

**EFFECT OF FINANCIAL PERFORMANCE ON TREASURY FUNDING OF  
PUBLIC INSTITUTIONS IN KENYA**

**BY**

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## DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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Reg.No.....

Signature.....

Date.....

I do hereby confirm that I have examined the master's dissertation of

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# **EFFECT OF FINANCIAL PERFORMANCE ON TREASURY FUNDING OF PUBLIC INSTITUTIONS IN KENYA**

## **ABSTRACT**

Recent studies have observed that government institutions are burdened with financial management risks that comprise the acquisition, allocation and investment of funds in the various budgetary considerations. This study will be to examine the effects of financial performance of public institutions on treasury funding. The study will use correlation design. The study was based on secondary data that was obtained from the annual financial reports on the 12 public institutions under study. The target population was all the fully owned public companies by the government. There were 81 fully owned entities by the government. A sample of 12 public entities was considered for this study. Secondary data was gathered from the financial reports of the institutions over the ten year period, Year 2004 to Year 2013. We considered these methods because it was the most economical way of data collection compared to others. Panel data analysis was used for analysis since it involves the funding and financial performance of the twelve institutions over the ten year period. Regression and Correlation analysis was used to establish the relationship between the government funding and financial performance of public institutions. Results of the study revealed a positive insignificant relationship with treasury funding. There was a positive significant relationship between liquidity and treasury funding while leverage had a negative and significant relationship with treasury funding. There is need to improve financial planning and forecasting to increase liquidity levels in public institutions.

**Key words:** Treasury funding, Liquidity, Leverage, financial surplus, Public Institution.

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## **DEDICATION**

I dedicate the dissertation to my entire family, for the support and especially for the encouragement and cheering me up throughout the period.

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## LIST OF ACRONYMS

<b>GoK:</b>	Government of Kenya
<b>NPV:</b>	Net Present Value
<b>O.E.C.D:</b>	Economic Co-operation and Development
<b>SA:</b>	South Africa
<b>SC:</b>	State Corporation

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the study**

Recent studies have observed that government institutions are burdened with financial management risks that comprise the acquisition, allocation and investment of funds in the various budgetary considerations. In these studies the level of risk exposure in decision making, resource allocation and usage which are linked to corruption practices. The institutions are exposed to financial risks such as liquidity, credit and interest rate risks due to the bureaucratic nature of decision making in the government owned entities.

Globally, over the years, there has been a change in the way in which the public entities have been run and managed and financed. Therefore, internationally acceptable stipulating public financial practices in state corporations have been developed worldwide. The main purpose for these principles is to sensitize and promote the principles of corporate governance which are deemed appropriate in sustainability of viable financing principles (G.O.K, 2013). In the global context these principles are developed and promoted through Organization for Economic Co-operation and Development (O.E.C.D).

In Western Europe, Eastern Europe and America nationalization was promoted throughout the 20<sup>th</sup> century, mostly after the second world due to the emergence of Soviet union which precipitated cold war. The government must promote and regulate “telecommunication, power, petroleum, railways, airports, airlines, public transport, health care, postal services and sometimes banks”. Despite of this being a government there has been an increased trend of privatization of state owned parastatals so as to raise new funds as such to acquire resources to achieve their mission and vision.

In Nigeria and Ghana, their National Treasury developed a financing strategy for funding state-owned companies, which also included closer monitoring of such entities. The two countries developed a framework for funding state-owned companies that distinguished purely commercial activities from the costs of exercising their developmental mandate.

The main source of funding for public institutions in Kenya is the treasury. Other sources of funds for the institutions are their income generating activities. To eliminate wastage and mismanagement there is need to adhere to the professional ethics as stipulated (GOK 1991). Despite the availability of these regulations, public institutions are seen to have financial challenges and thus relying on treasury funding for their survival. The need for this study was based on a lack of knowledge on the influence of Government funding on the performance of these institutions.

According to Otieno (2013) Treasury's approval for domestic or external borrowing is only granted for investments that demonstrate commercial viability and satisfy the rate-of-return criteria. According to the Treasury policy the investment should be able to generate sufficient revenue to repay the loans in full without recourse to the Exchequer for bailout. Findings from Kenya Debt Relief Network (2013) revealed up to 7.6 billion was unguaranteed loan borrowed by parastatals. The Treasury paid Sh1.4 billion in the year 2013 for guaranteed loans.

Public sector managers are discouraged from acting entrepreneurially in their organizations because citizens suspect civil servants of acting in their own self-interest (Moore 1995, pp.18-19). Moore (1995, p.19) contends that society denies its public sector the key ingredient on which its private sector specifically relies to remain responsive, dynamic and value creating :Namely, the adaptability and efficiency that come from using the imagination of managers to combine public demand with access to resources and control over

operational capacity to create value. Public Value presents a more modern view of the public sector executive, embracing accountability and viewing public managers as explorers commissioned by society. Due to the changing trends on the global economic performance, public sector is now transforming into being entrepreneurial while still providing public wants.

### ***1.1.1 Background of public sector parastatals***

The State Corporation Act Cap 446 (1987) defines a Parastatals as a state corporation (SC) or a corporate body established by or under an Act of parliament; it is also a corporate body established by order of the president to perform the functions specified in that order; it also includes a bank or a financial institution licensed under the banking Act or other company incorporated under the company Act whose shares or majority of whose shares are owned by the government of Kenya or by another state corporation (Wamalwa, 2003).

Government the world over including Kenya established Parastatals with both economic and public policy motives. The government of Kenya forms Parastatals to meet both commercial and social goals. They exist for various reasons including: to accelerate economic social development, to redress regional economic imbalance, increase Kenyan citizen's participation in the economy and to promote foreign direct investment through joint ventures (GoK- Sessional Paper No. 4, 2005). The economic motive arose out of the government desire to promote or enhance private African enterprises (Wamalwa, 2003), since after independence, most private enterprises and entrepreneurships were European owned while a bulk of the locals were lacking in undertaking such business ventures.

Establishing Parastatals was also viewed as a means of generating other non-tax revenue for the government in order to support the country's agenda. On the other hand, despite the high level of commercial and economic intents, Parastatals were established with

public policy motive in the conduct of their operations. They are required to serve as a stabilizer of highly profit oriented capitalists whose goal is profit maximization. They therefore stand as a bridge in providing goods and services to the general public at a much lower affordable prices compared to the private firm. At independence in 1963, Parastatals were retooled by Sessional Paper no. 10 of 1965 into vehicles for the indigenization of the economy.

Thus majority of key Parastatals that exist today were established in the 1960s and 1970s. By 1995, there were 240 state corporations. The number currently stands at 127. The financial performance of Parastatals in Kenya has continuously been unimpressive to the public, which to a larger extent are its majority shareholders. The dismal performance can be largely attributed to lack of discipline in expenditure pattern, mismanagement, wastage, poor governance and lack of adequate supervision both by management and regulatory bodies (Sessional Paper No.4, GoK 1991).

These mismanagement and poor governance practices have led to Parastatals not achieving their objectives, rather most have lagged in the delivery of the required services, failed to meet the demands of the consuming public, while most services provided were poor and unreliable, thereby making the public to lack confidence in the performance of state-owned enterprises. Consequently, the Parastatals became a liability to national government instead of been a profit-driven investment vehicle. Billions of shillings flowed out of central government accounts to sustain the Parastatals.

## **1.2 The Problem Statement**

The subject of financial performance due to treasury financing of public institutions is paramount. Financing is the engine of any business and therefore should be a top priority to any firm's management (Nagaoka, 2007; Martin &Huang, 2009; Levine, 2004). Public

institutions in the entire world are highly dependent on government funding and have experienced deterred growth due to the challenge of funding by the government (Shior and Yonah, 1998).

Over the years, Kenya government has been running a total of two hundred and sixty two Parastatals. However, as a follow-up to a government directive made in the 1980's to reduce the number of Parastatals in the country, recently, a team of experts handed in a report to the president, and part of their recommendation concerning the running of the Kenya is that, some of these Parastatals should be merged., trimming down their numbers from the two hundred and sixty two to one hundred and eighty seven (Omondi, 2013).

The Parastatals Management decisions on financing, investing, working capital management, fund management services and surplus management are limited owing to their dependence on treasury decisions and political influence. Despite the transformation of these institutions through professional management and competition with private firms, their large contribution of the gross national income, the government has not invested in the research aligned to this problem. No known study has been conducted to establish effect of the Public Institutions financial performance on treasury funding. This study therefore sought to fill this research gap.

### **1.3 Objectives of the Study**

#### **1.3.1 *General objective***

The overall objective of the study was to examine the effects of financial performance of public institutions on treasury funding.

#### **1.3.2. *Specific objectives***

The study was guided by the following specific objectives;

- i. To determine the effects of financial surplus of public institutions on treasury funding
- ii. To analyze the effects of financial leverage of public institutions on treasury funding
- iii. To assess the effects of liquidity ratio of public institutions on treasury funding

#### **1.4 Research Questions**

The study was guided by the following research questions;

- i. What are the effects of surplus of public institutions on treasury funding?
- ii. What are the effects of financial leverage of public institutions on treasury funding?
- iii. What are the effects of liquidity ratio of public institutions on treasury funding?

#### **1.5 Importance of the Study**

The research study will focus on treasury funding and therefore will be significant to policy makers, government stakeholders, investors, financiers, and management in the government institutions as it will elucidate how financing performance affect treasury funding of the public institutions. The findings and recommendations will enhance the formulation of policies and framework that will enhance growth in the public institutions.

Policy and law makers and local authorities will be able to develop and implement policies that would foster growth of the public institutions as well as the efficiency in the use of the public money. Future researchers and academicians also used the study as an empirical source in their areas of interest.

#### **1.6 Scope of the Study**

The study observed the financial performance of twelve (12) public institutions for the ten year period between year 2004-2013 and the treasury funding for the same period. This study therefore sought to look at the effects of the financial performance of the public institutions

on the level of funding by the treasury and see how the funding has transformed the public sector working environment as well as service delivery to which is their core goal.

### **1.7 Limitation of the Study**

The study sought information on treasury funding and financial performance of twelve (12) public institutions for the ten year period, 2004-2013. Access of the detailed data for the entire period as well as the computation of the necessary ratios was a challenge especially with regard to the history of management of public institutions and the political influence on management. The access of data on the credit rating of the institutions for this period may was also a challenge as the country doesn't have a standard credit rating system or recognized institutions for this role. Lastly, due to confidentiality of some financial information, access to all the data may be a challenge, thus dummy names were used to indicate the public institutions.

## CHAPTER TWO

### LITERATURE REVIEW

#### **2.1 Introduction**

In the current chapter both theoretical and empirical literature is reviewed. The chapter is subdivided into theoretical review, empirical review and conceptual framework.

#### **2.2 Theoretical Review**

The current study was guided by pecking order theory, agency theory and static trade off theory.

##### ***2.2.1 Pecking Order Theory***

This theory was developed by Majluf (1984); it argues that the financing choice in a corporate organization is sourced on price priority basis. Initially an organization should exhaust the cheapest sources of finance which is mostly the retained earnings and in this case it will be the amount of financial surplus. After exhausting the cheapest source the firms should borrow from the cheapest source of debt.

According to Myers (1984) there are costs associated with the financing mode adopted by any institution. The cost of this information is accelerated due to the level of information asymmetry which precipitates the chances experiencing moral hazard and adverse selection. Moreover, the firm ought to borrow funds with the sole purpose of investing in projects which can generate higher net present value as such to increase the values of investors.

The choice of financial structure in a commercial institution has both short and long run impact. Myres (1984) argued that in the short run a corporate organization will increase the leverage if they have positive cash flows in the period under consideration. The theory is appropriate for the study since the state commercial firms have to strike a balance between

leverage and use of financial surplus, they should ensure that even if they borrow the chances of bankruptcy are minimized.

### ***2.2.2 The Agency Theory***

Agency theory was put forth by Jensen and Meckling in (1976) when they argued that there is need for separation of ownership and management in order to ensure there is smooth running of corporate firms in their day to day operations. Elliot (2002) argued that the sole purpose of organization top management is to maximize shareholders wealth through pursuing projects which are generating positive net present value. In this case the management of commercial state corporations ought to ensure that they pursue those projects which have higher return compared to the source of financing.

There are several measures which have been developed to minimize the level of conflict between principle and agent in a corporate organization. For example the mixture of debt and owner contribution in the capital structure variations can minimize the conflict in particular (Pinegar and Wilbricht, 1989; Lubatkin and Chatterjee, 1994) argued that increased leverage minimize conflict with minimal agency cost changes since in several instance debt providers demands to have a representation in company management.

The theory is appropriate for the study since an increase in leverage forces the management to increase cash flow efficiency so that they have enough resources to service the loan when it falls due. In addition, the management will be more careful not to window dress the financial records since the lenders uses them to examine them while determining the amount of loan they can grant unto any institution.

### ***2.2.3 Static Trade-Off Theory***

This theory assumes that there are two main sources of financing which can be used by any organization. The sources are either debt or the ownership contribution. It posits that all institutions should strike a balance on both as such to benefits from the optimal benefits associated with their combination (Myers, 1984). Myers argued that although use of leverage increases the chances of bankruptcy and its associated costs, the tradeoff between interest tax shield benefits and the borrowing associated costs should be evaluated. If the benefits exceed the costs then state commercial corporations should use the borrowed funds and vice versa.

The theory is appropriate for the study since the commercial state corporation may be in need of finances as such to invest in project which can have more social benefits in addition to generating positive net present value. Although, the commercial state corporations are qualified to use borrowed funds there is need to examine the costs benefits analysis as such to borrow when they have high chances of more return and consequently increase the amount of financial surplus.

### ***2.3. Treasury funding in public institutions***

A public institution is a state owned enterprise which is aimed at achieving social and economic benefits among its citizens. These institutions can be either aimed at achieving social benefits or generate some income in addition to achieving social benefits (Jongbloed, 2000). In both developed and developing the mode of public funding both commercial and social state institutions ought to be evaluated. Past studies have persistently reported on issues concerning adherence to ethical issues on accountability as well as diversion of funds from the intended projects (Cleveland-Innes, 2010; Jongbloed, 2000). Both developed and developing economies have developed reforms on their public institutions financing mode, either through monitoring or changing the existing systems of financial management.

Formulation of policy reforms in developed and developing countries has been a focus by many governments seeks to improve public institutions funding. An important priority of public policy is to ensure that public institutions contribute to economic growth and social development especially in the current globalization trends (Macerinskiene, 2006).

A good public funding management system is crucial for any nation in order to improve service delivery, access to facilities, and efficient use of resources (Newman, Couturier, & Scurry, 2004). However this has proved a complex and challenging matter due to the political influence and increasing competition from the private entities (Choban, & Choban, 2008; Moja, 2007). Although, the public institution are quenched with expansion needs they are inhibited by inability to raise funds from treasury owing to changing government financing trends.

Although, the recent globalization trends demands increases financial needs among state corporations, there is limited supply due to government in ability to generate revenue in the same speed with demand (Salmi & Hauptman, 2009). Furthermore, Lebeau *et al.* (2011) add that the world economic crisis has pressure on public funded institutions in most parts of the world. According to Ko and Osamu (2010), argued that higher education in Japan was faced by challenges which include “global market, funding cuts, social demand and shrinking of the number of students currently”. Due to these education institutions have developed other measures to meet their budget deficit (Teixeira & Koryakina, 2011). Since the government levels of financing in education institution are constrained by the changing technology then there are chances of future financial crisis. To diverge these then educational institutions ought to develop means of raising funds for example they can engage in capacity development training programs, introduction of self-sponsored, venture into income

generating projects which can be used as training platform's for students as they acquire industry related skills.

### **2.3.1 Financial surplus**

There are different models which have been developed to explain the financing mix in any commercial enterprise. According to Ooi (1999) there are high chances of most profitable firms being highly leveraged as compared to firms earning low profit levels. These firms are more leverage so as to benefit from the interest tax benefits. These findings contrasted Myers (1984) who found an inverse significant relationship between profitability and leverage. Myres argued that firms which make high profits rely so much on retained earnings thus they stand at lower chances of using borrowed capital. These results were cemented by Titman and Wessels (1988) and Barton *et al.* (1989), who agreed that there are lower chances of profitable firms using debt capital since they do not share all the earnings with the capital providers. Recently, Al-Sakran (2001) appears to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and debt financing.

A high P/E ratio shows that investors are optimistic about the growth opportunities of the firm, which makes them use a low capitalization rate thus making such firms to be valued highly. Although this method is relied upon by financial analysts to evaluate the performance and prospects of the shares, it has the following limitations: A high P/E ratio is considered good but it could be high but because the share price is quite low. Interpretation of P/E ratio becomes meaningless because of the measurement problems of earnings per share. This is because a number of arbitrary assumptions and choices are made to estimate earnings. Accounting policies may be manipulated and changed which may distort the fair estimation of the earnings (Dolmat-Connel, 2002).

### ***2.3.2 Leverage***

Bitok *et al.*, (2011), examined the determinants of capital structure among companies listed in Nairobi securities exchange. The study used purposive sampling to select 54 companies which were listed in other sectors in exclusion of financial sectors whose capital structure is regulated by capital adequacy ratios. The study was guided by static trade off theory, pecking order theory and agency cost theory. From the findings it was concluded that static trade off theory was the most appropriate capital structure theory in Kenya. In addition, those firms which were large had a positive and significant relationship with leverage. Profitability, asset tangibility and firm size all independently had a negative influence on leverage.

Debt holders have a prior claim on the company's cash flows relative to shareholders, who are entitled only to any residual cash flow after debt holders have been paid. This therefore means that the fixed claim of debt holders causes the residual claim of the stockholders to become less certain, and this increase the cost of stock Brigham and Houston (2004). Use of debt financing has two benefits to an organization which are: interest tax shield benefit and guaranteed annual returns prior to ordinary stock holders.

Although, there leverage has the associated benefits its faced with drawbacks especially when an organization is not profitable then there are chances of bankruptcy and fluctuation of interest rates due to changing macroeconomic conditions which increases and decreases the interest expenses whose burden dwindles the prospects of good returns to capital providers. Thirdly, there are instances in which an organization may suffer from financial distress (Pandey, 2005).

### **2.3.3 Liquidity ratio**

A liquidity ratio which is a reflection of firm's asset structure is an important determinant of the capital structure of a new firm. Harris and Raviv (1991) argued that through liquidity ratio it would be easier to examine the level of assets tangibility. Past empirical findings have revealed a positive relationship between leverage and asset structure (Titman and Wessles, 1988). This is in agreement with Myers (1977) who argued that the levels of assets tangibility increase the chances of an organization to use borrowed funds.

There is need to revalue assets prior to using them as collateral securities (Williamson, 1988). Scholarly articles have argued that assets are used as collateral security since they minimizes the bankruptcy and agency cost associated with debt financing (Allen, 1995). Others have argued that those firms with high asset bases especially the current assets can be in a position to short term finances which can finance working capital (Michaelas, et al, 1999).

## **2.4 Empirical Review**

The genesis of organization mix of long term and short term sources of finance hails from Modigliani and Miller seminar paper of 1958. These papers argued that the choice of either equity or debt has a significant influence on the resultant cost of capital. Although, initially they assumed taxation had no role on determination of cost of capital they incorporated it in their latest articles and the resultant model posited that use of debt increases interest tax shield benefit thus it is more beneficial to use borrowed funds. In USA a study by Graham (2000) examined the benefits associated with the mix of debt and equity in any corporate organization. The findings revealed that there were tendencies of earning higher profits if a firm had higher levels of debt and was involved in liquid business activities.

Devoset el al, (2001) sought to examine the reasons why newly listed companies have tendencies to use conservative leverage policy on their first three years upon listing. They

argued that leverage decision was influenced by “managerial entrenchment, financial flexibility and credit constraints”. To achieve their study they used secondary data retrieved from COMPUSTAT in years 1990-2008. Purposive sampling was used to exclude all firms listed in non-financial market segment and were actively trading with the period under consideration. Results of the study revealed that those which had zero leverage were influenced mostly by both internal and external factors on their financial leverage determination.

Strebulaey and Yang (2006) investigated the valuation of companies in relation to zero debt and market to book value ratios. The study argued that the health status of an organization can be influenced by the level of debt whereby the non-debted firms were deemed to be healthier as compared to leveraged firms. An examination of profitability and debt to equity ratio among corporate organization has revealed that there is a positive relationship between gearing and profitability as well as maximization on available growth opportunities (Graham, 2000). These findings have been contrasted by Byoun (2006) who argued that the higher who found that the higher the debt the lower the profit and prospects of growth.

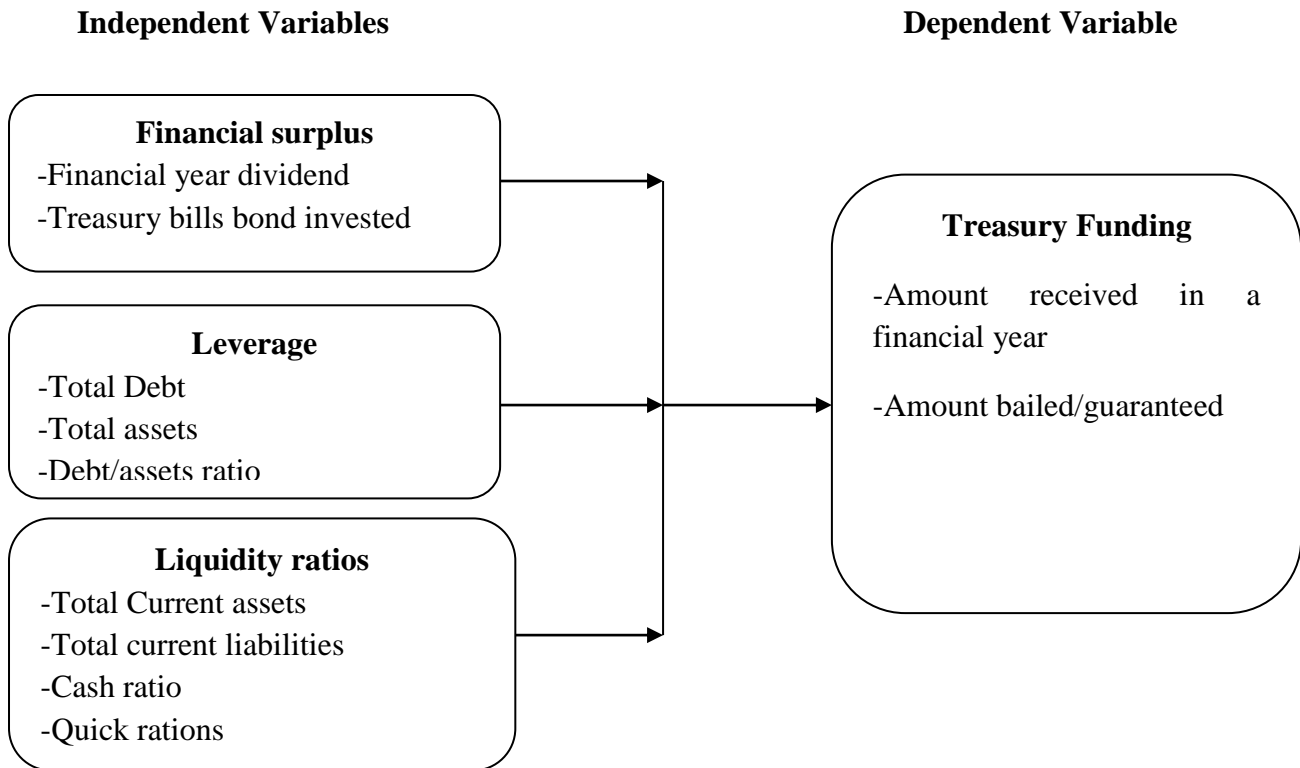
Chebii, Kipchumba and Wasike (2011) examined the role of capital structure on dividend distribution among companies listed in NSE. The study categorised 34 companies listed in 1998 to 2004 as either lowly or highly leveraged. There was a positive and significant relationship between financial leverage and dividend payout ratio. Chebii et al, concluded that listed firms had high chances of gaining competitive advantage as compared to lowly leveraged firms.

## 2.5 Conceptual Framework

To solve the research problem we will adopt the following conceptual framework.

**FIGURE 1**

### Conceptual Framework



**TABLE 1**

### Operationalization of Variables

	Variable	Indicators	Data	Measure
Independent Variables	Financial surplus	-Financial year dividend -Treasury bills bond invested	Secondary data	Annual Net Profit Margin
	Leverage	-Total Debt -Total assets -Debt/assets ratio	Secondary data	Annual Debt Asset Ratio
	Liquidity ratios	-Total Current assets -Total current liabilities -Cash ratio -Quick ratios	Secondary data	Annual Current Ratio
Dependent Variables	Treasury Funding	- Government financing	Secondary data	Amount of annual Treasury funding

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

In this chapter we discuss the techniques employed to meet the objectives of the research. It presents the technique used to obtain the research design, study population, sample size, sampling techniques, targeted population, the collection instruments used, the methodology used to collect data as well as the data analysis procedures.

#### **3.2 Research Design**

In the current study correlation research design was adopted. Correlation research design describes the characteristic and association between the financial variables and the treasury funding. The design was appropriate since the study to examine the effect of financial performance on treasury funding. The study was based on secondary data that was obtained from the annual financial reports on the 12 public institutions under study.

#### **3.3 Target Population**

The target population was all the fully owned public companies by the government. According to the Kenya Institute for Public Policy Research and Analysis in 2013, there are 81 fully owned entities by the government as shown in appendix iii.

#### **3.4 Sample Size and Sampling Technique**

The research shall use a simple random sampling. Through simple random sampling all individuals have an equal chance of being selected. A sample of 12 public entities out of 81 will be considered for this study. The secondary data will be collected from the financial reports from 2004 to 2013. This was a 10 years period of study thus 120 observations was collected. According to Mugenda and Mugenda (2003) a sample of at least

10% of the total population is representative. Thus, 15% of the accessible population is enough for the sample size.

### **3.5 Data Collection and Type**

This study utilized secondary data for the ten years specified. Secondary data was gathered from the financial reports of the institutions over the ten year period, Year 2004 to Year 2013. We considered these methods because it is the most economical way of data collection compared to others. This is because it can be conducted within a small period of time that the researcher has. The collected data for this study shall be quantitative as well as qualitative in nature. This means that 120 observations was collected from the 12 public institution for the duration specified.

### **3.6 Panel Data Analysis**

The current section composed of four steps: data preparation through cleaning, data analysis, interpretation and report writing. Microsoft Excel, E views and STATA statistical packages were used to analyse the data. A graphical method was used to explore the data. Panel regression analysis diagnostic test for heteroskedasticity, serial correlation and fixed effects will be used. Panel analysis method was appropriate since the data had both cross sectional and time series effects. Panel data analysis was used for analysis since it involves the funding and financial performance of the twelve institutions over the ten year period.

**TABLE 2**

**Panel Data Diagnostic Tests**

<b>Test</b>	<b>Test Used</b>	<b>Conclusion</b>
Use of pooled or random effects model	Breusch Pagan LM test	If P value >0.05, use pooled effects model. If p value >0.05, there are no time fixed effects do not use two way model or introduce dummy variables
Time Fixed Effects	F statistics	If P value <0.05, presence of non-uniform variance.
Heteroskedasticity	Modified Wald Test	
Serial correlation	Wooldridge	If P>0.05, no serial correlation
Random or fixed effects	Drukker test	
	Hausman test	If p value>0.05, use random effects model.

**3.6.1 Model specification**

The nature of data was cross-sectional and time series, which is called the panel data. Asteriou and Hall, (2011) argued that panel data analysis is considered when the researcher seeks to investigate the impact of various variables on a particular dependent variable. In addition, the method is commonly preferred by scientists since it provides for the inclusion of data for N cross-sections i.e. firms, individuals, organizations and the T time period i.e. years, quarters and months.

The model to examine the effects of financial performance of public institutions on treasury funding shall be tested using the equation (i) below

$$Y_{i,t} = \beta_0 + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + \epsilon_{i,t} \dots \dots \dots (i)$$

- Where:
- Y – Treasury Funding to firm i at time t
  - X<sub>1i,t</sub> – Financial surplus of firm i at time t
  - X<sub>2i,t</sub> - Leverage of firm i at time t
  - X<sub>3i,t</sub> – Liquidity of firm i at time t

$\beta_0$ : is the error term that constitutes the effect of other variables influencing treasury funding,

Panel data analysis involves three main approaches: common constant, random effect and fixed effect.

### ***Common constant***

In the common constant method, is set equally for all the firms. In particular, it implies that all the examined firms have no difference and the data set is a priori homogeneous. However, the common constant is believed to be limited due to the fact that it does not concern the involvement of fixed and random effects in its estimation (Asteriou & Hall 2011).

### ***Fixed effect model***

Being different from the common constant, fixed effect model concerns all specific effects that, firstly, belong only to a particular firm, and secondly, do not change over time. Furthermore, it allows different constants for different cross- section groups (Asteriou & Hall 2011). The fixed effect model can be illustrated as follows:

$$Y_{i,t} = \beta_0 + \beta_1 X_{1i,t} + \beta_2 X_{2i,t} + \beta_3 X_{3i,t} + V_i + \epsilon_{i,t} \dots \dots \dots (ii)$$

### ***Random Effect Model***

The main difference between fixed effect model and random effect model is that random effect model considers all the specific effects which are not fixed, but rather random (Asteriou & Hall, 2011). Therefore, the model of random effect model is as shown in equation ii above. Where  $v_i$  equals to a zero mean standard random variable. The use of this model, firstly, equalizes all the value for all individuals from the same group and secondly, it creates a simpler estimation than that of the fixed effect model. However, random effect model requires more specific assumptions; otherwise, the results will be invalid or

biased (Asteriou & Hall 2011). The main difference between random effects and fixed effects model is that fixed effect model considers that each firm varies due to its intercept term, whereas random effect model estimates that each firm differs in its error term.

### ***Hausman test***

In order to test which is the most appropriate model between random and fixed effect model Hausman test will be applied. Hausman test tests the null hypothesis that the data follow random effect and the alternative states that the data follow fixed effect model (Hausman, 1978; Watson and Stock, 2003).

## **CHAPTER FOUR**

### **ANALYSIS AND FINDINGS**

#### **4.1 Introduction**

The current chapter presents analysis and findings of the study from the secondary analysed as per the government funding on parastatals. The data was collected from 12 parastatals for a period of ten though their real identities were not disclosed thus dummy names were used from the alphabetical letters. The chapter is organized as exploratory data analysis and panel data analysis where several diagnostic tests were carried out prior to fitting of the conceptualized model.

#### **4.2 Exploratory Data Analysis**

Before examining, the relationship between financial surplus, leverage, liquidity and government funding in Kenya. The study explored the amount of government funding among parastatals which was expressed as a proportion of government financing to a parastatal to total expenditure per annum. Through the use of empirical growth plots as shown in Figure 2 there were variations in the government across various parastatals whereby in some periods the government injected huge more funding than in other periods though there was an upward pattern followed by downward patterns showing changes in proportion of government financing.

**FIGURE 2**

**Treasury Funding Pattern for Each Parastatal**

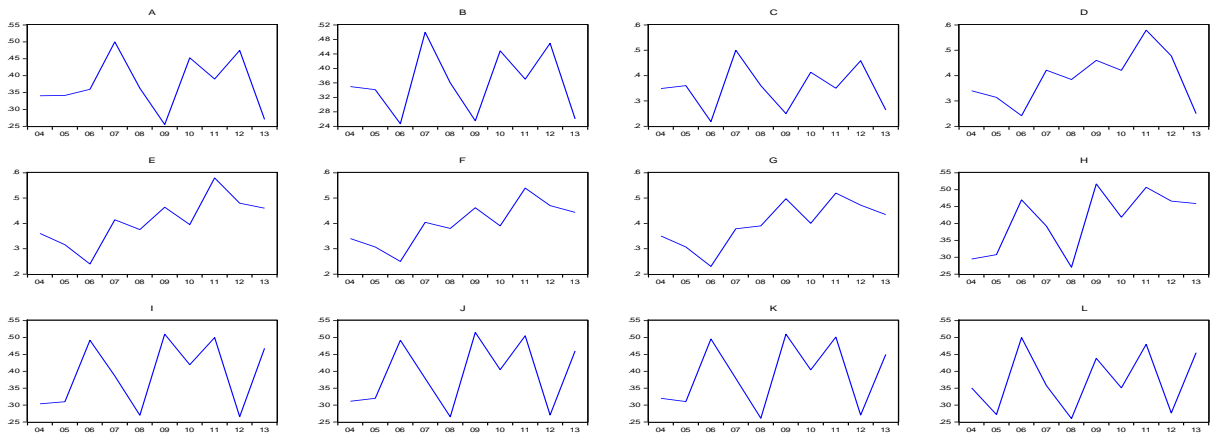
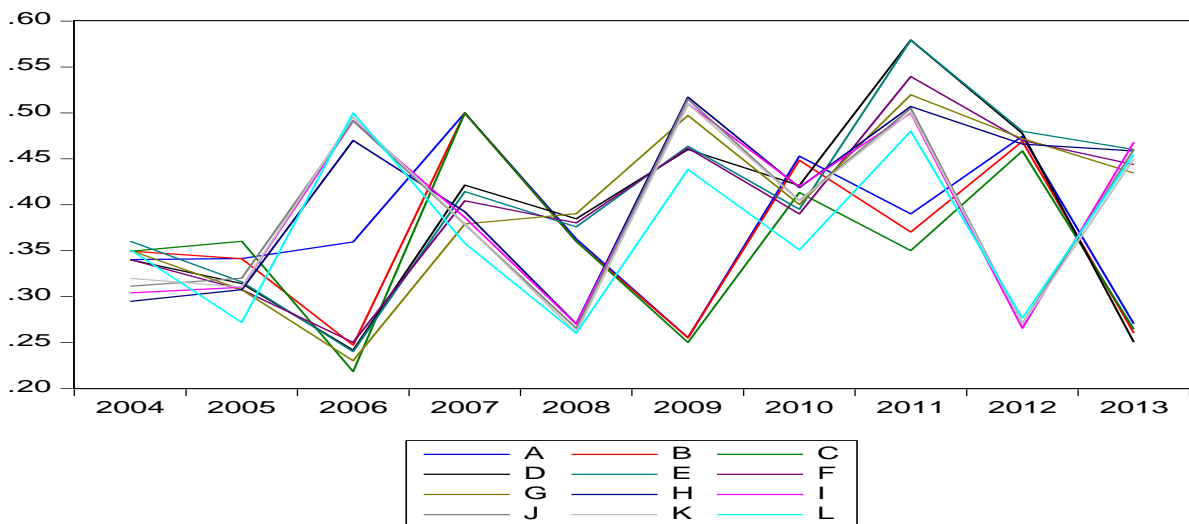


Figure 3 shows the overlain graphs which was used to show whether the slopes of were significantly different from each other. The pictorial presentation revealed that the slopes were not significantly differently from each other and the intercepts were different. From the findings it can be deduced that there were time related fixed effects since all of them had similar upward and downward trends.

**FIGURE 3**

**Overlain Plot for Government Funding in Parastatals**



### 4.2.1 Multi collinearity analysis

Correlation analysis was carried out to examine both the strength of the relationship between variables as well as multicollinearity between independent variables. Results in Table 3 revealed there was a positive but insignificant relationship between government funding and financial surplus ( $\rho=0.014$ , P value  $>0.05$ ). Secondly, there was a negative significant relationship between leverage and government (  $\rho= -0.249$ , p value  $<0.05$ ). This implies that an increase in leverage decreased government funding, when the government decreases the financing parastatals ought to seek alternative sources of financing such as bank loans. There was a positive and significant relationship between liquidity and government funding ( $\rho=0.340$ , p value  $<0.05$ ). This implies that a unit increase in liquidity increases government funding. There is a positive and insignificant relationship between financial and leverage and liquidity. Since there was none of the variable which had a correlation coefficient greater than 0.7, then all independent variables were unrelated.

**TABLE 3**  
**Correlation Analysis**

	<b>Treasury funding</b>	<b>Financial surplus</b>	<b>Leverage</b>	<b>Liquidity</b>
Treasury funding	1			
Financial surplus	0.014	1		
Leverage	-0.249***	0.166*	1	
Liquidity	0.340***	0.042	0.014	1
	0.877	0.071	0.882	
	0.006	0.648		

### 4.3 Diagnostic Analysis

In the current section the study reports panel data diagnostics tests which include serial correlation, heteroskedasticity and time fixed effects tests were carried out. Breusch Pagan LM test was used to test the appropriate model between pooled effects regression and random

effects regression model. Since the P value was less than 0.05, there was significant difference on firm performance among listed companies thus pooled effects regression modeling was not appropriate for the study

**TABLE 4**  
**Chi-Square Values For The Breusch-Pagan LM Test**

<b>Model</b>	<b>Dependent variable</b>	<b><math>\chi^2</math>-value</b>	<b>p-value</b>
1	Treasury funding	20.77	.0000

Results in Table 5 shows the test results for time fixed effects. The findings showed no significant time effects thus, there was no need to introduce dummy variables. Since there random effects two way analysis was carried out.

**TABLE 5**  
**Test Results for Time Fixed Effects**

<b>Model</b>	<b>Dependent variable</b>	<b>F- value</b>	<b>p-value</b>
1	Treasury funding	4.22	0.0001

Heteroskedasticity former was tested using modified Wald test while serial correlation was tested using Wooldridge Drukker test. Results in Table 6 revealed that there was no heteroskedasticity. In addition, there was no evidence for serial correlation among the panels since the (p value > 0.05).

**TABLE 6**  
**Result for Heteroskedasticity and Serial Correlation Tests**

<b>Model</b>	<b>Dependent variable</b>	<b>Test for heteroskedasticity</b>		<b>Serial Correlation</b>	
		<b><math>\chi^2</math>-value</b>	<b>p-value</b>	<b>F-value</b>	<b>p-value</b>
1	Treasury funding	0.19	0.6654	1.425	0.513

### 4.3.1 Panel Data Analysis

Descriptive analysis was present prior to panel regression analysis. The results indicate on average the government financed 38.7% of the total financing needs of parastatals. On average parastatals had financial surpluses of 10.3%, with an average leverage 57.1% was financed from debt financing. On average the liquidity risk was

**TABLE 7**

**Panel Descriptive Analysis**

<b>Variable</b>		<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
Treasury funding	overall	0.387	0.090	0.220	0.580
	between		0.053	0.318	0.486
	within		0.074	0.208	0.533
Financial surplus	overall	0.103	0.063	0.007	0.333
	between		0.048	0.049	0.202
	within		0.044	0.003	0.285
Leverage	overall	0.571	0.250	0.030	0.935
	between		0.192	0.328	0.935
	within		0.170	0.094	0.909
Liquidity	overall	1.089	0.343	0.080	1.590
	between		0.356	0.303	1.518
	within		0.052	0.866	1.286

The secondary data collected had both cross sectional and time series characteristics, Breusch Pagan LM test showed pooled effects model was not appropriate for the study. Due to this the most appropriate model for the study was panel regression model which could either be random effects (RE) or fixed effects (FE). FE regression modeling is more appropriate when the study seeks to examine the effect of independent variables over time. More so the independent entity should be having a relationship with the independent variables. In contrast RE assumes that independent variables have no collinearity with independent entities. In addition, it assumes that there are random variations across the error terms and both independent variables and specific's entities are too treated as independent variables. To make a choice between random and fixed effects panel regression model,

Hausman test was applied, as shown in Table 8. Since the p value was greater than 0.05, the most appropriate model to explain the relationship between treasury funding and financial surplus, leverage and liquidity among parastatals was random effects regression modeling.

**TABLE 8**

**Hausman Test Results**

<b>Variable</b>	<b>Fixed</b>	<b>Random</b>	<b>Variable (Diff.)</b>	<b>Prob.</b>
Financial surplus	0.055	0.061	0.001	0.829
Leverage	-0.090	-0.094	0.000	0.435
Liquidity	0.088	0.089	0.000	0.717
Chi square =0.887 P value = 0.8286				

Results in Table 9 shows that 17% of the variations on treasury funding were influenced by financial surplus, leverage and liquidity. Moreover, all the independent variables had a joint significance influence, (F statistics = 5.5119, P value <0.05).

There was a positive but not a significant relationship between financial surplus and treasury funding ( $\beta=0.073$ , p value >0.05). Secondly, there was a negative and significant relationship between leverage and treasury funding ( $\beta=0.073$ , p value >0.05). This implies that an increase in leverage decreased the amount of treasury funding. It can be deduced that the more the state corporation accessed financing the less the dependency with the treasury funding. Finally, there was a positive and significant relationship between liquidity and treasury funding. This implies that a unit change in liquidity increased treasury funding by 0.090 units. This means that the more the treasury funding increased the more the amount was spent on acquisition liquidity related assets and liabilities hence an increase in liquidity.

**TABLE 9**

**Random Effects Regression Model on Treasury Funding**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
Constant	0.357	0.053	6.776	0.0000
Financial surplus	0.073	0.145	0.505	0.6147
Leverage	-0.133	0.037	-3.574	0.0005
Liquidity	0.090	0.043	2.121	0.0361
<b>Effects Specification</b>				
			<b>S.D.</b>	<b>Rho</b>
Period random			0.044868	0.255752782
Idiosyncratic random			0.076539	0.744247218
<b>Weighted Statistics</b>				
R-squared	0.1248	Mean dependent variable		0.1708
Adjusted R-squared	0.1021	S.D. dependent variable		0.0777
S.E. of regression	0.0736	Sum squared resid		0.6281
F-statistic	5.5119	Durbin-Watson stat		2.4848
Prob(F-statistic)	0.0014			
<b>Unweighted Statistics</b>				
R-squared	0.1700	Mean dependent variable		0.387
Sum squared resid	0.7988	Durbin-Watson stat		2.500

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter summarizes and presents the research findings, from the study. It has been organized to provide a concise summary of the study findings, conclusions and areas suggested for further research.

#### 5.1 Summary

The current study stemmed from the realization of the research problem in literature on effects of firm performance on treasury funding. Empirically most of the studies on the effects of firm performance on financing structure have been skewed on profit making private institutions with limited research on its role on state corporations. Moreover, there is scanty information is documented on either commercial or social oriented state corporations in relation to treasury funding. Consequently, the researcher's primary purpose was to examine the effect of treasury funding in public financial institutions in Kenya. Further, the researcher aimed at answering three research questions which were: What are the effects of surplus of public institutions on treasury funding's? What are the effects of financial leverage of public institutions on treasury funding? What are the effects of liquidity ratio of public institutions on treasury funding?

In order to meet the overall objective and thus answer the research questions of the study the researcher adopted correlation research design. Purposive sampling technique was used to select a sample of 12 public institutions for a period of 10 years. Secondary data was collected from annual audited financial statements of public institutions. The independent variables constituted financial surplus, leverage and liquidity while the dependent variable was the proportion of total financial requirement of a public institution which was financed by treasury. The data was cleaned and subjected to analysis and presented inform of graphs

and Tables. Prior to panel data analysis diagnostic tests were carried out which revealed that the data had panel pattern and the most appropriate model was random effects regression analysis.

Regarding the first research question, both regression and correlation analysis revealed that there was a positive but not significant relationship between financial surplus and treasury funding. These results were in agreement with Dolmat (2002) who's argued that there are minimal chances of seeking alternative financing if an organization is having income in excess of its earnings. Further, the higher the amount of retained earnings the lower the chances of borrowing as argued in pecking order theory.

Secondly, the findings indicated that there was a negative and significant relationship between leverage and treasury funding. These results were consistent with the pecking order theory that outlines that firms should always exhaust the cheapest sources of finance. In addition, the findings concur with the static trade off theory which argues that firms should always evaluate the tradeoff between return and cost of raising alternative finances. Furthermore the rationale behind borrowing is to maximize on the return associated with the cheapest sources of finance.

Thirdly, the study observed a positive significant relationship between liquidity and treasury funding. The findings were in agreement with Williamson (1988) and Harris (1994) who argued that there is a positive and significant relationship between liquidity and the choice of financing mode. More so firms assets can be used to minimize the agency costs associated with alternative financing.

## **5.2 Conclusion**

Based on the study findings the current research inquiry attained the main objective of determining the effect of firm performance on treasury funding. It answered the following research questions: What are the effects of surplus of public institutions on treasury funding's? What are the effects of financial leverage of public institutions on treasury funding? What are the effects of liquidity ratio of public institutions on treasury funding?

Based on the study most of public institutions in Kenya had the same financing patterns whereby they had similar upward and downward trends. Since there was a positive and no significant relationship between financing surplus and treasury funding, there is need to intensify public institutions operations as such to increase the amount of revenue they generate per annum.

There is need to improve the level of public institutions liquidity and consequently be in a position to seek more funds from treasury funding. Since the funding from the treasury can be inform of lending and the public institution. Through increased current asset base inform of debtors, inventory and creditors. The public institutions should devise measurers to maximize the creditors days and minimize the debtors period which will ensure the public institutions are liquid enough and can meet its day to day operations with ease.

## **5.3 Recommendation**

There is need to devise financial planning and forecasting aimed at eradicating liquidity problems in public institutions. Through this the institutions will be able to manage the current assets and current liabilities. Since there is a negative significant relationship with leverage commercial public institutions should seek leverage so as to relieve the treasury financing which can be used to meet the other government social needs.

#### **5.4 Suggestion for Further Studies**

The current study helped to analyse the effect of financial performance and treasury funding. However, there is need for categorization of public institutions according to commercial and social policy and evaluate the influence of firm performance on treasury funding. Further, there is need to evaluate the qualitative influences of treasury funding in public institutions. There is need to evaluate the influence of financial performance on county funding since there are two of governance systems in Kenya and each has a contribution to the treasury funding.

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## **APPENDICES**

### **APPENDIX I**

#### **LIST OF FULL OWNED PUBLIC ENTITIES**

1. Agricultural Development Corporation
2. Agricultural Finance Corporation
3. Bomas Of Kenya Limited
4. Capital Markets Authority
5. Catering and Tourism Development Levy Trustees
6. Coffee Board Of Kenya
7. Commission For Higher Education
8. Communication Commission of Kenya
9. Consolidated Bank Of Kenya
10. East African Portland Cement Co.
11. Egerton University
12. Export Processing Zone Authority
13. Export Promotion Council
14. Higher Educations Loans Board
15. Horticultural Crops Development Authority
16. Insurance Regulatory Authority
17. Industrial and Commercial Development Corporation
18. Jomo Kenyatta University Of Agriculture and Technology
19. Kenya Accountants and Secretaries National Examinations Board(KASNEB)
20. Kenya Airports Authority
21. Kenya Anti-corruption Authority
22. Kenya Broadcasting Corporation
23. Kenya Bureau Of Standards
24. Kenya Civil Aviation Authority
25. Kenya College of Communication and Technology
26. Kenya Dairy Board
27. Kenya Electricity Generating Company
28. Kenya Ferry Services Limited
29. Kenya Forestry Research Institute
30. Kenya Industrial Estates
31. Kenya Industrial Research & Development Institute
32. Kenya institute of Administration
33. Kenya Institute of Public Policy Research and Analysis
34. Kenya Literature Bureau
35. Kenya National Examination Council
36. Kenya National Library Services
37. Kenya National Shipping Line
38. Kenya Ordinance Factories Corporation
39. Kenya Pipeline Company
40. Kenya Plant Health Inspectorate Services
41. Kenya Ports Authority

42. Kenya Post Office Saving Bank
43. Kenya Railways corporation
44. Kenya Revenue Authority
45. Kenya Roads Board
46. Kenya Safari Lodges & Hotels
47. Kenya Sugar Research Foundation
48. Kenya Tourist Board
49. Kenya Tourist Development Corporation
50. Kenya Utalii College
51. Kenya Wildlife Service
52. Kenyatta International Conference Center
53. Kenyatta University
54. Lake Victoria South Water Services Board
55. Local Authority Provident Fund
56. Maseno University
57. Moi University
58. National Bank Of Kenya
59. National Cereals and Produce Board
60. National Council For Law Reporting
61. National Enviromental Management Authority
62. National Hospital Insurance Fund
63. National housing Corporation
64. National Irrigation Board
65. National Museums Of Kenya
66. National Oil Corporation Of Kenya
67. National Social Security Fund
68. National Co-ordinating Agency for Population and Development
69. NEW KCC
70. NGO's Co-ordination Bureau
71. Pest Control Products Board
72. Public Procurement Oversight Authority
73. Postal Corporation Of Kenya
74. Retirement Benefits Authority
75. Sports Stadia Management Board
76. Tea Board Of Kenya
77. Tea Research Foundation Of Kenya
78. Teachers Service Commission
79. Telkom Kenya
80. University Of Nairobi
81. University Of Nairobi Enterprises & Services Ltd

Source: KIPPRA 2013