t + \sum_{i=0}^{q} \beta_{2i} \Delta FDIG_{t-i} + \sum_{i=0}^{r} \beta_{3i} \Delta GDPPd_{t-1} + \phi D_{TRG} + \varphi ECT_{t-1} + \zeta_t \quad (20)$$

$\varphi$ is showing the speed of adjustment from short run disequilibrium to long run equilibrium. Finally the study use the results of the models estimated to measure short-run dynamic effects, and the long-run equilibrating relationship between the variables. Afterwards, diagnostic tests will be used to check the normality, heteroscedasticity and serial correlation in the model. CUSUM and CUSUMsq statistics will be used to ensure the stability of parameters.

## V. Data Analysis and Empirical Findings

Initially, the unit root tests have been applied using the ADF, Phillip-Perron and Ng-Perron tests at levels and the results are presented in the following table:

**Table 3: Unit Root Tests at Levels**

| Variables | ADF | PP | Ng-Perron | | | |
|---|---|---|---|---|---|---|
| | | | $Mz_a$ | $MZ_t$ | MSB | MPT |
| Model Specification: Intercept | | | | | | |
| $TRG_t$ | -2.34204(1) | -2.342304(0) | -5.20654(0) | -1.39809 | 0.26852 | 5.23368 |
| $FDIG_t$ | -1.536640(1) | -1.274407(3) | -3.52838(1) | -1.29785 | 0.36783 | 6.93832 |
| $GDPd_t$ | 1.930467(0) | 1.930467(0) | -0.45225(1) | -0.11773 | 0.26032 | 9.72717 |
| $CTRG_t$ | -2.777346*(1) | -2.222296(1) | -8.90478**(1) | -2.00109** | .022472** | 3.16125** |
| $DITRG_t$ | -1.274193(0) | -1.540115(1) | -4.25421(0) | -1.22462 | 0.28786 | 6.07343 |
| $FTTRG_t$ | -2.213486(0) | -2.353552(2) | -5.97372(0) | -1.68515 | 0.28209 | 4.23547 |
| $PITRG_t$ | -1.330901(0) | -1.717650(3) | -3.58605(0) | -1.16428 | 0.32467 | 6.83032 |
| Model Specification: Intercept and trend | | | | | | |
| $TRG_t$ | -2.370350(0) | -2.370350(0) | -7.79928(0) | -1.94792 | 0.24976 | 11.7500 |
| $FDIG_t$ | -1.598349(1) | -1.381333(3) | -11.0464(1) | -2.25688 | 0.20431 | 8.70738 |
| $GDPPd_t$ | 1.018156(0) | 0.661948(1) | -5.02947(1) | -1.24957 | 0.218 | 16.6092 |
| $CTRG_t$ | -2.726181(1) | -2.186740(1) | -11.6134(1) | -2.40278 | 0.20690 | 7.88269 |
| $DITRG_t$ | -1.161892(0) | -1.439386(1) | -4.42072(0) | -1.32045 | 0.29870 | 19.2457 |
| $FTTRG_t$ | -2.213685(0) | -2.382146(2) | -7.84193(0) | -1.97697 | 0.25210 | 11.6283 |
| $PITRG_t$ | -1.502423(0) | -1.900403(3) | -4.74946(0) | -1.50294 | 0.31644 | 18.9399 |

Note: *, ** and *** show stationarity of variables at the 0.10, 0.05 and 0.01 level respectively. Brackets include the optimum lag length.

Table (3) explains that all variables at level except $CTRG_t$ (which is stationary at level with ADF and Ng perron test) are non-stationary with all tests used in analysis. We have then applied the same procedure to verify the unit roots for the first difference data of the variables and the results are presented in table-4.

**Table 4: Unit Root Tests at First Difference of the Variables**

| Variables | ADF | PP | Ng-Perron | | | |
|---|---|---|---|---|---|---|
| | | | $Mz_a$ | $MZ_t$ | MSB | MPT |
| Model Specification: Intercept | | | | | | |
| $DTRG_t$ | -5.347***(0) | -5.366***(2) | -18.678**(0) | -3.055** | 0.1636** | 1.315** |
| $DFDIG_t$ | -6.129***(1) | -6.160***(1) | -18.995***(0) | -3.032*** | 0.1596*** | 1.466*** |
| $DGDPP_t$ | -3.777***(0) | -3.832***(1) | -15.747***(0) | -2.688*** | 0.1707*** | 1.990*** |
| $DCTRG_t$ | *** | -4.635***(3) | *** | *** | *** | *** |
| $DDITRG_t$ | -4.901***(0) | -4.907***(1) | -16.521***(0) | -2.860*** | 0.1731*** | 1.535*** |
| $DFTTRG_t$ | -5.775***(0) | -5.767***(2) | -18.859***(0) | -3.066*** | 0.1626*** | 1.316*** |
| $DPITRG_t$ | -5.499***(0) | -5.578***(3) | -7.954***(1) | -1.989*** | 0.2450*** | 3.098*** |
| Model Specification: Intercept and trend | | | | | | |
| $DTRG_t$ | -5.276***(0) | -5.297***(2) | -18.708**(0) | -3.058** | 0.1635** | 4.871** |
| $DFDIG_t$ | -6.034***(0) | -6.072***(3) | -18.968**(0) | -3.034** | 0.1600** | 5.078** |
| $DGDPP_t$ | -4.247***(0) | -4.137***(3) | -17.158**(0) | -2.899** | 0.1689** | 5.491** |
| $DCTRG_t$ | -4.580***(0) | -4.577***(3) | -17.769**(0) | -2.973** | 0.1673** | 5.172** |
| $DDITRG_t$ | -4.838***(0) | -4.845***(1) | -17.686**(0) | -2.973** | 0.1681** | 5.158** |
| $DFTTRG_t$ | -5.699***(0) | -5.693***(1) | -18.925**(0) | -3.076** | 0.1625** | 4.815** |
| $DPITRG_t$ | -5.391***(0) | -5.483***(3) | -18.341**(0) | -2.992** | 0.1631** | 5.188** |

Note: *, ** and *** show stationarity of variables at the 0.10, 0.05 and 0.01 level respectively. Brackets include the optimum lag length.

Table (4) indicates that with ADF and PP tests, all the variables have become stationary at 1% level of significance after the first difference. Using Ng-Perron test, every variable except DTRGt has become stationary at 1% level of significance in the intercept and stationary at 5% level of significance in trend and intercept. DTRGt is stationary at 5% level of significance in intercept with Ng-Perron test. Based on the above, there is an evidence of level and first order of integration, because all the variables have become stationary at first difference with structural break.

**Impact of FDI on Aggregate tax revenue**:- The study first discusses the impact of FDI on aggregate tax revenue by using ARDL model as specified in equation (14) and finds the optimum lag length for ARDL model using SBC criteria and then includes dummy variable $D_{TRG}$ in the ARDL model to complete the information in the model. Optimum lag length is 1 for $DTRG_t$ 1 for $DFDIG_t$ and 0 for $DGDPP_t$ (means ARDL (1,1,0). The study selects the year 1989 for break period and puts 1 from 1975 to 1989 and 0 afterwards in $D_{TRG}$. The calculated F-statistic for selected ARDL model is given in table (6).

**Table 5: ARDL Bound Test: Using ARDL (1,1,0)**

| VARIABLES (when taken as a dependent) | F-Statistic | At 10% | | At 5% | | At 2.5% | | At 1% | |
|---|---|---|---|---|---|---|---|---|---|
| | | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) |
| D(TRG) | 8.304*** | 4.19 | 5.06 | 4.87 | 5.85 | 5.79 | 6.59 | 6.34 | 7.52 |

*, ** and *** means at 10%, 5% and 1% level of significant reject the null hypotheses of no co-integration.

Table (6) shows that the F-statistic for the Bounds Test is 8.304 and this is clearly exceed even the 1% critical value for the upper bound. Consequently, we *strongly reject* the null hypothesis of no co-integration and accept that the series has long-run relationship.

**Table 6: Long Run Coefficients: Dependent Variable is TRGt**

| Long Run Coefficients | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| FDIG | -0.220002 | 0.10526 | -2.090076 | 0.0446 |
| GDPP | -0.007035 | 0.003827 | -1.838082 | 0.0753 |
| DTRG | 7.318121 | 1.552078 | 4.715046 | 0.0000 |
| C | 2.388601 | 1.60952 | 1.484046 | 0.1476 |
| @TREND | 0.426908 | 0.105364 | 4.051741 | 0.0003 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

Table (7) shows all the long run estimates on the basis of selected ARDL model. The result indicates that both the coefficients $FDIG_t$ and $GDPP_t$ are negative and significant at 5% and 10% respectively. Accordingly, the long-run multiplier between FDI and tax revenue is -0.22 whereas the long-run multiplier between GDP per person employed and tax revenue is -0.007. The long-run equation is as follows:

***Cointeq = TRG - (-0.2200*FDIG -0.0070*GDPP + 7.3181*DTRG + 2.3886 + 0.4269*@TREND)***

Therefore in the long-run an increase of 10 percent in $FDIG_t$ will lead to a decrease of 2.2 percent in $TRG_t$. Similarly, an increase of 10 percent in $GDPP_t$ will lead to a decrease of 0.07 percent in $TRG_t$. Intercept (C) is positive but insignificant. The coefficient of DTRG and trend are positive and significant at 1% level of significance.

**Table 7: Error Correction Model: Dependent Variable is DTRGt**

| Cointegrating Form | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| D(FDIG) | 0.079117 | 0.105828 | 0.747596 | 0.4602 |
| D(GDPP) | -0.003568 | 0.001901 | -1.876271 | 0.0698 |
| D(DTRG) | 3.711183 | 0.793512 | 4.676908 | 0.0001 |
| D(@TREND()) | 0.216495 | 0.054157 | 3.997532 | 0.0004 |
| CointEq(-1) | -0.507122 | 0.103567 | -4.896556 | 0.0000 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

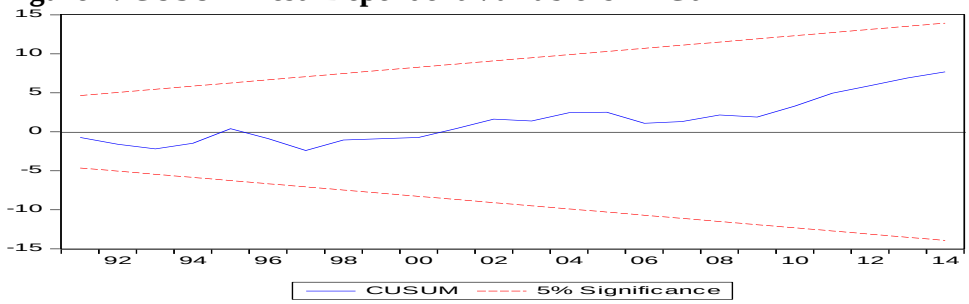
Table (8) shows that in the short run the coefficient of FDI have a positive contribution to tax revenue but it is not significant. GDP per person employed has negative and significant at 10%. $D(D_{TRG})$ and D(@trend) are positive and statistically significant at 1% significant level. The error-correction coefficient is negative as required and is very significant at 1%. It is showing that the system is getting adjusted towards long run equilibrium at the speed of 50.71percent.

**Table 8: Diagnostic Tests: Dependent Variable is TRGt**

| | **LM version** | **P-value** | | |
|---|---|---|---|---|
| Serial Correlation | 0.0496 | 0.8238 | R-squared | 0.7591 |
| Normality | 1.0476 | 0.5923 | Prob(F-statistic) | 0.0000 |
| Heteroscedasticity | 1.6677 | 0.9476 | | |

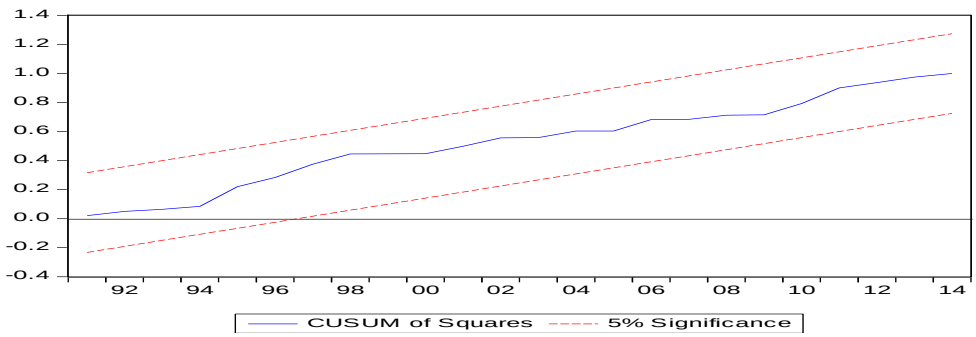
Results of table (9) shows that all p-values are greater than 5% so, the problems of serial correlation, normality and heteroscedasticity are not found in this model. The R-square is very strong, which is more than 60% and the Prob(F-statistic)is significant at 1%.

**Figure 1: CUSUM Test- Dependent Variable is TRGt**




*Field Study, 2015*

**Figure 2: CUSUMsq Test- Dependent Variable is TRGt**



The figures 1 & 2 shows that CUSUM and CUSUMs q test do not exceed the critical boundaries at 5% level of significance. This means that the model of tax revenue is correctly specified and long run coefficients are reliable.

**Impact of FDI on Domestic indirect tax revenue:-** In this section the study discusses the impact of FDI on domestic indirect tax revenue by using the ARDL model as in equation (19) after replacing the dependant variable TRGt by DITRGt and the dummy variable $D_{TRG\ by}$ $D_{ITRG}$. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable $D_{ITRG}$ for structural breaks to complete the information in the ARDL model. The optimum lag length is 2 for DDITRGt 1 for DFDIGt and 0 for DGDPEt (means ARDL (2,1,0). The study selects the year 1991 for break period and puts 1 from 1975 to 1991 and 0 afterwards in $D_{TRG}$. The calculated F-statistic for selected ARDL model is given in table (10).

**Table 2 ARDL Bound Test: Using ARDL(2,1, 0)**

| VARIABLES (when taken as a dependent) | F-Statistic | At 10% | | At 5% | | At 2.5% | | At 1% | |
|---|---|---|---|---|---|---|---|---|---|
| | | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) |
| D(DITRG) | 14.04*** | 4.19 | 5.06 | 4.87 | 5.85 | 5.79 | 6.59 | 6.34 | 7.52 |

*, ** and *** means at 10%, 5% and 1% level of significant reject the null hypotheses of no co-integration.
*Field Study, 2015*

Table (10) shows that the F-statistic result is 14.04. It is greater than the upper bound values. So, the null hypothesis of no co-integration is rejected at 1% level of significance and long-run relationship exists in the model.

**Table 3 Long Run Results: Dependent Variable is DITRGt**

| Long Run Coefficients | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| FDIG | -0.111159 | 0.01752 | -6.344745 | 0.0000 |
| GDPP | 0.000449 | 0.000705 | 0.636673 | 0.5292 |
| $D_{ITRG}$ | 1.827894 | 0.272061 | 6.718683 | 0.0000 |
| C | 0.359175 | 0.31313 | 1.147047 | 0.2604 |
| @TREND | 0.108899 | 0.018153 | 5.998882 | 0.0000 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.
*Field Study, 2015*

Table (11) show the long run estimates on the basis of selected ARDL model. The results indicate that $FDIG_t$ is negative and significant at 1% and $GDPP_t$ has a positive contribution to the domestic indirect tax revenue but it is statistically insignificant. Accordingly, the long-run multiplier between FDI and domestic indirect tax revenue is -0.1112. On the contrary, the long-run multiplier between GDP per person employed and tax revenue is 0.00045 which is very small and its equation is as follows:

***Cointeq = DITRG - (-0.1112*FDIG + 0.0004*GDPP + 1.8279* $D_{ITRG}$ + 0.3592 + 0.1089*@TREND )***

Hence in the long-run an increase of 10 percent in $FDIG_t$ will lead to a decrease of 1.112 percent in $DITRG_t$ whereas an increase of 10 percent in $GDPP_t$ will lead to an increase of 0.0045 percent in

$DITRG_t$. Intercept (C) is positive but insignificant. Both the coefficient of $D_{ITRG}$ and trend are positive and significant at 1% level of significance.

**Table 4 Error Correction Model: Dependent Variable is DDITRGt**

| Cointegrating Form | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| D(DITRG(-1)) | 0.376395 | 0.129212 | 2.912992 | 0.0067 |
| D(FDIG) | -0.014785 | 0.032074 | -0.460986 | 0.6481 |
| D(GDPP) | 0.000373 | 0.00058 | 0.643845 | 0.5246 |
| $D(D_{ITRG})$ | 1.519729 | 0.315053 | 4.823725 | 0.0000 |
| D(@TREND()) | 0.090539 | 0.021015 | 4.308313 | 0.0002 |
| CointEq(-1) | -0.831409 | 0.133042 | -6.249219 | 0.0000 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.
*Field Study, 2015*

Table (12) shows that in the short-run FDI is negative but it is not statistically significant and GDP per person employed have positive impact on tax revenue collection but statistically insignificant. $D(D_{ITRG})$ and D(@trend) have positive impact in the short run and are statistically significant at 1% significance level. The coefficient of CointEq(-1) is negative and significant at 1%. This means there is a short run relationship in the model and the magnitude implies almost 83.14% of any disequilibrium among Domestic Indirect Tax Revenue, FDI and GDP per person is corrected within one period.

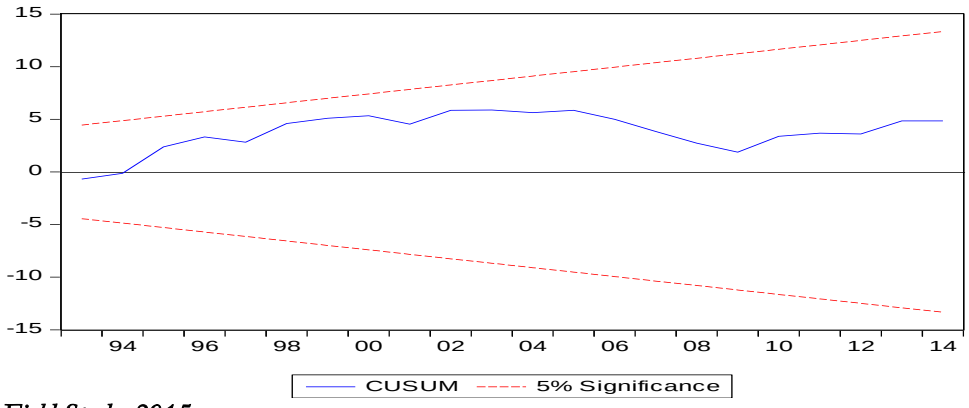
**Table 5 Diagnostic Tests: Dependent Variable is DITRGt**

| | LM version | P-value | Cofficient | |
|---|---|---|---|---|
| Serial Correlation | 1.8742 | 0.3918 | Normality | 0.8864 |
| Normality | 0.0667 | 0.8537 | Heteroscedasticity | 0.0000 |
| Heteroscedasticity | 10.3581 | 0.1692 | | |

*Field Study, 2015*

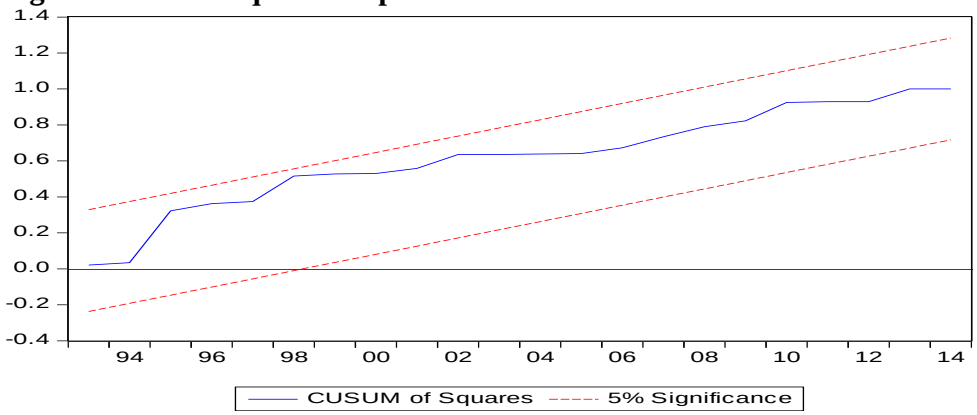
Results of table (13) shows that all p-values are greater than 5% so, the problems of serial correlation, normality and heteroscedasticity are not found in this model. The R-square is very strong, which is more than 60% and the Prob(F-statistic)is significant at 1%.

**Figure 3: CUSUM Test: Dependent Variable is DITRGt**




*Field Study, 2015*

**Figure 4 CUSUMsq Test: Dependent Variable is DITRGt**




*Field Study, 2015*

The figures 3 & 4 shows that CUSUM and CUSUMs q test do not exceed the critical boundaries at 5% level of significance. This means that the model of tax revenue is correctly specified and long run coefficients are reliable.

**Impact of FDI on Corporate income tax revenue**:- Here the study discusses the impact of FDI on Corporate income tax revenue by using the ARDL model as in equation (19 after replacing the dependant variable TRGt by CTRGt and the dummy variable $D_{TRG\ by}$ $D_{CTRG}$. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable $D_{CTRG}$ for structural breaks to complete the information in the ARDL model. The optimum lag length is 1 for DCTRGt 1 for DFDIGt and 0 for DGDPPt (means ARDL (1,1,0)). The study selects the year 1989 for break period and puts 1 from 1975 to 1989 and 0 afterwards in $D_{CTRG}$. The calculated F-statistic for selected ARDL model is given in table (14).

**Table 6 ARDL Bound Test: Using ARDL(1,1,0)**

| VARIABLES (when taken as a dependent) | F-Statistic | At 10% | | At 5% | | At 2.5% | | At 1% | |
|---|---|---|---|---|---|---|---|---|---|
| | | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) |
| D(CTRG) | 11.31*** | 4.19 | 5.06 | 4.87 | 5.85 | 5.79 | 6.59 | 6.34 | 7.52 |

*, ** and *** means at 10%, 5% and 1% level of significant reject the null hypotheses of no cointegration.

*Field Study, 2015*

Table (13) shows that the F-statistic result is 11.31. It is greater than the upper bound value. So, the null hypothesis of no cointegration is rejected at 1% level of significance and proved that the three variables are move together in the long-run.

**Table 7 Long Run Results: Dependent Variable is CTRGt**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDIG | -0.214664 | 0.039149 | -5.483304 | 0.0000 |
| GDPP | -0.004201 | 0.001399 | -3.001992 | 0.0052 |
| $D_{CTRG}$ | 3.443584 | 0.618741 | 5.56547 | 0.0000 |
| C | -1.581568 | 0.628754 | -2.515399 | 0.0171 |
| @TREND | 0.246405 | 0.040553 | 6.076164 | 0.0000 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

*Field Study, 2015*

Table (15) shows the long run estimates on the basis of selected ARDL model. The result indicates that both the coefficients $FDIG_t$ and $GDPP_t$ are negative and significant at 1% level of significance. Thus, the long-run multiplier between FDI and tax revenue is -0.2147 while the long-run multiplier between GDP per person employed and tax revenue is -0.0042. The long-run equation is as follows:

***Cointeq = CTRG - (-0.2200*FDIG -0.0070*GDPP + 7.3181*$D_{CTRG}$ + 2.3886 +0.4269*@TREND )***

Hence in the long-run an increase of 10 percent in FDI will lead to a decrease of 2.147 percent in $CTRG_t$. Similarly, an increase of 10 percent in $GDPP_t$ will lead to a decrease of 0.042 percent in $CTRG_t$. Intercept (C) is negative and significant at 5% level of significance. The coefficient of $D_{CTRG}$ and trend are positive and significant at 1% level of significance.

**Table 8 Error Correction Model: Dependent Variable is DCTRGt**

| Cointegrating Form | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| D(FDIG) | -0.031077 | 0.0327 | -0.950371 | 0.3490 |
| D(GDPP) | -0.001822 | 0.000596 | -3.055089 | 0.0045 |
| $D(D_{CTRG})$ | 1.493326 | 0.236187 | 6.322644 | 0.0000 |
| D(@TREND()) | 0.106855 | 0.01802 | 5.929702 | 0.0000 |
| CointEq(-1) | -0.433655 | 0.076744 | -5.650691 | 0.0000 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.
*Field Study, 2015*

Table (16) shows that in the short-run FDI have negative multiplayer but statistically insignificant impact on $CTRG_t$ while GDP per person employed have negative coefficient and statistically significant impact on $CTRG_t$ at 1% significant level. $D(D_{CTRG})$ and (@trend) are positive and statistically significant at 1%. The coefficient of CointEq(-1) is negative and significant at 1%. This indicates the presence of short run relationship in the model and its speed of adjustment is 43.36% in a year from short run disequilibrium to long run equilibrium.

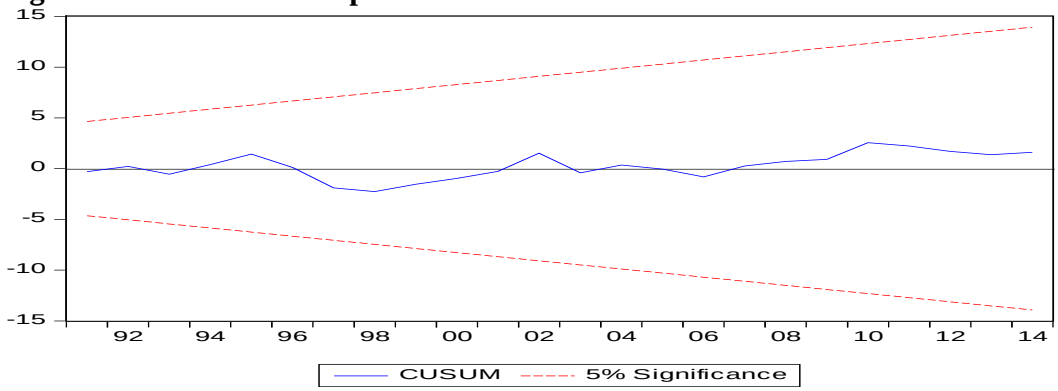
**Table 9 Diagnostic Tests: Dependent Variable is CTRGt**

| | **LM version** | **P-value** | **Cofficient** | |
|---|---|---|---|---|
| Serial Correlation | 1.7336 | 0.1879 | R-squared | 0.8726 |
| Normality | 0.9239 | 0.6301 | Prob(F-statistic) | 0.0000 |
| Heteroscedasticity | 3.2753 | 0.7736 | | |

*Field Study, 2015*

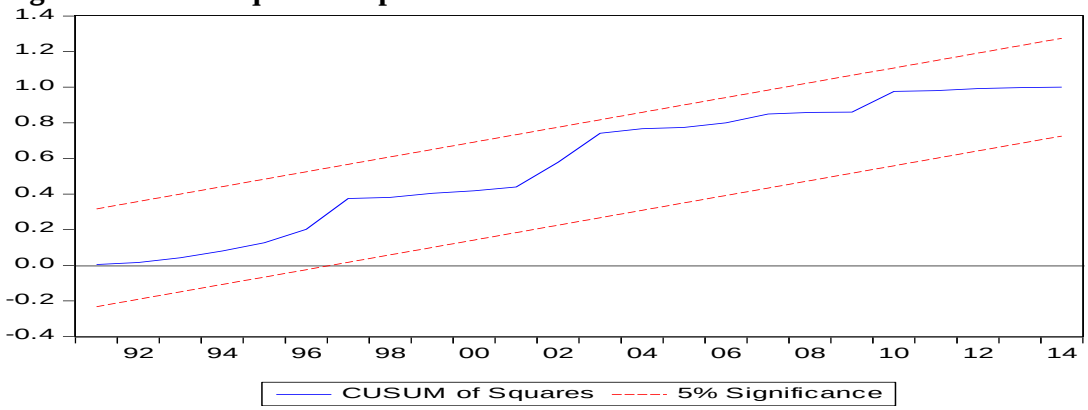
Results of table (17) shows that all p-values are greater than 5% so, the problems of serial correlation, normality and heteroscedasticity are not found in this model. The R-square is very strong, which is more than 60% and the Prob(F-statistic) is significant at 1%.

**Figure 5 CUSUM Test: Dependent Variable is CTRGt**




*Field Study, 2015*

**Figure 6 CUSUMsq Test: Dependent Variable is CTRGt**




*Field Study, 2015*

The figures 5 & 6 shows that CUSUM and CUSUMs q test do not exceed the critical boundaries at 5% level of significance. This means that the model of tax revenue is correctly specified and long run coefficients are reliable.

**Impact of FDI on Foreign trade tax revenue:-** The study also discusses the impact of FDI on foreign trade tax revenue as stated in equation (4) and by using the ARDL model as in equation (19) after replacing the dependant variable $TRG_t$ by $FTTRG_t$ and the dummy variable $D_{TRG\ by}$ $D_{FTRG}$. The study finds the optimum lag length for ARDL model by using SBC and then includes dummy variable $D_{FTRG}$ for structural breaks to complete the information in the ARDL model. The optimum lag length is 1 for DFTTRGt 0 for DFDIGt and 0 for DGDPPt (means ARDL (1,0,0)). The study selects the year 1993 for break period and puts 1 from 1975 to 1993 and 0 afterwards in $D_{FTRG}$. The calculated F-statistic for selected ARDL model is given in table (18).

**Table 10 ARDL Bound Test: Using ARDL(1,0,0)**

| VARIABLES (when taken as a dependent) | F-Statistic | At 10% | | At 5% | | At 2.5% | | At 1% | |
|---|---|---|---|---|---|---|---|---|---|
| | | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) |
| D(FTTRG) | 4.984** | 4.19 | 5.06 | 4.87 | 5.85 | 5.79 | 6.59 | 6.34 | 7.52 |

*, ** and *** means at 10%, 5% and 1% level of significant reject the null hypotheses of no co-integration.

*Field Study, 2015*

**Table 11 Johansen Cointegration Test: for the series: FTTRG FDIG GDPP and DFTRG**

| Hypothesized No. of CE(s) | Eigenvalue | Trace Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| None * | 0.590994 | 54.30163 | 47.85613 | 0.011 |
| *Trace test indicates 1 cointegrating eqn(s) at the 0.05 level* | | | | |
| **Hypothesized No. of CE(s)** | **Eigenvalue** | **Max-Eigen Statistic** | **0.05 Critical Value** | **Prob.**** |
| None * | 0.590994 | 33.97297 | 27.58434 | 0.0066 |
| *Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level* | | | | |
| * denotes rejection of the hypothesis at the 0.05 level | | | | |
| **MacKinnon-Haug-Michelis (1999) p-values | | | | |

*Field Study, 2015*

The above two tables demonstrate the co-integration test result of the models. Table (18) shows the ARDL bound test result of the model. Accordingly, the F-statistic is 4.984. This is between the upper and the lower critical value in both the 5% and 10% significance. So this result is inconclusive to reject or accept the null hypothesis of no co-integration. To ensure the presence of long run relationship in the model it is valuable to apply other test methods. Here the Johnson Juselius maximum likelihood method of co-integration test is applied to obtain the number of co-integrating vector(s). Hence table (19) illustrates the existence of long-run relationship.

**Table 12 Long Run Results: Dependent Variable is FTTRGt**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDIG*** | 0.155673 | 0.054881 | 2.836549 | 0.0077 |
| GDPP | 0.002349 | 0.002275 | 1.032375 | 0.3094 |
| DTRG*** | -2.840475 | 1.012071 | -2.806597 | 0.0083 |
| C*** | 6.963913 | 1.134766 | 6.136874 | 0.0000 |
| @TREND*** | -0.164384 | 0.054594 | -3.011022 | 0.0050 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

*Field Study, 2015*

Table (20) demonstrates the long run estimates on the basis of selected ARDL model. Thus the coefficient of $FDIG_t$ is positive and significant at 1% level of significance. And $GDPP_t$ is also positive but not significant. Accordingly, the long-run multiplier between FDI and foreign trade tax revenue is 0.1557. In the same way, the long-run multiplier between GDP per person employed and foreign trade tax revenue is 0.00235. Its equation is as follows:

$$Cointeq = FTTRG - (0.1557*FDIG + 0.0023*GDPP - 2.8405*D_{FTRG} + 6.9639 - 0.1644*@TREND)$$

Therefore in the long-run an increase of 10 percent in FDI will lead to an increase of 1.557 percent in $FTTRG_t$ while an increase of 10 percent in $GDPP_t$ will also lead to an increase of 0.0235 percent in $FTTRG_t$. Intercept (C) is positive and significant at 1% whereas the coefficient of $D_{FTRG}$ and @trend are negative and significant at 1% level of significance.

**Table 13 Error Correction Model: Dependent Variable is $DFTTRG_t$**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(FDIG)** | 0.079617 | 0.035948 | 2.214801 | 0.0338 |
| D(GDPP) | 0.001201 | 0.001201 | 0.999871 | 0.3246 |
| D(DTRG)*** | -1.452719 | 0.506383 | -2.868812 | 0.0071 |
| D(@TREND)*** | -0.084072 | 0.030456 | -2.760475 | 0.0093 |
| CointEq(-1)*** | -0.511435 | 0.125264 | -4.082871 | 0.0003 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

*Field Study, 2015*

Table (21) shows that both dynamic regressors FDI and GDP have positive impact on foreign trade tax revenue. And also all the short run regressors except GDP per person employed are statistically significant at 1 to 5%. The coefficient of CointEq(-1) is negative and significant at 1%. This indicates the presence of short run relationship in the model and its speed of adjustment is 51.14% in a year from short run disequilibrium to long run equilibrium.

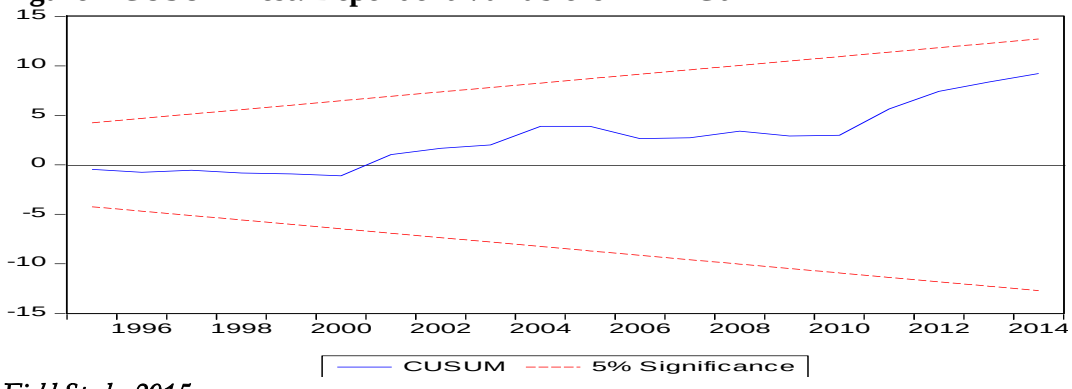
**Table 14 Diagnostic Tests: Dependent Variable is FTTRGt**

| | LM version | P-value | Coefficient | |
|---|---|---|---|---|
| Serial Correlation | 0.1621 | 0.3474 | R-squared | 0.7481 |
| Normality | 0.7579 | 0.6846 | Prob(F-statistic) | 0.0000 |
| Heteroscedasticity | 8.5013 | 0.1307 | | |

*Field Study, 2015*

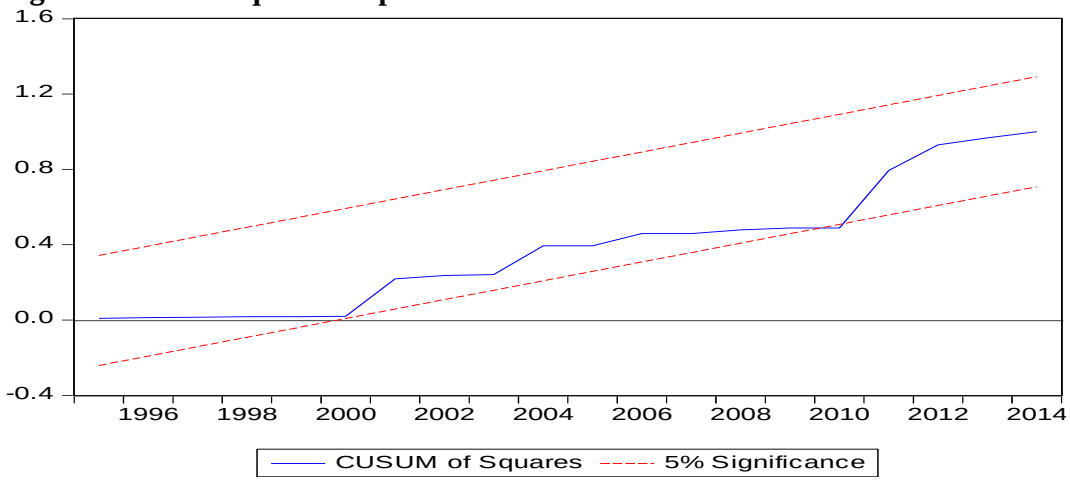
The results of table (22) prove that all p-values are greater than 5%. So the problems of serial correlation, normality and heteroscedasticity are not found in this model. The R-square is very strong, which is more than 60% and the Prob(F-statistic) is significant at 1%.

**Figure 7 CUSUM Test: Dependent Variable is FTTRGt**




*Field Study, 2015*

**Figure 8 CUSUMsq Test: Dependent Variable is FTTRGt**




*Field Study, 2015*

The figures 7& 8 shows that CUSUM and CUSUMs q test. CUSUM test do not exceed the critical boundaries at 5% level of significance. However; CUSUMs q test depicts the presence of instability in the model. This means that the long run coefficients are not reliable.

**Impact of FDI on Personal income tax revenue:-** In this section the study discusses the impact of FDI on Personal income tax revenue using the ARDL model as in equation (20) after replacing TRGt by PITRGt. The optimum lag length is 1 for DPITRGt 0 for DFDIGt and 0 for DGDPEt (means ARDL (1,0,0). The calculated F-statistic for selected ARDL model is given in table (23).

**Table 15 ARDL Bound Test: Using ARDL(1,0,0)**

| VARIABLES (when taken as a dependent) | F-Statistic | At 10% | | At 5% | | At 2.5% | | At 1% | |
|---|---|---|---|---|---|---|---|---|---|
| | | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) | I(0) | I(1) |
| D(PITRG) | 7.647*** | 4.19 | 5.06 | 4.87 | 5.85 | 5.79 | 6.59 | 6.34 | 7.52 |

*, ** and *** means at 10%, 5% and 1% level of significant reject the null hypotheses of no co-integration.

*Field Study, 2015*

Table (23) depicts that the F-statistic result is 7.647. It is greater than the upper bound value. So, the null hypothesis of no co-integration is rejected and concludes there is evidence of a long-run relationship among the time-series at 1% level of significance.

**Table 16 Long Run Results: Dependent Variable is PITRGt**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| FDIG | -0.008606 | 0.012566 | -0.684897 | 0.4982 |
| GDPP | -0.000567 | 0.000508 | -1.117732 | 0.2718 |
| $D_{PTRG}$ | 0.945096 | 0.230941 | 4.092368 | 0.0003 |
| C | -0.044892 | 0.232501 | -0.193084 | 0.8481 |
| @TREND | 0.047671 | 0.01407 | 3.388192 | 0.0018 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

*Field Study, 2015*

Table (24) illustrates the long run estimates on the basis of selected ARDL model. In view of that all the coefficient of the regressors except $D_{PTRG}$ and @trend are negative and insignificant. Thus the long-run multiplier between FDI and personal income tax revenue is -0.0086 whereas the long-run multiplier between GDP per person employed and personal income tax revenue is -0.0006.

***Cointeq = PITRG - (-0.0086*FDIG - 0.0006*GDPP -0.945*$D_{PTRG}$ - 0.045 + 0.0477*@TREND)***

Hence in the long-run an increase of 10 percent in FDI will lead to a decrease of 0.086 percent in $PITRG_t$. Similarly, an increase of 10 percent in GDP per person employed will lead to a decrease of 0.006 units in $PTRG_t$. The coefficient of DTRG and trend is positive and significant at 1% level of significance.

**Table 17 Error Correction Model: Dependent Variable is DPITRGt**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| D(FDIG) | -0.002945 | 0.004365 | -0.674505 | 0.5047 |
| D(GDPP) | -0.000194 | 0.00016 | -1.212245 | 0.2340 |
| D(DTRG) | 0.32335 | 0.068308 | 4.733677 | 0.0000 |
| D(@TREND()) | 0.01631 | 0.004562 | 3.575213 | 0.0011 |
| CointEq(-1) | -0.342134 | 0.084676 | -4.0405 | 0.0003 |

Note: *, ** and *** show statistically significance of parameters at the 0.10, 0.05 and 0.01 respectively.

*Field Study, 2015*

Table (25) shows that both the coefficient of FDI and GDP per person employed have negative and insignificant contribution to the personal income tax revenue in the short-run. DTRG and trend have positive impact in the short run as expected and statistically significant. The coefficient of CointEq(-1) is negative and significant at 1%. The magnitude of this coefficient implies that nearly 34% of any disequilibrium among Tax Revenue, FDI and GDP per person employed is corrected within one period.

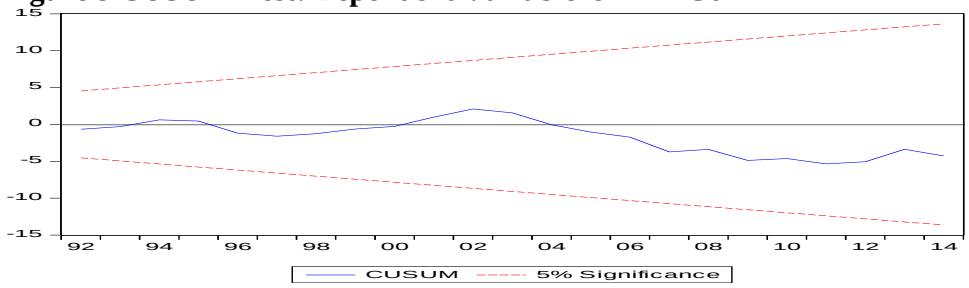
**Table 18 Diagnostic Tests: Dependent Variable is PITRGt**

| | LM version | P-value | Coefficient | |
|---|---|---|---|---|
| Serial Correlation | 1.4615 | 0.2267 | R-squared | 0.8713 |
| Normality | 1.6883 | 0.4299 | Prob(F-statistic) | 0.0000 |
| Heteroscedasticity | 2.7825 | 0.7335 | | |

*Field Study, 2015*

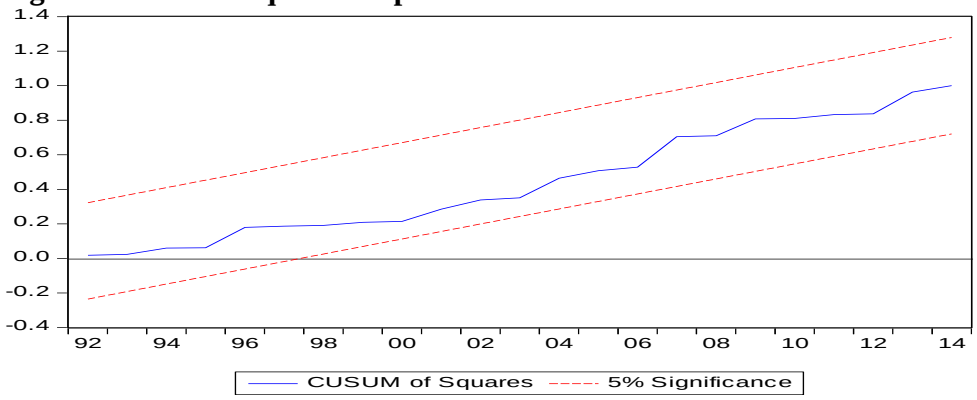
The results of table (26) show that all the p-values are greater than 5%. So the problems of serial correlation, normality and heteroscedasticity are not found in this model. In addition the R-square is very strong, which is more than 60% and the Prob(F-statistic) is significant at 1%.

**Figure 9 CUSUM Test: Dependent Variable is PITRGt**




*Field Study, 2015*

**Figure 10 CUSUMsq Test: Dependent Variable is PITRGt**




*Field Study, 2015*

The figures 9 & 10 shows that CUSUM and CUSUMs q test do not exceed the critical boundaries at 5% level of significance. This means that the model of personal income tax revenue is correctly specified and long run coefficients are reliable.

## VI Summary and Conclusion

The present study attempted an empirical analysis on the impact of foreign direct investment on tax revenues in Ethiopia. The time series data analysis has been attempted using long period data for the period 1977-2014 using a structural break for year 1989. ARDL Bounds test and its error correction model have been used to verify the long run and short run relationship between the variables. The evidence suggests that all the variables are non-stationary at levels and became stationary at first difference. The study uses FDI and GDP per capita as explanatory variables and tax revenue as the dependent variable. The results indicate that there is long run equilibrium between the variables and there exists short run relationship between the tax revenue and FDI. There exists a negative and statistically significant impact of FDI on tax revenues in Ethiopia leading to a reduction in the general welfare of the society. Therefore the null hypothesis (FDI has no impact on tax revenue) is rejected and the alternative hypothesis (FDI has an impact on the tax revenue in the country) is accepted. GDP per capita also had a negative and significant impact on tax revenue. Similar to the earlier works, the present study came out with the evidence of significant relationship between FDI and tax revenues, but FDI having a negative contribution towards improving tax revenues in Ethiopia.

At disaggregated tax revenue components *level t*he study observed mixed results. FDI has negative and significant impact on the domestic indirect tax revenue, though it is expected to augment indirect tax revenue collection through productivity spillover. Since indirect tax depends on the sales of goods and services. Likewise FDI and GDP per person employed have a Negative and significant impact on corporate income tax revenue. Here the provision of tax holiday and other related factors can be a reason for the impact. FDI also has a negative contribution on personal income tax revenue but its impact is insignificant. On the other hand FDI has a positive and significant impact on foreign trade tax revenue, despite the huge amount of incentives provided in the form of zero tax and custom duties exemptions.

Based on the empirical evidence provided by the model employed and the data used for the study period (1974-2014), we propose that, offering tax incentives to attract FDI may lead to a significant revenue decline in Ethiopia. Among different tax revenue types, the corporate income tax revenue

has been highly affected may be due to tax holiday provision. However, this needs further probe as there is a tendency for firms to avoid the local taxation using transfer pricing and tax base erosion methods. In contrast to FDI increasing domestic indirect tax revenue, the opposite is found to be true in Ethiopia which requires further investigation. Moreover, despite the increase in number of employment opportunities through FDI, its impact on the personal income tax revenue has been found to be negative. This is in contrast what has been normally expected.

The provisions of tax incentives need to be carefully assessed and monitored. The costs and benefits related to incentives have to be taken in to consideration. Monitoring and evaluation system should be developed and implemented properly so as to reduce negative impacts. The provision of tax holiday should be reduced or replaced by reduced tax rate. Tax incentives should be provided based on critically studied approach; a casual provision of such incentive can affect the country tax revenue.

As it has been discussed in the literature as well as in the empirical findings FDIs are attracted by tax incentive motives. The provision of tax incentives for FDI may result in revenue losses for the host countries such as Ethiopia. The present study finds that FDI had a negative impact on tax revenue in Ethiopia and among the tax types corporate income tax revenues were highly affected. Some of the reasons for this could be the provision of tax holiday, the tax base erosion practices of FDI firms or the transfer pricing methods. A further enquiry is needed to investigate these issues.

One of the most important advantages that have been ascribed to FDI in the theoretical and empirical literature has been job creation and the consequent increases in personal incomes in the host countries. This is expected to have a positive impact on personal income tax revenues in these countries. Contrary to this belief, the study finds decline in the personal income tax revenues. It is found that in spite of an increase in the employment opportunities created by FDIs, the impact on contribution for personal income tax revenue has been negative. This requires a further probe.

In view of these empirical findings, the study recommends that the provision of tax incentives need to be carefully assessed and monitored in Ethiopia. The costs and benefits related to these incentives need to be evaluated. The monitoring and evaluation system should be developed and implemented properly so as to enhance the tax revenues.

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