

**THE RELATIONSHIP BETWEEN CORPORATE TAX AND INVESTMENT IN
KENYA**

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**A RESEARCH PROJECT PRESENTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS
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DECLARATION

I, Odhiambo Irene, hereby declare that this project is my own work and effort and that it has not been submitted anywhere for any award.

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DEDICATION

To my late dad, this is for you. Your wisdom and passion for education were an inspiration to us all.

To my mum, my husband, my children and my siblings; for nursing me with love and dedication for success in my life.

ACKNOWLEDGEMENT

I wish to give thanks to almighty God through whose mercy and blessing I would not have completed this project. I am heavily indebted to various people and organizations without whose material and non material support this research would not have been. I take this opportunity to express my sincere thanks to each of these people and organizations.

I thank the staff of the Jomo Kenyatta Library of the University of Nairobi who provided the opportunity to use the facilities in the MBA and the Electronic Library sections. The staff enabled me to access not only research reports from earlier MBA research findings but I was able to access scholarly publication from the wider academic sphere.

I acknowledge Dr. Josiah Aduda for the able direction he provided concerning what to do at each stage of this research; from the generation of the research idea, to its conceptualization, to the drafting of the research proposal, to the analysis of samples and preparation of the report.

The data used in the analysis was obtained from KNBS, World Bank and UNSD. It would not have been possible to conduct an analysis and extract out the relevant findings if the data was not available in the first place.

In my literature review I have cited quite a lot of scholarly publications. Some are from earlier research findings from projects done by other MBA students. I have used scholarly papers from the wider academia. These are works without which I could not have had a scholarly insight into this research

Finally I would wish to thank my family. Their support and encouragement throughout the period I was conducting this research was invaluable.

ABSTRACT

Empirical research and theory on the relationship between taxes and investment indicate that taxes are a key matter for the decision of enterprises on where and how much to invest. The aim of this study was establishing the relationship between investment rate and corporate tax rate in Kenya. This study was a descriptive time series correlation study with investment rate as a percentage of GDP as the dependent variable and total corporate tax as the independent variable. Regression analysis was used to find the relationship between corporate tax and investment rate. The data used covered the period 1993 to 2012. Secondary data was used in the analysis. The data included the annual values of GDP in Kenya, the annual values of investment and the annual rates of corporate tax. The data was electronically collected from the Kenya National Bureau of Statistics, from the International Monetary Fund and from the United Nations Statistics Department.

The findings of this study indicated that the relationship between corporate tax and investment rate in Kenya was positive, but weak, meaning that the variation in investment rate was not strongly explained by variation in total tax. It was concluded that there are other factors other than taxation rate that have a bearing on investment, and the government of Kenya should therefore not focus on corporate taxation as a strategy to attract or stimulate investment. The study recommends that other non-corporate tax factors should be used to control investment in Kenya; if these factors are investigated and identified, they will provide a useful insight in their control in a manner to improve investment in Kenya.

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ABBREVIATIONS AND ACRONYMS

- EU - European Union
- FDI - Foreign Direct Investment
- GDP - Gross Domestic Product
- IMF - International Monetary Fund
- NSE - Nairobi Securities Exchange
- OECD - Organization for Economic Co-operation and Development
- UK - United Kingdom
- UNSD - United Nations Statistics Department
- USA - United States of America

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A corporation is a legal entity created under a state or other statute that allows incorporation by persons who become the shareholders of the corporation. Just like an individual in the state, a corporation has to pay tax on the income it earns. This tax paid by a corporation to the state is the corporate tax. The taxes required to be paid by a corporation as demanded by the state are assumed to have an effect on how much a corporation will invest. Investment, though having varied context-based meanings, refers to the act of committing money or capital to an undertaking in the hope of obtaining further income or profit (Lederman, 2002).

Empirical research on the relationship between taxes and investment indicates consensus amongst most researchers that taxes are a key matter for the decision of enterprises on where and how much to invest. In response, policy-makers often rely on the effectiveness of corporate tax policy reforms as a means of attracting and stimulating more investment in a country. The policy issue that faces policy makers is whether or not to raise taxes and by how much to do so (Becker, Fuest and Hemmelgarn, 2006).

Lowering the tax burden on investment might imply cutting down public expenditure or shifting of the tax burden to other tax bases like labour. Tax policy makers, therefore, need to know whether taxes do matter in investment and how much they do. The decisions for the design of sound tax policy should carefully weigh the benefits of a corporate tax reduction to the economy as a whole against the cost. The focus should,

therefore, be on how much additional investment or production a country gets for a given loss of tax revenue (Keen, 2002).

Theoretically, it is indicated that higher taxes reduce the desired capital stock. However, this is not always the case providing the possibility that desired capital stock could even increase as taxes rise and fall as taxes reduce. The effect of tax policies on the levels of investment in a country is not automatically predictable from theory or from other researches done elsewhere (Galindo and Melendez, 2010).

1.1.1 Corporate Tax

Lederman (2002) defines a corporation as a legal entity created under a state or other statute that allows incorporation by persons who become the shareholders of the corporation. Generally, the corporation's organizers complete appropriate forms and file them with the state or other jurisdiction in which the corporation will be incorporated. Those organizers become the corporation's initial shareholders once the corporation is recognized by the state. Corporate shareholders may be individuals, other corporations, or other entities such as partnerships. An entity recognized as a corporation under state law is also treated as a corporation for tax purposes.

For tax purposes, a corporation is a separate taxpayer with separate identity from its shareholders. This means that the corporate entity is subject to taxation on corporate-level activities. Corporation tax is similar to the individual income tax, but it is levied on companies and it does not have a graduated scale structure (Lederman, 2002).

1.1.2 Investment Rate

Investment is a concept that has varied meanings depending upon the context in which the concept is used. Levine and Renelt (1992) gave various meanings to investment: first, they viewed investment as the act of committing money or capital to an undertaking hoping to obtain further income or profit; secondly, they viewed investment as an asset or item purchased with the hope that it will generate income or realize higher value in some future; the third view was that in an economic sense, investment refers to the purchase of goods that are not consumed today but are useful for creation of wealth in future; lastly, in the financial sense, an investment is a monetary asset purchased based on the assumption that the asset will provide future income or will appreciate in value and be sold at a higher price.

Keynes (1936) macro-economically defined investment in terms of the current investment in an economy. According to Keynes, current investment is the current addition to the value of capital equipment which results from the productive activity within the period. To Keynes, investment is that part of the period's income which has not passed into consumption. Investment is, therefore, a measure of the additions to, and replacements of, the stocks of fixed assets. It consists of investment in structures, equipment and in software, and it includes account of investment. Investment rate refers to expression of investment as a percentage of the Gross Domestic Product in a specified period.

Investment can come from sources outside the country or from sources within the country. When investment comes from sources outside the country, it is referred to as foreign direct investment. Foreign direct investment is recognized as an important

resource for economic development for any country. The flows of foreign direct investment could fill the gap between desired investment and domestically mobilized finance (Todaro and Smith, 2003). Investment can also come from local sources facilitated through the deepening of the financial systems in a country in order to make efficient the movement of funds from savers and borrowers. The totality of locally generated investment and the internationally attracted investment makes up the total level of investment in a country. When this total is expressed as a percentage of GDP in a specified length of time, it becomes investment rate (Levine and Renelt, 1992).

1.1.3 Corporate Tax and Investment Rate

Finance economists have studied the relationship between corporate income taxes and investment, and have found evidence suggesting that taxes may have adverse effects on investment activity through their impact on the cost of capital. While, this result is robust to different estimation techniques, there is much less consensus on its magnitude. Taxing the income of firms can be harmful in economies where firms face significant financial constraints.

Logically, a financially constrained firm has the return to its marginal investment being higher than the after tax interest rate. If the corporate tax rate is reduced, the incentives to invest are increased by raising the return to the highly potential productive investment and allowing the firm to use more of its internal funds to invest. If the reliance on internal funds is greater, so should be the expected impact of reducing corporate tax rates on investment. This indicates that when corporate taxes are reduced, investment increases and when corporate taxes are increased, investment reduces. However, empirical findings are sometimes at variance with this expectation (Galindo and Melendez, 2010).

1.2 Research Problem

The theories that relate corporate taxes to investment indicate that higher corporate taxes slow down investment. Tobin's Q theory suggests that firms will invest for so long as each shilling spent purchasing capital raises the market value of the firm by more than one shilling. The effect of corporate taxes is to reduce the amount of capital for which the two become equal, halting investment expansion. The accelerator theory by Carver (1904) and Aftalion (1927) suggests that as demand or income increases in an economy, the investments made by firms also increase. The investment is, however, reduced by taxation which erodes disposable income. Further, Modigliani-Miller (1958) theorem states that in the absence of taxes firms' financial structure and policy are irrelevant for their investment decisions indicating that corporate taxes affect the investment decisions.

In Kenya, corporate taxes have been on the upward trend. The upward trend has led to increase in revenues used to run government programmes. To achieve the development goals of making Kenya a middle income state by 2030, there should be significant levels of sustainable investment from local and foreign sources (Mutuku, 2011).

Empirical studies done seem to agree on the relationship between corporate taxes and investment levels in a country. Studies by Bond and Chennells (2000), Parsons (2008) and Miao and Wang (2009) found that higher effective corporate income taxes were associated with lower investment while low taxes stimulated more investment. In Kenya studied done by Musyoka (2012) and Eshiwani (2006) focused on the effect of corporate taxes on foreign direct investment only and concluded that lower taxes attracted foreign investment. The study by Mutuku (2011) focused on the effects of taxation on companies' capitalization in companies listed at the Nairobi Securities Exchange. No

study has been done in Kenya to relate corporate taxes to the general investment in the country and the findings in other countries give mixed result that do no good to predict the situation in Kenya. This study therefore aimed to fill this gap by answering the question: what is the relationship between corporate tax rate and investment rate in Kenya?

1.3 Research Objective

This study aimed at establishing the relationship between investment rate and corporate tax rate in Kenya

1.4 Value of the Study

This study is significant to the following groups of people: scholars, government of Kenya's policy makers, investors abroad and the corporate bodies in Kenya. Theories connecting corporate taxes and investment in countries seem to vary in opinion. While theory indicates that these taxes lower investment, empirical studies show a variation of findings. Some show that higher corporate taxes hinder investment while others show that companies are indifferent to taxes depending on the context within which the studies were done. For scholarly reasons, this study contributes to this discussion through finding out how corporate taxes affect investment in Kenya. Future researchers can use the findings of this study to further arguments on corporate taxes or on other topics that find this study relevant.

The government of Kenya will find this study useful. The motivation behind policy makers in the Kenyan government is to turn this country into a middle income country by the turn of the year 2030. With taxes as the main source of funding, these policy makers

must have the most accurate and current information concerning how taxes affect investment. With such information it will be easier to come up with finely tuned policies concerning taxation. This will contribute to ensuring that all sectors in the country are taking the correct strides into turning Kenya into a middle income country.

There is no doubt that investors outside Kenya are interested in the investment environment in Kenya before they put their money into assets here in Kenya. Taxation policy is one of the key inputs into their decisions concerning investment in Kenya. With this study, the taxman can borrow ideas that will make the tax policy pleasant to foreign investors. When these investors become aware of the tax policies in Kenya they will be interested in investing here, therefore boosting our economic advancement.

The corporate bodies in Kenya also are keenly interested in the corporate tax policy of the Kenyan government since the policy touches on them directly. The findings of this study will provide a well researched and objective opinion concerning the effects of the level of corporate taxes on their investment activity. This then will provide input into arguing their case concerning how the tax policy contributes towards their investment decisions in Kenya.

CHAPTER TWO LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theories and the empirical literature review behind this study. There are three theories behind this study. These are the q Theory of investment, the accelerator theory of investment and the Modigliani-Miller theorem. These theories are discussed under the first section of this chapter. The second chapter discusses other earlier research works that have been done on this topic. There seems not to be agreement among the earlier researchers on how corporate taxes affect investment in a country. While some studies show that lower corporate taxes stimulate investment, others show that investments by companies are insensitive to corporate taxes.

2.2 Review of Theories

2.2.1 The q Theory of Investment

This model was developed by Summers (1981) based on investment equations involving Tobin's q for estimating the impact of tax policies on both investment and the stock market. The crucial insight underlying Tobin's theory is that in a tax-less world, firms will invest for so long as each shilling spent purchasing capital raises the market value of the firm by more than one shilling. Tobin went on to assume that as a good approximation, the market value of an additional unit of capital equals the average market value of the existing capital stock. This assumption meant that the value of the marginal " q " on an additional dollar of investment was well approximated by the average q , which was the ratio of the market value capital stock to its replacement cost. The rate of

investment is, therefore, an increasing function of the marginal return to investment as approximated by q .

In equilibrium, the Tobin's model posits that firms equate their net marginal product of capital with the cost of capital. A change in the corporate tax rate affects the steady-state of capital stock but does not affect the steady-state of q because the change does not influence the cost to the firm of acquiring new capital goods. As capital is accumulated, the marginal product of capital falls and the system converges to where q is equal to its equilibrium value. The model assumes that investors have perfect foresight and take account of the capital losses that occur as capital is accumulated. It is alternatively assumed that the investors have myopic expectations and fail to foresee the effects of capital accumulation.

This theory is important to this study since it explains the behaviour of investors when corporate tax is lowered or raised. When tax rates are reduced, the Tobin's q initially rises prompting more investment, but after some time the marginal productivity of capital falls back to the level where q is in equilibrium at the point where they become indifferent between installing an extra unit of capital and paying out its cost in the form of higher dividends (Salinger and Summers, 1983).

2.2.2 Accelerator Theory of Investment

The accelerator theory was developed by Carver (1904) and Aftalion (1927). Though this theory was conceived before Keynesian economics, it emerged just as the Keynesian theory became dominant in the twentieth century. This is an economic theory that suggests that as demand or income increases in an economy, the investments made by

firms also increase. This theory also suggests that when demand levels result in an excess in demand, firms meet the demand by raising the prices to cause demand to drop or increase investment to match demand. The accelerator theory suggests that most companies choose to increase production thus increase their profits.

This theory is relevant to this study since the accelerator theory is interpreted to create economic policies. The theory posits that it would be better to use tax cuts to create more disposable income for companies who would then demand more investment products. Every government and its economists create their own interpretation of accelerator theory and the questions it can be used to answer (Eklund, 2013).

2.2.3 Modigliani-Miller Theorem

Modigliani-Miller (1958) theorem states that in the absence of taxes firms' financial structure and policy are irrelevant for their investment decisions. The theorem is assumed to hold in perfect capital markets. The theory assumed neutral taxes; no capital market frictions (like transaction costs, asset trade restrictions or bankruptcy costs; symmetric access to credit markets (meaning firms and investors can borrow or lend at the same rate); and a firm financial policy reveals no information. The model also assumed that each firm belonged to a set of firms with common earnings and risk across states of the world.

However, in imperfect capital markets with adverse selection and moral hazard, the use of external funds to finance investment projects is relatively more expensive than financing them with internal funds. Taxation is one of the imperfections of the capital markets. Firms, therefore, will borrow and invest up to that level where the cost of

investment is equal to the benefits of investment. With tax, this point may be lower leading to lower levels of investment (Stiglitz, 1969).

This theory is relevant to this study since it provides the explanation as to how tax, as one of the costs of capital, affects investment. When taxation goes up, holding all other factors constant, firms have limited access to capital due to the higher costs and threats of bankruptcy that arise sooner than if the tax rates were lower (Villamil, 2006).

2.3 Determinants of Investment

Investment level is determined by quantitative and qualitative factors. Quantitative factors include rate of interest, capital, profit, and size of the market. A rise in the rate of interest discourages the investment activity while a reduction in interest stimulates more investment. The importance of profit as a determinant of investment is a widely accepted and confirmed driver of investment (Keynes, 1936).

Institutional factors also affect investment. Institutions enable economic exchanges, efficient resource allocation and result in efficient economic activities. Constraints put in place by institutions enhance the level of investment freedom. Investment tends to grow faster when people are free from fear of expropriation and troubles (North, 1991).

Investment is also affected by transitional factors such as liberalizing markets and prices, privatizing state-owned firms, restructuring firms towards market incentives and building economic and social institutions and infrastructures that promote growth. When markets and prices are liberalized, investors get higher motivation to invest and do business since they enjoy the freedom to set prices, to sell and to buy. Privatization of state indicates

commitment to private ownership and offers profitable investment opportunities (Holland and Pain, 1998).

Macroeconomic and financial factors are also key drivers of investment. These macroeconomic policies include domestic saving, growth, trade policy, inflation and government consumption expenditure. The financial system of an economy channels funds from savers to investor and the depth of financial development is a strong determinant of investment in an economy (Loayza, Klaus, and Serven, 2000).

2.4 Review of Empirical Studies

Bond and Chennells (2000) conducted a comparative study on taxation developments in the USA, Japan, Germany, France, the UK, Denmark and the Netherlands. The study considered the proposed reforms of corporate taxation in Germany also, with respect to its likely effects on business investment. Most of these countries had a trend of lowering corporate taxes. The study covered a period of 20 years between 1979-99. The study found that lower taxes stimulated investment through lowering the cost of capital.

Parsons (2008) conducted a comparative study to examine the sensitivity of industry-level investment in Canada to a reduction in the corporate tax burden. The study covered the period starting 2001 to 2004. The analysis exploited the fact that the reduction in the federal corporate income tax rate did not apply to manufacturing industries in Canada. The selective nature of the tax reductions provided treatment and control groups, making it easier to identify the effect of lower taxes on business investment. The impact of the tax component of the user cost on investment in 43 manufacturing and service industries

was estimated. The study found that that the corporate tax reductions led to higher investment.

Djankov, Ganser, McLiesh, Ramalho and Shleifer (2009) conducted a study to establish the effect of corporate taxes on investment and entrepreneurship. The study was done with data on effective corporate income tax rates in 85 countries in 2004. The countries included 27 high income, 19 upper-middle income, 21 lower-middle income, and 18 low income countries. 22 of studied countries are rich OECD countries, 10 are in East Asia, 17 are in Eastern Europe, 13 in Latin America, 6 in the Middle East, 14 in Africa, and 3 in South Asia. The data was collected from a survey, conducted jointly with PricewaterhouseCoopers, of all taxes imposed on “the same” standardized mid-size domestic firms. The results showed that effective corporate tax rate had a large adverse impact on aggregate investment. Higher effective corporate income taxes were associated with lower investment in manufacturing, but not in services.

The study by Panagiota (2007) conducted a survey of both theoretical and empirical literature, concerning the factors, especially tax - incentives, that affect foreign direct investment inflows. The existing theoretical studies about factors affecting FDI inflows had not reached to a clear-cut theoretical framework. The results of existing empirical studies were also diverse.

Miao and Wang (2009) studied the impact of corporate tax policy on the economy in the presence of capital adjustment costs in a dynamic general equilibrium model. The study showed that corporate tax policy generated both intensive and extensive margin effects through the channel of marginal Q. The impact of the taxation was determined by the

strength of the extensive margin effect. The study found that economy displayed asymmetric responses to tax changes depending on the initial distribution of firms. The study also showed that expectation of a decrease in future corporate income tax rate raised investment and adjustment rate immediately, while an anticipated increase in the future investment tax credit reduced investment and adjustment rate initially.

A study conducted in Colombia by Galindo and Melendez (2010) used a yearly dataset of plant-level investment in Colombian firms during the period 1997 to 2007 to assess the impact of a tax incentive implemented in 2004 for firms that invest in fixed assets. The study used a regression analysis to determine the relationship between corporate taxes and investment. The study found a positive and statistically significant correlation between the investment and the adoption of the tax incentives. However the overall conclusion was that the tax stimulus analyzed was ineffective in promoting investment in Colombia.

Abbas, Klemm, Bedi and Park (2012) conducted a study to analyze the impact of corporate tax on revenues and on domestic and foreign investment. The study covered corporate income tax regimes in 50 emerging and developing economies over 1996-2007. Effective tax rates were computed to take account of complicated special regimes like partial tax holidays, temporarily reduced rates and increased investment allowances. This reduction in taxes was used as a way of luring investors. Regression analysis revealed that higher tax rates adversely affect domestic investment and FDI, but raised revenues in the short-run.

Sato (2012) conducted a study to investigate the effect of corporate income tax on foreign direct investment. The study empirically analyzed foreign direct investment based on a panel of bilateral foreign direct investment flows among 30 countries that were members of the OECD during a period spanning 1985 – 2007. The study found that the scale of foreign direct investment was influenced by the investment level of the previous period. The study also found that the impact of corporate tax on foreign investment was significantly negative.

A study by Veronika and Lenka (2012) aimed to verify the expected negative relationship between corporate taxation and long-term economic growth in EU member countries. The study covered the periods 1998 - 2010. The study was based on the neoclassical growth model extended with human capital. The model also associated with the variable reflecting the different possibilities to measure the tax burden on corporations, especially tax quota separated on income taxation of corporations, the implicit tax rate on capital and effective tax rates. The default is a panel regression methodology and related methods of data analysis. The study found a negative relationship between corporate tax rate and investment which affected the long term economic growth of the countries studied.

Raza, Ali and Abassi (2012) investigated the effect of corporate income tax and firms' size on capital investment in tangible assets by manufacturing firms belonging to the nine non-financial sectors listed on the Karachi Stock Exchange. Panel financial Data on annual basis was used for the six years focusing on a sample of 65 manufacturing companies. A multiple regression analysis was used. The results indicated that there was

a negative relationship between corporate income tax and investment while firm size and investment had a positive relationship with each other.

Ahiawodzi and Tsorhe (2013) investigated the effect of corporate income tax rate reforms on private investment in Ghana. Ghana had experienced several tax reforms resulting in a lot of corporate income tax rate changes. A regression model was used for the analysis with private investment as the dependent variable and six independent variables one of which was corporate income tax rate. The data used for the study was for the period between 1985 and 2010. The empirical results revealed that the level of corporate income tax rate in Ghana adversely affected the level of private investment during both pre-tax reform and post-tax reform period.

Musyoka (2012) conducted a study to determine the relationship between tax incentives and foreign direct investment in Kenya. Data for the ten most recent years were collected and used for the study. Analysis was done using the measures of central tendency and dispersion. Correlation, regression and significance tests were also used. Three measures of performance were used to enable conclusion. These were loss of revenue due to investment incentives, loss of revenue due to trade related incentives, import duty exemptions and net inflows of foreign direct investment. The results of all the measures of performance showed no significance difference when correlated with the foreign direct investment. The research concluded that there was no significance improvement in foreign direct investment as a result of implementing tax incentives in Kenya.

Eshiwani (2006) carried out a study in order to establish whether taxation had an impact on foreign direct investment. This was done for the years between 1994 and 2003. During

this time foreign direct investment in Kenya had stagnated while taxation levels seemed to decline. Data was collected from various government sources that dealt with either taxation or FDI. FDI was considered the explanatory variable while the other four taxes were viewed as the independent variables in the regression model used. The effective tax rate showed a positive correlation to FDI while the other three tax rates exhibited negative correlation to FDI. This study suggested that FDI in Kenya showed a great deal of sensitivity to the tax regime.

Mutuku (2011) did a study whose main objective was to establish the relationship between market capitalization and taxation for firms listed at the NSE. The study was causal research designed to investigate the causality between corporate taxes and market capitalization. The study was done on listed companies at the NSE. Secondary data was obtained from the published audited financial statements for the period starting 2006 to 2010. Descriptive statistics were used and qualitative statistics analyzed using content analysis. The study found that increase in market capitalization corresponded to increase in tax collected. The study recommended that firms listed at the NSE should diversify their tax plans to allow realization of full benefit of available taxation schemes.

2.5 Conclusion to the Literature Review

In the literature review, the three theories seem to agree that corporate taxes increase the cost of investment. In a market where taxes are low, companies have more freedom to get funds to invest before fears of bankruptcy come into reality. On the contrary, when taxes are high, the fears of bankruptcy come sooner reducing the freedom to the access of investment funds and, therefore reduction in investment.

Empirical studies done seem to have mixed conclusions on the relationship between corporate taxes and investment. In most of the studies, corporate bodies are very sensitive to the taxation policies of the countries within which they operate. When taxes are increased, investment tends to slow, while the same investment grows when corporate tax rates come down.

Other studies suggest to the contrary concerning the relationship between corporate taxes and investment. They show that investments are insensitive to tax levels as long as the income expected is higher than the rate of corporate tax. No study, however, has been done in Kenya to find out how investment is affected by corporate taxes across time.

CHAPTER THREE RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology used to conduct the study. It specifies the research design, what the target population is, how data was collected, and the method of analysis.

3.2 Research Design

This study is a descriptive time series correlation study with investment rate as the dependent variable while the corporate tax is the independent variable. Regression analysis was used to find the relationship between corporate tax and investment rate.

A time series study is a descriptive study used when a phenomenon being studied extends over a considerable time period. This unique research design furnishes a continuous record of fluctuations in the study variable(s) over an entire period in which the variables are being studied (Webb, Campbell, Schwartz, and Sechrest, 1966). This study mode was also used Galindo and Mendez (2010) when they conducted a study to determine the relationship between corporate tax stimulus and investment in Colombia. This justifies the use of the time series analysis for this study since the aim of the study is to establish the relationship between variables by analyzing their behaviour across time.

3.3 Population

Since the study will use secondary data from Kenya, then Kenya is the only country in the population. This is a census study.

This study is defined by the time between 1993 and 2012; that is, data for 20 years will be used for the analysis.

3.4 Data Collection

This study used secondary data for analysis. The secondary data includes the annual values of GDP in Kenya (at US Dollar rates ruling in those years), the annual values of investment and the annual rates of corporate tax. The data was electronically collected from the Kenya National Bureau of Statistics. In case where some data was missing, the missing data was electronically obtained from IMF and the United Nations Statistics Department.

3.5 Data Analysis

The linear regression analysis model that was used for analysis in this study was borrowed from a similar study by Galindo and Melendez (2010), where regression analysis was used to determine the relationship between corporate taxes and investment. In the study by Galindo and Melendez (2010), a yearly dataset of plant-level investment in Colombian firms during the period 1997 to 2007 was used to assess the impact of a tax incentive for firms that invested in fixed assets. The study found a positive and statistically significant correlation between the investment and the adoption of the tax incentives.

The dependent variable in this study is the investment rate while the independent variable is corporate tax. The linear regression analysis was used to determine how corporate tax relates to investment rates. Investment rate in year t was found by using the formula below:

$$\text{Investment Rate}_t = \frac{\text{Investment}_t}{\text{GDP}_t}$$

The investment rate refers to the pace or velocity at which money is put into an asset with the expectation of capital appreciation, dividends or interest earnings.

The regression analysis took the form below:

$$Y = \alpha + \beta(X) + \epsilon$$

Where,

Y = Annual rate of investment

X = Annual corporate tax rate

α = The constant of regression

β_i = The sensitivity of investment rate to corporate tax rate

ϵ = The error term.

The t - tests at 95 % confidence level was used to determine the statistical significance of the intercept term, α , and the coefficient term, β . The F - tests were used to determine whether the regression is of statistical importance at 95 % confidence level. The coefficient of determination, R^2 , and the Adjusted R^2 were used to determine how much variation in investment rate is explained by variation in the corporate tax rate. The analysis was done using MS Excel 2007 software.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION OF FINDINGS

4.1 Introduction

This chapter focuses on the presentation of data and interpretation. In the first part the focus is on the presentation and analysis of the data and ends with the regression results. The second part of this section summarizes the findings and provides the interpretation of the findings from the analysis in comparison with findings of other researchers on the same topic.

4.2 Data Presentation

4.2.1 Summary Statistics

Table 4.1 provides a statistical summary of the annual investment rates as percentage of GDP and total tax rates levied on corporations. For the 20 years starting 1993, the mean investment rate was 17.60 % (Standard deviation = 3.41) indicating that on average Kenyans' investments were 17.60 % of GDP. The maximum level of investment rate was realized in 1995 when the level was 22.00 % of GDP. The lowest level of investment was 6.00 % of GDP realized in 2003. The mean level of tax on corporations was 41.55 % (Standard deviation = 7.30). The highest tax rate was 50.20 % in both 2005 and 2006 while the lowest was 30.61% in 2001.

Table 4.1: Summary Statistics

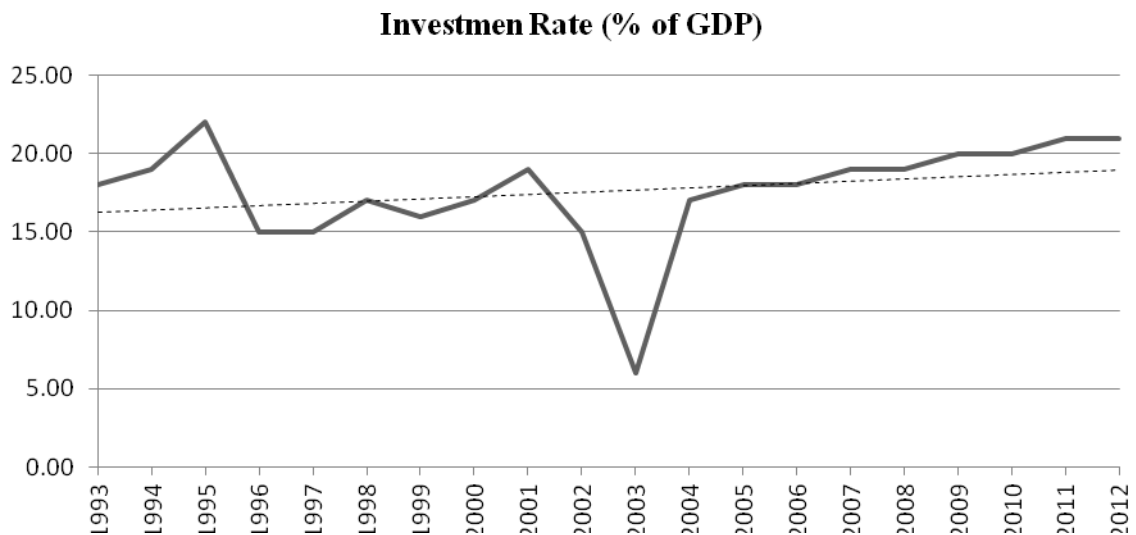
Statistic	Investment	Tax
Mean	17.60	41.55
Min	6.00	30.61
Max	22.00	50.20
Std Dev	3.41	7.30
Coefficient of Variation	0.19	0.18

(Source: Researcher, 2013)

4.2.2 Trend analysis

Figure 4.1 shows the time series plot of annual national investment values expressed as a percentage of annual GDP in each particular year. As shown by the dotted trend line, the national rate of investment as a percentage of GDP has been on a steady rise year after year between 1993 and 2012.

Figure 4.1: Investment Rate

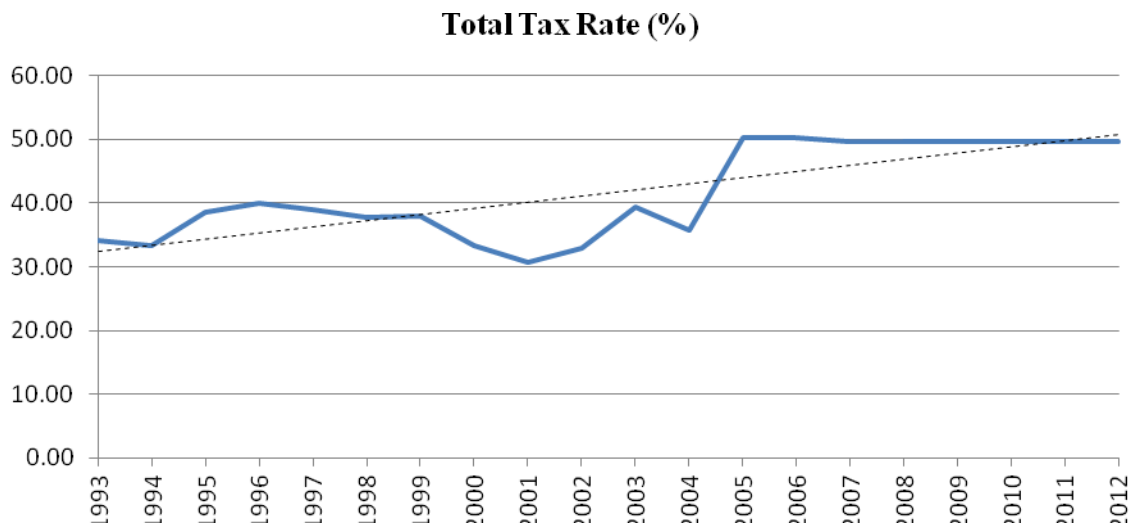


(Source: Researcher, 2013)

A more detailed analysis shows that investment rate sharply peaked in 1995 when it rose to 22.00 percent of GDP. However, the sharp rise was not too long lived as it sharply fell by seven percent to 15.00 % the following year. A steady rise, slower than that before 1995, was realized to peak at a lower value of 19.00 % in 2001 as compared to the peak value of 1995. This peak was again followed by a sharp drop and by a bigger difference of 13 % to reach the lowest point of 6 % in 2003. The year 2003 was the year that realized the poorest rate of investment between the period 1993 and 2012.

The period following the sharp drop of 2003 experienced an equally sharp rise in the investment rate which was a recovery to reach a rate of 17.00 %, which was still lower than the value of 19.00 % before the sharp dip. Contrary to the period before 2003, after the recovery, the investment rate has been on a stable almost straight line rise from 17.00 % in 2004 to 21.00 % in 2012.

Figure 4.2: Total Tax Rate



(Source: Researcher, 2013)

Figure 4.2 shows the time series plot of the total taxation rates required of the corporate bodies in Kenya between 1993 and 2012. As shown by the dotted trend line, there has been a steady rise in the taxation levied on corporate bodies in the private sector. The period before 2005 was affected by higher variability in the taxation level but the rate stabilized at about 49.60 %.

The trend analysis shows the rate of investment and the taxation rate as being on a steady rise. This is also indicated by the positive correlation between them; $r(20) = 0.33$. However the correlation is weak indicating that the co-movement between investment rate and the taxation level is not strongly paired.

4.2.3 Regression Results

Table 4.2a provides the results of the regression analysis with investment rate as the dependent variable against total corporate tax rate as the independent variable. The constant term was 11.16 % which was statistically significant, $t_{(20)} = 2.55, p < 0.05$. The coefficient of total tax was 0.15 which was not statistically significant, $t_{(20)} = 1.49, p > 0.05$. The regression statistics, as shown in Table 4.2b show that the regression analysis was not statistically significant and the variation in investment rate was not strongly explained by variation in total tax, $F_{(1,18)} = 2.22, p(F) > 0.05, R^2 = 0.11$.

Table 4.2a: Regression Results

	Coefficient	std. error	t-ratio	p-value
Constant	11.16	4.38	2.55	0.02
Total tax	0.15	0.10	1.49	0.15

(Source: Researcher, 2013)

The model is, therefore, as below:

$$\text{Investment Rate} = 11.16 + 0.15(\text{Total Tax Rate})$$

Table 4.2b: Regression Statistics

Statistic	
R-squared	0.11
Adjusted R-squared	0.06
F(1, 18)	2.22
P-value(F)	0.15

(Source: Researcher, 2013)

4.3 Summary and Interpretation of Findings

This study was conducted using regression analysis, aimed at establishing the relationship between investment rate and total corporate tax. The regression found that the constant term was statistically significant, indicating that there are some factors not captured by the analysis that affect investment rate. However, the coefficient term was not statistically significant indicating a weak relationship between investment rate and taxation rate. The whole regression was found to be statistically insignificant and the variation in investment rate was poorly explained by the variation in corporate taxation rate.

The findings are similar to those of Musyoka (2012) who studied the relationship between tax incentives and foreign direct investment in Kenya. This research concluded that there was no significant improvement in foreign direct investment as a result of

implementing tax incentives in Kenya. This study indicated the insensitivity of investment, though foreign, to taxation policy in Kenya. These findings also support those of Hungerford (2012) who used time series data which suggested that the reduction in the tax rates had little association with saving, investment, or productivity growth. The study was done in the USA covering the period 1945 to 2009. Djankov, Ganser, McLiesh, Ramalho and Shleifer (2009) also had earlier found that corporate taxes did not have any effect on investment especially in the services sector. The study had used data on effective corporate income tax rates in 85 countries in 2004. In a cross-section of countries, they estimated that effective corporate tax rate had a large adverse impact on aggregate investment, but investment in services was not affected at all.

On the contrary, the findings of this study seem to contradict those of Bond and Chennells (2000) in the USA, Japan, Germany, France, the UK, Denmark and the Netherlands. Most of these countries had a trend of lowering corporate taxes. The study found that investment was sensitive to corporate taxes in that lower taxes stimulated investment through lowering the cost of capital. The findings also contradict those of Abbas, Klemm, Bedi and Park (2012) conducted in 50 emerging and developing economies over 1996-2007. In these economies, reduction in taxes was used as a way of luring investors. Regression analysis revealed sensitivity of investment to corporate taxes since higher tax rates adversely affected both domestic investment and FDI.

The findings of Veronika and Lenka (2012) are at variance with the findings of this study. The study by Veronika and Lenka (2012) sought to verify the relationship between corporate taxation and long-term economic growth in EU member countries. The study found a relationship between investment and corporate taxation. The relationship was

found to be negative. The findings of Sato (2012) were no different from those of Veronika and Lenka (2012). Sato (2012) focused on the effect of corporate income tax on foreign direct investment among 30 OECD countries period spanning 1985 – 2007. The study by Sato (2012) found that the scale of foreign direct investment was strongly influenced by the investment level of the previous period and the impact was negative. It meant that among the 30 OECD countries increase in taxation reduced investment.

Galindo and Pombo (2011) conducted a survey study in 42 developing countries with data taken from the World Bank Business Environment Surveys. The study aimed at finding out whether firms with different sizes are affected differently by taxation policy. The study showed that investment responded negatively to an increase in the corporate tax rate. These effects were stronger among bigger firms. Contrary to the findings of this research, Galindo and Pombo indicated strong relationship between tax policy and investment.

Gomes and Pouget (2008) also had findings contrary to the findings of this study. Their study found that in 21 OECD countries, government's choices of the corporate tax rate and public investment are interdependent. In particular, corporate tax rate and public investment both responded positively to the other. The study found that a decline of 15% in the corporate tax rate reduced public investment by between 0.6% and 1.1% of GDP.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

Theory predicts a close connection between the investment and corporate taxes due to the fact that in many economies tax is a major component of the costs of production and eats into incomes of corporations. The sensitivity of investment to corporate taxes has a behavioural explanation since theory predicts that the fear of payment of high taxes makes investors to avoid investing in countries or sectors in a country that charge such taxes. As a consequence, not only is there a relationship between investment and corporate taxes, but, the relationship is negative; indicating that higher taxes reduce investment.

This study set forth to find out whether there is a strong, negative and statistically significant relationship between investment rate and corporate taxation in Kenya. In this study, the investment rate was the dependent variable while total corporate tax was the independent variable. To establish the relationship between them, a linear regression analysis was conducted. The sample period was 1993 to 2012.

The relationship between investment rates and corporate tax was positive, but, statistically insignificant. The constant term and the coefficient term were both statistically insignificant. The study, therefore found that there was no significant relationship between investment rate and corporate taxation.

5.2 Conclusions

The regression found that the constant term was statistically significant indicating there are some factors not captured by the analysis that affect investment rate. However, the coefficient term was not statistically significant; indicating a weak relationship between investment rate and taxation rate. The whole regression was found to be statistically insignificant and the variation in investment rate was poorly explained by the variation in corporate taxation rate.

Due to the significance of the constant term, the conclusion is that there are other factors other than taxation rate that have a major contribution towards investment. These factors seem to affect investment given that the rate of corporate taxation in Kenya does not vary very much. These other non-taxation factors seem to be stronger determinants of investment behavior in Kenya.

Corporate taxation is not a key driver of investment. This conclusion is drawn from the fact that the coefficient term in the regression was statistically insignificant and that the whole regression was statistically insignificant with variation in corporate taxes poorly explaining the variation in investment. This could be due to the fact that investors don't mind paying taxes as long as the opportunity for profitability is available or due to the importance of other non-tax factors as compared to taxation policy. Further, it could be that the taxation policy is investment friendly to investors.

5.3 Recommendations to Policy and Practice

This study recommends that the setting of taxation should not go beyond the variation in this study. This will be helpful in two ways. First, investors will not be scared away, which should then lead to economic growth and, second, the government will still realize revenues to spur economic growth. Since the coefficient of total taxation rate was positive and insignificant in this study, this indicates that taxation is not a factor that affects investment rate in Kenya. This could possibly be due to the fact that the range of variation is within a range that is not considered punitive to investors.

The research also recommends that the government should not focus on corporate taxation as a strategy to attract foreign investment or stimulate local investment. This is based on the fact that the F-statistic in the regression analysis indicated that the regression was not statistically significant. This means that the variability in investment did not depend on the rate of taxation. Seemingly, if the government puts in place an environment that can enable potential investors to create wealth, the rate of taxation levied will not be an issue of consideration by the investors in deciding the rate of investment. The policy makers should, therefore, focus on what issues beside taxation that affect investment, and then tackle those issues since taxation as it is at present does not drive investment.

Our study indicates that there are factors other than corporate taxation that had a bearing on the investment rate in Kenya. This is drawn from the fact that the constant term was significant. If these factors are investigated and found out, and how each relates to investment rate, it will provide helpful insight in controlling the factors in a manner to improve investment in Kenya.

5.4 Limitations of the Study

The findings of this study are limited in the explanation of the relationship between investment rate and corporate taxation in Kenya due to several reasons. First, the study focused on only 20 years. It is not known how the results would have turned out if the study was extended to earlier years. The study does not, also, provide an explanation of what the situation might be like after 2012.

The study focused on only one factor, that is, how corporate taxation affects investment. This limited the strength of the study since all other factors other than corporate taxation were not considered, yet it is possible that they have a stronger bearing on the behaviour of investment rate in Kenya. This weakness is derived from the fact that the coefficient of determination was poor.

This study was based on past, secondary and statistical data. This is a limitation since investment is not a purely empirical issue, but has behavioural aspects too. This study ignored the behavioural aspect of investment. Investment decisions involve such issues like risk tolerance, mood, political attitudes, and so forth; this study did not consider these aspects.

Further, the study used past data which may not be an accurate approximation of the current status of the factors determining investment in Kenya. Given the dynamism of the investment environment, the relationship between investment rate and corporate tax rate may not be properly explained by past data. The findings of this study can, therefore, be used to explain what happened in the time of study, but may not capture the situation as it is and how it will be in the future.

5.5 Suggestions for Further Research

The findings of this study can be improved if the study is expanded to cover more countries. Given that Kenya is a key player in the East African community, the study can be expanded to cover other member countries within the East African community in order to provide result that will be useful in that context.

A future research can be carried out on the same topic, but using data across a longer period of time. This is with the assumption that the data for a longer time will provide results that are better than those provided by the 20 year data used in this study. The possible higher objectivity that arises based on the sample period may be settled covering a longer period.

A future researcher can conduct the research with the aim of determining whether there is a causal relationship between investment rate and corporate taxation rate. This will help provide an explanation of why the coefficient of determination is low. Further, such a study will provide answers as to which other factors are to be considered to make the relationship stronger.

This study ignored the behavioural aspect of investment. A study can be done to include behavioural aspects of investment and come out with a more accurate model that will connect investment to its determining factors. This can be done if an qualitative study is done to determine these factors.

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APPENDICES

Appendix I: Total Corporate Taxation Rate (Source: Kenya National Bureau of Statistics, 2013)

YEAR	TOTAL TAX RATE (%)
1993	34.11
1994	33.37
1995	38.56
1996	39.90
1997	38.86
1998	37.76
1999	37.93
2000	33.40
2001	30.61
2002	32.93
2003	39.31
2004	35.79
2005	50.20
2006	50.20
2007	49.70
2008	49.70
2009	49.70
2010	49.70
2011	49.60
2012	49.60

Appendix II: Investment Rate
(Source: Kenya National Bureau of Statistics, 2013)

YEAR	INVESTMENT RATE (% of GDP)
1993	18.00
1994	19.00
1995	22.00
1996	15.00
1997	15.00
1998	17.00
1999	16.00
2000	17.00
2001	19.00
2002	15.00
2003	6.00
2004	17.00
2005	18.00
2006	18.00
2007	19.00
2008	19.00
2009	20.00
2010	20.00
2011	21.00
2012	21.00

Appendix III: GDP at Current Dollar Rates
(Source: Kenya National Bureau of Statistics, 2013)

YEAR	GDP (Current US Dollar Rates)
1991	10,402,057,553
1992	10,282,697,693
1993	7,139,069,455
1994	9,084,433,617
1995	11,700,698,293
1996	11,973,069,750
1997	13,034,332,160
1998	14,016,439,320
1999	12,798,811,537
2000	12,604,122,897
2001	12,983,455,858
2002	13,150,894,438
2003	14,904,452,944
2004	16,095,233,283
2005	18,739,190,171
2006	22,504,109,496
2007	27,236,709,574
2008	30,467,360,179
2009	30,600,162,776
2010	32,181,290,592
2011	34,058,731,737