

**IMPACT OF TRANSFER PRICING ON CORPORATE INCOME TAX IN KENYA**

**BY**

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## **DECLARATION**

This research paper is my original work and has not been presented for a degree in any other University or institution of higher learning.

Signed: ..... Date: .....

Hillary Kariuki Wangai

This paper has been submitted with my approval as University Supervisor:

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## **DEDICATION**

This research paper is dedicated to family, for the encouragement and support throughout my academic and professional life.

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This research project is as a result of support from several sources and I wish to acknowledge them all.

First and foremost, my success in writing this paper is due to the Almighty God who gave me courage and good health to face the challenges in getting the necessary information for the study. Secondly, would like to appreciate my supervisor Dr. Moses Muriithi for advice and guidance. Finally, I would like to acknowledge my family for their prayers and support which made this research paper a reality.

The above acknowledgements notwithstanding, all errors and omissions in this paper are solely mine.

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## **LIST OF ABBREVIATIONS**

ALS	Arm's Length Standard
ITA	Income Tax Act
MNC	Multinational company
MNE	Multinational Enterprise
OECD	Organization for Economic Cooperation for Development
TP	Transfer Pricing

## **ABSTRACT**

Tax revenue is important for any country since it enables the country's government to cater for the welfare of her people. In addition, a country that mobilizes adequate tax revenue reduces her budget deficit which translates into reduced external borrowing. Reduced external borrowing is good for economic growth since the amount of country's revenue which could be used in paying the external debt can be employed in other productive sectors of the economy. This in turn will assist the country to reduce the level of unemployment as well as attracting foreign direct investment. However, most of the developing countries do not mobilize adequate tax as a result of tax evasion. One of the ways in which tax evasion occurs is through transfer pricing by MNCs. For Kenya to achieve her vision 2030 there is need to investigate the effect of transfer pricing on Kenya's corporate income tax. In Kenya, a few studies have explored external debt service but in different approaches. This study therefore sought to bridge the gap by investigating the effect of external debt service on foreign direct investment inflows for the period between 1980 and 2014. The study used OLS method in estimating long-run co-integrating equation. The study carried out pre-estimation tests so as to validate the results. Among the pre-estimation tests carried out are autocorrelation, heteroscedasticity, multicollinearity and normality test. Stationarity of the variables was further investigated using Augmented Dickey Fuller test.

The estimated results revealed overall significance of the explanatory variables in explaining tax revenue ratio to GDP. The coefficient of determination showed that 85.31 percent of the variation in corporate income tax revenue ratio to GDP is explained by from transfer pricing, agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP and GDP growth rate.

The findings further revealed that lag two of foreign debt ratio to GDP to be negative individually significant at 5 percent level of significance in influencing corporate income tax revenue ratio to GDP in the short run. Lag one of GDP growth rate was also revealed to be negative and individually significant at 10 percent level of significance in influencing corporate income tax revenue ratio to GDP in the short run. Further, lag one and lag two of transfer pricing

were also revealed to be negative and individually insignificant in influencing corporate income tax revenue ratio to GDP in the short run.

Based on these study findings, the government of Kenya should focus on reducing foreign debt and also put in place good policies that will enable government to raise more tax revenue as the economy grows. To achieve higher tax corporate tax as the economy grows, government needs to develop policies that will curb transfer pricing so that she obtains higher taxes from MNCs that are registering higher profits in the country. This is because if every MNC pays her share of taxes, there will be no over-taxation of other economic agents and thus tax evasion will be reduced. Reduction in tax evasion will translate into high taxes and thus lead to decrease in foreign debt.

## **CHAPTER ONE:**

### **INTRODUCTION**

#### **1.1. Background Information**

A transfer price is defined as the price at which goods and services are transferred between related entities operating in different tax jurisdiction. (Kaplan and Atkinson, 1998)

There are many MNEs operating in Kenya whose cross-border transactions with their non-resident related entities have become a key area of focus by the KRA. MNEs around the world are under pressure to model their businesses in a way they comply and compete to minimize costs and maximize output and returns on investments.

Transfer pricing rules were introduced in Kenya in June of 2006 to clarify the provisions of section 18(3) of the ITA. According to the rules, the commissioner has the power to adjust profits derived by a resident person from a business conducted with a non-resident person so as to reflect the profits level that would be derived were such a business conducted in an arms' length set up. As such, the Commissioner can adjust prices in transactions involving related parties operating from different tax jurisdictions to get to an arm's-length price. Any tax arising from a commissioner's adjustment of transfer prices is deemed as additional tax under the laws of Kenya and will attract penalties and interest covering the entire period of the understatement.

Section 18(3) of the income tax of Kenya however did not provide a clear cut way of determining the transfer prices comparable to one that would be arrived at in an arms 'length set up. KRA has over the years trained personnel to specialize in Transfer pricing and this is

evidenced by the introduction of a TP department inside the authority. According to Ngumy, Anjarwalla & Khanna (2010).

Before the introduction of the TP rules, there were no specific guidelines to assist multinational companies setting of an agreeable arms' length price and they relied on the Organization for Economic Cooperation for Development (OECD) guidelines which are universally accepted and applied.

An MNC is a corporation with presence in multiple tax jurisdictions. According to (Grabski,1985), it's a large international corporation that produces and sells goods in more than one country.

MNEs in Kenya are required to adhere to the provisions of the TP rules and pass TP adjustments in their books of accounts by the end of each financial year, to ensure that they comply with the arm's length principle. As such, transfer of goods and services from one tax jurisdiction to the other by related corporate entities in different tax jurisdictions is done at market prices. Non-compliance with this requirement results to tax evasion and exposes the companies to lengthy and expensive KRA audits and subsequent tax penalties and interests.

The setting up of operations in Kenya by MNEs is greatly influenced by how best the organization structure will enable optimal tax planning. While KRA is after the MNEs through TP audits to avert tax evasion via dubious TP policies, MNEs are on the other hand trying to maximize their tax saving using complicated organizational structures.

## 1.2. Tax Revenue

Tax is a compulsory contribution to the government, paid by individuals and corporate entities, which does not bear any relationship to the benefit received (Hyman, 1987). It represents money earned by the State from taxation. The money earned by the state is used in funding public expenditure and other related costs. For example, money generated from tax is used in financing goods for public use and positive externalities that are not provided adequately by the private sector. Total tax is composed of contribution by different tax heads. In Kenya, the main tax heads include VAT, Income Tax, customs, employment tax and withholding tax.

Taxes are generally classified as direct or indirect taxes. Direct taxes are those taxes which are paid by the taxpayer personally, or through agents such as employers and other mandated agencies. Majorly, they are a percentage of incomes earned and are cannot be shifted to other people.

Indirect taxes are borne by a different person from the one who submits to the revenue authority. They are transferred to a different party. For instance, the consumers of goods and services pay the taxes but the seller of the service bears the responsibility of submitting the taxes to the revenue authority. Examples of indirect taxes in Kenya include Value added tax, excise duty, custom duties among others.

Among the major contributors to the tax revenue in Kenya are income tax, Value added tax, Pay-as-You-Earn, excise duty and customs duty (KRA, 2007).

Taxes affect the performance of the economy of a country through their effect on work effort, savings and investments. The productivity of an economy will increase when there is investment in both physical and human capitals. Investment comes from both the private and public savings.

Thus, any factor affecting investment will influence the economic performance (Mintz and Wilson, 2000)

### **1.3. Corporate Income Tax revenue in Kenya**

Corporate income tax in refers to taxes paid on incomes generated by corporates which are tax resident in Kenya. Local companies are taxes at a standard rate of 30% of PBT, tax non-resident companies at 37.5%.

The ITA defines a permanent establishment as a fixed business premise a person carries on business and includes a building site and a construction project, which has existed for six months or more (ITA). Corporate tax payable is determined after deducting all the allowable expenses including interests, royalties, management and professional service fees. All these expenses are easily utilized by the MNEs to manipulate the amount of tax payable to the government through distortion of the transfer prices (KPMG, 2014).

#### 1.4. **The concept of Transfer pricing**

Flows of goods and services among related entities of an MNE across different tax jurisdictions are referred to as intra-firm trade and the prices at which these goods and services are transferred are called the transfer prices. Transfer pricing is therefore the process of determination of the transfer prices of goods in an intra-firm trade. This area of study has been studied by a few researchers such as Hirshleifer (1956), Horst (1971) and Rugman and Eden (1985).

International trade has increasingly been inclined towards the transfer of goods within the international organizations. Therefore, the international organizations can manage the risk associated with transfer pricing while at the same time enhance their performance observing the transfer pricing regulations (Tang 1997).

Multinationals operate in different tax jurisdictions and as such the commercial transactions will be subject to different market forces which will influence the nature of relationships among them. To enhance compliance and fair distribution of the tax base among the related entities in a Multinational, it's imperative that the transactions among the related entities are carried out at an arms' length set up. Failure to comply with this principle may lead to double taxation where tax authorities from both sides insist on taxing the profits generated to get their share. To avoid this, multinationals set to come up with means to reduce their tax liabilities through manipulation of transfer prices (Azemar & Corcos, 2009).



Revenue collection authorities all over the world have been faced with leakage of tax revenues especially resulting from the manipulation of the tax and corporate structures of companies so that their tax bases are un-evenly distributed among the countries of operations whereby the vast amount of tax is levied by the country with a favorable tax jurisdiction, e.g. tax havens such as UAE and Mauritius. Such a scenario brings into play transfer pricing challenges since such related party transactions may be viewed by the revenue authorities involved as efforts to manipulate the profits subject to tax (Feinschreiber & Kent, 2008).

To mitigate this challenge, companies adopt arms-length prices in their related party transactions and are required to pass audit adjustments in their books of accounts at the end of the financial period to reflect the transfer prices that would be expected to prevail were all transactions among the related entities are carried out at arm's length.

#### **1.5. Impacts of transfer pricing on MNEs**

There has been a concern by the multinationals since 1970s on the harmful effect of transfer mispricing on the third world countries (Newfarmer & Richard 1978)

Governments and tax collection authorities appreciate that transfer prices can be a tax avoidance and evasion tool by manipulating transfer prices setting them above or below opportunity cost. This way, the multinational company can reduce its overall tax liability and achieve a higher after-tax profit at a group level, which is not possible for non-related entities. Transfer price manipulation is therefore the over/under invoicing of transfer prices in intra-firm trade to ensure that the profits due to the company are above what would normally be achieved in an arms' length setting, majorly in response to government regulations.

The affinity of an organization or an individual to avoid tax is prevalent in all areas of professionals and frauds associated with it have been estimated to stand at approximately 5 times all conventional crimes (Croall, 2001).

#### **1.6. Transfer pricing in Africa**

Most African countries are moving towards regulation of transfer prices among related members of MNEs. Kenya, Egypt, Morocco and South Africa have for long had based on the ALS. Uganda passed the TP regulations recently adopting TP based on ALS. Seven other African countries lack comprehensive transfer pricing rules and include Mozambique and DRC, which has codes in their income tax codes referencing to ALS (PWC,2011).

As the African economies evolve and get integrated into the world economy, more countries will develop or adopt rules to safeguard their interests against the MNEs which will be based on the ALS.

The study concludes that the African TP is expected to be based on Organization of Economies for corporation and development guidelines and the United Nations manual. However, the TP rules will be shaped by the desire by the African economies to safeguard their natural resources

#### **1.7. Transfer pricing in Kenya**

KRA has been the most active tax collection authority in the region in implementing and following up on transfer pricing practices of MNEs.

A number of cases relating to transfer prices has been handled at the high court in Kenya. The transfer pricing rules in Kenya were introduced in July 2006, to guide on the application of the arm's-length principle (PwC, 2011).

According to the Kenya tax data, tax revenue contribution to the GDP grew from 10% in the 1960s to about 20% in the 1980s (Karingi *et al.*, 2004). Following the introduction of the tax modernization program, tax revenue soared and contributed 24.6% of the GDP in 1995/6 and later stabilized at 23%. Since then, the tax revenue contribution to GDP has been oscillating around 20%. (Karingi *et al.*, 2004).

Tax revenues at present are important to the achievement of Kenya's economic development agenda. Serious attention has been given to tax issues which is an indication of the importance of the area to the economy (Tanzi & Zee, 2000).

Key reform areas in the tax policy including transfer pricing are contained in the Tax Management Administration Guidelines and the Kenya Vision 2030. The overall goal is to broaden the tax base and capture the untaxed population and sector to the tax drag net and streamline tax administration.

## **1.8. Statement of the Problem**

Taxes play an important role in meeting government expenditure in Kenya; taxes financed 62.6 per cent of the 2013/2014 budget (IEA& OECD, 2013).

The major contributors of tax revenues in Kenya are the Income Tax and VAT. In the 2005/6 fiscal year, income tax contributed 36.3% of the total revenue collected by the government. (IEA & OECD, 2012)

Multinationals contributions to the GDP cannot be overlooked as their share contribution is significant. Major entrance of MNEs came about after Kenya gained her independence in 1963 where companies officially set base in the independent Kenya, regulated by the Laws of Kenya. Their presence has continued over time and some are listed in the NSE, with minority shares held by Kenyans. Data on their specific contribution to the GDP is not available, but their contribution is visible as the form the best part of the private sector. (PwC, 2011).

Based on their contribution to the MNEs, their compliance and non—compliance is focus areas by tax revenue authorities as they are significant contributors to the revenue basket. There has been concerns about the activities or MNEs in developing countries where they formulate complex tax avoidance measures to siphon off profits to their parent company leading to negative revenue effects, and unfair tax positions to the developing countries. (Cottarelli, (2011)).

As a precaution, governments safeguard against artificial shifting of profits out of the tax jurisdictions by the MNEs and ensure that the profits generated from economic activities in their jurisdictions are disclosed and taxed accordingly. (OECD, 2010).

Despite the significance of the contribution of the MNEs to the tax collection in Kenya, there is little coverage of this area of research (PwC, 2011). There have been limited studies on transfer pricing in emerging markets (Landolf, 2006) and especially on Kenya. Most of the developing countries are struggling with coming up with means of reducing revenue loss through complex tax planning mechanisms by MNEs through off-shore tax havens. A lot of revenue is equally lost through cross border transactions by related entities of MNEs. The complexity has posed a challenge in collating information on the impact and extent of the effects of transfer mispricing in Kenya, and other African countries. (Oriwo, 2010).

The increase in relevance of transfer pricing to the corporate income taxes collection and government revenue in general necessitates more research work to be conducted in this area. Research should make available more materials on transfer pricing to policy makers and other economic agents for better decision making. This paper seeks to investigate the significance of transfer pricing to the corporate income taxes, and provide more information on this sensitive subject.

## **1.9. Research Questions**

The study sought to answer the following questions, namely:

- i. What is the effect of transfer pricing on corporate income tax revenue in Kenya?
- ii. What is the significance of intervening variables on corporate income tax revenue in Kenya?
- iii. What are policy implications arising from this study?

## **1.10. Objective of the study**

### **1.10.1. General Objective**

The general objective of this study is to estimate the effect of transfer pricing on corporate income tax revenue in Kenya.

### **1.10.2. Specific Objectives**

Specific objectives of the study were in two-fold namely;

- i. To estimate the effect of transfer pricing while controlling the other determinants of corporate income tax revenue; and
- ii. To draw policy implications based on the study findings.

## **1.11. Justification and significance of the study**

TP is relatively a new concept in the African continent. In Kenya, the concept was introduced in the year 2006. Effective administration of tax revenue is a key step towards achievement of

economic development of a country. MNEs play an important role in this realization as they contribute significantly to the tax revenue generated and utilized by the government to fund its development agenda.

Very little research has been carried out on the significance and importance of TP on the tax revenue collection in the developing countries. This is despite the growing need by the governments to mobilize their internal resources to ensure more tax is collected as the governments need to collect more revenue to fund the growing economies (Cottarelli, 2011).

According to Silberztein (2008), TP is a major challenge for developing countries. There is focus on how to reduce revenue loss to the local tax administration through offshore tax havens.

The KRA similarly has been faced with rising revenue targets and indications are that it has been exhaustively using all administrative measures at its disposal to maximize on the amount of tax revenue that is collected. Of importance to consider is the introduction of TP rules in 2006 and their effects on the achievement of the targets.

This study will show whether introduction of the TP rules in Kenya have any effect on the government tax collection from the MNCs. The findings are particularly important to the government and the tax collection agency in evaluating the effectiveness of the TP policy and guide on policy formulation and subsequent decisions relating to MNCs. It provides researchers working on this subject with more insight on the topic and areas for further research.

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

This section consists of both theoretical and empirical literature review. Theoretical literature expounds on the link between transfer pricing and corporate income tax while the empirical literature provides detailed previous studies that have done on the effect transfer pricing on corporate income tax. In this section we begin with theoretical literature review followed by empirical literature review and finally an overview of literature.

#### **2.2. Theoretical review**

##### **2.2.1. Economic Theory**

The economic theory literature is based on the Hirshleifer model of 1956 which uses the manufacturing division and the distribution division. This model was used to develop this theory that uses buying and selling divisions as profit centers.

Under a competitive market structure, the strategy to be employed is to transfer the resources at market price while for intra-company transfers, the price is placed along the marginal cost curve. This situation was analyzed under perfect and imperfect competition markets (Schjelderup and Sorgard (1997))



The basic concept for determining the transfer price is the marginal cost which is an economic aspect. The company is supposed to manage the scarce resources effectively and produce the right amounts that maximize the profits. Members of the firm are questioned for their best input to achieve an output that achieves this returns. In this theory, prices are used as a measure to distribute the scarce resources. The theory is criticized due to the focus it has on short term profit maximization and not the long term effect it has. Therefore, the model is only effective in simple case situations (Hirshleifer, 2006).

### **2.2.2 Accounting theory**

The makeup of pricing involves cost plus margin. Further, transfer pricing require constant control of the activities involved. The expectations of tax rules are a crucial factor in the transfer prices of these multi-nationals. Transfer price when under accounting theory has two main functions which are profit allocation and maximization. Profit allocation is meant to follow up on the decisions made by the management while profit maximization in relation to taxation systems transfers the returns between individuals so as to reduce the tax base in line to multinational level so as to reorganize the returns to the lesser tax rate economical setting (Veres, 2011).

Milner (2011) puts out that MNE's and MNC's in Africa have the liberty to change the transfer prices to be in their favor. The transfer pricing in this case becomes a major loss of returns in many African nations according to the African Tax Administration Forum (ATAF). However, in an aim to protect profit and encourage growth, African nations are taking measures used in the rest of the world related to transfer pricing (Veres, 2011).

In Kenya there is a single market price as the reference point used to decide whether an MNC has dishonored the Income Tax Act. The decision however is questioned by experts who perceive that KRA should consider a range of prices in determining the transfer pricing instead of using a middle market price. This method suggested by tax experts is used by OECD in Europe and North America (KPMG, 2014). KRA also allows reduction of prices at the end of each year just before the preparation of the financial results if an MNC had previously charged higher than the market price which in turn reduces the tax collected by KRA (Delloite, 2015).

The target by this accounting theory is the impact of transfer prices on economic decisions that are used to determine how much a company can produce. Further, it is used to determine the type of market price that should be used by a firm.

### **2.2.3. Economic Deterrence Theory**

As per this theory, the taxpayer is a neutral individual in terms of risk to evade tax and yet maintains the morality expected. Models have been developed to show the relationship between tax rates and how the tax payer avoids tax. The result of these models was that higher tax rates led to compliance by the MNE's but with the factor that the penalties awarded were equal to the tax that could have been evaded.

In measuring tax compliance by Kenyans, respondents lied about their tax payment according to (Ali, *et al.*, 2013, March).

The method used by this theory is higher penalties if the chance of being detected is low and low penalties if the chance is high. In the US, the range of penalties was increased but the result was negative as compliance did not improve. The tax advisors argued that the increase was perceived to be unjustified by the taxpayers hence intentionally disobeying the law of paying all the tax. When the factor of complexity was tried, the compliance did not improve as it required tax payers to hire tax advisors. Therefore, according to this theory, tax payers will most likely consider evading the tax if the penalty is lower than the evasion. The solutions proposed by other studies have shown that penalties should be used in conjunction with rewards. The theory is suitable in MNE's in developing countries such as Kenya as they seek to minimize tax and maximize profit (Choe & Hyde, 2007).

In Kenya, transfer pricing penalties are very much applicable under the ITA. The commissioner can recover the taxes remaining from the affected parties. Consequently, under the ITA, penalties

are charged at 20% for unpaid taxes and the interest during the period it is not paid is 2% per month (Delloite, 2015), while observing the *induplum rule*. The tax payer can also defend himself/herself using documented justified transfer prices among intra-group transactions. The defense is meant to demonstrate nature of prices of these transacting parties. The documentation is also not generally required but should be maintained by the tax payers for their best interest (Ali, *et al.*, 2013, March).

## **2.3 Empirical Review**

This section presents a review of the impact of transfer pricing on corporate tax revenue internationally and locally, and also examines the determinants of tax revenue.

Using 20 US companies, Harris et al. (1993) concluded that affiliates in favorable tax jurisdictions remitted lesser tax revenue than those in unfavorable tax jurisdictions in the USA. However, he noted that his is a one-sided comparison where it provided an indirect evidence of transfer mispricing. This was demonstrated by the understanding that Harris et al. (1993) can be explained by profit shifting as well as differences in specific locations of the profit centers in different tax jurisdictions.

According to a separate research done by Lecraw (1985), the transfer pricing behavior of MNEs is significantly affected by tariffs, price, foreign exchange controls and relative tax rates.

Using a 30-day balance of USA trade prices to identify outlying factors, Pak and Zdanowicz (1994) concluded that the government lost close to 33 billion dollars in tax revenues relating to taxable income tax that was not disclosed. In an almost similar study, Swenson (2001) using the yearly USA import data tested for existence of transfer pricing manipulation over 1981 to 1986. She concluded that 5% there was a tiny rise in the USA importation prices associated with a 5% fall in foreign corporate income tax rates.

In a study carried out by Eden and Rodriguez (2003), a ten percent rise in intra-firm trade share in the USA import widened the gap between the two indices by 1.3% and also noted that TP enhanced the relationship

Eden and Rodriguez (2003) used the monthly import price data to assess the impact of intra-company trade on international price indices, on the prediction that transfer pricing manipulation should widen the gap between. Their empirical work shows that a 10% increase in the intracompany trade share of the USA imports widens the gap between the unit value indexes and price specification indices by 1.3 %, with transfer pricing manipulation strengthening the relationship.

In a bid to test the kind of relationship that exist between the corporate income tax differentials and TP manipulation, Clausing (2003) relied on 30days net export data from the USBS for the period 1997-1999. The analysis indicated that there existed a link indicative of tax avoidance. a tax rate by 1% lower in the country of destination / origin was observed to be associated with intra-company export prices 1.8% lower and intra-company import prices by 2.0 % higher relative to non- intra-company goods

The concept of tax-motivated TP was introduced by Hassett and Newmark (2008). The profits of each portion of MNE business are most likely structured through intercompany transactions, like intercompany sales, licensing and leasing among others. Management of MNC is often interested in maximizing global profits as well as minimizing the overall tax paid by the group. Thus, the management of MNE group examines and review tax laws and administrative requirements in various jurisdictions of operation with a view of assessing their potential tax liabilities. One way through which MNEs minimize their effective tax exposure is through TP by shifting profits

from normal or high tax jurisdictions to low tax jurisdiction and in some cases to tax havens (Hollingshead, 2010).

Firms that are not involved in manufacturing are likely to pursue tax maximization as compared to non-manufacturing firms. Firms whose TP practices are assessed on tax minimization goals spend a higher percentage of their TP resources on tax planning relative to compliance goals Awour and Ngigi, (2012).

Several studies have been done to examine the determinants of tax revenue in sub-Saharan Africa: In a bid to establish the determinants of tax revenue as a contributor to the GDP, Stotsky and Wolde Mariam (1997) used 43 sub Saharan African countries for the period 1990 to 1995. The results so obtained suggested that Agriculture and Mining have a significant inverse relationship with tax revenue and imports and exports have a direct and significant relationship with the tax revenue as a share of the GDP. It was also concluded that per capita income had no significant relationship with tax revenue.

In investigating the performance of revenues using a large panel of 105 countries for 25 years, Gupta (2007) found out that Per capita income, agriculture, foreign aid, and trade openness had significant and direct relationships with revenue. Further, corruption, political instability and economic instability had a negative relationship with tax revenue. Foreign debt however was found to be insignificant.

Eltony (2002) in a study to analyze factors affecting tax revenue, he came up with the finding that Per capita income, Agriculture, mining and net exports were found to have a significant and positive relationship with the tax revenue performance. In the Arab countries over and above

these factors, oil and foreign debt had significant and direct relationship with revenue performance.

In investigating the stability of determinant of income tax by Rajan (1996), per capita GDP, per-capita government expenditure, and literacy levels were found to have a direct and significant relationship with tax share of GDP.

Teera(2002), investigated the determinants of tax revenue share in Uganda using time series data. He used the (ADF) and the (ECM)and found that, there is a direct significant relationship between per capita income and total tax revenue.

Higher per capita income was interpreted to indicate higher capacity to pay taxes and capacity to charge and collect according to Chelliah (1971). Tax share in this research was associated with variables such as non-mineral export ratio, agriculture share and mining share.

According to Tanzi (1992), 50% of the variation in the tax as a share of GDP is explained by agriculture, foreign debt, per capita income and import share. He concluded that higher foreign debts lead to heightened growth leading to high income generation and taxes in the country.

Trade share and per capita incomes are the key determinants of tax share according to Lotz and Morss (1967). Piancastelli (2001)). Supported this finding in his later study.

In a study carried out in 20014, Agbeyegbe. al. (2004) examined 22 Sub-Saharan countries covering the period 1980 to1996 period. It was concluded that the determinant of total tax revenue that was consistently found to be a significant and exhibited an inverse relationship to tax share was inflation.



## 2.4 Overview of the literature

The key determinants of income tax have been found to be many and diverse.

Share of agriculture in the country's GDP has been found to be a big influence to the level of income tax in a country. Stotsky and Wolde Mariam (1997) suggested that Agriculture and Mining have a significant inverse relationship with tax revenue and imports and exports have a direct and significant relationship with the tax revenue as a share of the GDP. It was also concluded that per capita income had no significant relationship with tax revenue.

According to Gupta (2007) suggest that Per capita income, agriculture, foreign aid, and trade openness had significant and direct relationships with revenue. Further, corruption, political instability and economic instability had a negative relationship with tax revenue. Foreign debt however was found to be insignificant.

According to Eltony (2002), Per capita income, Agriculture, mining and net exports were found to have a significant and positive relationship with the tax revenue performance

According to Rajan (1996), per capita GDP, per-capita government expenditure, and literacy levels were found to have a direct and significant relationship with tax share of GDP.

Teera (2002) research suggests that there is a direct significant relationship between per capita income and total tax revenue.

Chelliah(1971) suggest that a higher per capita income reflecting a higher level of development is held o indicate a higher capacity to pay taxes as well as a greater capacity to levy and collect them.

According to Tanzi (1992), higher foreign debts lead to heightened growth leading to high income generation and taxes in the country

From the empirical studies reviewed on the determinants of tax revenue, the key determinants of tax revenue, among others are Agriculture, Net export position, Trade openness, Foreign aid, Foreign debt and Inflation, all expressed as shares of the national Gross Domestic product.

However, all these studies have not clearly tackled the significance of transfer pricing and other variables in determination of the levels of corporate tax revenue in Kenya, even when past studies in other areas have shown varying impacts of transfer pricing on revenue generation in an economy.

## **CHAPTER THREE:**

### **METHODOLOGY**

#### **3.1 Introduction**

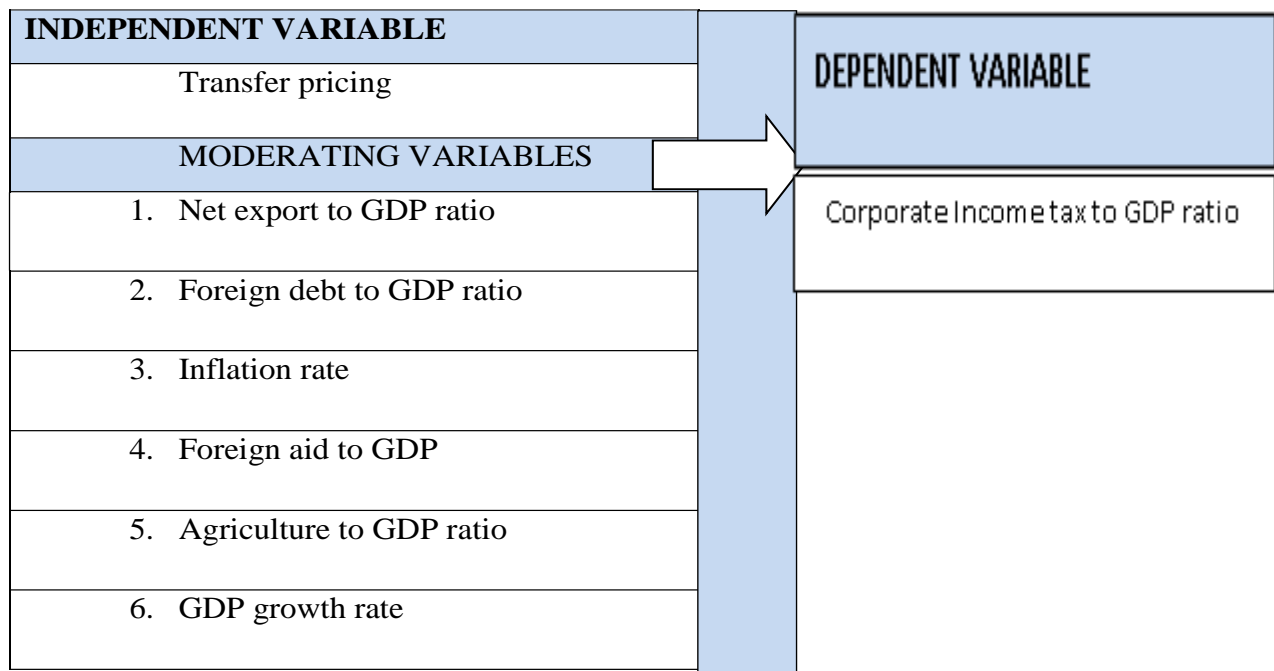
This chapter specifies the model used to analyze the determination of levels of income taxes and the significance of the tested variables. The study utilizes economic theory and econometric models to define this relationship. This chapter lays out the conceptual framework, the type of data, the statistical methods used and limitations of the study

#### **3.2 Conceptual Framework**

Different models in many studies have been applied in the study of the parameters which affect the levels of income tax revenues in an economy.

The conceptual framework describes the relationship between tax revenue and GDP, Agriculture, Imports, Exports, Inflation, and Transfer pricing. All the mentioned variables have been seen to have varying effects on the level of tax revenue collection.

#### **Figure 3.1: Relationship among Variables**



*Source: Author's presentation*

The above conceptual framework gives a depiction on how the variables are related to one another. The variables defined here are the dependent, independent and moderating variables. An independent variable in this case is the main variable the study seeks to investigate its influence on the dependent variable. On the other hand, moderating variables help us identify the exact effect of the independent variable on the dependent variable by holding them constant.

### **3.3 Economic Model**

The above conceptual framework translated into an operational estimation framework by looking at the relationship between corporate income tax ratio to GDP, transfer pricing and other control variables as suggested by the literature. An assumption was made of linear relationship between

corporate income tax ratio to GDP and the independent variables. In this case the estimated model was specified as shown in equation 1.

$$\text{tax} = \beta_0 + \beta_1 \text{agr} + \beta_2 \text{nx} + \beta_3 \text{fd} + \beta_4 \text{inf} + \beta_5 \text{fa} + \beta_6 \text{tp} + \beta_7 \text{gdpgr} + \mu \dots 1$$

Where:

tax is the ratio of Corporate tax revenue collected to the GDP;

agr is the ratio of agricultural contribution to the GDP;

nx is the ratio of Net exports to GDP;

fd is the ratio of foreign Debt to GDP;

inf is inflation rate during the time under review;

fa is the ratio of foreign aid to GDP;

tp is the dummy variable representing transfer pricing: 1 in the period after 2006, (after introduction of TP) and 0 for the period before 2006 (before introduction of TP); and

gdpgr is GDP growth rate.

$B_0$  = Constant;

$\beta_1$  = Change attributable to agriculture;

$\beta_2$  = Change attributable to Net exports;

$B_3$  = Change attributable to Debt;

$B_4$  = Change attributable to Inflation;

$B_5$  = Change attributable to foreign aid; and

$B_6$  = Change attributable to transfer pricing.

$B_7$  = Change attributable to GDP growth rate

$\mu$  = Error term to capture the un-explainable effect on tax revenue.

### 3.5 Definition and measurement of variables

Table 3.1 summarizes the way both dependent and independent variables were measured.

**Table 3.1: Variables used**

Variable used	Definition	Measurement
---------------	------------	-------------

**Dependent:**

Corporate income tax revenue (tax)	Tax revenue from corporate businesses	percentage of corporate income tax revenue to GDP
------------------------------------	---------------------------------------	---

**Independent:**

Gdpgr	Used to illustrate economic growth rate	GDP growth rate
Agr	Agriculture contribution to the economy	Agr is the percentage of agricultural contribution to GDP.
Nx	Exports Minus Imports	NX is the percentage contribution of Net exports to GDP
Fd	Foreign debt	FD is the percentage contribution of total foreign debt to GDP
inf	Inflation	INFis inflation rate during the time under review
fa	Foreign Aid	FAis the percentage contribution of foreign aid to GDP
tp	Transfer pricing	1 – for existence and 0 for non-existence (Dummy variable) of TP

Table 3.2 shows the expected sign of the coefficient of the independent variables used in the study together with supporting studies.

**Table 3.2: Expected signs**

<b>Independent Variables</b>	<b>Expected signs</b>	<b>Supporting study</b>
gdpgr	Positive	Gupta, 2007
agr	Negative	Stotsky & Wolde,1997 and Gupta 2007
nx	Positive	Etony 2002
fd	Positive	Tanzi 1992
in	Negative	Agbayegba al. 2004
fa	Positive	Gupta, 2007
tp	Positive	Clausing, 2003

The model is linear. The parameters of the model will be estimated using ordinary least squares (OLS). This is informed by the fact that OLS minimizes the sum of squared errors and yields best linear unbiased estimators.

## **3.6 Diagnostic tests**

### **3.6.1 Heteroscedasticity**

Heteroscedasticity refers to a situation where variance of the error term varies with change in the number of observation. Presence of heteroscedasticity does not have an impact on the unbiasedness and linearity of the regression coefficient since it only affects the best property of OLS, which renders the conclusion made while testing hypothesis invalid (Gujarati, 2004). The study therefore tested for heteroscedasticity using Breusch-Pagan-Godfrey test.

### **3.6.2 Autocorrelation**

Autocorrelation refers to a case where error term is related to its preceding value. Presence autocorrelation however, do not affect the unbiasedness of the estimates but render hypothesis testing inapplicable. Autocorrelation occurs mostly in time series data. The reason behind this is the fact that such data assumes a certain trend as the time changes. Autocorrelation does not affect the unbiasedness, linearity and asymptotic nature of the estimators. The only problem is that it violates the Best property of OLS which makes conclusion hypothesis testing wrong. This study therefore used Breusch Godfrey test to check whether data experience serial correlation (Gujarati, 2004).

### **3.6.3 Multicollinearity**

Multicollinearity is also common in time series data since variables may be following a particular trend. Multicollinearity refers to a situation where some of the explanatory variables are related. The variables may be increasing or decreasing over time. Multicollinearity makes the



coefficient of regression to be indeterminate. Multicollinearity may be common among variables, but what matters is the degree (Gujarati, 2004). To check for the presence of multicollinearity, the study used the variance inflation factors (VIF) test (Nachtsheim, 2004).

#### **3.6.4 Normality**

One of the assumptions of classical linear regression model is that the error term must be normally distributed with zero mean and a constant variance denoted as  $\mu (0, \sigma^2)$ . The error term is used to capture all other factors which affect dependent variable but are not considered in the model. However, it is thought that the omitted factors have a small impact and at best random. For OLS to be applied, the error term must be normal (Gujarati, 2004). To confirm whether the error term is normal or not, the study employed the Shapiro- Wilk test.

#### **3.6.5 Unit root test**

The study was done using specified time periods. Therefore, a unit root test had was carried out to enhance accuracy in the data. It's utilized for establishing the order and the stationarity of the series.

If the variance, mean and covariance is constant over time; the series is said to be stationary. In the case time series is non-stationary, the result can be spurious regression which renders the results invalid.

First, the variables of the unit root are tested to determine the order of integration using the Augmented Dicker-Fuller test (ADF). The non-stationary time series are of the order of 1 represented as  $1(1)$  while the stationary is of the order 0 represented as  $1(0)$  (Overesch, 2006).

The differencing is not appropriate as it prevents the long-run relationship that can be found in

the data from being detected. To detect the presence of spurious correlation, D.W. statistics are used.

### **3.6.6 Co-integration**

The equilibrium relationship that occurs between the stationary and the non-stationary series can be captured using the co-integration technique. Besides, the spurious and inconsistency of regression are avoidable when the technique is used. The problems that are caused by differencing in non-stationary series are solved because it combines the short-run information with the long-run information. Further, the statistical validity of the tax equations that are estimated is well represented without loss in the information on non-stationary series (Overesch, 2006).

Johansen test for co-integration is used to test for co-integration and it is used to determine if the regression residuals are non-stationary or stationary. The Phillip-Perron (PP) and ADF unit root tests are used to check the regression residuals. The reason for using the PP unit root test is because according to Pierre (1989), unusual behaviors can devalue the use of the conventional ADF root test.

### **3.7 Data type, Sources and Analysis**

The study relied wholly on secondary data derived from Statistical Abstracts (Kenya National Bureau of Statistics), World Development Indicators from the World Bank database and data from Kenya Revenue Authority. The study covered the period from year 1980 to 2014.

This is assumed reasonable to demonstrate the effects of TP on corporate revenue growth for over ten years before the TP rules were introduced in Kenya in 2006 and the years afterwards up to 2014.

The statistical bulletins were also used to identify tax revenues growth during period after the introduction of TP. In addition, the data was used to describe the effects of TP on revenue. Growth in tax revenue, if any, in period after TP will be compared to growth in periods before the TP rules came into effect.

Diagnostic tests are summarized in table 3.3

**Table 3.3: OLS Assumptions and Tests**

<b>OLS Assumption</b>	<b>Test</b>
Heteroscedasticity	Breusch-Pagan-Godfrey
Autocorrelation	Breusch-Godfrey
Multicollinearity	Variance Inflation Factors
Stationarity	Augmented Dickey Fuller
Normality	Shapiro wilk
Co-integration	Johansen test of co-integration

## CHAPTER FOUR

### EMPIRICAL RESULTS

#### 4.1 Introduction

In this chapter, results of empirical analysis are presented. The chapter discusses descriptive statistics of the data, diagnostic tests and report on the regression results.

#### 4.2 Descriptive Statistics

Descriptive statistics of the data series is shown in table 4.1. Descriptive statistics of corporate income tax revenue ratio to GDP, transfer pricing, agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP and GDP growth rate is illustrated. Distribution of a series can be determined by evaluating various statistical measures as shown in table 4.1.

**Table 4.1: Descriptive Statistics**

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
Corporate income tax ratio to GDP	36	16.40	3.67	5	20.49
agr	36	30.14	2.79	23.16	34.22
nx	36	-7.34	5.02	-17.28	4.95
fd	35	54.56	26.60	21.24	131.90
Inf	36	12.44	8.75	1.55	45.98
Fa	35	6.56	3.53	2.44	16.96
Tp	36	0.28	0.45	0	1

Gdpgr	36	3.78	2.33	-0.80	8.40
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The sample under study had 36 observations. The study had eight variables (one dependent and seven independent variables). Range is obtained from the difference between the maximum value and minimum value. The maximum value of corporate income tax revenue ratio to GDP is 20.49 while the minimum is 16.40 giving a range 4.09. The standard deviation shows the spread of the values from the mean and is important for comparison purposes. The data shows that foreign debt ratio to GDP has a larger spread as compared to other variables. Corporate income tax revenue ratio to GDP has 3.67, agriculture ratio to GDP has a standard deviation of 2.79, net export ratio to GDP has 5.02, inflation rate has 8.75, foreign aid ratio to GDP has 3.53, transfer pricing has 0.45 and GDP growth rate has 2.33.

### 4.3 Correlation Matrix

Correlation of the variables is examined in the table 4.2. Coefficient of correlation shows whether the independent variables are related or not.

**Table 4.2: Correlation matrix**

		Agr	nx	fd	Inf	fa	gdpgr	tp
agr	-0.5034	1.0000						
nx	-0.4393	0.3911	1.0000					
fd	-0.2952	0.4678	0.8564	1.0000				
inf	0.0056	-0.0170	0.5397	0.5671	1.0000			

fa	-0.0033	0.2104	0.5869	0.8144	0.6568	1.0000		
gdpg	-0.0623	-0.2542	-0.4257	-0.3771	-0.4712	-0.1800	1.0000	
tp	0.4437	-0.6447	-0.7416	-0.6849	-0.1041	-0.3169	0.3801	1.0000

From Table 4.2, we observe the relationship existing between various variables used in this study. There is a positive association between corporate income tax revenue ratio to GDP and inflation rate and transfer pricing. On the other hand, there is a negative association between corporate income tax revenue ratio to GDP and agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, foreign aid ratio to GDP and GDP growth rate. Agriculture ratio to GDP has positive association with net export ratio to GDP, foreign debt ratio to GDP and foreign aid ratio to GDP but negatively associated to inflation rate, GDP growth rate and transfer pricing. Multicollinearity would be considered present if the correlation coefficient was equal to or above 0.8 as it may lead to spurious regression. As indicated in Table 4.2, the study found that some pairs had a correlation of more than 0.8 (net exports and foreign debt ratio to GDP, foreign debt ratio to gdp and foreign aid) which is the threshold to permit retaining of those variables. To correct that, the study applied step wise differencing to variable exhibiting this characteristic.

#### 4.4 Diagnostic Tests

##### 4.4.1 Heteroscedasticity

Using Breusch-Pagan test results are as shown in table 4.3.

**Table 4.3: Test for Heteroscedasticity**

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity			
Ho: Constant variance			
Variables: Fitted values of Corporate Income tax			
chi2(1) = 15.32			
Prob> chi2 =0.0001			

The results reveal presence of heteroscedasticity since the p-value of 0.0001 is significant which leads to rejection of the null hypothesis. This was corrected by use of robust standard error regression since the cause of heteroscedasticity is not known.

#### **4.4.2: Serial correlation**

Breusch Godfrey test was used in testing for serial correlation. The results are as shown in table 4.4.

**Table 4.4: Serial correlation**

Breusch-Godfrey LM test for autocorrelation			
lags(p)	chi2	Df	Prob> chi2
1	10.504	1	0.0012
H <sub>0</sub> : no serial correlation			

The results reveal presence of serial correlation since the p-value of 0.0012 is significant which leads to rejection of the null hypothesis. This was corrected by use of robust standard error regression since the autocorrelation is not known.

### 4.4.3 Multicollinearity

To test for multicollinearity, Variance Inflation Factors (VIF) was examined. For VIF values greater than 10, multicollinearity is deemed to be present (Nachtsheim, 2004). The VIF are calculated as shown below.

#### Variance Inflation Factors

$$VIF = \frac{1}{1 - R^2}$$

Where VIF= variance inflation factor

$R^2$ = coefficient of determination

$1/VIF$ = tolerance

The VIF values are shown in table 4.5



**Table 4.5: Multi-collinearity**

Variable	VIF	1/VIF
fd	11.70	0.085492
nx	6.36	0.157185
fa	5.59	0.178816
tp	4.80	0.208312
inf	3.53	0.283677
agr	1.92	0.520696
gdpgr	1.79	0.558332
Mean VIF	5.10	

From table 4.5, it is evident that all the variables except foreign debt to GDP ratio had VIF less than 10. This implies that all variables except foreign debt to GDP ratio depicted absence of multicollinearity. Multicollinearity as depicted by foreign debt to GDP was corrected by differencing the variable.

#### **4.4.4: Normality**

In testing for normality of the error term, Shapiro Wilk test was used. The results are shown in the table 4.6. The null hypothesis in this situation indicates that the error terms is normally distributed whereas the alternative hypothesis indicates that the error term is not normally distributed

**Table 4.6: Test for Normality**

Variable	Obs	W	V	z	Prob>z
Res	35	0.97843	0.770	-0.546	0.70738

The probability value in table 4.6 is not significant thus leading to failure to reject the null hypothesis. This therefore implies that the residuals are normally distributed.

#### 4.5: Stationary Test

Stationarity means the variable is integrated of order zero and therefore inference is applicable. However, presence of a unit root lead to spurious regression which renders inference inapplicable and therefore the model cannot be used in forecasting. The unit root test was done by use of the Augmented Dickey Fuller Test on the individual variables. The test results are as shown in table 4.7.

**Table 4.7: Test for Stationarity in Levels**

Variable	Test statistic	1% critical level	5% critical level	10% critical level
Tax	-2.356	-3.682	-2.972	-2.618
Agr	-1.484	-3.682	-2.972	-2.618
Nx	-1.478	-3.682	-2.972	-2.618
fd	-1.105	-3.682	-2.972	-2.618
Inf	-3.362	-3.682	-2.972	-2.618

Fa	-1.674	-3.689	-2.975	-2.619
Gdpgr	-3.429	-3.682	-2.972	-2.618

Table 4.7 shows that only all variables used in the study are non-stationary at levels. The variables were differenced and the results are as shown in the table 4.8.

**Table 4.8: Test for Stationarity (First Difference)**

Variables	Test statistic	1% critical level	5% critical level	10% critical level
Dlntax	-5.115	-3.689	-2.975	-2.619
Dlagr	-3.782	-3.689	-2.975	-2.619
Dlnx	-5.862	-3.689	-2.975	-2.619
Dlfd	-5.830	-3.696	-2.978	-2.620
Dlinf	-6.647	-3.689	-2.975	-2.619
Dlfa	-6.171	-3.696	-2.978	-2.620
Dl gdpgr	-6.432	-3.689	-2.975	-2.619

Table 4.8 shows that all the variables became stationary after first difference. This showed that all the variables have one-unit root or are integrated of order 1 that is I (1).

#### 4.6: Vector Autoregressive (VAR) and Vector Error Correction Model (VECM)

Overall, the findings presented in table 4.7 show that all the variables became stationary after first difference, that is to mean the variables are integrated of order one, I (1). These results suggest there might be co-integrating vectors between the variables an implication that the model could be feasibly employed with the VAR framework if co-integration is found to be absent or VECM framework if co-integration is found to be present.

##### 4.6.1: Lag length Selection

Before estimating Vector Autoregressive (VAR) or Vector Error Correction Model(VECM), it is important to identify lag length of unrestricted VAR order and VEC order. The two lag selection criteria are discussed below.

**Table 4.9: Vector Autoregressive(VAR) Lag Selection Criteria**

Selection-order criteria								
Sample: 1984 - 2014					Number of observation = 31			
Max rank	LL	LR	df	P	FPE	AIC	HQIC	SBIC
0	-570.20				2.2e+06	37.303	37.4236	37.6731
1	-435.98	268.43	64	0.000	27102.6	32.7729	33.8585	36.1034
2	-340.09	191.79*	64	0.000	8911.6	30.7152	32.7659	37.0062
3	.	.	64	.	-3.0e-29*	.	.	.

4	7246.1	.	64	.	-451.49*	447.751*	-440.018*
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From table 4.9, LR criteria shows that 2 lags should be considered. FPE criterion shows that 3 lags should be chosen. AIC, HQIC and SBIC show that 4 lags should be considered. In this case the three criteria show that 4 lags should be chosen. Since three out of the five criteria recommend 4 lags, the study will therefore consider 4lags. These results can be justified by use of vector error correction lag selection criteria as shown in table 4.10.

**Table 4.10: Vector Error Correction (VEC) Lag Selection Criteria**

Selection-order criteria								
Sample: 1984 - 2014								
Number of observation = 31								
Max rank	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-570.20				2.2e+06	37.303	37.4236	37.6731
1	-435.98	268.43	64	0.000	27102.6	32.7729	33.8585	36.1034
2	-340.09	191.79*	64	0.000	8911.6	30.7152	32.7659	37.0062
3	.	.	64	.	-3.0e-29*	.	.	.
4	7246.1	.	64		.	-451.49*	447.751*	-440.018*

Results in table 4.10 corroborate findings in table 4.9. This therefore implies the study considered 4 lags in the Johansen test of co-integration and VAR or VECM framework.

#### 4.6.2: Johansen test of Co-integration

After identifying lag length, it is important to check whether there is long run relationship among the variables (co-integration) or not. To ascertain this, Johansen test of co-integration was adopted and the results are as shown in table 4.11.

**Table 4.11: Johansen Test for Co-integration (Max Statistic Model)**

Trend: Constant		Number of observation = 32			
Sample: 1984-2015					
Maximum rank	Parms	LL	Eigenvalue	Max statistic	5% critical Value
0	200	.	.	188.13	51.42
1	215	.	1.0	160.68	45.28
2	228	.	1.0	39.05	39.37
3	239	.	1.0	722.24	33.46
4	248	.	1.0	681.72	27.07
5	255	.	1.0	636.01	20.97
6	260	.	1.0	626.97	14.07
7	263	.	1.0	0.00	3.76
8	264	.	0.0		

These results therefore show that the variables have long run association-ship and thus VECM framework should be adopted.

#### 4.7: Vector Error Correction Model (VECM)

VECM framework was adopted and the results are as shown in table 4.12.

**Table 4.12: Regression Results**

Dependent Variable: tax revenue ratio to GDP				
Method		: Vector error-correction model		
Sample		: 1984 – 2015		
	Coef.	Std. Err.	z	P>z
<b>D_tax</b>				
_ce1	-0.124***	0.419	-0.30	0.068
L1.				
<b>tax</b>				
LD.	-0.020	0.395	-0.05	0.959
L2D.	0.164	0.456	0.36	0.719
<b>agr</b>				
LD.	0.548	0.599	0.91	0.360
L2D.	-0.222	0.784	-0.28	0.777
<b>nx</b>				
LD.	0.075	0.485	0.16	0.877
L2D.	0.203	0.328	0.62	0.537
<b>fd</b>				
LD.	-0.092	0.107	-0.86	0.392
L2D.	-0.033**	0.089	-0.37	0.041
<b>inf</b>				
LD.	0.011	0.196	0.06	0.955
L2D.	0.084	0.126	0.66	0.507

<b>fa</b>				
LD.	0.644	0.741	0.87	0.385
L2D.	0.680	0.590	1.15	0.249
<b>tp</b>				
LD.	-3.671	4.586	-0.80	0.423
L2D.	-4.971	4.508	-1.10	0.270
<b>gdpgr</b>				
LD.	-0.881	0.682	-1.29	0.097
L2D.	-0.520	0.478	-1.09	0.277
Cons	0.062	0.649	0.10	0.923
R-squared = 0.8531				
P>chi2 = 0.0007*				

Where \*, \*\*, \*\*\* indicates significance at 1%, 5% and 10% level of significance respectively.

#### **4.8 Interpretation of the Results**

The results reveal that regression performed well in terms of goodness of fit and overall significance with a coefficient of determination of 0.8531 and probability value of 0.0007. The coefficient of determination means that 85.31 % of the variation in corporate income tax revenue ratio to GDP is explained by the explanatory variables in the model. Probability value of (0.0007) implies that the variables in the model are jointly significant in explaining corporate income tax revenue ratio to GDP at 1% level of significance.

The coefficient of the error correction term (-0.124) is negative and significant at 10 percent level of significance an implication that there is long run causality running from agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP, transfer pricing and GDP growth rate to corporate income tax revenue ratio to GDP.



The results further reveals that lag two of foreign debt ratio to GDP is negative and individually significant in influencing corporate income tax revenue ratio to GDP at 5 percent level of significance in the short run. In addition, lag one of GDP growth rate is negative and individually significant in influencing corporate income tax revenue ratio to GDP at 10 percent level of significance in the short run.

The results further reveals that lag one and lag two of transfer pricing negatively influence corporate income tax revenue ratio to GDP but insignificantly. Moreover, the results showed that lag one of agriculture ratio to GDP are positive and insignificant in determining tax revenue to GDP in Kenya.

#### **4.9 Discussion of the Findings**

The coefficient of lag two of foreign debt is negative and significant. The results conform to economic theory since high foreign debt leads to increased external debt service that may lead to increased taxes. Increase in taxes discourages foreign direct investment and tax evasion which eventually results to low tax revenue.

The results suggest contrary outcome to those of previous study by Eltony (2002) which found a positive and significant relationship between foreign debt and tax revenue among the Arab countries. This discrepancy may however be explained by the differences in the methodologies. While Eltony (2002) used panel regression methodology, this study used time series methodology.

The coefficient of lag one of the GDP growth rate is negative and significant. This finding do not conform to economic theory since high economic growth measured by GDP growth rate results to high tax revenue because as economic agents' income increase, taxes also increase. This

finding suggests contrary scenario to earlier study Gupta (2007) which found economic growth to be a positive and significant determinant of tax revenue performance of 105 countries. This contradiction can be attributed to different methodologies used. While Gupta (2007) used panel regression methodology, this study used time series methodology.

The results reveal that transfer pricing negatively influence corporate income tax revenue ratio to GDP but insignificantly. This finding conforms to economic theory since transfer pricing makes MNEs to record low pre-tax profits thus reducing the taxes that they pay to revenue authorities. These findings suggest similar scenario to earlier study by Park and Zdanowicz (2003) while investigating the effect of transfer pricing on USA tax system.

Further, the results showed that lag one of agriculture ratio to GDP are positive and insignificant in determining tax revenue to GDP in Kenya. This finding contradicts economic theory since in developing economies agriculture is practiced on small scale and most of the land owners do not have land title deeds. These characteristics make it difficult for tax authority to successfully bring the agricultural sector into their tax net. This finding is however in agreement with earlier study by Stotsky and Wolde Mariam (1997) while investigating the determinants of tax revenue among 43 Sub-Saharan countries.

## **CHAPTER FIVE**

### **CONCLUSIONS AND POLICY IMPLICATIONS**

#### **5.1: Introduction**

This chapter presents a summary of the study and policy recommendation based on the findings of the study. The chapter is comprised of three sections namely, summary and conclusions of the study, policy implications and recommendations, limitations of the study and recommendation of areas for future research.

#### **5.2: Summary and Conclusions**

Tax revenue plays a key role in every government fiscal operations. In Kenya, tax revenue finance 62.6 percent of all government operations (IEA& OECD, 2013). In Kenya, most of the tax revenue is obtained from income tax and Value Added TAX (VAT). For instance, in fiscal year 2005/2006, 36.3 percent of the total tax revenue was contributed by income tax (IEA & OECD, 2012)

However, the contribution of Multinationals contributions to the GDP and therefore to tax revenue contribution cannot be overlooked as their share contribution is significant. Major entrance of MNEs came about after Kenya gained her independence in 1963 where companies officially set base in the independent Kenya, regulated by the Laws of Kenya. Their presence has continued over time and some are listed in the NSE, with minority shares held by Kenyans. Data

on their specific contribution to the GDP is however, not available, but their contribution is visible as the form the best part of the private sector. (PwC, 2011).

However, most of the MNEs often tend to practice tax evasion through transfer pricing. Most of these firms usually sell their products to parent firms or other subsidiaries in other countries where taxes are low so as to make high profits. This implies that g where taxes are high fail to get the required taxes from these MNEs. This study therefore sought to investigate the effect of transfer pricing on tax revenue in Kenya for the period running from 1980 to 2015. The author made a careful selection of the variables in addition to transfer pricing as guided by empirical studies in this line of study. These variables were analyzed using econometric techniques as guided by Gujarati (2004) and other international studies in the field of study. The explanatory variables used in the study include agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP and GDP growth rate. The objective of the study was to estimate the effect of transfer pricing on tax revenue in Kenya between 1980 and 2014.

To achieve the intended objective, pre-estimation tests and stationarity tests were carried out. Augmented Dickey Fuller test was used to test for stationarity of the variables and revealed that all the variables were non stationary at levels but became stationary after first difference. This implied that the variables were integrated of order one that is  $I(1)$ . This characteristic of the data informed the researcher to identify the lag length and also check for co-integration using Johansen test of co-integration. Five criteria (LR, FPE, AIC, HQIC and SBIC) for identifying lag length were used of which three out of the five recommended 4 lags. Johansen test of co-integration revealed presence of seven co-integrating equations. After identification of the

number of lags and co-integrating equations the study proceeded to estimation of VECM which takes into account both short run and long run causality. The coefficient of the error correction term (ECT) was negative and significant at 10 % level of significance. This therefore implied that there was long run relationship running from transfer pricing, agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP and GDP growth rate to corporate income tax revenue ratio to GDP.

The results revealed overall significance of the explanatory variables in explaining tax revenue ratio to GDP. The coefficient of determination showed that 85.31 percent of the variation in corporate income tax revenue ratio to GDP is explained by from transfer pricing, agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate, foreign aid ratio to GDP and GDP growth rate.

The findings further revealed that lag two of foreign debt ratio to GDP to be negative individually significant at 5 percent level of significance in influencing corporate income tax revenue ratio to GDP in the short run. Lag one of GDP growth rate was also revealed to be negative and individually significant at 10 percent level of significance in influencing corporate income tax revenue ratio to GDP in the short run. Further, lag one and lag two of transfer pricing were also revealed to be negative and individually insignificant in influencing corporate income tax revenue ratio to GDP in the short run.

### **5.3: Policy Implications and Recommendation**

The findings of this study have important policy implication for tax revenue productivity in Kenya. The study has revealed presence of long run relationship between transfer pricing, agriculture ratio to GDP, net export ratio to GDP, foreign debt ratio to GDP, inflation rate,

foreign aid ratio to GDP and GDP growth rate and tax revenue ratio to GDP. VECM shows that transfer pricing is not important determinant of corporate income tax revenue ratio to GDP in the short run. However, the VECM revealed short run relationship between foreign debt and GDP growth rate.

Based on these study findings, the government of Kenya should focus on reducing foreign debt and also put in place good policies that will enable government to raise more tax revenue as the economy grows. To achieve higher tax revenue as the economy grows, government needs to develop policies that will curb transfer pricing so that she obtains higher taxes from MNCs that are registering higher profits in the country. This is because if every MNC pays her share of taxes, there will be no over-taxation of other economic agents and thus tax evasion will be reduced. Reduction in tax evasion will translate into high taxes and thus lead to decrease in foreign debt.

#### **5.4: Limitations of the Study**

The major shortcoming of this study is that it failed to incorporate all the variables that influence corporate income tax revenue ratio to GDP as guided by other empirical studies. Failure to incorporate all variables was attributed to lack of consistently recorded data. The study also used annual data but use of quarterly data could be much efficient in establishing the effect of the variables on the corporate income tax revenue ratio to GDP in Kenya.

#### **5.5: Areas for Further Study**

Future researchers ought to investigate the effect of omitted variables on corporate income tax revenue ratio to GDP in Kenya. For instance, there is need to investigate the effect of institutional quality, and corruption on tax revenue ratio to GDP since the literature has revealed them to be important determinants of corporate tax revenue ratio to GDP among the developing economies.

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