



**FACTORS INFLUENCING DEBT FINANCING AND ITS  
EFFECTS ON FINANCIAL PERFORMANCE OF STATE  
CORPORATIONS IN KENYA**

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**FACTORS INFLUENCING DEBT FINANCING AND ITS EFFECTS ON  
FINANCIAL PERFORMANCE OF STATE CORPORATIONS IN KENYA**

by

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## **DECLARATION**

I, Micah Odhiambo Nyamita, do declare that this thesis is a representation of my own work in both conception and execution. This thesis represents research work carried out by myself and it has not been submitted in any form for another degree at any university or higher learning institution. All information used from published or unpublished work of others has been acknowledged.

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## **ABSTRACT**

Identifying the best level of debt financing within corporations and its determinants is one of the main issues in financial management theory, as the use of debt is believed to have an important influence on the performance of corporations. The majority of studies on debt financing have been undertaken using data from developed economies, focusing more on private sector non-financial corporations. This study investigated the factors influencing debt financing and whether the use of debt positively or negatively influences the financial performance of state corporations in Kenya. The “financial leverage”, which is the proportion of debt financing of state corporations in the Kenyan region, based on the total debt and the total assets, was the object of analysis for the period 2007 to 2011. Applying both descriptive and inferential statistics, and a hybrid of cross sectional and longitudinal quantitative surveys, primary data from questionnaires, and secondary data from the corporations’ financial statements, were utilized. The sample size used was 50 income generating state corporations in Kenya. Using the primary and secondary data, the study, in addition, determined the extent of debt financing and analysed the different types of debt financing used by the various state corporations. It focused on the use of financial ratio analysis to identify the financial performance of the corporations by applying a pooling of cross-section analysis. Moreover, the “financial leverage” ratio was analysed in correlation with the financial performance ratios, in order to identify the potential of anticipation for future financing options for state corporations in Kenya. Further, the regression analysis result was used to demonstrate whether there is a relationship between the corporation’s “financial leverage” and its financial performance ratios and the debt financing theory suitable for explaining debt capital structure within the state corporations. The panel data for financial performance helped in identifying whether there was a significant relationship between “financial leverage” of corporations and their financial performance. The results identified the main factors influencing debt financing within state-owned corporations in Kenya to include profitability, asset tangibility and corporation growth. It was also determined that debt financing is inversely related to financial performance of state-owned corporations in Kenya. In addition, the results revealed that state-owned corporations from developed and developing economies use capital market debt securities, such as bonds and notes, and derivative financial instruments, such as swaps, options and forward contracts. In contrast, these types of debt are not common within the Kenyan state-owned corporations. The developed and developing economies state-owned corporations are perceived to have embraced the new public sector financial management

reforms agenda and operate in more developed and efficient capital markets. However, in Kenya, the new public sector financial management agenda may have not been implemented positively within the state-owned corporations and the country's capital market may still be inefficient. It is expected that the findings of this study would have vital policy implications for Kenyan state-owned corporations, in particular, and the government, in general.

## **DEDICATION**

Dedicated to my wife, Mrs Lillian A. Odhiambo, and my two sons, Emmanuel and Victor, who sacrificed their time and love, by allowing me to be away from home in pursuit of my career advancement.

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## ACRONYMS

AG	Auditor General
AGE	Corporation age
ANC	African National Congress
ANOVA	Analysis of variance
BKCY	Probability of bankruptcy
CEO	Chief Executive Officer
CMA	Capital Markets Authority
COB	Controller of Budget
CSR	Civil Service Reform
CSRP	Civil Service Reform Programme
DEA	Data envelopment analysis
EAC	East African Community
ECOFIN	Economic and Financial Affairs
EPS	Earnings per share
EU	European Union
FE	Fixed effects
FMC	Financial markets conditions
FMI	Financial Management Initiative
GDP	Gross domestic product
GMM	Generalized method of moments
GOC	Government-owned Corporation
GoK	Government of Kenya
GROW	Corporation growth
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
INDM	Industry median
INFL	Inflation rate
INT	Interest rate
IPO	Initial Public Offer
IPSAS	International Public Sector Accounting Standards
KBC	Kenya Broadcasting Corporation
KCB	Kenya Commercial Bank

KNBS	Kenya National Bureau of Statistics
KRA	Kenya Revenue Authority
Ksh.	Kenya shillings
LDL	Long-term debt leverage
LIQ	Liquidity
MTEF	Medium-term Expenditure Framework
NDTS	Non-debt tax shield
NPFM	New Public Financial Management
NPM	New Public Management
NSE	Nairobi Stock Exchange
OECD	Organisation for Economic Cooperation and Development
OECF	Overseas Economic Cooperation Fund
OLS	Ordinary least squares
PFM	Public Financial Management
PPB	Planning, programming, budgeting
PPP	Public Private Partnership
PRGF	Poverty Reduction and Growth Facility
PROF	Profitability
PRP	Performance Related Party
RBM	Result Based Management
RDP	Reconstruction Development Programmes
RE	Random effects
RISK	Corporation risk
ROA	Return on assets
ROC	Return on capital
ROE	Return on equity
ROI	Return on investment
SAPS	Structural Adjustment Programmes
SDL	Short-term debt leverage
SIZ	Corporation size
SOE	State-owned enterprise
SPSS	Statistical Package for Social Sciences
STATA	Data Analysis and Statistical Software
TANG	Asset tangibility

TARDA	Tana and Athi River Development Authority
TAX	Corporation tax rate
TDL	Total debt leverage
UK	United Kingdom
USA	United States of America
USAID	United States Agency for International Development
ZBB	Zero-based budget

## TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
DEDICATION	v
ACKNOWLEDGEMENTS	vi
ACRONYMS	viii
LIST OF FIGURES	xviii
LIST OF TABLES	xix
CHAPTER ONE: BACKGROUND OF THE STUDY	1
1.1 Introduction	1
1.2 Background to the study	2
1.3 Research problem	7
1.4 Aim and objectives of the study	9
1.4.1 Aim of the study	9
1.4.2 Objective of the study	9
1.5 Research questions	10
1.6 Significance of the study	10
1.7 Research methodology	11
1.7.1 Research design	11
1.7.2 Target Population	11
1.7.3 Sampling Method	12
1.7.4 Measuring instruments	12
1.7.5 Data collection	12
1.7.6 Data analysis	13
1.7.7 Anonymity and confidentiality	13
1.7.8 Validity and reliability	13
1.7.9 Ethical consideration	14
1.8 Delimitations	14
1.9 Limitations	14
1.10 Definition of key terms	15
1.10.1 Financing	15
1.10.2 Debt financing	15
1.10.3 Financial leverage	15
1.10.4 Financial performance	16
1.10.5 State corporations	16
1.11 Organisation of the chapter	17
1.12 Conclusion	18
CHAPTER TWO: PUBLIC SECTOR FINANCIAL MANAGEMENT AND STATE-OWNED CORPORATIONS	19
2.1 Introduction	19
2.2 Public management	19
2.2.1 Strategies	21

2.2.2	External constituencies	21
2.2.3	Internal components	22
2.2.3.1	Human resources	22
2.2.3.2	Performance management	23
2.2.3.3	E-government	23
2.2.3.4	Accountability	23
2.2.3.5	Public financial management	24
2.2.3.6	State-owned corporations	24
2.3	Public financial management	25
2.3.1	Public financial management functions	26
2.3.1.1	Budgeting	27
2.3.1.2	Financing	27
2.3.1.3	Expenditure management	28
2.3.1.4	Accountability	28
2.3.1.5	Financial reporting	29
2.3.1.6	Auditing	30
2.3.2	Public-sector financial management reforms: an international perspective	31
2.3.2.1	Public-sector financial-management reforms in America	32
2.3.2.2	Public-sector financial-management reforms in Europe	34
2.3.2.3	Public-sector financial-management reforms in Asia	36
2.3.2.4	Public-sector financial-management reforms in Africa	39
2.4	State-owned corporations	42
2.4.1	Characteristics of state-owned corporations	42
2.4.1.1	Separate legal entity	42
2.4.1.2	Business and political goals	43
2.4.1.3	Different forms of business	43
2.4.1.4	Supply of public goods and services	44
2.4.1.5	Managed by board of directors	44
2.4.1.6	Corporate financial management practice	45
2.4.2	Public-sector financial-management reforms within the state-owned corporations	45
2.4.2.1	Privatisation of state-owned corporations	47
2.4.2.2	Managerial-structural reforms within state-owned corporations	48
2.4.3	Financing within state-owned corporations	49
2.4.3.1	Internally generated revenues	50
2.4.3.2	External financial sources	50
2.4.3.3	Debt financing sources	51
2.4.4	Financial performance of state-owned corporations	54
2.4.4.1	Financial performance of state-owned corporations in America	56
2.4.4.2	Financial performance of state-owned corporations in	56

	Europe	
	2.4.4.3 Financial performance of state-owned corporations in Asia	56
	2.4.4.4 Financial performance of state-owned corporations in Africa	57
2.5	Economic status of Kenya	59
2.5.1	Public-sector financial management reforms in Kenya	62
2.5.1.1	Public-sector financial-management reforms in the 1970s	64
2.5.1.2	Public-sector financial-management reforms in the 1990s	65
2.5.1.3	The current public-sector financial-management in Kenya	65
2.5.2	State-owned corporations in Kenya	67
2.6	Conclusion	70
	<b>CHAPTER THREE: DEBT FINANCING FOR CORPORATIONS</b>	72
3.1	Introduction	72
3.2	Debt financing	72
3.3	Theories of debt financing	73
3.3.1	Trade-off theory	74
3.3.2	Pecking order theory	75
3.3.3	Market timing theory	75
3.3.4	Agency theory	77
3.3.5	Other theories	78
3.4	Factors influencing debt financing	79
3.4.1	Corporation factors	79
3.4.1.1	Profitability	79
3.4.1.2	Corporation size	80
3.4.1.3	Corporation nature of assets	81
3.4.1.4	Corporation growth	82
3.4.1.5	Corporation risk	83
3.4.1.6	Corporation tax rate	83
3.4.1.7	Liquidity	84
3.4.1.8	Non-debt tax shield	84
3.4.1.9	Probability of bankruptcy	84
3.4.2	Macroeconomic factors	85
3.4.2.1	Gross domestic product	85
3.4.2.2	Inflation rate	86
3.4.2.3	Interest rate	86
3.4.2.4	Industry median	87
3.4.2.5	Financial or debt markets conditions	87
3.4.2.6	Other factors	88
3.5	Types of debt financing within corporations	88
3.5.1	Internal and external financing	88
3.5.2	Public and private debt	89
3.5.3	Long-term and short-term	90
3.5.4	Other categories of debt	90
3.6	Debt-financing levels within corporations	91

3.6.1	Book leverage	91
3.6.2	Market leverage	92
3.7	Financial performance of a corporation	93
3.7.1	Financial performance of a corporation and debt financing	94
3.8.	Empirical findings	96
3.8.1	Empirical findings on levels of debt financing within corporations	96
3.8.2	Empirical findings on factors influencing debt financing	97
3.8.2.1	Profitability	97
3.8.2.2	Corporation size	98
3.8.2.3	Corporation nature of assets (tangibility)	98
3.8.2.4	Corporation growth	99
3.8.2.5	Corporation risk	100
3.8.2.6	Corporation tax rate	100
3.8.2.7	Liquidity	101
3.8.2.8	Non-debt tax shield	101
3.8.2.9	Probability of bankruptcy	101
3.8.2.10	Gross domestic product	102
3.8.2.11	Inflation rate	102
3.8.2.12	Interest rate	102
3.8.2.13	Other factors	102
3.8.3	Empirical findings on debt financing and financial performance of a corporation	104
3.9	Conceptual models	105
3.9.1	Conceptual model for types and level of debt financing within corporations	105
3.9.2	Conceptual model for factors influencing debt financing within corporations	106
3.9.3	Conceptual model for debt financing and financial performance of corporations	108
3.9.4	Conceptual model for the study	110
3.10	Conclusion	111
<b>CHAPTER FOUR: METHODOLOGY</b>		112
4.1	Introduction	112
4.2	Research design	112
4.3	Research models	114
4.3.1	Model for the extent of debt financing	114
4.3.2	Model for factors influencing debt financing	115
4.3.3	Model for debt financing and financial performance of corporations	116
4.4	Research variables and measures	116
4.4.1	Variables and measures for debt financing	116
4.4.2	Variables and measures for factors influencing debt financing	117
4.4.2.1	Profitability	118
4.4.2.2	Corporation size	118
4.4.2.3	Asset tangibility	118

4.4.2.4	Corporation growth	118
4.4.2.5	Corporation risk	119
4.4.2.6	Corporation tax rate	119
4.4.2.7	Liquidity	120
4.4.2.8	Non-debt tax shield	120
4.4.2.9	Probability of bankruptcy	120
4.4.2.10	Gross domestic product	120
4.4.2.11	Inflation and interest rate	121
4.4.2.12	Other factors	121
4.4.3	Variables and measures for financial performance	122
4.5	Research hypotheses	123
4.5.1	Hypotheses for factors influencing debt financing	123
4.5.2	Hypotheses for the relationship between debt financing and financial performance	124
4.6	Target population	124
4.7	Sample size	124
4.8	Data collection tools and procedures	127
4.9	Data analysis	128
4.10	Delimitations	132
4.11	Limitations	132
4.12	Validity and reliability	133
4.13	Anonymity and confidentiality	135
4.14	Ethical consideration	135
4.15	Conclusion	136
CHAPTER FIVE: DATA ANALYSIS AND DISCUSSION		137
5.1	Introduction	137
5.2	Types of debt financing	137
5.2.1	Types of debt financing: Kenyan perspective	139
5.2.2	Types of debt financing: perspective of developed and developing economies	144
5.2.2.1	America	145
5.2.2.2	Europe	145
5.2.2.3	Asia	146
5.2.2.4	Africa	146
5.3	The extent of debt financing within the state-owned corporations in Kenya	148
5.3.1	Descriptive statistics for items of common-size financial statements	148
5.3.2	Common-size statements of financial position and statements of cash flow	149
5.3.3	Graphical presentation of aggregate debt ratio levels	152
5.3.4	Graphical presentation of aggregate net external financing levels	154
5.3.5	Debt financing levels of Kenyan state-owned corporations within various economic sectors	156
5.3.6	Debt financing levels of listed and unlisted state-owned corporations in Kenya	160

5.4	Regression results	162
5.4.1	Regression analysis descriptive statistics	162
5.4.2	Correlation analysis	164
5.5	Factors influencing debt financing within the state-owned corporations in Kenya	167
5.5.1	Empirical results of firm-specific factors	170
5.5.1.1	Profitability	170
5.5.1.2	Corporation nature of assets (tangibility)	171
5.5.1.3	Corporation growth	172
5.5.1.4	Corporation size	173
5.5.1.5	Corporation risk	173
5.5.1.6	Liquidity	174
5.5.2	Empirical results of macroeconomic factors	175
5.5.2.1	Inflation rate	175
5.5.2.2	Corporation age	176
5.6	The relationship between debt financing and financial performance of state-owned corporations in Kenya	178
5.6.1	The relationship between financial performance and total debt leverage	178
5.6.2	The relationship between financial performance and long-term debt leverage	181
5.6.3	The relationship between financial performance and short-term debt leverage	183
5.7	Conclusion	186
CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS		188
6.1	Introduction	188
6.2	Summary of the study	188
6.3	Key findings, conclusions and implications	190
6.3.1	The different types of debt financing used by the various state-owned corporations, both in Kenya and from developed and developing economies	190
6.3.1.1	Literature findings	191
6.3.1.2	Study findings on the types of debt financing used by state-owned corporations in Kenya	192
6.3.1.3	Study findings on the types of debt financing used by state-owned corporations from developed and developing economies	192
6.3.1.4	Conclusion and implications	193
6.3.2	The extent of debt financing within the state-owned corporations in Kenya	194
6.3.2.1	Literature findings	195
6.3.2.2	Study findings	196
6.3.2.3	Conclusion and implications	197
6.3.3	The factors influencing debt financing within the state-owned corporations in Kenya	197

6.3.3.1	Literature findings	198
6.3.3.2	Study findings	202
6.3.3.3	Conclusion and implications	205
6.3.4	The relationship between debt financing and financial performance of state-owned corporations in Kenya	208
6.3.4.1	Literature findings	208
6.3.4.2	Study findings	209
6.3.4.3	Conclusion and implications	210
6.4	Contribution of the study to the literature	211
6.4.1	Types of debt financing used by state-owned corporations	211
6.4.1.1	The types of debt financing used by state-owned corporations in Kenya	211
6.4.1.2	The types of debt financing used by state-owned corporations from developed and developing economies	212
6.4.2	Extent of debt financing within state-owned corporations in Kenya	212
6.4.3	Factors influencing debt financing within state-owned corporations in Kenya	212
6.4.4	Relationship between debt financing and financial performance of state-owned corporations in Kenya	213
6.5	Recommendations of the study	215
6.5.1	To government and policy makers	216
6.5.1.1	Encourage use of local and international capital market debt securities	216
6.5.1.2	Enhance the implementation of public sector financial management reforms under the state-owned corporations	216
6.5.2	To the management of state-owned corporations in Kenya	217
6.5.2.1	Cost effective balanced use of different types of debt financing	217
6.5.2.2	Familiarisation with the guidelines of new public sector financial management reforms under state-owned corporations	218
6.5.2.3	Increase use of debt financing	218
6.5.3	To Capital Market Authority	218
6.6	Suggestions for further research	219
6.7	Conclusion	219
	REFERENCES	221
	APPENDIX A: LETTER OF PERMISSION	248
	APPENDIX B: LETTER OF INFORMATION	250
	APPENDIX C: CONSENT LETTER	253
	APPENDIX D: LETTER OF ETHICS	255
	APPENDIX E: SAMPLE OF FINANCIAL STATEMENTS	256
	APPENDIX F: QUESTIONNAIRE	260
	APPENDIX G: ADDITIONAL TABLES OF REGRESSION RESULTS	261

## **LIST OF FIGURES**

Figure 2.1: Components of public management	21
Figure 2.2: Functions of public financial management	25
Figure 3.1: Conceptual model of the study	110
Figure 5.1: Percentage usage of types of debt financing in Kenya, from 2007 to 2011	142
Figure 5.2: Percentage usage of types of debt financing across the continents from 2007 to 2011	147
Figure 5.3: Aggregate debt ratio levels from 2007 to 2011	152
Figure 5.4: Aggregate levels of individual types of debt financing from 2007 to 2011	153
Figure 5.5: Net aggregate external financing levels from 2007 to 2011	155
Figure 5.6: Long-term debt levels of the sectors from 2007 to 2011	157
Figure 5.7: Short-term debt levels of the sectors from 2007 to 2011	159
Figure 5.8: Long-term debt levels within listed and unlisted state-owned corporations	160
Figure 5.9: Short-term debt levels within listed and unlisted state-owned corporations	161
Figure 6.1: Debt financing model within state-owned corporations in Kenya	214

## LIST OF TABLES

Table 2.1: Economic sectors performance in Kenya	60
Table 2.2: Macroeconomic performance indicators in Kenya	61
Table 3.1: Summary of theoretical and empirical findings	103
Table 4.1: Research variables and measures	122
Table 4.2: Response to the questionnaires	125
Table 4.3: Issue of financial statements	126
Table 4.4: Global state-owned corporations	126
Table 5.1: Kenyan state-owned corporations	137
Table 5.2: Continental state-owned corporations	138
Table 5.3: Descriptive statistics of types of debt financing- Kenyan perspective from 2007-2011	139
Table 5.4: Types of debt usage-Kenyan perspective from 2007 to 2011	140
Table 5.5: Ways of financing investments of state-owned corporations in Kenya	143
Table 5.6: The maximum debt repayment period	144
Table 5.7: Types of debt financing: developed and developing economies perspective	144
Table 5.8: Descriptive statistics for items of common-size financial statements from 2007 to 2011	148
Table 5.9: Common-size statements of financial position from 2007 to 2011	150
Table 5.10: Common-size statements of cash inflows and outflows from 2007 to 2011	151
Table 5.11: Descriptive statistics for the sectors' long-term debt from 2007 to 2011	156
Table 5.12: Descriptive statistics for the sectors' short-term debt from 2007 to 2011	158
Table 5.13: Regression analysis summary statistics from 2007 to 2011	162
Table 5.14: Correlation analysis	165
Table 5.15: Factors influencing debt financing regression model results from 2007 to 2011	168
Table 5.16: Other factors influencing debt financing	177
Table 5.17: Relationship between financial performance and total debt leverage from 2007 to 2011	179
Table 5.18: Relationship between financial performance and long-term debt leverage from 2007 to 2011	182
Table 5.19: Relationship between financial performance and short-term debt leverage from 2007 to 2011	184

## **CHAPTER ONE**

### **BACKGROUND OF THE STUDY**

#### **1.1 INTRODUCTION**

Kenya's recently developed public sector performance contracting system is supposed to improve efficiency and accountability within the state-owned corporations. The first medium-term 2008 – 2012 of vision 2030, which articulates government's commitment to facilitating public sector growth through enhanced good governance, makes the study of debt financing within the state corporations in Kenya important. The adoption of performance standards within the state-owned corporations in Kenya, aimed at integrating and aligning their performance to vision 2030, has not yet achieved the traction required (Republic of Kenya 2013: 34). Therefore, there should be clearly developed and enforceable strategic plans, such as debt financing strategies, and performance plans for the state-owned corporations in Kenya. These strategic plans would facilitate alignment of corporate mandates of state-owned corporations in Kenya with national development projects, which are linked to the Kenyan vision 2030. In addition, Fosu (2013: 140) argued that despite several decades of research in this area, there is no commonly accepted conclusion about the relationship between debt financing and the financial performance of corporations. It is believed that debt financing decisions either hurt or boost the financial performance of a corporation (Campello 2006: 168).

In Kenya, the first phase of the reform agenda of state corporations, under the umbrella of public sector reforms' programme in Kenya, has witnessed five state-owned corporations being privatised, and several more, from hotels to banks, have been scheduled to be privatised (Seymour 2011: 45). However, many of Kenya's state-owned corporations are in considerable debt, which reduce their value in the process of privatisation. Phase two of the reforms, which was launched in 2006 and still in progress, witnessed a series of ministerial and segmental initiatives that led to the introduction of governance reforms, especially on public sector financial management, including debt financing policies and performance-based management (Marwa and Zairi 2009: 36).

The Kenyan presidential report (Republic of Kenya 2013: xii-xiv) further noted that, in 2011/12, eleven income generating state-owned corporations made losses, compared to twelve in 2010/11 and sixteen in 2009/10. This represents 21%, 23% and 31%, respectively, of all income generating state-owned corporations. Highlighting the debt financing patterns, the report observed that the pattern of accumulation of publicly guaranteed debt financing to state-owned corporations in Kenya shows a decline in 2007 from 2006, but has been on an upward trend since then. This indicates that financial performance of state-owned corporations in Kenya has been increasing while their debt financing levels have been on the rise since 2007. Consequently, this study attempted to identify the factors influencing debt financing and its effects on financial performance of income generating state-owned corporations in Kenya for five-year period 2007-2011.

This chapter gives a brief background of the study, followed by the statement of research problem, the aim of the study, research questions, research objectives and significance of the study. The chapter also presents a discussion on the delimitations and limitations of the study and, finally, offers brief definitions of key terms used in the study and the organisation of the thesis.

## **1.2 BACKGROUND TO THE STUDY**

Financial capital is one of the mandatory resources needed for corporations to start and subsequently operate. Financing decisions, especially debt financing, have been revealed to have noteworthy implications for the operations of corporations, risk of failure, performance of corporation and the prospective of the corporation to expand (Cassar 2004: 261). According to Goswami and Shrikhande (2001: 39), most corporations looking for external financing options mainly use debt financing rather than equity financing. They argued that this is the case for both local and transnational corporations across different developed economies of the world. Singh (1994: 11), using data from selected developing countries, found that firms in developing countries made significantly more use of debt finance to finance their growth than is typically the case in the developed countries. Rajan and Zingales (2012: 1421), in their study of private sector public corporations in major industrialised countries, concluded that, at an aggregate level, debt financing patterns are similar across the nations. Most of the state-owned corporations in Kenya have been identified for privatisation because of their poor financial management policies, including debt financing (Debrah and

Toroitich 2005: 209). The aim of this study, therefore, was to identify the factors influencing debt financing and then determined the effects it has on financial performance of state-owned corporations in Kenya.

Debt financing refers to the mix of corporations' borrowed funds which primarily consists of the long-term and short-term external finance used within the corporation. It is best explained by the capital structure decisions within the corporation, which involves debt-equity choice. Studies on this topic have revolved around the theory that certain financial policies, like debt financing, should either boost or hamper a corporation's competitive performance (Campello 2006: 136). Assuming that debt is default-free and interest payments are tax-deductible, Modigliani and Miller (1963: 434) demonstrated that firms will increase their market values by increasing their use of debt financing. Most importantly, debt financing is the major source of new external funds for corporations (Denis and Mihov 2003: 4). Excessive use of debt, on the other hand, increases the financial risk of the corporation which, in turn, increases the bankruptcy costs (Myers 1977: 148).

Studies have analysed debt finance to determine whether optimal debt finance levels exist. An optimal debt finance level would be one that will minimize a corporation's cost of capital while maximizing corporation value. According to Miller (2012: 262), the balancing of the bankruptcy costs against the tax gains on debt financing gives rise to an optimal capital structure. Therefore, decisions on debt finance level have an impact on the success of the corporation. Precisely how corporations decide the amount of debt in their capital structures remains a puzzle (Rao, Al-Yahyaee and Syed 2007: 1).

The argument for the existence of an optimal debt financing level has kept researchers long in the field for decades. From the initial work of Modigliani and Miller (1958: 261) to the recent studies like Jõeveer (2013: 294); Jiraporn, Kim and Kitsabunnarat (2012: 208); Kayo and Kimura (2011: 358) and Fan, Titman and Twite (2012: 23), researchers have continued to find out whether debt financing levels are relevant or irrelevant in financing decisions of a corporation. Myers (2001: 81) argued that there is no universally accepted theory of debt financing choice and there is no reason to expect one. However, he consents to the fact that there are several conditional theories which have been accepted.

Most corporate finance literature point to the “trade-off theory”, in which taxation and deadweight bankruptcy costs are taken into consideration (Frank and Goyal 2009: 1). According to this theory, corporations seek debt finance levels that balance the tax advantages of additional debt against the possible bankruptcy costs (Myers 2001: 81). Myers (1984: 581) proposed the “pecking-order theory” in which there is preference of retained earnings, debt and then equity. Frank and Goyal (2009: 1) argued that the idea that firms engage in “market timing” has also become popular. Finally, the “agency theory” lurks in the background of much of the theoretical discussion. Agency concerns are normally included in the trade-off framework when deduced broadly. Each theory has tried to explain the reasons behind the choice between debt financing and other forms of financing.

There are other recent theories which have been proposed lately. Jensen (1986: 324) developed the free cash flow theory in which he argues that free cash flows allowed firms' managers to finance projects earning low returns which might not be funded by the equity or bond markets, hence, reducing debt financing. Myers and Majluf (1984: 219) contributed to the asymmetric information hypothesis in debt financing. They argued that asymmetric information problems drive the capital structure of firms since managers know more than the rest of the market about their firm's value (information asymmetry) and the market penalizes the issuance of securities, including debt, whose benefits related to the assessment of such information. The theory argues that managers will issue securities in regard to their sensitivity towards information, issue more securities that are insensitive to information and fewer securities sensitive to information.

Berger, Ofek, and Yermack (2012: 1414) highlighted that there are theoretical arguments and some empirical evidence that point to the possibility that managers can become entrenched, and that they may deviate from choosing optimal debt financing as a result. The argument is referred to as managerial entrenchment theory, which suggests that entrenchment motives may cause managers to increase debt financing level beyond the optimal point, in order to inflate the voting power of their equity stakes and reduce the possibility of takeover attempts (Harris and Raviv 1988: 56). Since managerial entrenchment involves management control issues, it affects the agency costs and can be grouped under the agency costs theory of debt financing. Research on debt financing theories is yet to be concluded (Myers 2001: 81). This study is, therefore, an additional contribution to the wealth of financial management epistemology already in existence in the area of debt financing.

Over the past half of a century, there has been an increasing interest on identifying the factors that influence debt financing within corporations. From the initial work of Modigliani and Miller (1958: 261) to the recent studies like Jõeveer (2013: 294); Jiraporn, Kim and Kitsabunnarat (2012:208); Kayo and Kimura (2011: 358) and Fan, Titman and Twite (2012:23), determinants of debt financing continue to be a topic of interest in financial economics and have produced enormous volumes of research. Frank and Goyal (2009: 1) argued that the factors that influence debt-financing decisions remain indefinable even though there is a lot of theoretical literature and decades of empirical tests. In support of Frank and Goyal's argument, Stearns and Mizruchi (1993: 603) recognised that, while debt financing is supposed to be an activity universally acceptable to corporations, little is known about its main determinants.

However, studies by Hackbarth (2009: 507); Frank and Goyal (2009: 3); Antoniou, Guney and Paudyal (2008: 59); Majumdar (2012: 22) and Jõeveer (2013: 301) have found that there are common factors among corporations that may influence the debt-equity choice. The determinants of debt financing for a corporation, from the above studies, include profitability, corporation size, growth, industry conditions and nature of assets. Other factors are tax rates, business risk, stock market conditions, and access to capital markets. The economic environment, inflation rate, the finance manager's gender and the composition of the board of directors, are also considered to have an influence on debt financing (Jõeveer 2013: 103; Antoniou, Guney and Paudyal 2008: 77). Most of these studies are based on private sector corporations and are executed in more developed economies with modern financial systems (Jõeveer 2013: 301; Majumdar 2012: 22 ; Frank and Goyal 2009: 3; Mayer 1990: 307). This study attempted to present evidence on factors influencing debt-financing decisions for state-owned corporations in a less developed economy with unstable financial systems.

Due to the increased global financial advancements, it is not possible to have specific types of debt finance. However, in general, classification of sources of debt finance can be varied depending on the characteristics of the provider and the debt's maturity period. Anderson and Makhija (1999: 311) categorised debt into public or arm's-length debt. They argued that arm's-length debt or monitored debt is that which is typically supplied by commercial banks and suppliers of goods and services. Chen, Cheng and Lo (2013: 755), reviewing the same categories, referred to them as public versus private debt. Public-debt financing is the process

of obtaining funds from the securities markets by issuing different types of corporations' debt stocks. The financial accounting information published in the financial statements, on the other hand, normally categorise debt into long-term and short-term debt. This study also analysed the different types of debt used and the extent of debt financing levels for the studied five-year period.

One of the key measures of a corporation's strength and growth is financial performance. Almost all stakeholders of a corporation are interested in the level of the corporation's financial performance. Therefore, strategies of the corporation, including debt financing, should be designed to increase the financial performance (rate of return on owner's investment) by generating a greater return on borrowed funds than the cost of using the funds. This kind of debt financing strategy is referred to as financial leverage (Damodaran 1999: 103). The strategy will have a positive effect if return on assets (ROA) is greater than the before-tax interest rate paid on debt. A negative effect will occur when a corporation generates a return on assets (ROA) that is less than the before-tax interest on debt. Studies on the relationship between corporations' financing choice and their performance often conclude that debt financing either hurts or boosts performance (Campello 2006: 168). A study on corporations in the U.S. and in other countries revealed that debt financing potentially increases a corporation's value through the tax deductibility of interest (Kaplan and Strömberg 2008: 14).

Other studies such as Obert and Olawale (2010: 1709) and Rao, Al-Yahyaee and Syed (2007: 1) identified a negative relationship between debt financing strategy and corporate performance. San and Heng (2011: 28), investigating the relationship of debt financing strategy and corporate performance of a corporation before and during financial crisis of the 2007 on construction corporations in Main Board of Bursa Malaysia (exchange market), found a mixed relationship using different measures of financial performance. For this reason of varied results, this study sought to determine the relationship between debt financing and financial performance of the state corporations in Kenya.

Financial management decisions of state-owned corporations are influenced by both the economic factors and the state-enacted regulations. To some extent, the state corporations' managers are constantly tempted to base decisions on political rather than market criteria, and strategic state investment may be misdirected because of simple miscalculation (Fukuyama

1995: 96). Boothman (1987: 302) argued that, until recently, government-owned corporations have attracted minimal attention from management students. On the other hand, he agrees that there has been a growing appreciation of the significance of their role and uniqueness as an organisation type which stands between and combines the characteristics of public sector and private sector management. In Kenya, most of the state-owned corporations are being restructured and the majority have been identified for privatisation (Debrah and Toroitich 2005: 210).

In Kenya, the 206 state corporations are central to economic growth and are scattered within all the economic sectors in the republic. Their management, especially in the area of finance, will either boost or hamper the national economic growth (Hope 2012: 129). Furthermore, in the last decade, a significant number of state-owned corporations in Kenya have been privatised and some are in the process, because of poor financial performance. The findings of this study will help the government to either continue with the privatisation programme or continue with the ongoing restructuring within state-owned corporations. According to Randa, Wagh, Sanghi, Umutesi, Opala, Mukuna, Nyamumbo, Karni, and Rabuku (2013: 4), the Kenyan financial sector is now the third largest in Sub-Saharan Africa (after South Africa and Nigeria) with a steady growth over the last decade. This has created an active financial sector with an open borrowing environment for both private and public sector corporations, including the state-owned corporations.

In line with the aforementioned argument, this study provides evidence on the factors influencing debt financing levels and the effect of debt financing levels on the financial performance of state corporations in Kenya. In addition, it analysed the different types of debt financing and the long-term and short-term debt financing levels within the state corporations in Kenya. A comparison of the types of debt financing used by state corporations from developed and other developing economies is undertaken using the available literature.

### **1.3 RESEARCH PROBLEM**

Debt financing is deemed crucial for economic development, as evidenced by the positive relationship between financial deepening and economic growth in the study of financial development and economic growth (Calderón and Liu 2003: 321). The information on the extent of borrowing within the state corporations is mostly available to government officials

and, to a small extent, to the public through the legislative assemblies. Most of the reporting systems for the public sector in developing countries are still in the process of modernisation and this makes the availability of their financial information complicated. In recognition of this fact, studies on debt financing have been done mostly using data from developed economies with more private sector corporations (Foster and Young 2013: 6). This study, therefore, attempts to fill the gap in the literature by using data from corporations within the public sector and from a developing economy.

In the past decade, the financial sector has undergone much transformation in many countries around the world (Agca, De Nicolò and Detragiache 2007:3). The technological changes and policies that reduce the administrative barriers of countries have led to increased access to foreign sources of finance. Most advanced and emerging economies have adopted banking sector reforms. The reforms have reduced or removed controls on interest rates and some state-owned banks have been privatised. In addition, policies to strengthen the bond and stock markets and their regulations have been undertaken by most countries with emerging economies, including Kenya (Ngugi, Amanja and Maana 2006:1). These reforms have made debt financing popular among corporations, both in private and public sector. The study provides an analysis on how the debt financing patterns within the state corporations in Kenya compare with the other patterns from developed economies using the available literature.

The factors that influence debt-financing decisions remain inconclusive even though there is much theoretical literature and decades of empirical tests (Frank and Goyal 2009: 1). However, the empirical findings have largely been the same for most studies. De Jong, Kabir and Nguyen (2008: 1961) assert that asset tangibility and corporation size have a positive significant relationship with the corporation's debt level. They also state that growth of the corporation and profitability have a significant negative effect but tax rates and business risk have mixed results, which are mostly not significant. Frank and Goyal (2009: 3) also affirm that industry condition and expected inflation have a positive effect on a corporation's debt level, while profitability has a significant negative effect. Jõeveer (2013: 301) argues that the economic conditions measured using the growth have a significant negative effect. Antoniou, Guney and Paudyal (2008: 59), using stock market variables from different countries, found that stock market conditions influence the choice of capital. Most of the above results are from studies using private-sector corporations and data from developed economies. This

study, therefore, sought to find out whether the results from the previous studies hold for state-owned corporations in a developing economy like Kenya.

Few studies directly give the empirical relationship between a corporation's debt financing and its financial performance. Most of the studies, like Baltacı and Ayaydın (2014: 54); Smith (2012: 157); Antoniou, Guney and Paudyal (2008: 59); De Jong, Kabir and Nguyen (2008: 1963) and Huang and Song (2006: 14) used profitability which is a partial measure of financial performance to give empirical findings. They found that either there is a significant or non-significant negative relationship between leverage and the corporation's profitability. This implies that as profitability (financial performance) increases, the corporation tends to use less debt, which is a contradiction of the "trade-off theory" and a confirmation of the "pecking-order theory". The "pecking-order theory" basically states that the corporation will use debt financing, rather than issuing equity, when internal cash flow is not sufficient to finance investment expenditure (Myers 2001: 81).

Other studies also have found a positive relationship confirming the "trade-off theory" (Kouki and Said 2012: 221; Gungoraydinoglu and Öztekin 2011: 1467). The studies by Fosu (2013: 146); Salim and Yadav (2012: 165); Chinaemerem and Odita (2012: 43) and Pratheepkanth (2011: 171), which have used other financial performance measures, like return on equity (ROE), return on assets (ROA) and return on investment (ROI), also found results of negative and positive relationships indicating consistency with prior empirical studies. This study, therefore, used the common preferred accounting measures of financial performance like return on equity, return on investment and return on assets to assess how the debt financing of state corporations relate with their financial performance in Kenya.

## **1.4 AIM AND OBJECTIVES OF THE STUDY**

### **1.4.1 Aim of the study**

The main aim of this study was to investigate factors influencing debt financing and its effects on financial performance for state corporations in Kenya.

### **1.4.2 Objectives of the study**

The objectives of the study were:

- To analyse the different types of debt financing used by the various state corporations in Kenya;
- To determine the extent of debt financing within the state corporations in Kenya;
- To analyze the types of debt financing used by state corporations from developed and developing economies;
- To identify factors influencing debt financing within the state corporations in Kenya; and
- To determine the relationship between debt financing and financial performance of state corporations in Kenya.

## **1.5 RESEARCH QUESTIONS**

The study answered the following questions:

- What are the different types of debt financing used by state corporations in Kenya?
- How do they compare with those used from developed and other developing economies?
- What is the extent of use of debt financing within the state corporations?
- What are the factors influencing debt financing within state corporations in Kenya?
- How does a debt financing decision affect financial performance of state corporations in Kenya?

## **1.6 SIGNIFICANCE OF THE STUDY**

Kenya's recently developed public sector performance contracting system is supposed to improve efficiency and accountability within the state-owned corporations. Further, the first medium-term 2008-2012 of vision 2030 articulates government's commitment to facilitating public sector growth through enhanced good governance within all governmental units, including state-owned corporations. This study will be important in determining the extent to which the government has achieved its deliverables with respect to debt financing within the state-owned corporations. Therefore, it is expected that the findings of this study should have vital policy implications for Kenyan state-owned corporations.

The regulatory bodies that are responsible for the licensing, regulation and supervision of operators in the capital markets, including policy formulation, monitoring and evaluation, can make informed decisions on the basis of the findings of the study. Africa, as a continent with most nations having state-owned corporations, should also benefit from this study, by helping investors interested in this continent to make justified decisions.

The study, in addition, makes a significant contribution to the growing body of research on capital structure and performance, especially in the public sector and a nation considered to be less developed. Out of the envisaged publications, the findings may also be used as a source of reference for other researchers. In addition, finance students and academic researchers may use the study findings to stimulate further research in this area.

## **1.7 RESEARCH METHODOLOGY**

### **1.7.1 Research design**

The study used a combination of the descriptive and explanatory research design. It applied a hybrid of cross sectional and longitudinal quantitative surveys. Rindfleisch, Malter, Ganesan and Moorman (2008: 276), in their study of cross-sectional versus longitudinal, argued that both the designs have limitations and a combination will give a strong output. Therefore, the combination of the techniques allowed the researcher to investigate types and extent of debt financing across state corporations and also get the trend over a period of five years from 2007 to 2011.

### **1.7.2 Target Population**

The population of this study was defined in terms of the number of state-owned corporations established by the Acts of Parliament in Kenya as at December 31, 2011. The population frame data was from the office of the Inspector General in charge of state corporations under the Ministry of Public Service in the office of the Prime Minister of Kenya. According to this data, there are 206 established state corporations in Kenya, out of which 50 are income-generating corporations (State-owned corporations). Hence, the target population for this study was made up of the 50 income-generating state corporations in Kenya as at 31<sup>st</sup> December 2011.

### **1.7.3 Sampling Method**

The sample size for the study is made up of all the 50 income-generating corporations, selected from the general population using the stratified non-probability sampling technique. The non-income generating corporations are excluded from the study, since their financial performance is not profit based and may not be influenced by market-oriented decisions, such as debt financing strategies. Struwig and Stead (2013: 116) argued that the non-probability sampling technique should be used in special cases, usually when the population has much in common, like the case of income-generating state corporations. In addition, in selecting the respondents within the target population, a census study was applied to collect data for all the 50 income-generating state corporations.

### **1.7.4 Measuring instruments**

The study used two measuring instruments to make the results valid and reliable as per the content and predictability of the research. The questionnaire, together with the information from the financial statements, was used to measure the variables across the state-owned corporations. In addition, ratio analysis was used to measure the variables from the financial statements over the five-year period. Most of the study variable measures were extracted from the financial statements of the state-owned corporations for the five-year period 2007-2011. The information from questionnaires and the state-owned corporations' official websites were used to give clarity, especially on the different types of debt financing, where the financial statements were not specific.

### **1.7.5 Data collection**

The study used both the primary and secondary data in the analysis. The cross-sectional primary data from the questionnaires and extracted information from the financial statements were used to analyse the types of debt financing used by the state corporations in Kenya. Copies of the financial statements of the corporations obtained from the financial managers or the Ministry of Finance office were used as secondary data for longitudinal analysis. Since the state-owned corporations' headquarters are spread all over the country, the researcher travelled to all of the sampled state corporation's headquarters to administer the questionnaires and collect the copies of the financial statements personally.

### **1.7.6 Data analysis**

The descriptive statistical analysis method was used to determine the extent of debt financing and compare the different types of debt used by the state corporations. A panel data regression analysis was also done using the fixed effects (FE), random effects (RE) and the generalised method of moment (GMM) models, according to Forte, Barros and Nakamura (2013: 361), to identify the factors influencing debt financing and how debt financing relates to financial performance of state corporations.

To establish the significance of individual variables in each of the regression models, the *t*-test was applied at 90%, 95% and 99% levels of confidence. The data analysis was done using both the Statistical Package for the Social Sciences (SPSS) and Data Analysis and Statistical Software (STATA) and the presentations and discussions of the results shown in chapter five. The results obtained were presented using graphs and tables, then analysed according to the research objectives, followed by conclusions and recommendations arising from the outcomes.

### **1.7.7 Anonymity and confidentiality**

The data collection process did not involve getting personal confidential data and, therefore, the anonymity of the participants was upheld. Since the study is on public organizations, the Kenyan law does not restrict the researcher from making the findings of the study public. However, the researcher intends to maintain the confidentiality of the information and the identity of the participants to the extent of the research work only. The data from the participants will be retained for fifteen years after the study, for any further analysis and then disposed off by shredding.

### **1.7.8 Validity and reliability**

The correlation coefficient tests, Pearson product moment correlation coefficient (*r*) and coefficient of determination (R-sq), and *t*-tests, at 90%, 95% and 99% levels of confidence, were applied to determine internal and external validity. Further, the robustness and Arellano-Bond tests were applied to test the validity and reliability of the study regression models and variables.

### **1.7.9 Ethical consideration**

The study was strictly conducted according to Durban University of Technology research ethics policy and guidelines. This ensured that all ethical issues identified before and during the study were addressed in the most appropriate manner.

## **1.8 DELIMITATIONS**

The study focused on income generating state corporations in Kenya. The sample size for the study was made up of the 50 income generating state corporations using a stratified non-probability sampling technique. The non-income generating state corporations were excluded from the study, since their financial performance is not profit based. The sampled 50 state-owned corporations are mostly “profit” motivated and to some extent they also pursue socio-economic country growth and development goals. Further, according to Zhang, Wang, Su, Liu, Shen and Bi (2007), a census study is more straightforward and suitable to be used in a local setting where the population frame exists with certainty. The study, therefore, after sampling the income generating state corporations, used a census technique and collected data for all the 50 established income generating state corporations in Kenya.

## **1.9 LIMITATIONS**

The study used two measuring instruments to make the results valid and reliable as per the content and predictability of the research. The questionnaires together with the information from the financial statements were used to measure the variables across the corporations. Ratio analysis was used to measure the variables from the financial statements over the five-year period. Since the state-owned corporations’ headquarters are spread all over the country, the researcher travelled to all of the sampled state corporation’s headquarters to administer the questionnaires and collect the copies of the financial statements personally. Regrettably, the response from the corporations was not so good. 50% of the sampled corporations filled and returned the questionnaires, 34% did not respond, while 16% of the sampled corporations declined to participate in the study. According to Altinay and Paraskevas (2008: 99), there is no generally agreed standard for a minimum acceptable response rate. However, Altinay and Paraskevas (2008: 99) argued that researchers generally consider an acceptable response rate to be anything from 15% to 20% and above, with 10% being the minimum.

In response to the request of financial statements, out of the visited corporations, only 26% gave copies of their financial statements personally. All the state corporations in Kenya are required by the Public Financial Management Act number 18 of 2012 to submit their annual financial statements to the Investment Department in the Ministry of Finance. The rest of the financial statements of state corporations not obtained from the state corporations directly, being public documents, were acquired by the researcher from the Department of Investment within the Ministry of Finance. The researcher obtained, in total, 80% of the copies of financial statements both from the corporations and the Ministry of Finance office. The study used both the primary and secondary data to complement each other in the analysis.

## **1.10 DEFINITION OF KEY TERMS**

### **1.10.1 Financing**

Financing is the process of raising capital required for corporations' investments and operations (Bassey, Arene and Okpukpara 2014: 36). Generally, investments of corporations can be financed by either internal or external sources of funds. Internal financing is the use of funds that are generated within a corporation, rather than from external sources, for example, undistributed profits and the tax liability savings that results from depreciation (Mokhova and Zinecker 2014: 531). On the other hand, external financing involves getting funds from an outside source without giving goods or services in return (Denis and Mihov 2003: 4).

### **1.10.2 Debt financing**

Debt financing is the major element of external financing mostly for corporations raising additional funds after formation (Mokhova and Zinecker 2014). Bosworth, Smith and Brill (1971:254) argued that there has been an explosive increase in external financing over the years, particularly evident during the periods of economic expansion of corporations (Mizruchi and Stearns 1994: 136). The major source of external finance is debt financing, compared to equity external funds (Baltacı and Ayaydın 2014: 53). According to O'Brien and David (2010: 51), Mayer (1988), in his study of new issues in corporate finance, put debt financing at 90% percent of all new external financing.

### **1.10.3 Financial leverage**

The use of debt in a corporation's mix of capital financing or capital structure is called financial leverage (Colin, Stephen, Randolph and Bradford 2012: 23). According to Thomas

(2013: 45), the use of debt financing along with the owner's equity in the capital structure of a corporation is described as financial leverage. Therefore, the more debt a corporation has, as a percentage of assets, the greater is its level of financial leverage (Chakraborty 2013: 112). Debt financing acts like a lever in the sense that using it can greatly magnify both gains and losses. Therefore, financial leverage increases the potential reward to shareholders (financial performance), but it also increases the potential for financial distress and business failure.

#### **1.10.4 Financial performance**

Financial performance is one of the common measures of how well a firm uses its resources from its main operations to generate revenues (Tudose 2012: 77). Simply put, it is a measure of the results of a corporation's operations in monetary terms. This term is also used as a common measure of a corporation's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. There are various different ways to measure financial performance, but all measures should be taken in aggregation. According to Rao, Al-Yahyaee and Syed (2007: 9), *"management researchers prefer accounting measures of financial performance, such as return on equity (ROE), return on investment (ROI), and return on assets (ROA), along with the variability in those returns measures"*.

#### **1.10.5 State-owned corporations**

A state-owned corporation, also referred to as government-owned corporation or state-owned enterprise, is a legal entity created by a government to carry out commercial activities on behalf of the government (Adamolekun 1999: 97). Furthermore, governments have often established state-owned corporations in imperfectly competitive or highly-regulated industries, where the lack of competition reduces the efforts to encourage efficiency (Ramstetter and Ngoc 2013: 29). Their legal status varies from being a part of government; being fully owned, to listed stock corporations, with the government as the majority stockholder. There is no standard definition of a government-owned corporation (GOC) or state-owned enterprise (SOE), although the two terms can be used interchangeably. The defining characteristics are that they have a separate legal form and they are set up to operate as a commercial entity. While they may also have public policy objectives, GOCs should be differentiated from other forms of government agencies or state entities established to pursue purely non-commercial objectives (Girma, Gong and Görg 2009: 866).

## **1.11 ORGANIZATION OF THE CHAPTERS**

Chapter one outlined the background to the study, statement of the problem, aim of the study and the study research questions. It also summarized the research objectives, significance of the study, delimitations and limitations of the study. Lastly, the chapter presented brief definitions of key terms.

Chapter two reviewed literature on public financial management, starting with the global perspective and narrowing down to the Kenyan perspective. It reviewed the current public sector financial management reforms being implemented by most developed and developing countries, including Kenya. It also reviewed literature on state-owned corporations, focusing on public sector financial management reforms on debt financing and its effects on financial performance of state-owned corporations. The chapter concluded with a review of economic status in Kenya for the five-year period from 2007 to 2011.

Chapter three continued with the review of literature on corporate debt financing and its theories. It also reviewed factors influencing debt financing, debt financing within corporations and empirical studies on factors influencing debt financing within corporations. The chapter further reviewed financial performance of corporations and the empirical studies on debt financing and financial performance of corporations. Finally, the chapter reviewed some of the study models of debt financing within corporations and a conceptual framework of the study concluded the chapter.

Chapter four presented an outline of the research design and population and sampling. In addition, it summarized the data collection tools and procedures used in the study. The chapter concluded by explaining the data analysis techniques including the models of diagnostic tests used in the study.

Chapter five presented the data analysis and results of the study. The study presented the results using various statistical presentation methods like pie charts, graphs and tables. The chapter also provided a discussion of the results and the contribution of the study, in line with the research objectives.

Chapter six presented the summary, conclusions and recommendations of the study based on the research objectives. It finalised the study discussion by showing the effects of debt financing on financial performance of state corporations in Kenya from the key findings.

## **1.12 CONCLUSION**

This chapter focused on discussing the background aligned to the basis of the objectives of the study. The problem statement regarding the study argued that most studies in debt financing have used data from private-sector corporations majorly from developed economies. The statement also argued that the debate on factors influencing debt financing is inconclusive and the empirical findings on how debt financing relates to financial performance of corporations keep on giving conflicting results depending on the corporations' characteristics. The chapter presented the significance of the study towards the government policy makers, state corporation regulatory authorities and fellow researchers. It concluded by giving the meaning of key terms and the structure of the thesis.

The next chapter provides a review of literature on public sector financial management focusing on debt financing within state-owned corporations in Kenya.

## **CHAPTER TWO**

### **PUBLIC SECTOR FINANCIAL MANAGEMENT AND STATE-OWNED CORPORATIONS**

#### **2.1. INTRODUCTION**

Practical concerns relating to successful public financial management ultimately determines whether or not there is good governance at all public sector institutions including state corporations (Albino-War, Singh and Ahmad 2005: 3). Although there is growing literature on national public financial management in general, the researcher feels that less attention has been focused on the financial management of state-owned corporations. This chapter, therefore, reviews literature on public financial management starting with the global perspective and proceeding to the Kenyan perspective. It reviews the public sector financial management reforms that have been embraced by many developed economies and the current ones being implemented by most emerging economies. The chapter, further, reviews the financial management practice of state-owned corporations within the developed and developing economies, paying more attention on their debt financing strategies and financial performance. Finally, a review of the state-owned corporations in Kenya and the economic status in Kenya concludes the chapter.

#### **2.2 PUBLIC MANAGEMENT**

There has been a transformation in the management of the public sectors of many countries (Hughes 2003: 1). However, public management has long been a field in search of structure (Kettl and Milward 1996: vii). It borrows much from a host of disciplines and many different methodological approaches. Beginning with the traditional model of public management, which was primarily concerned about the achievement of equity and fairness as goals, this has changed since the mid-1980s to a flexible market-based form of public management (Hughes 2003: 1; Greener 2013: 54). According to Greener (2013: 53-54), the main functions of traditional public management included, firstly, provision of public services, which should be more equitable and reliable than commercial or voluntary bodies' service provisions. Further, the provision of public services should be carried out by public servants and delivered uniformly to everyone within the jurisdiction. In the process of the provision and

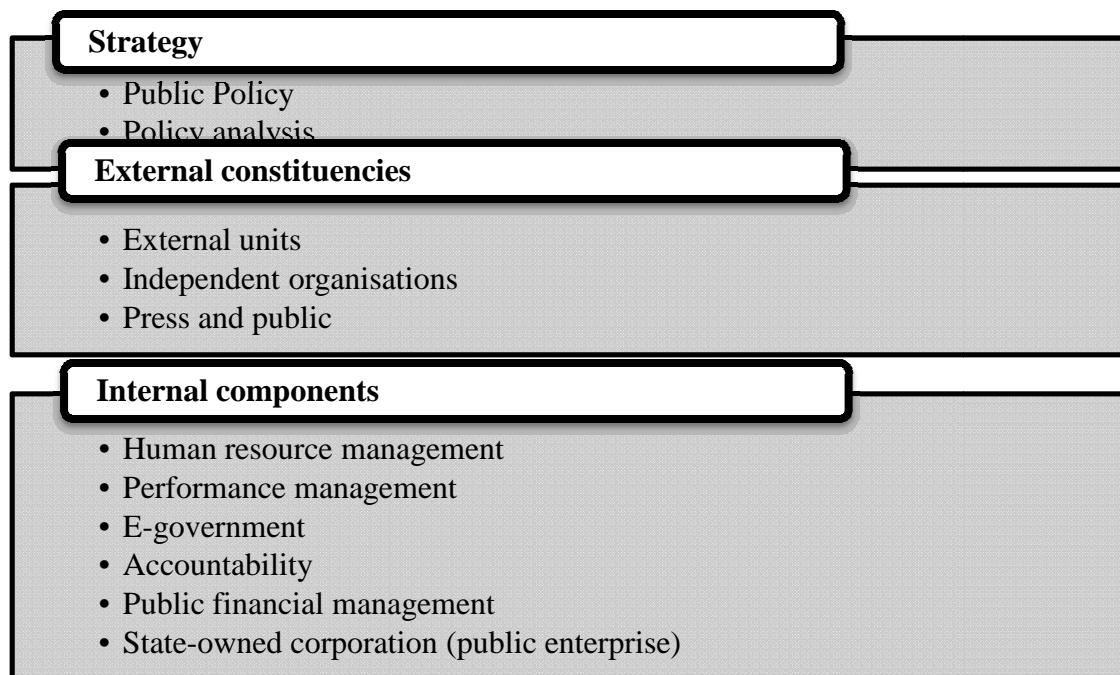
delivery of public services, the operations should be controlled from the headquarters through a hierarchical chain of command. The employment practices or personnel management should be standardised throughout each public service provider (governmental units) and accountability of public servants to the public should be through the elected representative bodies. The second major function of traditional public management is the financing of the public sector activities through internal and external sources (Greener 2013: 54).

The inadequacies of traditional public management became evident in the 1970s and 1980s (Hughes 2003: 32). According to Hughes (2003: 32), the inadequacies include the hierarchical structures which are not necessarily the most efficient of organisations when comparing outcomes with inputs; the bureaucracy, which allows for certainty but is usually slow in implementation; standardization of work, which hinders innovations; and the political control, which is always problematic in assuring genuine accountability. Therefore, the 1980s and 1990s saw the emergence of a new managerial approach in the public sector, commonly referred to by scholars as “new public management” (NPM) (Hood 1995: 93; Hughes 2003: 44; Greener 2013: 62).

The general agreement as to the actual changes from the traditional public management model to the new public management model include, firstly, a shift towards focusing more on the achievement of results and the personal responsibilities of managers (Hughes 2003: 44). Secondly, there is an intention to move away from the classic bureaucracy to more flexible terms and conditions for organisations, personnel and employment. Thirdly, the organisational and personal objectives are to be set clearly, to enable performance evaluation. Fourthly, the senior personnel are more likely to be dedicated to the government of the day rather than being non-partisan or neutral. Fifthly, government functions are more likely to face market tests. Finally, Hughes (2003: 44) argued that there is also a trend towards reducing government functions through privatisation and private-sector partnerships. According to Christensen and Laegreid (2013: 2), one main attribute of new public management is the adoption of the management and organisational practices used by private-sector organisations. They argued that the new public management movement ascribes to the generic principle that the formal organisations of public and private sectors should be similar. Managers in the public-sector organisations should have enough discretion and freedom in their daily work to be able to make efficient use of allocated resources.

Therefore, according to Hughes (2003: 44-46) the main components or functions of new public management are similar to general management functions and include strategy, managing internal components and management of external constituencies. The functions are summarised in Figure 2.1.

**Figure 2.1: Components of public management**



**Source: Hughes (2003: 44-46)**

### **2.2.1 Strategy**

Strategy is the first main function of general management and involves establishing objectives and priorities and making plans to achieve them (Hughes 2003: 46). The strategy component under new public management involves public policy formulations and political policy analysis. According to Hughes (2003: 114), public policy is a declaration of intent, a programme of goals and objectives, general rules and procedures governing future government decisions and actions. On the other hand, policy analysis is a function of policy research which assists in the public policy development process by granting accurate and helpful decision-making information.

### **2.2.2 External constituencies**

The task of managing external constituencies is an important function of the new public management since public programmes are normally visible and belong to all citizens, not just

immediate consumers (Hughes 2003: 202). It involves dealing with “external” units which are essentially coordinative and concern the managerial procedures by which governmental units subject to the same authority, either national or local, need to deal with each other. The second component of managing external constituencies involves dealing with those organisations that are not controlled by the same authority, such as other branches or levels of government, interest groups and private enterprises that can affect the government unit’s ability to achieve its objectives. The third component of managing external constituencies deals with the press and public, which is a matter of public relations (Hughes 2003: 203).

### **2.2.3 Internal components**

The main function of the new public management is managing internal components (Hughes 2003: 47). Hughes (2003: 46) noted that the general management internal component functions involve organising and staffing, directing personnel and the personnel management system, and controlling performance. However, under the new public management, the function of managing internal components is mostly discussed as a function of public enterprise, personnel and performance management, public financial management, e-government and accountability (Adamolekun 1999: vii; Hughes 2003: v).

#### ***2.2.3.1 Human resources management***

Human resource management aims at selecting, appointing and developing the best available workers for the required task (Hughes 2003: 151). It has been a distinctive approach to personnel management under the new public management model which seeks to achieve competitive advantage through the strategic deployment of a highly dedicated and capable workforce, using an integrated collection of cultural, structural and personnel procedures (Adamolekun 1999: 86). The contemporary public human resources management has become a more proactive process, which embraces the functions of the old public personnel departments, but attempts to increase its range of activities across the public sector (Greener 2013: 197). The public human resources management, therefore, involves taking a greater responsibility for recruitment of outstanding individuals into the public sector, as well as their development, once recruited. It improves the productivity of the public sector employees through assessment of their training needs and making sure that their skills and professional knowledge are kept current.

#### ***2.2.3.2 Performance management***

To promote an effective, efficient, and accountable public sector, the new public management internal function incorporates the performance management component which involves setting of explicit and measurable pre-set performance targets that should guide civil servants' efforts towards the achievement of their organizations' objectives (Speklé and Verbeeten 2014: 131). Hughes (2003: 157) noted that performance management in the traditional public administration model was inadequate in both the management of individual performance and organisational performance. However, under the new public management model, governmental units are required to develop performance measures that help in indicating the progress the unit has made towards achieving the declared objectives. In addition, the public performance management has also embraced a performance appraisal technique that measures the performance of individual staff, even to the extent of defining the key contributions expected over a period and then compared with the actual achievement at the end of the period.

#### ***2.2.3.3 E-government***

E-government, as a term within the internal components of new public management, refers to the use of information technology to deliver public services in a more convenient, customer-based, cost-effective and better way (Hughes 2003: 182; Sattam Rakan and Mohammad Yousef 2014: 214). In other words, it is the adoption of information and communication technology by the governmental units. The technologies include internet, intranets, video conferencing, touch-tone data entry and other technologies such as interactive television and internet access via mobile phone and personal digital assistants. According to Hughes (2003: 195), e-government could be argued to be the latest instalment in the new public management internal component function.

#### ***2.2.3.4 Accountability***

Accountability, under the new public management model, forms an important link between the administrative function of public sector and the stakeholders (Hughes 2003: 254; Taylor 2007: 103). Generally, the accountability concept can be examined in different forms, which include political, administrative/managerial, legal and professional forms (Taylor 2007: 103). Political accountability refers to democratic pressures imposed by the legislature on politicians and public sector managers. Administrative accountability involves the application of supervisory control processes within the governmental unit activities. This supervisory

function is based on an organized and legitimate relationship between different levels of authority in the hierarchical structure within the governmental unit. Legal accountability involves the enforcement of legal control over a wide range of public sector activities. Professional accountability refers to the assignment of control of the governmental unit activities in the hands of the officials with the expertise or special skills to get the job done. Hughes (2003: 255) noted that accountable public management should mean that those who are involved in public sector activities are accountable for what they do, whether they are managers or politicians.

#### ***2.2.3.5 Public financial management***

Public financial management is the most important component in managing the internal components' function of the new public management (Adamolekun 1999: 68; Hughes 2003: 165; Greener 2013: 82). Any government activity needs money in order to operate, and the ability to raise money and to spend it (financing and expenditure management) is what distinguishes the institutions of government with other parts of the society. After the financial administrations under many governments have been reorganised, public financial management, under new public management, have followed three main themes; promoting result-oriented management, introducing an accrual-based management accounting system, and the use of market-oriented mechanisms (Christensen and Laegreid 2013: 106). The focus of this study, being on debt financing of state-owned corporation, relates more to the public financial management practice and a further review of the same follows in the lower section of this chapter.

#### ***2.2.3.6 State-owned corporations***

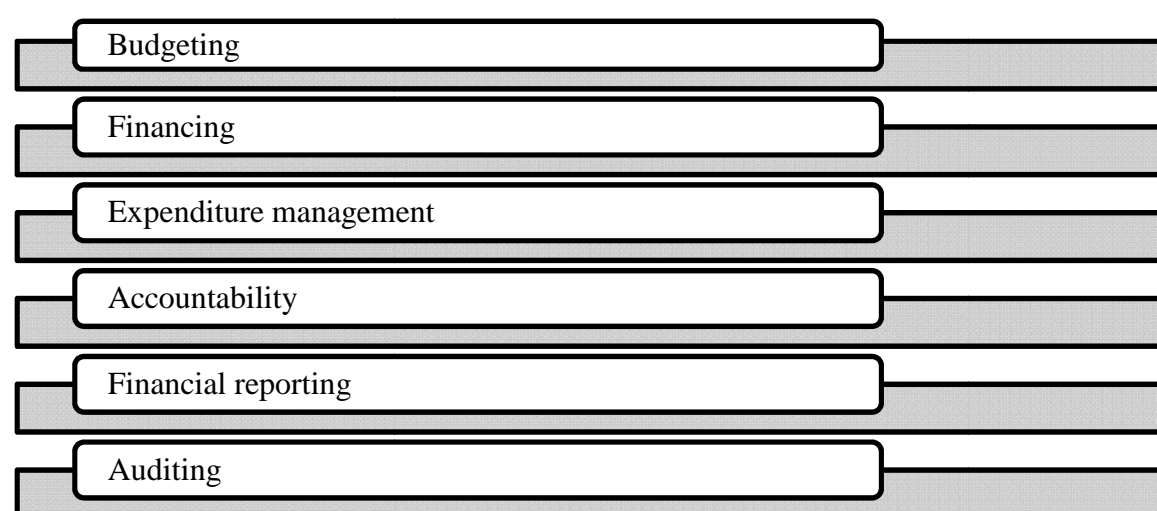
State-owned corporations, which sometimes are referred to as public enterprises or as government-owned enterprises, are a particular kind of statutory organisation that sells goods and services to the public on a large scale, with the financial returns accruing first to the organisation itself and then to the government (Hughes 2003: 97). The governments resort to state-owned corporations because of the need to borrow a leaf from private enterprise practices and management (Adamolekun 1999: 29). Hughes (2003: 95 & 104) argued that, even with widespread privatisation, state-owned corporations or public enterprises are still an important part of the public management in many countries and one of the economic arguments for privatisation of state-owned corporations has been to reduce public sector borrowing. This study focused on the effects of borrowing on financial performance of state-

owned corporations in Kenya, which fall under the public management internal components of public financial management and state-owned corporations. Therefore, a further review of public financial management and state-owned corporations follows.

## 2.3 PUBLIC FINANCIAL MANAGEMENT

Even though researchers vary in what they consider the study of public financial management should comprise (Visser and Erasmus 2013: 7). McKinney (2004: 2) argued that public financial management is the process whereby a governmental unit or agency (state corporation) employs the means to obtain and allocate resources, including finances, based on articulated priorities, and then utilizes methods and controls effectively to achieve publicly determined needs. He further argued that, traditionally, public financial management involved budgeting, taxation (raising revenue), accounting, treasury management, purchasing and auditing. However, McKinney (2004: 2) recognised that the integrated approach to financial management incorporates an additional set of components including planning, programming and evaluating functions. He summarised public financial management to include planning, programming, budgeting, financing, controlling and evaluating. These functions are highlighted in figure 2.2.

**Figure 2.2: Functions of public financial management**



**Source: McKinney (2004: 2)**

Therefore, public financial management includes budgeting of anticipated revenues and costs, accounting for the receipt and the disbursement of funds once the budget is enacted, issuing

short- and long-term debt to buy equipment and construct facilities and, after the year end, auditing transactions for legal compliance and adherence to accounting principles (Visser and Erasmus 2013: 8). This is a special area within the larger subject of financial management, aimed at delivering services as effectively and efficiently as possible to maximize benefits to the public. Depending on the level of government and the specific nation, these can range from local authorities' services in a city to a national governmental unit, like the state corporations' services for the whole nation.

Governments provide a variety of services to citizens to improve quality of life and the function of society. These can include services like law enforcement, emergency interventions and medical care, along with national infrastructure developments. Education, business grants, and other measures to improve communities are also part of public financial management. Huge amounts of money can be involved, and managing these responsibly guarantees that resources will continue to be available while the majority of citizens possibly benefits from these government activities. The government can, therefore, be influenced to invest in special units, like state corporations, to help grow their revenues and also produce or supply the required government products and services to the public. These state corporations are allowed to raise funds through borrowing and the financial returns from the their investments accrue to the government (Hughes 2003: 97). Therefore, debt financing within state-owned corporations is a significant function of the public sector financial management, since it can be used as a major source of revenue and an aspect for economic growth within the public sector (Alfaro *et al.* 2004: 322; Rioja and Valev 2007: 127)

### **2.3.1. Public financial management functions**

Whether the governmental unit is a local authority or state corporation, the main functions of public financial management as a discipline applies. The public financial management functions include budgeting, financing, expenditure management, accountability, financial reporting and auditing (Visser and Erasmus 2013: 9-12). These functions may involve aspects of applied economics, but they differ from the private sector since most of their sources are raised publicly and, more often, without the intention of maximizing profits. According to Flynn (2007: 1), the boundary between the public and private sectors is neither clear nor permanent, especially for state corporations whose objective is also to maximise profits. Blidisel *et al.* (2010: 11) supported the idea arguing that most public sector organisations are embracing private sector management practices, since there is a growing influence of currents

of thought which generalize the idea that there is structural and managerial homology between all the organizations. Tilley (2014: 1) argued that diligent financial management discipline is even more important in the public sector than the private sector. This financial leadership, according to him, helps to deliver outcomes that are good value for money, people-focused and sustainable. Therefore, as a major component of new public management, the functions of public financial management can be reviewed under budgeting, financing, expenditure management, accountability, financial reporting and auditing.

### ***2.3.1.1 Budgeting***

The financial management, whether for private or public sector, ceases to exist without a budget (Visser and Erasmus 2013: 14). Budgeting in public financial management provides the necessary framework to control costs within the governmental units by ensuring that costs do not exceed the allocated funds (Speklé and Verbeeten 2014: 133). Therefore, before resources are raised and allocated, all the governmental units are required to have an operational budget, which links specific spending objectives with their associated costs. On the other hand, budgeting is also a management accounting mechanism that facilitates the public sector performance system (van Helden and Reichard 2013: 11). Therefore, budgeting within the governmental unit is used, firstly, as a means of obtaining and allocating resources based on articulated priorities, and, secondly, as a tool of control to effectively achieve publicly determined objectives. Generally, budgeting serves as a link to all the functions of public financial management (Visser and Erasmus 2013: 9).

### ***2.3.1.2 Financing***

Within the public sector organizations, the public management function of financing is substantially different with that of organisations in the private sector (Frumkin and Gelaskiewicz 2004: 291). At the central, provincial or counties, and local levels, governmental units collect revenue through both the charging of fees and the levying of taxes. The financing of governmental units through fees and taxes is normally inadequate for most developing countries (Chihi and Normandin 2013: 77). These unsustainable financial positions normally require external financing interventions to fund the deficits. Unlike external financing in private sector organisations, in addition to borrowing through loans and issues of debt instruments, governmental units can also be funded through donations, either from local or international organisations. There is also a new financing concept within governmental units referred to as public-private partnerships (PPP) (Meidutė and Paliulis

2011: 257). Since financing is the main subject of this study, the function is discussed further below, with respect to income generating state-owned corporations.

### **2.3.1.3 Expenditure management**

Expenditure management relates to the day-to-day governmental unit operational processes linked to the execution of policy objectives stated in the budget (Visser and Erasmus 2013: 10). It involves the actual spending of money in relation to the governmental units approved budgets. However, even if the spending is authorised by the budget, expenditure management within the governmental unit should be carried out in a manner that delivers outcomes that are good value for money, people-focused and sustainable (Tilley 2014: 65). According to Blidisel *et al.* (2010: 11), the public sector adopts private techniques in accounting, administration, public finances as well as in management. Therefore, expenditure management within the public sector is not much different from the normal administrative process within private-sector organisations, with higher levels of centralisation and bureaucratisation (Frumkin and Gelaskiewicz 2004: 287). However, according to the authors, most studies concluded that the differences are, in fact, negligible.

### **2.3.1.4 Accountability**

Accountability, financial reporting and auditing can be summarized as a management accounting practice within the public-sector financial management (Macinati and Anessi-Pessina 2014: 1). This implies that management accounting, together with its disciplines like accountability, financial reporting and auditing may be expected to contribute to a better functioning of the public sector financial management (van Helden *et al.* 2010: 83). The accountability concept is primarily associated with power delegation from shareholders (principal) to managers (agents) and the way to ensure the relationship between the agents and the principals (Almquist *et al.* 2013: 480).

Bovens (2010: 943) argued that public accountability can be looked at from two aspects, firstly, as a virtue, and, secondly, as a mechanism. In the first case, accountability is used primarily as a normative concept, as a set of standards for the evaluation of the behaviour of public actors. In this case, being accountable is seen as a positive quality within the governmental units. Hence, accountability is the assessment of the actual and active behaviour of public agents or officers within the governmental units. In the second case, accountability is seen as an institutional relation or arrangement in which a governmental unit

officer can be held to account by a forum (legislature or the public). Hence, it is the way in which the governmental units are arranged to operate. Therefore, within the public sector financial management, the legislature has to ensure that mechanisms and procedures (Public Financial Management Act) are put in place to facilitate accountability within the governmental units (Visser and Erasmus 2013: 11).

### ***2.3.1.5 Financial reporting***

The adoption of the accountability concept is crucial since it requires public management to be transparent and informative, and managers to be responsible for both the results obtained and the resources used (Jorge de Jesus and Eirado 2012: 88). Jorge de Jesus and Eirado argued that public sector financial reporting assumes a particular role as it represents the main tool for recording and reporting management activities' information. Hence, public financial reporting contributes significantly to the fulfilment of public financial management objectives on internal and external reporting for accountability purposes.

Prior to financial management reforms, financial reporting in the public sector was predominantly designed to assist in monitoring of compliance by the governmental units with various legal and administrative requirements, all based on cash rather than accrual accounting (Redmayne and Laswad 2013: 90). In order to improve the monitoring of performance in the public sector, financial reporting requirements for all public sector entities, in most countries, have been revised to bring them closer to the reporting of private-sector entities. Carlin (2005: 312), in his review of international adoption of accrual accounting and reporting by governmental units, suggested that, although the implementation experience has differed significantly between jurisdictions, particularly on dimensions such as degree of public consultation and gestation period, the trend towards the adoption of accrual accounting is a global, rather than an English speaking 'club' phenomenon. Therefore, the adoption of the international public sector accounting standards (IPSAS), which are mostly accrual-accounting based, has helped the public sector to improve the quality of financial information, simplified the internal and monitoring control of governmental units and added value to the financial information regarding economic profitability (Ilie and Miose 2012: 35).

### **2.3.1.6 Auditing**

Auditing is the process of reviewing financial statements and evaluating the accuracy of the information provided, which is crucial for investors and other stakeholders of an organisation (Schelker 2013: 275). According to Penini and Carmeli (2010: 37), auditing, from the perspective of office management theory, is an important tool used by managers and all those in charge of the office, in improving office performance. The importance of auditing is recognized by both governmental scholars and practitioners alike, who emphasize that through quality auditing, better organizational processes and outcomes are achieved. In the public sector, traditionally, the audit function has been executed by the government auditors within the office of the Auditor General (Huy, Van Nhi and Minh 2013: 59).

This traditional sole provision of public sector audits by government auditors has been questioned and criticized, particularly in regards to efficiency (Chong *et al.* 2009: 676). In addition, Antipova (2013: 133) argued that public sector all over the world is now facing the challenge of demonstrating better performance in managing budgetary resources. Hence, the introduction of performance auditing goes beyond the traditional auditing scope of mere compliance with rules, regulations and legislation, and whether authorization for all expenditures exists (Visser and Erasmus 2013: 39). According to this aspect of auditing, there is an introduction of the performance evaluation system, which monitors and evaluates the performance of governmental units on a continuous basis. This system helps in complementing the functions of the Auditor General within the public financial management. Moreover, governmental units have also introduced audit committees which are generally involved with reviews of internal controls, support and monitoring of internal audit, and risk management, and some committees request internal audits to carry out value for money studies (O'Riordan 2013: 32).

Tilley (2012: 65) stated that one of the most painful lessons of the global economic recession is that public and private financial management can no longer be separated, hence, the need for public sector financial management reforms. He argued that the successful implementation of public sector financial management reforms, and the running of the public sector, in general, requires a culture of strong management and open accountability. In line with Tilley's argument, this study continued with the review of public financial management with regard to the public sector management reforms.

### **2.3.2 Public-sector financial-management reforms: an international perspective**

Countries worldwide are experiencing external and internal pressures to restructure their public sectors in order to solve financial management problems, to raise public confidence in government, and to adapt to social and economic trends (Lynn Jr 1999: 302). Various reforms have occurred which can be viewed as a major policy shift in the manner in which governmental units exercise their financial management functions. Visser and Erasmus (2013: 15) argued that, in some countries, this change has given rise to the transformation of the whole public sector financial management. According to Tilley (2014: 65), this transformation has caused a permanent difference to strategy and culture, hence, enabling the necessary changes to systems and processes within the public sector financial management.

The new public management paradigm is a reference to public sector reform by practitioners and academicians (Polidano 1999: 3). Polidano (1999: 3) argued that the new public management reforms are a response to common pressures like deregulation of line management; conversion of civil service departments into free-standing agencies or enterprises; performance-based accountability, particularly through contracts; and competitive mechanisms such as contracting-out and internal markets (Polidano 1999: 3). This new public management (NPM) aims at nurturing a performance-oriented culture that seeks to refurbish the process through which state corporations operate in order to increase efficiency, effectiveness, and encompassing client-oriented, mission-driven, and quality-enhanced management which are normally the private-sector management practice (Hope 2012: 129). These reforms are intended to better serve the needs of both the government and the citizenry with improved delivery of public services in order to reduce poverty, improve livelihoods, and sustain good governance.

Guthrie and Olson (1999: 210) contributed to the new public management (NPM) debate by stating that an increasing notable element of NPM movement is the accounting-based financial management techniques that are being drawn in the pursuit of reforms. In other words, the new public financial management (NPFM) reforms, which are advocated by the NPM movement, embrace the corporate financial management theories and techniques practised by the private-sector corporations (Padovani, Yetano and Orelli 2010). Roberge and Jesuit (2012: 422) observed that new public management reforms' adaptability is not pre-ordained and varies across regions, states and communities.

However, Guthrie and Olson (1999: 210) summarized the new public financial management reforms across countries into four main areas. The first area involved changes to financial reporting systems, including the promotion of accrual-based financial reporting framework across all governmental units, as well as the state-owned corporations, and reliance on professionally set accounting standards. The second area related to the development of commercially-minded, market-based management systems and procedures to deal with pricing and provision of services with emphasis on cash management, including financing. The third area referred to the development of a performance measurement approach, focusing on techniques such as financial and non-financial performance indicators for all the governmental units including state-owned corporations. The fourth area concerned the decentralisation or delegation of budgets, coupled with the attempted integration of both financial and management accounting system and also with economic-based information sets. In addition, the final category of reforms involved changing to internal and external public sector audits, notably in terms of providing reviews of efficiency and effectiveness of public services (Hughes 2003: 172). Hence, this study briefly reviewed the literature on the public sector financial management reforms in the four main regions of the world, i.e., America, Europe, Asia and Africa, focusing on these areas.

### ***2.3.2.1 Public-sector financial-management reforms in America***

According to Newberry (2014: 2), the public-sector financial-management reforms, commonly referred to as new public financial-management style, pursued within the neoliberal reforms, have their roots in the United States, but have proceeded further in Westminster parliamentary countries, such as the UK, Australia and New Zealand. Though the North American national governments have distinctly different administrative histories, the language of performance, customers, accountability, privatization, and decentralization is heard throughout North America, and all the countries governments are engaged in public management reforms that feature these themes (Lynn Jr 1999: 302). Lynn argued that since all three countries, Canada, Mexico and the United States, have federal government systems, the public management reforms have occurred at state or provincial and municipal levels as well as at the federal level. Hence, the theme of public management reforms reverberates through many political chambers, creating the impression of convergent thinking in the whole of North America. According to Gruening (2001: 3), the USA is best suited as a reference point for development of reforms, for public sector, because of the sheer size of the American

administrative-political sciences. The diversity and richness of approaches make America the natural leader of the international agenda.

Consequently, De Vries and Nemec (2013: 6) argued that the American idea on new public management (NPM) is summarized under ten principles: Government under NPM should be catalytic (steering rather than rowing), community-owned (empowering rather than serving); competitive by injecting competition into service delivery, mission-driven instead of rule-driven, results-oriented, customer-driven, enterprising, anticipatory, decentralized and market-oriented. Therefore, the public sector in North America has undergone a succession of financial-management reforms since the mid 1980s, with the stated objectives of improving the efficiency and effectiveness of government organisations whilst maintaining a focus on improving financial accountability (Bowrey and Smark 2010: 27). These public-sector financial reforms resulted in an improved budgeting process, market-based financing, efficient expenditure management, accruals accounting-based financial reporting and professionalised auditing and control within all the governmental units in the United States and other American countries. In other words, public-sector financial-management reforms in the U.S. encouraged a greater use of financial management practices taken from the private sector (Watkins and Arrington 2007: 41).

According to Hughes (2003: 171), the early years of public financial management reforms on America were not encouraging. For example, the comprehensive “planning, programming, budgeting” (PPB) system was initiated into the U.S. Defence Department in 1961 and expanded to other governmental units by President Johnson in 1965. The initiative did not survive and silently died from the American public sector. The “zero-based budget” (ZBB) was also introduced in the U.S.A in 1962 and, by 1977, could not be continued. However, the budgeting change, which has been considered successful in America, involves the preparation of detailed budget estimates beyond the usual single year. Further, Guthrie and Olson (1999: 210) noted that the American public-sector financial-management reforms cannot be interpreted as a shift to the positive side, since America has never come close to the type of public sector financial management systems that have been established in European countries like Sweden and the United Kingdom.

From the mid-1980s to the mid-1990s, Latin America experienced a major economic change, as import and export restrictions were lifted, financial markets liberalized and numerous state

corporations privatised (Lora and Olivera 2004: 99). The economic effects of these types of structural reforms are widely thought to be positive. Therefore, in South America, the key principles of new public management (NPM) reforms have been summarized clearly in a document published by the Latin American Centre of Development Administration (Saravia and Gomes 2008: 494). That document highlights the need to professionalise the high levels of the bureaucracy in order to strengthen the capacity for public policy formulation and evaluation, to make public administration more transparent and accountable and to adopt a new organizational design for activities whose implementation could be shared with the private sector, among others.

Pérez and Hernández (2007: 139) argued that it was on the basis of the new public management reforms, and under the initiative of the United States Agency for International Development (USAID), that a public financial management model was developed for the countries in the Latin American and Caribbean regions (Wiley-Blackwell). This model included changes in budget laws, in accounting and auditing systems and in the computerised use of public financial information. Feinberg (2010: 164) argued that the areas in which Latin American governments have made the most progress are achieving fiscal discipline and introducing computerized information sharing systems. According to Feinberg (2010: 164), the list of remaining challenges is long and includes a lack of trained professionals, mazes of incoherent regulations, and an excessive focus on legal procedures, as opposed to performance outcomes.

#### ***2.3.2.2 Public-sector financial-management reforms in Europe***

The Euro-Mediterranean ECOFIN Ministerial meetings held since June 2005, have been stressing the importance of the reform of public sector financial management as part of a wider process of economic and institutional change aimed at promoting higher growth and employment (De Wulf *et al.* 2010: 9). In the last few decades, European countries, predominately those of British origin, have implemented, almost at the same time, public financial management reforms aimed at modelling political and administrative relationships based on assumptions of the economic market-oriented theory (Bess 2012: 550). Bess (2012: 550) observed that, even though the reforms have varied in depth, scope and success across nations, they are said to have been implemented in response to unproductive and inefficient government departments. The new financial management reforms began to develop in the late 70s and early eighties in the United Kingdom, and later the national governments of other

commonwealth countries, mainly New Zealand and Australia, joined. After the reform successes in these countries, administrative reforms took place in almost all Organisation for Economic Cooperation and Development (OECD) countries, which are dominated by the European countries (Gruening 2001: 2).

In liberal market economies, such as UK, Germany and other European countries, public-management reforms have been demonstrated by the privatisation and outsourcing of services; enhanced financial management practice, and a prominent focus on performance management and performance-related pay (PRP) within the public sectors (Bach and Kolins Givan 2011: 2349). Lindqvist (2012: 10) argued that, in Europe, public sector reforms have been introduced with the aim of increasing efficiency and effectiveness, especially in financial-management practice within the sector. The author also observed that clear conclusions as to the results of these public sector financial management reforms are difficult to draw from research. However, Matei and Lazăr (2011: 93), in their study of quality management on the NPM agenda, argued that there is a high degree of convergence achieved in contemporary administrative practice, which majorly involves new public-sector financial management, within the seven states of South-Eastern Europe.

In general, Van de Walle and Hammerschmid (2011: 192) observed that some changes within the public-sector financial management have been more fundamental than others and have profoundly changed the nature of the public sector in most European countries. Nevertheless, the European new public-sector financial-management reforms in the last decade appear to be bogged down in a quagmire of critical revisions and assessments (Gualmini 2008: 75). According to Gualmini (2008: 75), the emphasis of the agenda of reforms on efficiency has been considered a threat to civil servants' ethics and accountability and the shared goal of convergence has come up against the problem of national specificity. Liguori and Steccolini (2014: 320) argued that, while the European countries may use similar financial management reforms, each country carried out its own specific translation of modernization and new financial management ideas and concepts. Therefore, Europe has remained the leading continent in advocating the public-sector financial-management reforms with few countries, like France, taking cautious steps in their adoption of reforms' process (Bordogna and Neri 2011: 2317).

In Australia, for example, forward estimate budgets have been prepared since 1972 and, since 1983, the format has greatly been improved, with the budgets precisely providing the government and the public with information for over the next three years for the budget period (Hughes 2003: 174). On the other hand, accrual-based accounting was implemented in New Zealand as early as 1991 and, during the late 1990s, other European countries also adopted it. According to Guthrie and Olson (1999: 210), the major implementation of the new public-sector financial-management reforms in the UK took place in the late 1980s. The reform included the implementation of the “financial management initiative” (FMI), which focused on performance indicators, auditors and contracting-out (privatisation) procedures within the governmental units. The reforms further aimed at the promotion of delegated budgets and institutionalisation of quasi-market-based mechanisms for allocating and managing financial resources within the public sector.

Irrespective of the positive outcomes of the public-sector financial-management reforms, Europe should rethink the approach to bringing public finances back onto a sustainable path, with an eye to reducing the short-term economic and social costs, to avoid another financial crisis suffered in 2008/2009 (Wiley-Blackwell 2013: 22). According to Staehr (2010: 672), the crisis increased the appeal to governments of intervening in the economy to curb the downturn, save jobs and limit social problems, but it also exposed public financial management practice vulnerabilities that constrained the ability of the public sector to play an active role. Staehr (2010: 672) argued that the crisis posed considerable challenges to the public financial management reforms in the new EU members from Central and Eastern Europe. However, Bach (2012: 11) highlighted that there is no long-term solution other than public budget consolidation and introducing growth-stimulating reforms, particularly under the public financial management, in the crisis countries. In view of economic development and political acceptance, such reforms can only be implemented over time and gradually (Bach 2012: 11).

### ***2.3.2.3 Public-sector financial-management reforms in Asia***

Many Asian countries, especially from South Asia, commenced the adoption process of the financial management reforms in the public sector for various reasons (Shafiqul Huque 2005: 97). Shafiqul Huque (2005: 97) argued that, at times, the impetus for reform came from within the systems of the country while, in some cases, there have also been pressures from powerful external actors. Haque (2004: 361) also highlighted that, during the post-

independence period, except for communist countries such as Vietnam and Cambodia, the public-sector financial-management systems evolved in Southeast Asia in line with the liberal democratic models of public-sector financial management, especially the British and American models. He argued that these western financial models are characterized by principles, such as separation of power, political neutrality, and public accountability, which are to be maintained through constitutional provision, legal system, legislative means, ministerial supervision, budget and audit, and performance evaluation.

According to Cheung (2005: 257), apart from economic and fiscal pressures; domestic political changes, including regime change, democratization and the collapse of the pre-existing political order, have also resulted in a new articulation of governance that underlies new institutional arrangements, in addition to the innate influence of national administrative traditions such as the colonial, military, or imperial legacies of some Asian countries. Therefore, Samaratunge, Alam and Teicher (2008: 117) acknowledged that South and Southeast Asian experiences indicate that the outcome of new financial management reform varies from country to country and country-specific contextual factors significantly influence the state of adaptability.

For example, in Malaysia, a privatization policy was initiated in the mid 80s to relieving the financial and administrative burden on the government and facilitating economic growth through promotion of efficiency and productivity, through improved public-sector financial-management practice (Siddiquee and Mohamed 2007: 291). While some Asian countries, like Korea, are considered successful reformers in the sense that, after the implementation of their new public sector programmes, a significant total factor productivity growth, increased profitability, and other signs of healthy public sector financial management practice could be observed within their public sectors (Campos and Esfahani 2000: 230). However, privatization is regarded as one of the most effective public-sector financial-management reform model, especially in most Asian countries like China, Sri Lanka, Indonesia and Malaysia (Hughes 2003: 180).

In the case of Sri Lanka, the presence of normative and mimetic aspects such as professionalism, education, and awareness of international trends, created through seminars and training, have produced some of the public-sector financial-management reform ideas like planning, programming and budgeting (PPB) and the cash-basis accounting within the

public sector (Adhikari, Kuruppu and Matilal 2013: 218). Meanwhile, in Nepal, Adhikari, Kuruppu and Matilal (2013: 218) observed that international organizations, which are the main carriers of reform ideas, the higher-level officers, who have accepted these reform ideas, and the professional accountants, who are promoting the ideas, have all been driven by their own self-motives and their own legitimate needs, which have made public sector financial reforms a matter of talk or part of a routine schedule, and have been confined to the proposal stage.

According to Aizenman and Shah (2013: 1), the most notable development in the global economy of the last 35 years is the rise of China and India as world economic giants. For India, this has been as a result of massive policy changes within the public sector such as de-reservation of industries for public sector and a total reform of the public-sector financial-management practice (Dongre 2012: 478-478). Reddy, Nangia and Agrawal (2013: 604-605) argued that, as a result, the economy has dramatically changed from a highly-regulated institutional setting to the one that is more market-oriented due to these financial management reforms.

However, China has not embraced the liberalization agenda within her economy, with the government controlling the financial sector through the state-controlled banks and institutions which dominate the financial markets (Glick and Hutchison 2013: 187). The underlying rationale of the public-sector financial-management reforms for the Chinese government is the view that, reformed and privately managed state corporations will demonstrate superior management control and better performance, and, hence, encourage economic growth and employment (Xu and Uddin 2008: 162). In Indonesia, many public-sector financial-management reforms were introduced during the past decade (Mateev, Poutziouris and Ivanov 2013: 111). According to Mateev, Poutziouris and Ivanov (2013: 111), the main purpose was to improve transparency and accountability of the governmental units, especially the state-owned corporations. However, it was found that the reform initiatives, in this Asian country, have failed to achieve the objectives of the improved transparencies and accountabilities, as indicated by its national public auditors (Mateev, Poutziouris and Ivanov 2013: 111).

#### ***2.3.2.4 Public-sector financial-management reforms in Africa***

The importance of a well-functioning public sector in the development process of Africa is indisputable (Owusu 2006: 471). Owusu (2006: 471) argued that the challenge, however, is finding ways to create effective governmental units capable of facilitating national development. Indeed, many African countries, with the support of the World Bank and other pro-reform international institutions, such as IMF, have, since the 1980s, experimented with various public-sector financial-management reform programmes (Antwi, Analoui and Nana-Agyekum 2008: 253). Public-sector financial-management reforms, therefore, have been on the agenda of African governments and their development partners for decades and yet the financial-management problems still persist (Owusu 2012: 136).

In the 1970s and 1980s, most governments of Africa experienced an overall decline in the motivation and performance of public-sector servants, which resulted in low collection and accounting for government revenues (Adamolekun 1999: 71). In response and as part of Structural Adjustment Programmes (SAPS) adopted by most African countries, some governments in the region have established quasi-autonomous revenue authorities to be responsible for the collection of tax revenues. Further, most African countries, including Ghana, Malawi, Tanzania and Uganda, have embarked on the budgetary reforms involving the introduction of medium-term expenditure planning or forward budget (Adamolekun 1999: 75). Further, in order to ensure that the government's financial needs are accommodated at all times, Acts of most Central Banks in Africa have included a special provision to allow the governments to obtain direct advances and other short-term credits from the banks and allow the Central Banks to purchase or sell stocks, bonds or other securities issued by the government for the purpose of raising funds to settle public expenditures. In addition, most African countries have adopted the use of an independent comptroller and auditor general's office and the setting up of the parliamentary Public Accounts Committee (PAC) to ensure financial accountability with the government units (Adamolekun 1999: 82).

However, it is believed that the public-sector financial-management reforms policies in Africa have served external rather than domestic interests and ignored the experiences of organizations within those countries (Owusu 2012: 136). Goldfinch, DeRouen and Pospieszna (2013: 50) also argued that, although considerable resources and attention have been allocated to the public sector financial management reforms in low income and fragile

states in Africa, there is little evidence as to what degree this reform agenda has been implemented nor as to whether it has led to improved services and outcomes for populations.

Nevertheless, Peterson (2011: 205) recognized the fact that successful public-sector financial-management reform is rare in Africa, but acknowledged the success in some African countries like Ethiopia. Peterson (2011: 205) argued that the Ethiopian success is attributed to the fact that reforms were driven by a domestic political imperative, not by a foreign technical agenda. Hence, Peterson (2011: 205) argued that rapid results were needed within the Ethiopian public-sector financial management practice, to keep up with the accelerating pace of decentralization within the public sector. In addition, Antwi, Analoui and Nana-Agyekum (2008: 261-262) argued that what would appear to be the reality with regards to public-sector financial-management reform, in the context of the Ghanaian experience, is the transformation of the conditions of employment of career public officials. These officials will occupy key positions in government organisations, so as to enable public authorities to attract, retain and reward talented professionals. In turn, the officials will be more responsive to citizen needs and expectations by adapting best practice of public-sector financial management among other things.

In South Africa, public-sector management reforms towards a responsive, accountable and transparent state were declared by the African National Congress (ANC) leadership about a decade ago (Wenzel 2007: 50). However, Wenzel (2007: 50) argued that, in practice, anticipation is narrowed to consultation or simply information dissemination and propaganda. He observed that the shift from a traditional bureaucratic model to the market model of governance was based on the belief that private-sector financial-management methods are generally superior. Wenzel (2007: 62) concluded that, as long as the public sector financial management reforms in South Africa are driven by economic interpretations and hegemonic political ambitions, the laudable objectives and results of the Reconstruction and Development Programme (RDP) are guaranteed not to be realised.

Nigeria, like other African developing countries, embraced the idea to reform its public-financial management practice, especially within the finance sector in 1986 (Ogun and Akinlo 2011: 47). The reforms could have been initiated by three reasons; one, the macroeconomic imbalances in the 1980s, which led to the launching of the IMF supported Structural Adjustment Programme (SAP) in 1986; secondly, the persuasion from the

theoretical arguments made in support of liberalization; and thirdly, they argued that the impetus to reform the public-financial management in Nigeria also reflects the shift in the philosophical underpinning of economic policies at the global economy at the 1980s (Ogun and Akinlo 2011: 47).

Sekwat (2002: 514) examined Nigeria's post-independence experience with the public-sector reforms and revealed that most of the reform measures, including public-sector financial-management reforms, yielded limited results. The author identified poor leadership, limited fiscal resources, inadequate compensation, rampant corruption, weak governance, lack of measurable objectives, inadequate evaluation, mismanagement, inadequate facilities, and excessive government involvement in the production of goods and services as key factors that impeded previous reform proposals. However, Seymour (2011: 45) argued that if Nigeria is to benefit from the public sector reforms, it faces the considerable challenge of putting in place a legal framework to avoid further disasters and to reform the public sector to ease the process of embracing private-sector financial-management practice within the governmental units.

In summary, Andrews (2010: 12-39) looked at how far the public-financial-management reforms have progressed in Africa since the inception of reforms, and concluded that the public-sector financial-management process or practice reforms in Africa have resulted in budgets being made better than they are executed. The practice is lagging behind the creation of processes and laws, and processes are stronger where concentrated actors are engaged. In analysing the reforms across countries, Andrews (2010: 23-49) concluded that different countries fall into different 'PFM performance leagues' and countries in the different leagues look very different to each other. A range of factors influence which league a country is associated with; including economic growth, stability, reform tenure and colonial heritage (Andrews 2010: 23-49). Andrews (2010: 23-49) also argued that *"existing reforms face limits that can only be overcome with adjustments in reform approach; with less focus on pushing reform technicalities and more on creating 'space' in which reform takes place, less concentration of engagements with small sets of actors and more on expanding engagements, and less emphasis on reproducing the same reform models and more on better understanding what context-appropriate reforms look like"*.

## **2.4 STATE-OWNED CORPORATIONS**

A state corporation, also referred to as a government-owned corporation or state-owned enterprise, is a legal entity created by a government to carry out commercial activities on behalf of the government (Capalbo and Palumbo 2013: 39). Capalbo and Palumbo (2013: 39) argued that state-owned corporations are limited companies that are partially or totally owned by a central or a local government, or even by an agency controlled by them. According to Ramstetter and Ngoc (2013: 29), governments have often established state corporations in imperfectly competitive or highly-regulated industries, where the lack of competition reduces the efforts to encourage efficiency. Their legal status varies from being a part of government; being fully owned, to listed-stock corporations, with the government as the majority stockholder. There is no standard definition of a government-owned corporation (GOC) or state-owned enterprise (SOE), although the two terms can be used interchangeably (Adamolekun 1999: 28).

In most American and many European countries, the state-owned corporations are referred to as government-owned organisations or government-owned companies (Hughes 2003: 94). They are also referred to as government-sponsored enterprises, for those created by the USA congress, and federal government chartered and owned corporations for those established by the USA federal government (Chan and Rosenbloom 2009: S39). In Canada, the state-owned corporations are known as crown corporations (Lammam and Veldhuis 2009: 31) and most European countries, including UK and Italy, they are either referred as government-owned corporations or government-owned companies (Capalbo and Palumbo 2013: 39; Palcic and Reeves 2013: 265; Woo 2014: 14). In most Asian countries, such as China and India, government-owned corporations are known as state-owned enterprises (Khanna 2012: 5; Jiang, Huang and Kim 2013: 50). In Africa the government-owned corporations are referred to as either public enterprises, parastatal, state corporations or state-owned enterprises (Christensen 1998: 281; Adamolekun 1999: 28). However, the major features of state-owned corporations are not very different from private corporations.

### **2.4.1 Characteristics of state-owned corporations**

#### ***2.4.1.1 Separate legal entity***

The defining characteristics are that they have a separate legal form and they are set up to operate as a commercial entity (Adamolekun 1999: 28; Del Bo and Florio 2012: 265). While

they may also have public policy objectives, GOCs should be differentiated from other forms of government agencies or state entities established to pursue purely non-commercial objectives (Girma, Gong and Görg 2009: 866). Dresang and Sharkansky (1975: 163) argued that state-owned corporations are quasi-autonomous agencies, free from public-sector regulations, detailed public-treasury procedures, or ministerial supervision. The state-owned corporations are not, however, protected from the dynamics of their political environment (Dresang and Sharkansky 1975: 163). They form a fundamental part of the political practice of the government.

#### ***2.4.1.2 Business and political goals***

State-owned corporations are also required not only to be “successful businesses” and to operate with efficiency equal to if not better than comparable private sector corporations, but they should, in addition, pursue other government decidedly less economic business-like goals (Capalbo and Palumbo 2013: 42). Capalbo and Palumbo (2013: 39) further noted that, in addition to economic business-like objectives, the state-owned corporations should aspire to show a sense of social responsibility in having regard for the interests of the community in which they operate; obey the principles of ecological and environmental sustainability; and show a sense of responsibility for regional development and decentralisation. He further noted that these goals may prevail over the need for economic and financial efficiency and hence, may affect the profitability of state-owned corporations.

#### ***2.4.1.3 Different forms of business***

State-owned corporations are, therefore, a wide concept, since they can have several different forms and natures according to the peculiarity of the legal environment in which they are designed and operate (Capalbo and Palumbo 2013: 39). Sometimes, these corporations can operate in the market economy at conditions and for purposes similar to those pursued by private-sector corporations, and whose use of public resources is limited to their original capital endowment. Therefore, in most countries, state-owned corporations are established within different sectors or industries of the economy (Ramstetter and Ngoc 2013: 32). According to the OECD (2005: 9), state-owned corporations are often prevalent in utilities and infrastructure industries, such as energy, transport and telecommunication, whose performance is of great importance to broad segments of the population and to other parts of the business sector.

#### ***2.4.1.4 Supply of public goods and services***

According to MacCarthaigh (2011: 216), the financially viable arguments for creating state-owned corporations have been well rehearsed in literature. MacCarthaigh (2011: 216) also noted that the Organisation for Economic Co-operation and Development (OECD) state-owned enterprises governance guidelines (OECD 2005: 20-21) summarise the arguments as follows: the state may be the appropriate monopolist in an economic sector where an interlocking supply network is required for the provision of goods or services; the state may become involved in the supply of goods or services that the private sector is not incentivised to supply; some merit goods are inadequately provided for in a free-market system or there may be a principled reason for taking them out of the market; the private sector may overproduce certain goods with negative externalities; or if the state cannot regulate effectively or successfully contracts for services or cannot credibly promise not to confiscate or excessively tax corporations, thus inhibiting investment, then it should become directly engaged in business through corporations.

#### ***2.4.1.5 Managed by board of directors***

State-owned corporations, like private corporations, are governed by a board of directors and comply with the minimal governance issues outlined in the legal frameworks establishing them (Simpson 2014: 238). However, Simpson (2014: 242) argued that the boards of state-owned corporations, especially in developing countries, exhibit significant weaknesses in the areas of board performance evaluation, criteria for board appointment, the balance of executive directors and non-executive directors, and other board characteristics, indicating a departure from general practices. The appointment, size and structure of the state owned corporations' board varies from one country to another and one state corporation to another, with a lot of political influence. However, the boards of state-owned corporations should have the necessary authority, competencies and objectivity to carry out their function of strategic guidance and monitoring of management (OECD 2005: 15). In other words, the boards should act with integrity and be held accountable for their actions.

According to Simpson (2014: 242), specifically, the board should carry out their functions of monitoring of management and strategic guidance, subject to the objectives set by the government and the ownership entity. They should have the power to appoint and remove the Chief Executive Officer (CEO) and be composed so that they can exercise objective and

independent judgment. According to the OECD (2005: 49), good practice calls for the chairperson of the board to be separate from the Chief Executive Officer (CEO). If employee representation on the board is mandated, mechanisms should be developed to guarantee that this representation is exercised effectively and contributes to the enhancement of the board skills, information and independence (Simpson 2014: 242). When necessary, boards of state-owned corporations should set up specialized committees to support the full board in performing its functions, particularly in financial management decisions, with respect to audit, risk management and remuneration (Simpson 2014: 238).

#### ***2.4.1.6 Corporate financial management practice***

State-owned corporations should face competitive conditions regarding access to finance (OECD 2005: 21). Their relations with state-owned banks, state-owned financial institutions and other state-owned companies should be based on purely commercial grounds. The state-owned corporations should further be subject to the same high quality accounting and auditing standards as listed companies. According to the OECD guidelines, large or listed state-owned corporations should disclose financial and non-financial information according to high quality internationally recognised standards. To be more transparent and accountable, OECD guidelines also require the state-owned corporations to develop efficient internal audit procedures and establish an internal audit function that is monitored by and reports directly to the board and to the audit committee or the equivalent company organ.

In addition, state-owned corporations, especially large ones, should be subject to an annual independent external audit based on international standards. The existence of specific state control procedures does not substitute for an independent external audit. In general, the OECD guidelines require the state to act as an informed and active owner and establish a clear and consistent ownership policy, ensuring that the governance of state owned corporations are carried out in a transparent and accountable manner, with the necessary degree of professionalism and effectiveness.

#### **2.4.2 Public-sector financial-management reforms within the state-owned corporations**

The state-owned corporations have long dominated the industrial and commercial sectors in most countries (Khanna 2012: 5). According to Stan, Peng and Bruton (2014: 474), state-owned corporations represent 80% of stock-market capitalization of China, 62% of stock-

market capitalization of Russia, and 38% of stock-market capitalisation of Brazil. Stan, Peng and Bruton (2014: 474) noted that, even in the developed economies of Western Europe, the state is a controlling shareholder in 15% of listed corporations in Austria and Finland and 10% in Italy. In addition, they observed that state-owned corporations represent approximately 5% of GDP in the OECD countries and 10% of the global GDP. Stan, Peng and Bruton (2014: 474) further showed that some examples of state-owned corporations include the largest natural-gas company in the world, Gazprom of Russia, which has all of the 13 largest oil companies in the world based on oil reserves, and the world's largest mobile-phone operator, China Mobile, with its over 600 million subscribers. This analysis highlights the significance of state-owned corporations within the economies of the world currently, even after major reforms such as privatisation, for both developed and developing nations (Del Bo and Florio 2012: 263).

Therefore, the financial-management practices of state-owned corporations should be an important public-sector aspect to national policy developers and financial-management professional practitioners. For this reason, Khanna (2012: 5) argued that the state-owned corporations have experienced a chequered history, and, today, face unprecedented pressures and threats with dramatic changes in the business environment that, in many ways, are common all over the world. As most countries embraced the transition to a market economy, the transformation of state-owned corporations has remained a formidable challenge for most governments. Most national governments, hoping to see these corporations replicate the growth of their private peers, have restructured the ownership and supervision of state-owned corporations (Koppell 2007: 255). According to Koppell (2007: 255), the most common explanation for financial-management reforms of the state-owned corporations is the belief that a private-sector financial-management practice would lead to a more efficient and effective corporations.

Consequently, the public-sector financial-management reforms within the state-owned corporations began in early 1980s, being the target of neoliberal reformists, who focused on smaller government, trade and financial liberation, competition and privatisation (Hughes 2003: 94). In the early 1980s, matters of ideology about the overall role of government within the ownership of state-owned corporations became an issue. Since state-owned corporations operate at the boundary of public and private sectors, in mixed economies, their governmental role in their ownership was not clear. The argument led to disposal or

privatization of state-owned corporations by many nations of the world, both developed and developing, with United Kingdom, under the administration of Margaret Thatcher, taking an early lead (Hughes 2003: 94). The second major public-sector financial-management reform agenda, within the state-owned corporations, was driven by the managerial-restructuring reformist, who emphasised on managerial freedom, control and accountability within the state-owned corporations (Hughes 2003: 107-110; OECD 2005: 9; Capalbo and Palumbo 2013: 37).

#### ***2.4.2.1 Privatization of state-owned corporations***

In most countries, both developed and developing, privatization was regarded as one of the main instruments of restructuring the management practice of state-owned corporations (Kozarzewski 2007: 1). According to Badulescu and Pacala (2012: 13), the major objective of privatization was to improve economic efficiency, competitiveness and sustainability of the private sector from the entire economy. They argued that privatization of state corporations will help the government to free up resources, by reducing the financial burden initially directed towards corporations with financial deficit in the public sector and redirecting these funds to socially beneficial projects, such as health and education. They also noted that privatization will make a further important task, of removing the management of state-owned corporations from political control. Hence, it was important to make the state-owned corporations to adopt the private-sector financial-management style. The result of the privatization movement indicated that from the early 1980s to 1993, more than 7 000 state-owned corporations had been privatised in most countries (Hughes 2003: 97).

However, this restructuring method of privatization of state-owned corporations worked in most developed and developing countries, but, in most African countries, the effects of privatisation policies have not always been easy to identify (Seymour 2011: 44). Further, MacCarthaigh (2011: 216) noted that while the number of state-owned corporations declined internationally in the decade leading up to 2008, many privatisations consisted of partial sales of large state-owned corporations in utilities and networks. Therefore, MacCarthaigh (2011: 216) argued that, instead of governments completely departing from direct engagement in economic sectors, many governments continue to have significant stakes in former state wholly-owned corporations.

This indicates that privatisation policies have increasingly been about the partial opening of state-owned corporations to private capital, to help in raising their efficiency by subjecting them to stock-market disciplines, perhaps, with a view to subsequent full divestment (MacCarthaigh 2011: 216). Huyghebaert, Qj and Lijian (2014: 27-28) also noted that partial privatisation of state-owned corporations is to subject the corresponding state-owned corporations to the management practice of the stock market, as share prices henceforth would reflect information on managerial decisions and firm performance. This experience of partial privatisation has resulted in governments, including Kenya, having state-owned corporations, which are wholly owned by the government and those which are partially owned by the government and mostly listed in the stock markets.

#### ***2.4.2.2 Managerial structural reforms within state-owned corporations***

The advocates of managerial structural reforms believe that the perceived inefficiency within most state-owned corporations in the world is not necessarily as a result of ownership (Hughes 2003: 108). They believe that the state-owned corporations' under-performance has been as a result of structure of control and processes of their management, including the relations with their governments. According to Hughes (2003: 108), the theory of principal and agent suggests that accountability problems are inherently worse in the public sector, and particularly within the state-owned corporations, because they operate commercially and government-owned, but are usually not funded by the government.

Therefore, the extent of controls and accountability cause conflict between governments and their state-owned enterprises. The politicians and central agencies, who advocate for bureaucracy, claim there is insufficient control, while the management of state-owned corporations claim that there is too much interference from the politicians. The problem has been to find a mutually satisfactory accountability and control system for both the government and the state-owned corporation. In response to this problem, the Organisation for Economic Co-operation and Development (OECD) issued governance guidelines for state-owned enterprises in 2005 for its member states (OECD 2005).

In general, the OECD guidelines require the state to act as an informed and active owner and establish a clear and consistent ownership policy, ensuring that the governance of state-owned corporations are carried out in a transparent and accountable manner, with the necessary degree of professionalism and effectiveness. As aforementioned, the OECD

guidelines address all the issues of financial management and governance reforms being implemented by most countries that ascribe to the Organisation, including African countries, like Kenya (MacCarthaigh 2011: 216).

Further, following the disappointment with the outcomes of privatisations and managerial structural reform programmes in the 1990s, many African economies have placed state-owned corporations at the centre of their national development strategies (Moyo 2013: 1). According to the Moyo (2013: 1), there is a growing tendency to rely on state-owned corporations to remedy market letdowns, remove direct hindrances to development and pursue structural reforms. Nevertheless, Moyo (2013: 1) argued that distinct challenges remain for improving efficiency of state-owned corporations, including under performance of state-owned corporations which results in poor returns on invested government capital, and, in many cases, ongoing government subsidies. Moyo (2013: 1) also noted that state-owned corporations tend to be fraught with outdated governance and inconsistent ownership practices. Better governance arrangements, including financing from financial markets and institutions, with limited direct financial support from government, can lead to more effective and accountable state-owned corporations (Moyo 2013: 1).

### **2.4.3 Financing within state-owned corporations**

State-owned corporations are believed to be less efficient than their private counterparts (Ramstetter and Ngoc 2013: 28). The managers of state-owned corporations are constantly tempted to base decisions, including debt financing, on political rather than market criteria, and strategic state investment may be misdirected because of simple miscalculation (Fukuyama 1995: 96; MacCarthaigh 2011: 215). The financing decisions of state-owned corporations are unique compared to the private-sector corporations. The decisions are made by the Chief Executive Officers (CEO) with technical advice from the finance managers or officers. If the intended borrowing involves a large amount, then the financing strategy must be approved by the Board of Directors or the Cabinet Secretary or Minister in charge of the state-owned corporation (Palcic and Reeves 2013: 121; OECD 2005: 21).

Most state-owned corporations get their financial resources from foreign governments, from the private sector, from the revenue generated internally and from their own governments in the form of bona fide loans (Gantt and Dutto 1968: 115). In addition to these sources of finance, some of them also get central government or international grants which they treat as

increase in equity. The financing practice of state corporations also varies from one country to another and from one corporation to another. In addition, Adamolekun (1999: 40) argued that financing within state-owned corporations has also been a critical issue in most countries, particularly because of the strong linkage between finance and autonomy. It is, therefore, important to analyse the types of financing within the state-owned corporations. A good starting point will be to differentiate between internally generated revenues and external financing sources (Adamolekun 1999: 41).

#### ***2.4.3.1 Internally generated revenues***

Internally-generated revenues consists of the surpluses from trading, earnings from the sales of goods and services after payment of operating expenses, taxes and dividends (Adamolekun 1999: 1054; Mogues and Benin 2012: 42). These earnings could be used to finance investments of state-owned corporations. However, since the purpose of state-owned corporations is both profit making and socio-economic country growth, the prospects of generating revenue internally are normally reduced within most state-owned corporations. In addition, the influence of government on the state-owned corporations' tariffs and prices, and majorly on control and decision making, reduces the independence of management to make decisions on how to utilize their surpluses and profits (Adamolekun 1999: 42; Mogues and Benin 2012: 1056). Therefore, internally generated revenues, as a source of financing for most state-owned corporations, is not a common source of funds (Adamolekun 1999: 43). On the contrary, internally generated revenue may be a common source of funds for profitable state-owned corporations, especially those operating within the finance sector and has limited government or political interference (Almeida and Campello 2010: 592).

#### ***2.4.3.2 External financing sources***

External financing involves getting funds from an outside source without giving goods or services in return. Bosworth, Smith and Brill (1971:254) argued that there has been an explosive increase in external financing over the years, particularly evident during the periods of economic expansion of corporations (Mizruchi and Stearns 1994: 136). They argued that the major source of external finance is debt financing, compared to equity external funds.

#### ***Equity financing***

Equity financing by a state-owned corporation, is the process of raising external funds through an issue of new equity stocks, either to the government or to private entrepreneurs

(Adamolekum 1999: 42-43). Normally, government, as a principal shareholder in state-owned corporations, may contribute to increase the equity of the corporation or to increase its shares. On the other hand, private entrepreneurs can contribute to the financing of state-owned corporations through initial public purchase (IPO) offers. In addition, financial institutions, such as banks and insurance firms, which are shareholders in partially-owned state corporations, may choose to increase equity shareholding by acquiring more equity shares of the corporation.

### *Grants*

Grants are funds given to the state-owned corporations by the government or international development agencies, on the basis that the corporation will not have to repay. According to Adamolekum (1999: 42), there are different types of grants. Firstly, the statutory grants, are regular and mandatory grants, given by the government to specific state-owned corporations in line with statutory regulations establishing those corporations. The second type of grants is the special or categorical grants, which are attached to specific projects or activities of the corporation.

### *Subsidies*

Subsidies are allocations made by the government to state-owned corporations with a major aim of offsetting the losses made by state-owned corporations (Adamolekum 1999: 42). Many state-owned corporations incur losses either because of the government-controlled rates or prices, or because of their politically influenced objectives of service provision and employment render profitability difficult to achieve (Adamolekum 1999: 42; Cato 2012: 275). These incurred state-owned losses, in most cases, are offset by the government through subsidies.

#### **2.4.3.3 Debt financing sources**

Debt financing is the main element of external financing for corporations raising extra funds after creation (Baltacı and Ayaydın 2014: 53). Huyghebaert, Qj and Lijian (2014: 31) argued that, given the decision to access external financial markets and institutions, state-owned corporations, like any other corporation, would have preference for debt financing over equity financing. This makes debt financing through bank loans and stock-market debt securities or instruments, such as bonds and notes, a common practice within state-owned corporations. The decision to finance either through bank loans or stock market debt

instruments is influenced by the state of the national security markets and the cash deficit or requirement within an individual state-owned corporation (Huyghebaert, Qj and Lijian 2014: 31).

### *Bank loans*

According to Wang (2012: 77-78), it is easier for large-scale state-owned corporations, from developing economies, to receive financing from banks because they are owned by the government and have sufficient assets which act as loan guarantee. Therefore, state-owned corporations from developing economies, which have less developed stock markets, may prefer more of debt financing from bank loans (Huyghebaert, Qj and Lijian 2014). State-owned corporations can acquire bank loans from the national government banks, national financial institutions and international development banks and agencies (Adamolekun 1999: 42-43). Adamolekun further noted that state-owned corporations generally enjoy being allowed to take such loans, as it implies an increase in their agency problem.

### *Stock market loans*

Most of the state-owned corporations from developed economies prefer debt financing through stock-market instruments, like bonds, notes and debentures, since their stock markets are more liberalized and easily accessible by corporations (Balmaceda, Fischer and Ramirez 2014: 47-48). However, according to the OECD (2005: 21), the government, as an owner should develop an overall debt-financing policy and provide mechanisms that allow appropriate changes in capital structure of state-owned corporations. This could facilitate the indirect transfer of capital from one state-owned corporation to another, such as through some reinvestment of dividends received, or the raising of capital from the competitive stock market. Nevertheless, any debt financing decision that brings about a change in the capital structure of a state-owned corporation should be clearly consistent with the state-ownership objective and the specific circumstances of the state-owned corporation. The financing decisions, through the stock market, should be adequately documented to allow effective accountability through audits or scrutiny by the Parliament (OECD 2005: 21).

In general, for debt financing, lenders and the board frequently assume that there is an implicit government guarantee on debt of state-owned corporations (OECD 2005: 21). The OECD guidelines argued that this situation has, in many instances, led to excessive indebtedness, wasted resources and market distortion, to the detriment of both lenders and the

taxpayers. Therefore, state-owned corporations should face competitive conditions regarding access to finance and their relations with state-owned banks, state-owned financial institutions and other state-owned companies should be based on purely commercial grounds (OECD 2005: 21). In other words, as a general principle, the government should not give an automatic guarantee in respect of debt financing of state-owned corporations (OECD 2005: 21).

The uniqueness of the state corporations' financing practice have led to few management students being attracted to research in this area (Boothman 1987: 302). Few studies of debt financing on state-owned corporations that have been done, like Huyghebaert, Qj and Lijian (2014: 27); Wang (2012: 76); Huang and Song (2006); Delcours (2007); Majumdar and Chhibber (1999) and Tong and Green (2005) are from Eastern Europe and Asia where market liberation has been embraced. From these studies, there have been wide use of debt, especially in China, which has 150 listed companies reporting directly to the central government (Woetzel 2008: 2). Huang and Song (2006: 33), studying the Chinese firms, found out that state ownership of a corporation does not prevent it from following the rule of the market. The implication of this is that the earlier-mentioned issues of debt financing decisions or theories should hold even if the firm is state controlled. In addition, public-financial-management reforms are being embraced by most countries and state corporations are currently trying to follow the private-sector model of financial management. This study attempted to analyse the types of debt financing used by state-owned corporations from developed and other developing economies using the available academic literature and information from the official websites of the state-owned corporations.

While doing a comparison of financing of corporations within some developed countries, Mayer (1990: 308) argued that international comparison of the financing of corporations is a familiar subject. However, he observed that there are common problems associated with international comparisons of corporate-sector financing strategies such as, the valuation of assets, the treatment of reserves and goodwill, and the double counting of intra-sector flows. Mayer (1990: 308) added that the extent to which such inconsistencies can be overcome by ad hoc corrections is questionable. This study, therefore, in attempting to compare the debt financing strategies of state-owned corporations from the developed and developing economies, focused only on the types of liabilities shown on the financial statements of some state-owned corporations from these regions. This analysis has been done subject to

availability of information from the official websites of these state-owned corporations. It is believed that data from the official financial statements of the state-owned corporations are more reliable for comparison purposes (Mayer 1990: 309).

#### **2.4.4 Financial performance of state-owned corporations**

Economists often claim that private-sector corporations tend to be relatively efficient and, financially, perform better than the state-owned corporations, which are generally thought to be relatively inefficient (Simpson 2014: 247; Ramstetter and Ngoc 2013: 28). According to Ramstetter and Ngoc (2013: 28), this notion exists because state-owned corporations are generally assumed to have relatively weak motivation to pursue profits and efficiency due to low labour mobility and competition with other corporations. In confirmation to this statement, Girma, Gong and Görg (2009: 866) argued that, despite the much-praised reforms within state-owned corporations worldwide, the corporations have observed a reduction in productivity and have been making net losses since the late 1990s. This reduction in performance has been witnessed in most developing countries, particularly in China, which is believed to be a working model for other nations in state-owned corporations' reforms (Liu 2009: S46; Woo 2014: 21). However, Ramstetter and Ngoc (2013: 31) noted that policy makers often emphasize how performance of state-owned corporations should play a leading role in the industry and that private corporations should seek to cooperate with state-owned corporations to enhance general growth within the economy as a whole.

According to Wang, Wen and Seng (2014: 336), most of these corporations are mainly directed not by social welfare improvement goals, but by political interests and objectives including creating jobs, promoting industrialization, and subsidizing underdeveloped areas of the country. Compared with private-sector corporations, the boards of state-owned corporations are less independent, and the corporations are often characterized with a complicated shareholding structure as well as different governance systems. These systems, Wang, Wen and Seng (2014: 336) argued that these systems may lead to a lack of transparency and accountability, leading to inefficiency and deprived performance. In addition, Stan, Peng and Bruton (2014: 474) argued that the focus of state-owned corporations is motivated by different organizational goals when compared to private-owned corporations and these goals negatively influence their use of slack resources, which is believed to have contributed in improving performance within private-owned corporations. Stan, Peng and Bruton (2014: 474) further argued that good management of slack resources

is believed to help in reducing external financing, such as debt, within the corporations and, in turn, improve performance of the corporations, especially during the corporations' downturns.

Further, it was noted by Wang and Yung (2011: 797-798) that agency problems are more likely to increase in state-owned corporations than in private-owned corporations due to the various types of conflicts of interest, including those between the state and minority shareholders and between owners and managers. Controlling the conflicts among different interest groups in state-owned corporations is difficult since state-owned corporations often have a highly layered organizational hierarchy where information is more likely to be distorted as it moves from one level to the next. Wang and Yung (2011: 797-798) further noted, in summary, that this conflict of interest leads to more managerial opportunistic behaviours such as debt financing and earnings management. Hence, there is a lack of focus on improved financial management within most state-owned corporations.

In addition, Pham (2011: 80) stated that the reasons for low financial performance and inefficiency of state-owned corporations are innumerable, but mainly from the management mechanism of state-owned corporations, including debt-financing decisions. The author noted that this kind of mechanism, largely influenced by the subsidy system, did not motivate managers to be more responsible and open minded as actually practised in a market economy. Pham (2011: 80) added that there is no momentum to make use of private business management methods, such as marketing, human resource management, or optimal debt-financing decisions, to improve financial performance of state-owned corporations, because managers are not seriously appraised by the performance of the corporations, and employees are not motivated to conduct their work in a more professional way.

Consequently, in promotion of the view of success in financial performance of state-owned corporations, Liu (2009: S47) noted some success story of state-owned corporations found in a few countries, such as Temasec Holdings in Singapore, Renault in France, Embraer in Brazil, and Posco in Korea. Liu (2009: S47) argued that the evidence shows that state-owned corporations are not necessarily inefficient, depending on how they are managed and how the economic environment is maintained. He also observed that Chinese financial performance recovery of state-owned corporations was largely a result of the state-owned corporations'

reform policy and a change in the economic environment. Therefore, the experiences on financial performance of state-owned corporations have been varied across the continents.

#### ***2.4.4.1 Financial performance of state-owned corporations in America***

In America, Kole and Mulherin (1997: 2-3) studied a sample of U.S. corporations in which the federal government held 35% to 100% of the outstanding common stock for between 1 and 23 years during and following World War II. Kole and Mulherin (1997: 2-3) found that the financial performance of the state-owned corporations was not significantly different from that of private-sector corporations in the same industry. They argued that the availability and implementation of monitoring devices can favourably affect the financial performance of any form of corporation, public or private. Kole and Mulherin (1997: 17) further argued that it is becoming apparent that merely privatisation of state-owned corporations is not sufficient to improve financial performance. Instead, financial performance improvements also require the existence of competitive markets, external valuation, and internal evaluation and incentive devices to monitor the managers of state-owned corporations.

#### ***2.4.4.2 Financial performance of state-owned corporations in Europe***

Europe, led by UK, Spain and others, as the major initiator of privatization of state-owned corporations, has witnessed significant improvements in financial and operating performance (Farinós, García and Ibáñez 2007: 368). On the other hand, Palcic and Reeves (2013: 120) argued that improving the performance of state-owned corporations and their contribution to the economy and wider society has been a challenge for European governments for decades. The domestic and international economic crisis has prompted a specific set of policy reforms from most European governments, this has reduced the size of state-owned corporations in Europe. However, Stan, Peng and Bruton (2014: 474) noted that in the performance of state-owned corporations, Western Europe is still strong, with the state controlling shareholding in 15% of listed corporations in Austria and Finland and 10% in Italy. In addition, they observed that state-owned corporations represent approximately 5% of GDP in OECD countries, 10% of the global GDP and the largest natural-gas company in the world, Gazprom of Russia is a state-owned corporation.

#### ***2.4.4.3 Financial performance of state-owned corporations in Asia***

Irrespective of the perceived low financial performance within most state-owned corporations of the world, other countries, mostly from Asia, such as China, India and Malaysia, have

showed better performance within their state-owned corporations (Liao and Zhang 2014: 21-23; Khanna 2012: 26; Liu 2009: S46). Khanna (2012: 26-27) observed, from the Indian state-owned corporations that, with economic reforms and shifts in public policy towards market-based reforms and an end to protection and reservations provided to state-owned corporations, along with the imminent threat of privatization, have led to improved financial performance of state-owned corporations in India and China. Khanna (2012: 26-27) also noted that increasing competition and the entry of the private sector in most industries reserved for state-owned corporations, along with liberal imports, provide a drive for reform and a shift in management strategy of state-owned corporations, including debt-financing strategies.

In addition, Liu (2009: S46) also observed that Chinese state-owned corporations have always been the major force in maintaining and smoothly operating the strategic industries of the country. The Chinese state-owned corporations' policy changes included the conversion of bank debt into stocks, staff reductions, and the selling off of relatively low-profit state-owned small-and medium-sized corporations by local governments. However, Liu (2009: S46) highlighted that state-owned corporations remained dominant in China's strategic industries, such as banking and finance, telecommunications, crude oil and chemicals, iron and steel production, civil aviation, railroad, automobile production, other infrastructure and general utilities. Starting in the new century, the performance of almost all these state-owned corporations in China have improved steadily across a wide range of reforms, especially with respect to profitability and fulfilment of social responsibility (Liu 2009: S46).

#### ***2.4.4.4 Financial performance of state-owned corporations in Africa***

Further, according to Odainkey and Simpson (2013: 2), the World Bank's Report shows that the poor performance of state-owned corporations, mostly from African countries, can be attributed to over-extension of the public sector, leading to scarcity of resources, both financial and human and, hence, slower growth and poor performance. This retarded growth stems mainly from the increased participation of state-owned corporations in several industries and sectors of these developing countries, such as public utilities, resulting in governments being over-stretched financially and managerially. Furthermore, Odainkey and Simpson (2013: 2) noted that the poor performance of African state-owned corporations has been pointed to issues of governance and financial propriety, especially debt financing, among others.

Many reforms within African state-owned corporations have been introduced, yet with little good results in performance (Adamolekun 1999: 44). According to Adamolekun (1999: 44), several African countries, by the 1970s, were reviewing the performance of their state-owned corporations and introducing some reform measures, but half-hearted efforts and unfaithful implementations have led to poor results. Critics have also argued that most of the African state-owned corporations have remained highly overstaffed and mismanaged in economic terms, requiring heavy state subsidies (Christensen 1998: 281). These state subsidies amount to a substantial drain on the government's finances and are causing budget deficits and inflation. Therefore, to achieve improved performance in state-owned corporations in Africa, more far-reaching reforms and greater commitment on the part of the politicians and the corporation's managers is required (Adamolekun 1999: 44).

Though there is positive indication that financial performance of state corporations can be improved through better government policies and reforms (Aivazian, Ge and Qiu 2005: 807), the researcher believes that few studies have focused on how debt financing decisions affect financial performance of state-owned corporations. Mostly, the studies have focused on areas that may influence financial performance of state corporations, such as improved leadership style, board composition, and political connections and matters of governance, in general (Koppell 2007: 255; Kozarzewski 2007: 11-12; Liu 2009: S47; MacCarthaigh 2011: 220; Menozzi, Gutiérrez Urtiaga and Vannoni 2012: 695; Xiongjun, Pingqing and Yun 2013: 336; Simpson 2014: 238). Other studies focused on the effect of slack resources, technology, budget constraints, customer orientation, foreign investment regulatory policy and chief executive officers (CEOs) and their appointments, all looking at how the individual factors influence financial performance of state-owned corporation (Stan, Peng and Bruton 2014: 491; Wang, Wen and Seng 2014: 344; Michael 2007: 204; Woo 2014: 21-22; Jiang, Huang and Kim 2013: 63-64).

The few studies, such as Majumdar and Chhibber (1999: 291); Dewenter and Malatesta (2001: 320); King and Santor (2008: 2426); Huang and Song (2006: 16-17) and Lim (2012: 191), that have attempted to look at the debt financing decisions within state-owned corporations, have only managed through studies on stock exchange-listed corporations, which in these cases included some state-owned corporations which are listed in the stock exchange. Therefore, focusing on Kenyan state corporations, this study, in addition to the

existing literature on state-owned corporations, attempted to fill the perceived literature gap by analysing the debt financing decisions and how the decisions influence financial performance of state-owned corporations.

## **2.5 ECONOMIC STATUS OF KENYA**

According to Kiplagat, Wang and Li (2011: 2961), Kenya is located on the east coast of Africa. It lies on the equator and is bordered on the east by Somalia, Ethiopia is to the north, Sudan to the northwest, and Uganda directly to the west. The south-western border of the country is marked by Lake Victoria, and to the south is Tanzania and Mount Kilimanjaro, while the Indian Ocean lies to the south east. It is 582 646 km<sup>2</sup> and is the world's 47<sup>th</sup> largest country. Kenya has the most developed economy in Eastern Africa (Kiplagat, Wang and Li 2011: 2961). The authors observed that Kenya is also the economic, commercial and logistical hub of the entire East African region. According to them, the economy is heavily dependent on agriculture, which accounts for around 24% of GDP and 18% of wage employment in both agriculture and agro-based industries.

According to the 2009 Population and Housing Census, the population of the country stood at 38.6 million and was estimated to grow to about 41.4 million by 2012 (Ireru 2014: 41). The census showed that the population was increasing by one million people per year and is anticipated to be at 46.7 million by 2017. The author also observed that the majority of the Kenyan population resides in the rural areas even though recent data indicates that there has been an increase in the rate of urbanisation, largely caused by increasing rural-urban migration and the rate of natural population increase in urban areas. Nearly 4 out of every 10 Kenyans live in poverty; maternal mortality is among the highest in Africa, with 488 deaths per 100 000 live births, secondary school enrolment is at a low 32 percent; and learning achievement levels are well below their potential and what is needed to fuel a modern market economy (Randa *et al.* 2013: 13). The authors argued that GDP growth, while solid, has yet to take off at the rapid, sustained rate needed to transform the lives of ordinary citizens.

The major economic sectors in Kenya include agriculture, trade and industry, transport and communication, energy, education, finance and insurance, hotel and tourism, amongst others (Word Bank 2013: 4; Ministry of Devolution and Planning 2014: 5-15). The state-owned corporations in Kenya are established along these major sectors of the economy. The study

focused on the period 2007 to 2011, and according to the World Bank (2012: 2), since the 2008 crisis, Kenya has been growing at an average of 3.5 percent per year, well below the average for Sub-Saharan Africa (5.5 percent, excluding South Africa) and significantly slower than the East African Community (EAC) countries, some of which are among the fastest growing developing countries in the world.

According to the Ministry of Planning (2012: 8-9), the main sources of economic growth in Kenya for the last five years from 2007 to 2011 were transport and communication, wholesale and retail, manufacturing, education and financial intermediation sectors. Table 2.1 showed that the wholesale and retail sector had the greatest growth with an average of 7.2%. The transport and communication sector showed an average growth of 6.7%, followed by financial intermediation sector at an average of 6.2%. The educational sector indicated an average of 5.0%, followed closely by the manufacturing sector at an average of 3.9%. On the other hand, as shown on table 2.1, the agricultural and the tourism sectors have showed mixed results over the same five-year period.

**Table 2.1: Economic sectors' performance in Kenya**

Year	2007	2008	2009	2010	2011
Hotels and restaurants	16.3	-36.1	42.8	4.2	5.0
Tourism	16.4	-19.2	0.2	17.9	32.8
Wholesale & retail trade	11.5	5.1	3.9	8.0	7.3
Transport and communication	15.1	3.1	4.0	6.9	4.6
Financial intermediation	6.5	3.1	4.6	9.0	7.8
Education	3.7	5.8	6.3	4.5	4.9
Building and construction	6.9	8.3	12.4	4.5	4.3
Manufacturing	6.5	3.8	1.3	4.4	3.3
Agriculture	2.3	-5.4	-2.6	6.4	1.5
Energy	5.1	0.2	0.8	5.2	5.4

This table represents % growth of economic sectors' performance in Kenya for the period of the study from 2007 to 2011.

**Source: Kenya National Bureau of Statistics (KNBS) website (2014)**

Nevertheless the gross domestic product (GDP) growth over the five-year period from 2007 to 2011 has indicated a steady growth from the lowest figure of 1.5% in 2008 to 5.8% in 2010 and maintaining it at 4.4% in 2011 (Ministry of Planning 2012: 49). However, according to Randa *et al.* (2013: 3), average annual growth in Kenya was 4.4 percent in the period 2008-2013, which was much lower than in Uganda (5.6 percent), Tanzania (6.6 percent), Rwanda

(7.3 percent), and the Sub-Saharan Africa average as a whole (5.5 percent). However, the authors argued that macroeconomic conditions continued to improve, as the economy of Kenya entered the third year of relative stability in 2014, with single-digit inflation and a stabilized exchange rate.

As shown on table 2.2, inflation showed an unsteady downward trend over the five year study period, with the highest rate of 16.2% in 2008. According to the Central Bank of Kenya (2014), the weighted average commercial banks' lending rates have been increased from 13.32% in 2007 to 20% in 2011. The corporation tax rate, according to Deloitte & Touche (2011: 17), for the years of income from 2007 to 2011 have remained at 30% for resident corporations and 37.5% for non-resident corporations. However, some state-owned corporations are exempted from corporation tax, according to the Republic of Kenya Income Tax Act (Republic of Kenya 2012a: 157-165).

**Table 2.2: Macroeconomic performance indicators in Kenya**

Year	2007	2008	2009	2010	2011
Gross domestic product (GDP) (%)	7.0	1.5	2.7	5.8	4.4
Inflation rate (%)	9.8	16.2	9.2	4.1	14.0
Commercial banks lending rates (%)	13.32	14.87	14.76	13.87	20.04
Corporation tax rate (%)	30	30	30	30	30
Nairobi Stock Exchange (NSE) index	5445	3521	3247	4433	3205
Market capitalization (Kshs. Billion)	851	854	834	1167	868
Overall domestic credit (Kshs. Billion)	671	827.4	978.3	1300	1500
Outstanding public debt (Kshs. Billion)	715.5	748.5	889.9	1100	1300

This table represents macroeconomic performance indicators in Kenya for the period of the study from 2007 to 2011.

**Source: Kenya National Bureau of Statistics (KNBS), Central Bank of Kenya (KCB) and Capital Markets Authority (CMA) websites (2014)**

Kenya has one stock market, the Nairobi Stock Exchange (NSE), where the debt securities of the listed corporations, such as bonds and preference shares, are bought and sold. The market has increased in activities over the past periods, attracting even state-owned corporations, which are partially owned by the government (Randa and Gubbins 2013: 15). The authors argued that the securities' market is booming with securities' prices rising strongly in the past. Table 2.2 shows stable average market capitalization over the five-year period of the study, with a high growth of 40% recorded in 2010, driven by strong performances across all sectors of the economy in the same year. Nonetheless, the NSE index showed some slight

decline, but with an increase of 1 186 points (36.5%) in 2010. The stability of the stock exchange is believed to allow listed corporations, both private- and state-owned, to have an option of raising external finance through the stock market. Hence, the stock market activity may have an impact on debt-financing decisions of corporations, including listed state-owned corporations.

The banking sector in Kenya has undergone noteworthy transformation over the last decade or so (Randa *et al.* 2013: vii). The authors argued that these reforms have improved the resilience of the sector to domestic and international shocks. They also noted that the state presence in the sector has been shrinking, and with it the share of non-performing loans in bank portfolios. Randa *et al.* (2013: vii) also argued that Kenyan banks are doing better than their counterparts in Sub-Saharan Africa in terms of the share of lending to small and large corporations, including state-owned corporations.

Though the weighted average of commercial banks' lending rates have been increasing over the study period, from the lowest of 13.32% in 2007 to 20.04% in 2011, the overall domestic credit has been grown by 124%, from Kshs. 671 Billion in 2007 to Kshs. 1.5 Trillion in 2011 (Central Bank of Kenya 2014). On the other hand, the outstanding debt of the government has also increased by 82%, from Kshs. 715.5 Billion in 2007 to Kshs. 1.3 Trillion in 2011. These figures indicate that debt financing in Kenya has been increasing over the five-year study period, both within the public and the private sectors. This study, therefore, attempted to establish the factors that influence this increasing trend of debt financing within Kenya. It also tried to determine the impact that debt financing decisions have on the financial performance of corporations, focusing on the income-generating state-owned corporations in Kenya.

### **2.5.1 Public-sector financial-management reforms in Kenya**

Since 1997, the government of Kenya has been implementing public sector reforms aimed at strengthening government finance and accounting functions to improve public-sector financial management, accountability, and transparency of public funds (Diamond and Khemani 2006: 116). Nevertheless, Bagaka (2009: 188) argued that a look at Kenya's reform initiatives since the mid-1980s found that more emphasis has been placed on efficiency and economy and less attention has been given to social equity. Coleman (2013: 81), on the other hand, reported that Kenya's macroeconomic performance improved considerably in the

period of 2004-2007, with real GDP growth averaging 6 percent per year. Coleman (2013: 81) argued that this was achieved through the implementation of sound public financial management reforms, along with a favourable external environment. Coleman (2013: 81) noted that the support of the Poverty Reduction and Growth Facility (PRGF) programme, under the International Monetary Fund, ensured significant progress in structural reforms in Kenya, including reforms in the financial sector and in public-financial management and governance.

According to Marwa and Zairi (2009: 36), the public sector reform, referred to as the civil service reform programme (CSR), was first launched in Kenya in the early 1990s to improve efficiency and productivity within the governmental units. Marwa and Zairi (2009: 36) noted that the government created a steering committee on the Civil Service Reform Programme (CSRP) at the national, provincial and district levels and in each ministry with a national secretariat as its operational arm. The public-sector reform agenda was planned to be implemented in phases. The first phase of the reforms, which focused on containment, was implemented during the period of 1993 to 1998. The second phase was embarked on immediately during the period of 1998 to 2001, focusing on performance improvement within the Kenyan public sector. Finally, the third phase, focusing on refinement, consolidation and sustenance of reforms, was to be implemented during the period of 2001 to date.

Key reforms that were initiated in phase one were policy shifts in the areas of staffing, civil service organisation, pay and benefits, personnel management and training, financial and performance management (Deloge 2009: 3). According to Deloge (2009: 3), other reforms included the local government reforms, public expenditure reform, state corporations reform, judiciary and legal sector reforms. Phase one of the reforms were, therefore, an attempt by the government to implement the new public-sector financial-management reforms within the public sector in Kenya. According to Sawe (2007: 2-3), phase one involved a move from a hierarchical type of organizational structures to more flexible and professionally-oriented structures, followed by the decentralization of Finance Ministry's core functions to Provinces and Districts, as well as, lower operational levels. These helped to ensure effective service delivery and privatization and commercialization of a number of activities previously performed by the Finance Ministry. The first phase further focused on identification and

improvement of potential areas for revenue collection to supplement predicted shortfalls in ex-chequer releases and enforcement of target setting in ministerial operations or activities.

Phase two of the reforms witnessed a series of ministerial and segmental initiatives that led to the launch of governance reforms; justice, law and order-sector reforms; judicial reforms; capacity building and training; e-governance; results-based management (RBM); participation in quality awards and reintroduction of performance contracts (Marwa and Zairi 2009: 36). While remarkable progress in entrenching the public sector reforms' agenda has gained momentum in Kenya, there still remains room for improvement and much more remains to be done especially in the area of enhancing performance within the governmental units, such as state-owned corporations (Marwa and Zairi 2009: 36). Few African nations, such as Botswana and Ethiopia, have recorded major strides towards the realization of objectives of public sector-reforms, while several others, including Kenya, were struggling and had only recorded modest success (Marwa and Zairi 2009: 36).

However, Njeru (2013: 1-50) looked at the Kenyan public-sector financial management reforms from a constitutional dispensation and political perspective, and categorised the process into four phases. The four phases were made up of President Kenyatta regime, President Moi regime, President Kibaki regime and the new constitution era.

#### ***2.5.1.1 Public-sector financial-management reforms in the 1970s***

The Kenyatta era began immediately after the Kenyan independence in 1963. The independence Constitution (1963) divided public-sector financial-management powers among the three branches of the government; the executive, the parliament and the judiciary, but the executive soon moved to accumulate more influence than the other two (Njeru 2013: 2). The executive, under a strong presidency, led the budget process, with more powers from the Constitution (1963), which prohibited Parliament from introducing bills related to money or making any amendments to increase taxes or expenditure. The fiscal structure and institutions of public-sector financial management were intended to give the executive and ruling elite maximum control. The tax system established by the colonial government was retained in Kenya with minor changes introduced to remove obviously racial connotations and the preferences bestowed on the white settler community. Therefore, under Kenyatta regime, the Treasury, under the direction of the presidency, became the lead public-sector financial-management agency as Parliament's finance function was reduced to one of

ceremonial approval. The senior public servants became significantly powerful on technical and policy issues, especially the Treasury, which became very influential assuming control over all public financial resources (Njeru 2013: 2).

#### ***2.5.1.2 Public-sector financial-management reforms in the 1990s***

During President Moi's era, there was a slight improvement on the public-sector financial-management practice, allowing the parliament to approve taxes, rates and expenditure proposals, though merely as a formality, since any member of legislature, who opposed the finance bills, would be reprimanded (Njeru 2013: 2-3). Thus, despite the initial constitutional authority granted to Parliament to scrutinize and approve the national budget, the legislature was effectively ignored by the executive, and the Treasury took the lead role in public-sector financial management. In addition, there was a systematic erosion of the Office of the Controller and Auditor General arising from transfers of key officers, a situation that diluted its capacity to audit public-sector financial reports and led to accumulated audit arrears. These resulted to gross abuse of public office and mismanagement of finances that culminated in mega scandals (Njeru 2013: 3).

#### ***2.5.1.3 The current public-sector financial-management reforms in Kenya***

Prior to 2003, the year Kibaki regime assumed power, Kenya faced serious weaknesses in the area of public financial management practice, which culminated in a number of notorious scandals, such as Goldenburg and Anglo-Leasing scams (Hedvall *et al.* 2009: 12). Since then, a number of key reforms were initiated, which aimed at improving public-sector financial management and fiscal transparency. To improve public-sector financial management, key reforms were involved in changing the public-financial management legal framework. First, the Government Financial Management Act (2004) was legally enacted and addressed some urgent public financial management issues, mainly in accounting, by the introduction of the accrual-based financial reporting system. The second legal change was the introduction of the Public Procurement Act (2003), which established the modern procurement processes and standards within the public sector. Thirdly, the Public Audit Act (2003) was also introduced to establish the independence of the National Audit office (Hedvall *et al.* 2009: 12).

Since there was also a limited availability of fiscal information, the Kibaki regime also embarked on an introduction of a strengthened monthly expenditure return process, improvement in reporting on the semi-autonomous government agencies and extra budgetary

fund (Hedvall *et al.* 2009: 12). The regime established the publication of a quarterly budget review on the Ministry of Finance website and replaced the computerization legacy systems gradually by modern-integrated financial management information systems within all the government units. The treasury also implemented strict limitations to tax expenditures through tightened legal framework and improved controls at the Kenya Revenue Authority (KRA), improved cash management by releasing cash-based on cash-flow projections from the ministries and other governmental units and strengthening accountability within the governmental units by reducing the discretionary power of treasury to make budgetary changes.

Further, to improve budget realism, there was an improved fiscal framework, which emphasised greater reliability on macro-economic forecasts, improved revenue projections and realistic ceilings for budget preparations based on the medium-term expenditure framework (MTEF). The medium-term expenditure framework encourages wider consultation during budget preparation, including consultation of civil society groups (Hedvall *et al.* 2009: 12). The Kibaki regime also implemented public-sector financial-management administrative reforms which included outlawed political fund-raising events, establishment of the ministerial code of conduct, simplifying licensing regimes for businesses and the introduction of performance contracts for all semi-autonomous government agencies and the state-owned corporations (Hedvall *et al.* 2009: 12). Many of these changes were incorporated into the Fiscal Management Act of 2009 and later incorporated in the Kenyan current Constitution (Njeru 2013: 4).

The provisions of the Kenyan new Constitution enabled the transfer of key public-sector financial-management responsibilities from the executive to the parliament (Njeru 2013: 5). In addition, some of the regulatory institutions have been established and new independent constitutional offices introduced by separating the control function of the Controller and Auditor General (AG) into two, i.e., the Controller of Budget (COB) and the Auditor General (AG). The new Constitution extended the role of the Controller of Budget (COB) to supervise budget implementation and report on a quarterly basis to Parliament.

The new Constitution also changed the functions of the Treasury and, as a result, most of the functions of the Secretary of Finance (formerly the Minister for Finance) and the Principal Secretary (formerly the Permanent Secretary, Treasury) were relegated to legislation. The

other major changes in the new constitution are fiscal decentralization, with county governments authorized to decide on how to use their budgetary allocations, and the establishment of the Commission for Revenue Allocation. The Commission for Revenue Allocation is authorised to supervise the allocation of revenues between national and county governments and advise the legislature. Further, to consolidate fiscal decentralization, the new Constitution established a Senate and county legislatures as key institutions on matters of county public-sector finance (Njeru 2013: 5).

In addition, the reform agenda of state corporations, under the umbrella of public-sector reforms programme in Kenya, have witnessed five state-owned corporations being privatised, and several more, from hotels to banks, have been scheduled to be privatised too (Seymour 2011: 45). Seymour (2011: 45) noted that it is not just politics that is getting in the way, but many of Kenya's state-owned corporations are in considerable debt, which reduces their value in the process of privatisation. It is, therefore, important to show whether economic factors or government debt finance policy influences the finance managers of state corporations in Kenya in financing their investments through debt, or whether there are some other motives behind their financing decisions.

### **2.5.2 State-owned corporations in Kenya**

State-owned corporations in Kenya, as in most African countries, are organisations that are set up as corporate bodies and as part of the government agencies for commercial or commercial-like purpose (Dresang and Sharkansky 1975: 163; Adamolekun 1999: 28). They are commonly referred to as state corporations or parastatal, and have remained an important part of the Kenyan public sector since the colonial period (Dresang and Sharkansky 1975: 166). The Kenyan presidential report, Republic of Kenya (2013: xii-xiv), showed that the output of state-owned corporations to GDP, in nominal terms, has been increasing from 9.54% in 2009 to 11.64% in 2011, based on internally-generated income.

Kenya has 206 state-owned corporations established under the State Corporations Act, chapter 446 of Kenyan laws (Republic of Kenya 2009: 1-18). The new constitution of the country has also put in place the Public Financial Management Act, number 18 of 2012 (Republic of Kenya 2012b: 930). Financial management practices of the state-owned corporations in Kenya, including debt-financing decisions, are done according to the regulations of these two Acts of parliament. In particular, the Public Financial Management

Act has a section that deals with borrowing of national government entities which includes state-owned corporations. The Act provides that a state-owned corporation shall obtain the approval of the Cabinet Secretary (responsible Minister) for its intended programme of borrowing, refinancing and repayment of loans. Secondly, the state-owned corporations will also need to obtain the approval of the Cabinet Secretary before making any changes to its programme of borrowing. Finally, it provides that the national government is not liable to contribute towards payment of any debt or liability of a state corporation, unless the national government guaranteed the debt or liability (Republic of Kenya 2012b: 930).

Each state corporation in Kenya is established by an Act of Parliament in line with the needs of the government and the people of the Republic. They are managed by a board of directors appointed by the President of the Republic of Kenya. The board reports to the Cabinet Secretary in charge of the sector or ministry under which the corporation falls. The ministries include Agriculture, Finance, Energy, Trade and Industry, Education, Transport and Telecommunication, Medical, Defence, Tourism, Labour and Water. Further, there are some state corporations which are listed in the Nairobi Stock Exchange, meaning that their debt securities and equity are traded in the stock market.

In acknowledging the role of state-owned corporations in Kenya, the report of the Kenyan presidential taskforce on state-owned corporations reforms, Republic of Kenya (2013: X), identified five major roles that state-owned corporations play in Kenya. Firstly, state-owned corporations are important in promoting or accelerating economic growth and development. Secondly, these corporations are critical in building the capability and technical capacity of the state in facilitating and promoting national development. Thirdly, the corporations are important instruments in improving the delivery of public services, including meeting the basic needs of citizens. Fourthly, the state-owned corporations have been variously applied to the creation of good and widespread employment opportunities in various jurisdictions. Fifthly, the corporations are useful for targeted and judicious building of international partnerships. However, the report noted that the experience of state-owned corporations in Kenya, in trying to achieve these goals, has been, in some cases, successful and, in others, not so. Consequently, over the decades, different political regimes have tried to transform the state-owned corporations in Kenya so that they can fully play their other significant role in the national development process.

The report observed that, out of the government reform strategies, it is important to observe that there are notable successes, failures and missed opportunities in the history of state corporations in Kenya. According to the report, Safaricom, Kenya Airways and the financial sector regulators represent notable successes in the service-delivery sector, clearly facilitating the positioning of Kenya as a financial, transport and communications hub in the continent and the world at large. In all these cases, state-owned corporations, which were not functioning optimally, were either transformed through engagement with strategic change or anchor investors, or introduction of missing links in the product-value chains, which then added value before these could be fully or partially privatized.

On the other hand, data in the Kenyan presidential report, Republic of Kenya (2013: xii-xiv), shows that the output of state-owned corporations to GDP, in nominal terms, has been increasing from 9.54% in 2008/2009 to 11.64% in 2010/2011, based on internally-generated income. In terms of employment and wage earnings, formal wage employment in state-owned corporations in Kenya has been declining in both absolute numbers, as well as its share of the national formal wage employment. The report argued that this is, perhaps, a reflection of the withdrawal of the state from the sector through privatization efforts. On the other hand, data on average per capita annual wage earnings is rising faster than in the wider public sector or private sector, suggesting that the state-owned corporations sector pays more than even the private sector or the overall public sector. The report further argued that this is subjective evidence as to why, apart from the clear efficiency and effectiveness arguments, there is a demand for the establishment of more state corporations.

The presidential report further noted that, in 2011/12, eleven income-generating state-owned corporations made losses, compared to twelve in 2010/11 and sixteen in 2009/10. This represents 21%, 23% and 31%, respectively, of all income generating state-owned corporations. Highlighting the debt financing patterns, the report observed that the pattern of accumulation of publicly-guaranteed debt financing to state-owned corporations in Kenya shows a decline in 2007 from 2006, but has been on an upward trend since then. According to the report, the increase in this stock of debt is largely attributed to disbursements for creation of new infrastructure such as the Sondu Miriu Hydropower Project and the Kenya Ports Authority under the Mombasa Port Modernization Project. In addition, the report emphasised that it is important to note that, of the payments by the government on guaranteed debt in

2011/12, 95.6% was on debt accruing to two state-owned corporations, pointing to significant defaults in payments.

According to the report, out of the explicit contingent liabilities, available data shows that guaranteed debt in respect of Kenya Broadcasting Corporation (KBC) and the Tana and Athi River Development Authority (TARDA) has since crystallized and the Government of Kenya (GoK) guarantee called up. For KBC, the loan in question was an Overseas Economic Cooperation Fund (OECF) (Japan) that was contracted in 1989 and guaranteed by GoK, in respect of the KBC Modernization Project. KBC has not paid GoK any portion of this loan, but has continued to accumulate the liability in the form of loan principal and interest amounts in its financial statements. This experience of loan accumulation by the Kenyan state corporations is a common feature among the state-owned corporations, as shown under the analysis of results in this study.

Also, the Kenyan presidential report (Republic of Kenya 2013: xiv) noted that, from time to time, the Kenyan government treasury carries out loan restructuring of individual state-owned corporations, involving conversion of debt to equity or debt write-off and subsequent discharge of obligation of the corporations to repay or a combination of both. This increases the liabilities arising from state-owned corporations. The report acknowledged that, given growth plans of Kenya, under Kenya Vision 2030, it is expected that the level of debt within most of the state corporations will continue rising. The report argued that the key concern will be to enhance the efficiency and effectiveness in applying this debt to support the national development effort. Therefore, in recognition of the debt financing challenges facing the Kenyan state-owned corporations, this study attempted to identify the factors influencing debt financing within income-generating state-owned corporations and whether their debt financing decisions affect their financial performance.

## **2.6 CONCLUSION**

Since the focus of the study is on debt financing of state-owned corporations in Kenya, this chapter presented the review of literature highlighting the link between debt financing decisions of state-owned corporations and the public-sector financial management. The review showed that the public-sector financial management, which involves government budgeting, financing, expenditure management, accountability, financial reporting and

auditing, has been undergoing some considerable reforms over the last decades. The public-sector financial management reforms have been embraced the world over, with Europe and America taking the lead, followed strongly by Asia, and Africa, including Kenya, which is not far behind. The public sector financial management reform agenda has focused mostly on improving efficiency and accountability within the governmental units, including state-owned corporations. The reformists believed that by way of enhanced economic or market-based management, such as market-based debt-financing decisions, the efficiency and accountability of the governmental units, which have been in question for a while, will be improved.

The reforms have led to either the total release of state-owned corporations to the private sector through privatisation or partial release, combined with enhanced independence of the management to practise professionalism in decision making. Therefore, the literature has shown that the financial management practice, especially in debt financing, has changed within the state-owned corporations worldwide. This has led to the improved financial performance of state-owned corporations, especially from states that embraced the reforms positively. The literature also showed that the Kenyan economy is on a positive track and the government has embraced the public-financial management reforms within its state-owned corporations. It is believed that this restructuring, combined with improved economic performance, will translate to better financial performance within the Kenyan state-owned corporations. This study, therefore, underscored the impact of the new public-sector financial-management practice (debt financing) on financial performance of state-owned corporations in Kenya.

The next chapter provides a theoretical, empirical and conceptual framework discussion on debt-financing in line with the highlighted objectives of the research.

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## **CHAPTER THREE**

### **DEBT FINANCING FOR CORPORATIONS**

#### **3.1 INTRODUCTION**

The use of debt as a tool for financing investments of corporations, including state-owned corporations, has remained a common feature in the financial statements of corporations. However, Frank and Goyal (2005: 137) argued that the complexity of the problem of financing is immense and a challenge for development of rational theories. In the mid 50s, Weston (1955: 130) tried to find out whether it was possible to come up with reasonable theories about these matters. After this initial work of Weston, a large number of facts and theories have been proposed in this field of financial management. However, there is no clear demarcated debt financing theories used only for state-owned corporations. There is a belief that the state-owned corporations pursue commercial objectives and, therefore, the common debt financing theories for corporations should be applicable in their financing decisions. In contrast, the state-owned corporations have a strong social and political influence which may not allow them to pursue commercial objectives fully (Capalbo and Palumbo 2013: 39). Hence, this chapter focuses on literature on debt financing theories, factors influencing debt financing, debt financing types and levels within corporations and financial performance of corporations. The chapter concludes with a review of empirical studies on debt financing and financial performance and a conceptual framework of the study.

#### **3.2 DEBT FINANCING**

Debt financing is the main element of external financing for corporations raising extra funds after creation (Baltacı and Ayaydın 2014: 53). There has been a major increase in external financing over the years, particularly evident during the periods of economic expansion of corporations (Mizruchi and Stearns 1994: 136). The majority of corporations looking for external financing options use debt financing rather than equity financing (Goswami and Shrikhande 2001: 39). They argue that this is the case for most corporations from different industrialized economies of the world since expansion of productive activities, both in local and foreign countries, gives multinational corporations the choice of financing with debt in local and international capital markets. According to O'Brien and David (2010: 51), Mayer

(1988), in his study of new issues in corporate finance, put debt financing at 90% percent of all new external financing.

Debt financing has both an advantage and a disadvantage on the growth of corporations and for their strategic investments (O'Brien and David 2010: 52). According to Fama and French (2002: 1), the benefits of debt financing include the tax deductibility of interest and the reduction of free cash flow problems, while the costs of debt financing include potential bankruptcy costs and agency conflicts between stockholders and debt holders. Therefore, in making debt financing decisions, managers try to create a balance between the corporate tax advantages of debt financing and the costs of financial distress that arise from bankruptcy risks (Kraus and Litzenberger 1973: 911) and agency costs (Jensen and Meckling 1976: 5). Extensive research has been done, trying to give an explanation on how to create the best level of debt financing that takes into account the advantages and the risks, but none has come up with a conclusive theory so far (Myers 1984: 575). However, financial management literature has accepted some conditional theories of debt financing

### **3.3 THEORIES OF DEBT FINANCING**

In one of his early studies, Myers (2001: 81) argued that there is no universally accepted theory of debt-equity choice and there is no reason to expect one. Nevertheless, he assents to the fact that there are a number of conditional theories which have been established. The accepted theories start with the celebrated capital structure irrelevance proposition by Modigliani and Miller (1958: 268), developed in 1958. They argued in their first proposition that the market value of any firm is independent to its capital structure and is given by capitalizing its expected return at the rate appropriate to the risk class. Simply put, the debt financing level of the firm has no effect on the value of the corporation. The proposition was theoretically very sound but was based on the assumptions of perfect capital market and no tax world, which are not valid in reality.

The Modigliani and Miller paper inspired serious research dedicated to challenging the irrelevance proposition as a matter of theory or as an empirical matter. These consequential researches have shown that the Modigliani–Miller theorem does not apply under a selection of conditions (Frank and Goyal 2005: 140). The most frequently adopted conditions include consideration of taxes, transaction costs, bankruptcy costs, agency conflicts, adverse

selection, lack of division between financing and operations, time-varying financial market opportunities, and investor clientele effects.

Since so many different conditions that may affect debt financing levels within a corporation are available, it is not surprising that many different theories have been proposed after the Modigliani and Miller proposition. Most corporate finance literature point to the “trade-off theory”, in which taxation and deadweight bankruptcy costs are taken into consideration (Frank and Goyal 2009: 1). Myers (1984: 581) proposed the “pecking-order theory” in which there is preference of retained earnings, debt and then equity. Frank and Goyal (2009: 1) argued that the idea that firms engage in “market timing” has also become popular, especially for publicly-traded corporations. Finally, the “agency theory” lurks in the background of much of the theoretical discussion. Agency concerns are normally included in the trade-off framework when deduced broadly. Each theory, however, has tried to explain the reasons behind the choice between debt financing and other forms of financing.

### **3.3.1 Trade-off theory**

The term trade-off theory describes a host of related theories (Frank and Goyal 2005: 141). In all of these theories, the main goal is to maximize the corporation’s value by determining the optimal debt financing level. According to the theory, a firm’s optimal debt financing level is determined by a trade-off between the costs and advantages of borrowing, holding the firm’s assets and investment plans constant (Myers 1984: 578). It, therefore, means that the corporations will seek debt financing levels that balance the tax advantages of additional debt against the possible bankruptcy costs (Myers 2001: 81). According to Myers, the trade-off theory is easily accepted because it explains why firms do not use excessive debt. On the other hand, Hackbarth, Hennessy and Leland (2007: 1389) argued that “*existing trade-off models analyze the optimal amount of debt, but provide no guidance on debt structure, i.e. the mix of market versus nonmarket debt and specification of priority*”. After reviewing all the constraints of the trade-off models, Frank and Goyal (2005: 150) analysed the models into static and dynamic trade-off theories, and concluded that the trade-off class of models now appears to be much more promising than it did even just a few years ago.

According to them, a corporation is said to follow the static trade-off theory if the corporation’s debt financing level is determined by a single period trade-off between the tax benefits of debt and the deadweight costs of bankruptcy. On the other hand, a corporation is

said to demonstrate target adjustment or dynamic behaviour if the corporation has a target level of debt financing and if deviations from that target are gradually removed over time. There is also evidence that the debt financing behaviours of corporations can be explained by trade-off theory for the early stages of the life of corporations, for example, Kayhan and Titman (2007: 26) and Fama and French (2002: 14). The results of Dang (2013: 184) also showed that the trade-off theory clearly outperforms the pecking order theory in explaining corporate debt-financing decisions in the UK, Germany and France.

### **3.3.2 Pecking order theory**

The pecking order theory was developed by Myers and Majluf (1984: 187). According to their study, the debt financing level is driven by the desire of the corporation to finance new investments, first from retained earnings, then with low risk debt, and, finally, if all fails, with equity. The theory basically states that the corporation will use debt financing, rather than issuing equity, when internal cash flow is not sufficient to finance investment expenditure (Myers 2001: 81). Unlike the trade-off theory, the pecking order theory does not have a well defined optimal level of debt financing, because there are two kinds of equity, internal (retained earnings) and external, one at the top of the pecking order and one at the bottom (Myers 1984: 581). Myers, in this study, argued that the debt financing level of a corporation reflects its cumulative requirements for external finance. It is also not clear whether the firm will use all the available internal sources of finance first and at what point external equity is introduced. This is commonly referred to as information asymmetry problem.

In reviewing the theory based on the above limitations, Frank and Goyal (2005: 151) argued that the theory seems commonly more prone to emerge from an illustrative model than it is from a unifying model. Illustrative theories show an idea in as clear and straightforward approach as possible, based on some strong assumptions, while a unifying model is supposed to integrate many facts to show that these facts stem from a common underlying structure. Shyam-Sunder and Myers (1999: 242), in their study testing static trade-off against pecking order theory, concluded that the pecking order theory is an outstanding first-order descriptor of corporate debt-financing level mostly for established corporations.

### **3.3.3 Market timing theory**

Market timing is a relatively old concept in debt-financing decisions which is having a renewed surge of fame in the scholarly literature (Frank and Goyal 2009: 7). According to

Baker and Wurgler (2002: 1), in corporate finance, market timing refers to the exercise of issuing shares at high prices and repurchasing them at low prices with an intention of exploiting temporary fluctuations in the cost of equity relative to the cost of debt capital. They believe that debt-financing level decisions change as a result of the cumulative outcome of past attempts to time the capital market. Managers, therefore, have benefits to time the market if they think it is possible and if they care more about current equity owners.

There is evidence from a number of literature studies that focus on external financing decision claims, which argued that managers attempt to time equity markets by issuing shares at high market prices and repurchasing shares at low market prices, while increasing debt financing levels (Mahajan and Tartaroglu 2008: 755). They argued that apart from the theory being one of the acceptable behavioural finance theories of external financing, the market timing theory also provides an alternative explanation for debt-financing decisions. Further, Baker and Wurgler (2002: 4) argued that the significance of using historical market-to-book ratio in explaining leverage, under market timing theory, is inconsistent with the trade-off theory. In trade-off framework, as corporations adjust to their optimal capital structure, temporary shocks such as market timing attempts should not have a long-lasting effect on the debt financing decisions of the corporation. Consequently, this makes market timing theory a better alternative explanation for debt-financing behaviours within corporations.

On the other hand, market timing theory is believed to have generated significant controversy because it is at odds with several theories of capital structure (Mahajan and Tartaroglu 2008: 755). They argued that several recent studies question the persistent impact of market timing attempts as well as the interpretation of historical market-to-book ratio. Alti (2006: 1708) argued that *“while previous studies find convincing evidence of timing attempts by firms, quantifying the extent to which timing considerations affect financing activity has proved more problematic: commonly used measures of market timing typically correlate with other determinants of financing policy”*. Mahajan and Tartaroglu (2008: 765), studying corporations from different countries, also found that the effect of market timing on debt-financing levels is short lived since the effect is neutralized within a short period after the initial equity issuance. However, Elliott, Koëter-Kant and Warr (2008: 1) found from their study of non-financial corporations that market timing plays a significant, if not dominant, role in the debt-financing decisions. Market timing facts can be lumped in the pecking order

model since the information asymmetry problem of the pecking order theory includes market timing issues, when looked at broadly (Frank and Goyal 2005: 153).

### **3.3.4 Agency theory**

The agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. Basically, the argument is that debt financing requires managers to explain the investment details to debt providers and, therefore, expose themselves to monitoring by the debt investors (Frank and Goyal 2005: 154). Managers detest this process of their investments being exposed to screening and prefer retained earnings to external financing. Jensen and Meckling (1976: 2-4) and others, like Harris and Raviv (1991: 300), Stulz (1990: 17) and Leland (1998: 1213), developed these concepts into the agency theory. The agency theory, therefore, suggests that a high debt-financing level reduces the agency costs of outside equity and increases the corporation's value by constraining or encouraging managers to act extra hard in the interests of shareholders (Berger and Bonaccorsi di Patti 2006: 1066). The debt financing level is determined by agency costs, which arise from conflicts of interests between the managers and the equity shareholders (Jiraporn, Kim, Kim, and Kitsabunnarat 2012: 210).

The agency theory is an important model, yet controversial (Eisenhardt 1989: 57). Its proponents argued that it is a revolution and puts in place a foundation for a powerful theory of organisations. Its detractors called it trivial, dehumanising and dangerous. However, Eisenhardt (1989: 58) noted that the agency theory is applicable in various situations, ranging from macro-level concerns, such as regulatory policy, to micro-level experiences such as blame, impression management and other expression of self-interest. However, in most cases, agency theory has been applied to organisational matters such as acquisition and diversification strategies, board relationships, ownership and financing (Eisenhardt 1989: 59).

In financing decisions, the agency theory controversies arise on the empirical tests' evidence in the debt-financing literature, which gives mixed results (Berger and Bonaccorsi di Patti 2006: 1067). The absence of clear-cut evidence could be fairly explained by the inherent complexity in defining a measure of performance that is close to the theoretical definition of agency theory costs. The measures of a corporation's performance are usually ratios calculated from financial statements or stock-market data. These measures usually do not offset the effects of variations in exogenous corporation-specific factors that may affect the

value of the corporation, but are not within the control of the management and, therefore, cannot reflect agency costs (Berger and Bonaccorsi di Patti 2006: 1067). In addition, it is believed that agency concerns are normally included in the trade-off framework when trade-off theory is deduced broadly (Frank and Goyal 2009: 1).

### **3.3.5 Other theories**

Additional theories, to the aforementioned, have been highlighted in the recent past. Jensen (1986: 324) developed the free cash flow theory in which he argued that free cash flows allowed firms' managers to finance projects earning low returns which might not be funded by the equity or bond markets, hence, reducing debt financing. The free cash flow theory can be incorporated within the agency costs theory since it is argued that free cash flow reduces agency costs (Agrawal and Jayaraman 1994: 139). Myers and Majluf (1984: 219) contributed to the asymmetric information hypothesis in debt financing. They argued that asymmetric information problems drive the capital structure of firms since managers know more than the rest of the market about their firm's value (information asymmetry) and the market penalizes the issuance of securities, including debt, whose benefits related to the assessment of such information. Myers (1984: 577) incorporated the idea in the pecking order theory arguing that the pecking order theory predicts that companies should use stock issuances to cover financing deficits only as a last resort, after cheaper, less information-sensitive alternatives (like internal cash, bank debt, or public debt) have been exhausted.

Berger, Ofek, and Yermack (2012: 1414) highlighted that there are theoretical arguments and some empirical evidence that point to the possibility that managers can become entrenched, and that they may deviate from choosing optimal debt financing as a result. The argument is referred to as the managerial entrenchment theory, which suggests that entrenchment motives may cause managers to increase the debt-financing level beyond the optimal point, in order to inflate the voting power of their equity stakes and reduce the possibility of takeover attempts (Harris and Raviv 1988: 56). Since managerial entrenchment involves management control issues, it affects the agency costs, and can be lumped into the agency costs theory of debt financing. Research on debt financing theories is yet to be concluded (Myers 2001: 81). This study is, therefore, an additional contribution to the wealth of financial management epistemology already in existence in the area of debt financing.

### **3.4 FACTORS INFLUENCING DEBT FINANCING**

The factors that influence debt-financing choice remain indefinite despite much theoretical literature and the reassurance of decades of empirical tests (Frank and Goyal 2009: 1). A number of studies, like Jõeveer (2013: 294); De Jong, Kabir and Nguyen (2008: 1954); Kayo and Kimura (2011: 358) and Frank and Goyal (2009: 3), categorised the factors that influence debt financing into corporation characteristics or specific factors, macroeconomic factors or country specific factors. Corporation specific factors are those factors which are distinct to each individual corporation, while macroeconomic factors are economic factors of the country which have a common effect to all the corporations within the country.

#### **3.4.1 Corporation factors**

Corporation specific factors have remained the main focus of debt financing studies (Kayo and Kimura 2011: 358) from the second proposition of Modigliani and Miller (1963: 434) to the current studies, like Jõeveer (2013: 294); Majumdar (2012: 22); Frank and Goyal (2009: 3); Antoniou, Guney and Paudyal (2008: 59) and Deesomsak, Paudyal and Pescetto (2004: 387). The corporation specific factors influencing debt financing from the above studies, include corporation profitability, corporation size and growth, nature of assets, non-debt tax shields, liquidity and probability of bankruptcy. Other corporation factors, like corporation tax rates, business risk, access to capital markets, the finance manager's gender and the composition of the board of directors, are also considered to have influence on debt financing (Jõeveer 2013: 103; Antoniou, Guney and Paudyal 2008: 77).

##### ***3.4.1.1 Profitability***

Profitable corporations are believed to face reduced expected costs of financial distress and find interest-tax benefits more important (Frank and Goyal 2009: 7). Therefore, the tax benefit and the bankruptcy costs' perspective predict that profitable corporations should use more debt. However, the benefit is expected to be low within the state-owned corporations in Kenya, since most of them are exempted from taxation. In addition, the agency costs' perception expects that the restraint provided by debt financing is more valuable for profitable corporations since these corporations are prone to having stern free cash-flow problems (Jensen 1986: 324). In contrast, profitable state-owned corporations in Kenya may borrow less to avoid the restraint provided by debt financing in the process of serving the political interests.

On the other hand, Deesomsak, Paudyal and Pescetto (2004: 394) argued that they expect an inverse relation between profitability and debt financing levels since the pecking-order theory suggests that managers prefer to finance investments internally because of the informational asymmetry between managers and outside investors. Thus, profitable corporations will prefer not to raise external funds in order to avoid potential dilution of ownership and additional external monitoring. The theory of debt financing and profitability, therefore, predicts both a positive relationship, which supports the trade-off theory, and a negative relationship which supports the pecking order theory (Kayo and Kimura 2011: 360). The empirical findings discussed below confirm the same argument and this study shows which of the hypotheses are adopted by the Kenyan state corporations.

#### ***3.4.1.2 Corporation size***

The corporation size is also a very important factor that influences a corporation's debt financing decision (Kayo and Kimura 2011: 360). The trade-off theory suggests a positive relation between corporation size and debt financing level, since larger corporations have been revealed to have lower bankruptcy risk and relatively lower bankruptcy cost (Deesomsak, Paudyal and Pescetto 2004: 394). The larger corporations may also be more diversified (Titman and Wessels 2012: 6). In addition, Deesomsak, Paudyal and Pescetto argue that large corporations have lower agency costs of debt, relatively smaller monitoring costs, less volatile cash flows, easier access to credit market, and require more debt to fully benefit from the tax shield. Therefore, according to this hypothesis, corporation size is expected to have a positive impact on debt-financing level. Furthermore, larger companies, believed generally to be more transparent, tend to have larger debt levels and can issue larger amounts of debt, thus allowing them to spread the issuing costs (Byoun 2008: 3077).

However, Rajan and Zingales (1995: 1451) argued that this relationship could be either positive or negative. Their positive relationship argument supports the above trade-off suggestion, while, for the negative relationship, they say that asymmetric information problems are likely to be smaller in larger corporations. Thus, it would be possible for larger corporations to issue new shares instead of debt financing without a reduction in their market values. However, with the low activity and efficiency within the capital market in Kenya, the state-owned corporations raise funds through grants and issuing more shares to the government and other government agencies. Again, by testing the relationship between firm

size and debt financing, there are two possible results supported by different theoretical perceptions. A positive relationship indicates the importance of diversification and the negative relationship advocates for the role of information asymmetry.

#### ***3.4.1.3 Corporation nature of asset (tangibility)***

It is believed that corporations operating with more tangible assets have a higher debt capacity (Byoun 2008: 3077). Kayo and Kimura (2011: 360) suggested that asset tangibility plays an important role on debt financing decisions since the collateral capability of tangible assets in place tend to increase debt-financing levels. In addition, the agency theory proposes that corporations with high debt-financing levels tend to under invest, or invest below their optimal investment levels, and thus transfer wealth away from debt holders to equity holders (Deesomsak, Paudyal and Pescetto 2004: 392). They argued that these low optimal investment levels and transfer of wealth to equity holders will cause debt holders to require collateral because the use of secured debt can help alleviate this problem. They also argued that the liquidation value of the firm increases with the tangibility of assets and decreases the probability of mispricing in the event of bankruptcy. Therefore, the existence of tangible assets within the corporation's assets serves two critical purposes; it enables the corporation to pledge them as collateral, thereby, reducing the agency costs of debt, like risk shifting, and, at the same time, protects the debt holder in the event of liquidation (Rajan and Zingales 1995: 1451). It means that corporations with difficulties in providing collaterals are prone to pay the higher interest, or may be forced to issue equity instead of debt finance, which implies a positive relationship between tangibility of assets and debt financing.

Asset tangibility can also discourage debt financing since a larger proportion of tangible assets in a corporation's asset portfolio is expected to reduce supply-side constraints (Majumdar 2012: 5). According to Frank and Goyal (2009: 9), the pecking order theory makes opposite predictions since low information asymmetry associated with tangible assets makes equity issuances less costly. This may be the case for state-owned corporations in Kenya with higher tangibility, since the political influence may not allow them to use their assets as collateral. Thus, debt-financing levels should be lower for state-owned corporations with higher tangibility.

#### ***3.4.1.4 Corporation growth***

Generally, theoretical studies suggest that corporation growth opportunities are negatively related with debt-financing levels (Huang and Song 2006: 20). Growth increases costs of financial distress, reduces free cash-flow problems, which the corporation managers tend to protect, hence, making worse debt financing related agency problems (Frank and Goyal 2009: 8). According to the authors, growing corporations put a lot of emphasis on investments that benefits the shareholders; hence, the trade-off theory predicts that growth reduces the debt financing level. Titman and Wessels (2012: 4) agreed with this argument and suggested that the cost associated with the agency relationship is expected to be higher for corporations in growing industries, which have more flexibility in their choice of future investments.

Therefore, the expected future growth should be negatively related to debt financing levels. Deesomsak, Paudyal and Pescetto (2004: 394) put it more simply that higher growth opportunities give more benefits to invest sub-optimally, or to accept risky projects that take wealth from debt holders. This, they argued, raises the cost of borrowing, especially amongst the state-owned corporations, and thus, growing corporations tend to use internal resources or equity capital rather than debt. In addition, the state-owned corporations in Kenya, with high growth and whose value comes from intangible growth opportunities, may not want to commit themselves to debt servicing as their revenue may not be available when needed.

Nevertheless, growth opportunities can also compare positively with leverage, in line with the pecking order presumption (Kayo and Kimura 2011: 359). According to Frank and Goyal (2009: 8), the pecking order theory implies that corporations with more investments, holding profitability constant, should accumulate more debt over time. Thus, growth opportunities and debt financing are positively related under the pecking order theory. In addition, the pecking order of debt-financing decisions derives from the asymmetric information between managers and investors (Kayo and Kimura 2011: 359). In terms of asymmetric information propositions, Myers and Majluf (1984: 219) argued that managers tend to issue new shares when prices are overvalued, thus benefiting old shareholders. This scenario may cause new shareholders to demand a discount on the new shares price and result in managers avoiding the issuing of new shares, even though this decision can make firms ignore profitable investments. This behaviour, therefore, may increase issue of debt instead of equity, thus increasing debt financing levels. However, the asymmetric information propositions may not

work perfectly in Kenya due to the low efficiency within the stock market (Kayo and Kimura 2011: 359).

#### ***3.4.1.5 Corporation risk***

Corporation risk or volatility is a measure for the probability of financial distress and it is generally expected to be inversely related with the debt-financing level (Huang and Song 2006: 20). According to Frank and Goyal (2009: 10), corporations with more volatile cash flows face higher expected costs of financial distress and should use less debt. Furthermore, volatile cash flows are capable of reducing the probability of tax benefits being used. Therefore, higher risk should result in low debt financing under the trade-off theory. Deesomsak, Paudyal and Pescetto (2004: 394), looking at corporation risk from the point of corporation's earning, argued that higher volatility of earnings increases the probability of financial distress, since corporations may not be able to fulfil their debt-servicing contacts. This implies that the debt-financing level of a corporation decreases with increase in earnings volatility, leading to an expected inverse relationship. This may be the case for the state-owned corporations in Kenya, which are believed to have a strong political influence in their management practice (Njeru 2013: 3).

In their further analysis of the risk corporation, Frank and Goyal (2009: 10) suggested that it should be expected that corporations with volatile equity shares are those which are very risky, and such corporations may suffer more from adverse selection in the stock markets. Therefore, according to the pecking order theory, these corporations, being riskier because of their volatile stocks, would predict a higher debt-financing level. In addition, Frank and Goyal (2009: 10) argued that even corporations with volatile cash flows might need to periodically access the external capital markets, thereby increasing debt financing levels.

#### ***3.4.1.6 Corporation tax rate***

Corporation tax rates should influence debt financing since debt-interest payments are typically tax deductible whereas dividends payments are not (Antonczyk and Salzmann 2014: 136). It is, therefore, logical that higher tax rates, like in Kenya, will imply greater interest tax shield benefits and, consequently, induce more debt financing rather than equity financing (Jõeveer 2013: 295). This reasoning is the main theme of a pioneering study by Modigliani and Miller (1963: 434) and almost all researchers now believe that corporation taxes should be significant to a corporation's debt financing decisions (Huang and Song 2006: 19).

However, for state-owned corporations, especially in Kenya, which sometimes get tax subsidies from the government, may not have greater interest tax shield benefits and hence, less use of debt financing.

#### ***3.4.1.7 Liquidity***

Theoretically, corporations with more liquid assets can use them as another internal source of funds instead of debt, leading to lower debt-financing levels, according to the pecking order theory (Öztekin and Flannery 2012: 91). In addition, managers can manipulate liquid assets in favour of shareholders against the interest of debt holders which increases the agency costs of debt financing and reduces debt-financing levels (Deesomsak, Paudyal and Pescetto 2004: 394). This is most probable within state-owned corporations in Kenya, where the politically appointed managers may use the liquid assets in favour of the government (shareholders) and avoid debt financing which increases agency costs.

#### ***3.4.1.8 Non-debt tax shield***

Other items, apart from interest expenses, that contribute to tax payments decrease, for example, the tax deduction for depreciation and provision for bad debt are labelled as non-debt tax shields (Bauer 2004: 163). According to DeAngelo and Masulis (1980: 21), corporations that have non-debt tax shields are likely not to use fully the debt-tax shield that comes from debt interest. In other words, corporations with sufficient investments, tax credits or depreciation deductions are likely to use less debt financing (Kouki and Said 2012: 220). This may be the case for state-owned corporations in Kenya, with less debt tax shield benefits. They may use non-debt tax shields as substitutes for a debt-related tax shield and, therefore, the relationship between non-debt tax shields and debt financing should be negative (Lim 2012: 195).

#### ***3.4.1.9 Probability of bankruptcy***

Higher probability of bankruptcy implies high bankruptcy costs; hence, the trade-off hypothesis predicts a negative relationship between probability of bankruptcy and debt financing (Kayo and Kimura 2011: 360). In addition, the greater political influence within the state-owned corporations in Kenya also increases the probability of bankruptcy and keeps away the debt providers. However, larger corporations are often more diversified and have more stable cash flow. Therefore, the probability of bankruptcy for large firms is smaller compared with smaller ones (Titman and Wessels 2012: 6). Thus, according to the pecking

order hypothesis, larger profitable firms should use more of their internally generated funds; reducing the debt-financing levels. The pecking order argument implies that large corporations with less probability of bankruptcy can have less debt-financing levels.

### **3.4.2 Macroeconomic factors**

Macroeconomic factors are regional or national economic factors which externally influence the corporation's financial strategies, including debt financing decisions. Financial management literature recognizes the important role that macroeconomic factors play in the determination of capital structure decisions of firms (Lemma and Negash 2013: 1089). Recent and past literature identifies the gross domestic product (GDP), inflation rate, interest rate, financial institutions' activities and industry median as the common macroeconomic factors which have an influence on the debt-financing decisions of corporations (Mokhova and Zinecker 2014: 533; Baltacı and Ayaydın 2014: 50; Lemma and Negash 2013: 1090; Jõeveer 2013: 103; Kayo and Kimura 2011; Frank and Goyal 2009: 3; Deesomsak, Paudyal and Pescetto 2004: 395).

#### ***3.4.2.1 Gross domestic product***

It is believed that a country's economic development level reflects the wealth disparity between them, and, hence, access to finance including debt financing (Lemma and Negash 2013: 1090). During expansions, stock prices go up, expected bankruptcy costs go down, taxable income goes up, and cash increases, which leads to more debt financing within corporations (Frank and Goyal 2009: 11). Frank and Goyal (2009: 11) further argued that, during expansion, the corporations' assets will increase and if corporations borrow against collateral then debt financing levels should increase. Therefore, according to Jõeveer (2013: 298), the gross domestic product growth rate, which is used as a proxy for growth opportunities, should have a positive relationship with debt-financing levels of corporations.

However, Mokhova and Zinecker (2014: 533) argued that the boost in economy and, consequently, growth in the gross domestic product will lead to an increase in corporations' profits. According to the pecking order theory, corporations will prefer internal sources of financing, thereby causing reduction in debt-financing levels. Frank and Goyal (2009: 11) also noted that if the pecking order theory holds, then debt financing should decline during expansions since internal funds increase during expansions and agency problems between shareholders and managers are less severe. Consequently, corporations should issue less debt.

In contrast, state-owned corporations, especially in Kenya, also have social and political objectives to pursue; economic development level reflected by the gross domestic product may not have influence in the wealth disparity between them. Hence, gross domestic product may have no effect on their access to finance including debt financing.

#### ***3.4.2.2 Inflation rate***

Inflation is considered one of the main indicators of a country's stability and increase in the inflation rate causes uncertainty in economic conditions (Baltacı and Ayaydın 2014: 50). The authors argued that this uncertainty causes inability of corporations to repay their debt. Gungoraydinoglu and Öztekin (2011: 1467) also argued that higher inflation decreases the benefits of debt financing because of higher bankruptcy costs of debt imposed on corporations. In addition, Drobetz, Gounopoulos, Merikas and Schröder (2013: 67) argued that, in periods with higher inflation rates, corporations use currently weak currencies to repay debt and, in turn, lower their debt-financing levels. It is, therefore, expected that inflation rates should be negatively related to corporations' debt financing levels.

On the other hand, Jõeveer (2013: 295) maintained that the expected inflation is predicted to be positively related to debt financing due to higher real value of tax deductions on debt. In support of a positive relation, Frank and Goyal (2009: 11) argued that market timing in debt markets also results in a positive relation between expected inflation and debt financing if managers issue debt when expected inflation is high relative to current interest rates. In Kenya, the inflation rates have not been stable since 2007, and it will be important to find its effect on debt financing for most state-owned corporations.

#### ***3.4.2.3 Interest rates***

In the presence of other variables such as taxation and bankruptcy costs, changes in interest rates can influence debt financing levels within a corporation, since corporations are more likely to use debt when the cost of borrowing is low (Deesomsak, Paudyal and Pescetto 2004: 395). They argued that, under this hypothesis, the level of interest rates is expected to be negatively related to debt-financing levels. Deesomsak, Paudyal and Pescetto (2004: 395) further noted that interest rates also incorporate inflation expectations and, therefore, corporations could be expected to change from equity to debt financing when interest rates are increasing. In this case, the level of interest rates is expected to be positively related to leverage. As aforementioned, the interest rates in Kenya showed an increasing trend over the

five-year period-2007 to 2011, and it will be important to determine its effect on debt financing within state-owned corporations.

#### ***3.4.2.4 Industry median***

It would be logical to expect that specific characteristics of a given industry could also influence the debt-financing decisions of corporations (Baltacı and Ayaydın 2014: 51). Frank and Goyal (2009: 8) argued that corporations in an industry face common factors that affect their financing decisions and these could reflect on product-market interactions or the nature of competition. It could also reflect on industry heterogeneity in the types of assets, business risk, technology or regulation. Therefore, according to the authors, while looking at industry median in terms of growth, the trade-off theory predicts that higher industry median growth should result in less corporation debt financing. However, in terms of industry debt-financing levels, higher industry median debt levels should result in more corporation debt financing.

Frank and Goyal (2009: 8) further looked at the corporations in terms of industry regulations. The authors argued that regulated corporations have stable cash flows and lower expected costs of financial distress. Therefore, they should have more debt. However, managers have less discretion in regulated corporations, which reduces the severity of shareholder-manager conflicts and makes debt financing less desirable from a control perspective. They concluded that the trade-off theory makes an ambiguous prediction on the effect of regulation on leverage. Secondly, under a pure pecking order perception, the industry should only matter to the extent that it serves as a proxy for the financing deficit of a corporation, making it an indirect link. Thirdly, under the market timing theory, the industry should matter only if valuations are correlated across firms in an industry.

#### ***3.4.2.5 Financial or debt market conditions***

The literature also considers the level of conditions of financial institutions as another important factor that influence debt-financing decisions of a corporation (Lemma and Negash 2013: 1089). De Jong, Kabir and Nguyen (2008: 1954) argued that, when a bond market in a given country is highly developed, issuing and trading bonds are easier and leads to higher levels of corporate debt financing.

In contrast, they also acknowledged that, when the stock market is developed, the debt-financing level of corporations tends to be lower because the broader supply of funds

decreases the cost of equity. Deesomsak, Paudyal and Pescetto (2004: 395) also noted that financial market development plays an important role in the debt-financing choice of a corporation. They argued that, as stock-market activity increases, preference of corporations for equity over debt also increases. Therefore, stock-market activity is expected to be inversely related to debt financing. However, the stock market in Kenya has remained more active with equity issues than debt financing securities. This may discourage corporations, such as state-owned corporations, from venturing into stock-market debt instruments, like bonds, as a means of debt financing.

#### ***3.4.2.6 Other factors***

Additional institutional factors should be included as alternative measures of the severity of asymmetric information (Jõeveer 2013: 103). In his study, Jõeveer (2013: 103) included the corruption index of corporations and argued that it is expected that the higher the corruption perception index (means lower corruption), the less severe is the asymmetric information problem. Hence, the positive relation between the corruption index and the debt-financing level is expected. Jõeveer (2013: 155) and Bassey, Arene and Okpukpara (2014: 44) also studied the effect of the age of the corporation and debt financing and found that they are negatively correlated. This study investigated the above-mentioned macroeconomic factors and corporation specific factors including the rule of law and the gender of financial managers.

### **3.5 TYPES OF DEBT FINANCING WITHIN CORPORATIONS**

The diversity in the types of financing is significant since innovation in financing methods continues rapidly. According to Myers (2003: 2), the composition of financing types varies cross-sectionally, within apparently homogeneous economic sectors, and also over time, even when markets, institutions, regulation and taxation are apparently constant.

#### **3.5.1 Internal and external financing**

Generally, the investments of corporations can be financed by either internal or external sources of funds. Internal financing is the use of funds that are generated within a corporation, rather than from external sources, for example, undistributed profits and the tax liability savings that result from depreciation. On the other hand, external financing involves getting funds from an outside source without giving goods or services in return. Bosworth,

Smith and Brill (1971:254) argued that there has been an explosive increase in external financing over the years, particularly evident during the periods of economic expansion of corporations (Mizruchi and Stearns 1994: 136). The major source of external finance is debt financing, compared to equity external funds.

### **3.5.2 Public and private debt**

Due to the increased global financial advancements, it is not possible to have specific types of debt financing. However, in general, classification of sources of debt financing can be varied depending on the characteristics of the provider and the debt's maturity period. Anderson and Makhija (1999: 311) categorised debt into public or arm's-length debt (monitored debt), typically supplied by commercial banks and suppliers of goods and services. Chen, Cheng and Lo (2013: 755), reviewing the same categories, referred to them as public versus private debt.

Public debt financing is the process of obtaining funds from the securities markets by issuing different types of debt stocks of corporations. The debt stock of corporations is currently referred to as bonds or notes, in general. However, in advanced securities markets, such as in America and Europe, the corporation can raise funds through different kinds of bonds or notes depending on the corporation's needs. The common bonds or notes used in these markets are either domestic or international (foreign). Domestic bonds or notes are those issued by the corporation in their local stock markets, while, international bonds or notes, are those issued in the foreign stock markets. Another kind of a public bond can arise through the issuance of a preferred stock, which has similar characteristics as equity stock, but their holders have no voting rights or ownership rights. The bonds issue has not been very prominent in Kenya, with very few corporations, including state-owned corporations, using this kind of debt financing.

In addition, public debt which matures within one year is referred to as either a commercial paper or a discount note. The American stock markets use the term discount note, while, in Europe, Asia and Africa, the term commercial paper is common. Just like the bonds or the notes, the discount notes or commercial papers can be issued by a corporation either in a domestic or a foreign stock market.

The monitored debt or private debt is that which is provided by the creditor who often demands access to non-public information about the corporation, closely monitors investment decisions, and more efficiently decides whether to liquidate or refinance the corporation during financial distress (Chen, Cheng and Lo 2013). The private debt is, therefore, made up of bank loans and amounts payable to suppliers of goods and services. In the developed and developing economies, the other common types of the private debt are the derivative financial instruments. The derivative financial instruments common in America, Europe, Asia and part of Africa, are the swaps, options and forward contracts, which are mostly used by the corporations in foreign exchange risk hedging.

### **3.5.3 Long-term and short-term debt**

In the debt maturity term perspective, some studies, like Gatchev, Spindt and Tarhan (2009: 179); Berglöf and Von Thadden (1994: 1054) and Benmelech and Dvir (2013: 485), have classified debt-financing sources as either long-term debt or short-term debt. Long-term debt is a type of debt which a corporation has an obligation to pay off within a period longer than the corporation's accounting period. On the other hand, short-term debt refers to debt whose holders expect to be repaid within a short run, normally a period less than the corporation's accounting period. Berglöf and Von Thadden (1994: 1056) argued that the principal reason for the kind of separation is that *"if the firm is doing well in the short run, the short-term creditor is repaid, and long-term claim-holders receive all future returns"*. *"If the firm is unable to repay in the short run, the short-term creditor forces the firm to transfer or sell part of its assets"*. *"The maturity of her remaining claims is extended at the expense of some (not necessarily all) junior long-term claim-holders"*. This type of classification is also adopted by the International Financial Reporting Standards (IFRS), in reporting the outstanding debt in the corporation's statement of financial position.

### **3.5.4 Other categories of debt**

There are some other special types of debt arrangements like lease financing, provisions and deferred tax liability. Lease financing, is a contractual agreement in which a lender, identified on the contract as the lesser, grants the individual (corporation) or group of individuals leasing the product/equipment, identified on the contract as the lessee, the ability to operate the equipment for a given amount of time, identified as the term of leasing, while making specific monthly payments to the lesser or leasing company. Robicheaux, Fu and Ligon (2008: 432), in their study of lease financing and corporate governance, concluded that larger

corporations also tend to use lease financing as a way of reducing the agency cost of debt resulting from the shareholder versus debt-holder relationship.

Deferred tax liability is an account on a corporation's balance sheet that is a result of temporary differences between the anticipated and enacted income tax amount, and estimated taxes payable for the current year (Laux 2013: 1358). This liability may or may not be realized during any given year, which makes the deferred status appropriate and a way of financing the corporation's assets before it is cleared for the accounts. Provision is an amount from profits that has been put aside in a corporation's accounts to cover a future liability, for example, employees' retirement benefit (Logotheti 2014: 1). These funds are always available within the corporations and can be used to finance the activities of the corporation before the actual payments are made.

Taking into consideration the above approaches, this study, using numbers from the corporations' financial statements, firstly classified debt into long-term and short-term, then into various categories of public and monitored or private debt including deferred tax liability and liability provisions.

### **3.6 DEBT FINANCING LEVELS WITHIN CORPORATIONS**

Many diverse empirical measures have been used to show debt-financing levels within corporations (Frank and Goyal 2009: 2). They argue that some scholars advocate for book leverage, which is the proportion of corporation debt finance to the total book value of the corporation assets. Other scholars advocate for market leverage, which is the proportion of corporation debt to market value of the corporation.

#### **3.6.1 Book Leverage**

Book leverage, as a measure of the debt financing level within a corporation, is the proportion of corporation debt finance to the total book value of the assets. According to Frank and Goyal (2009: 2), the opinions of the researchers on which is a superior measure of debt financing level are divergent. Frank and Goyal (2009: 2) argued that supporters of the book leverage approach believe that financial markets swing so much and managers, in many occasions, tend to have a notion that market leverage figures may be unreliable as a guide to corporate financial policy. Since the calculation of book leverage relies on the book value of

the corporation, which is an accounting measure (Chen 2013: 3), managers tend to put more attention on book leverage because debt is better supported by assets in place than it is by growth opportunities.

On the other hand, the calculation of book leverage relies on the book value of equity that is an accounting measure of the net worth of a corporation. However, the financial statements of the corporation might provide an inaccurate assessment of the true value of the corporation's equity (Chen 2013: 3). Chen (2013: 3) argued that many of the assets listed on the financial statements are valued on their historical cost rather than their current true value. The current true value might, however, differ significantly from its book value. Again, many factors might not be recorded on the financial statements of the corporation, such as valuable and/or troubled off balance-sheet assets. As a result, book leverage might not adequately capture the true extent of leverage mainly because of both its natural historical characteristic and its inability to reflect the current values. However, calculation of market value for corporations which are not listed in the stock exchange is not easy; this may make book value leverage popular for studies on unlisted corporations (Brav 2009: 274).

### **3.6.2 Market leverage**

Market leverage, used as a measure of the debt financing level of a corporation, is the proportion of corporation debt to market value of the corporation. In support of market leverage, Knaup and Wagner (2012: 2) argued that the statement of financial position might provide an inaccurate assessment of the true value of a corporation since many of the assets listed on the statement of financial position are mostly valued on their historical cost rather than their current value. Markets are generally believed to be futuristic and numbers generated from them in the calculation of market leverage may be more relevant to the decisions of the corporations managers (Frank and Goyal 2009: 2).

Market-based measures, such as market leverage, do well in evaluating the financial risks associated with the activities of the corporation (Knaup and Wagner 2012: 4-5). They argued that existing literature suggests that investors are able to distinguish between the corporations based on their exposures to certain types of financial risks or asset compositions using the market-based measure. However, calculation of market values for corporations which are not listed in the stock exchange is not easy; this may make book value leverage popular for studies on unlisted corporations like Brav (2009: 274).

In addition to the aforementioned debate on the debt-financing level measure, varied studies also use different definitions of debt. Brav (2009: 273), Fan, Titman and Twite (2012: 33) and others use total debt as the numerator while De Jong, Kabir and Nguyen (2008: 1956) and others use long-term debt. There are other studies like Huang and Song (2006: 21) and Jõeveer (2013: 299) that used both long-term debt and total debt as numerators of the leverage ratio.

Fama and French (2002: 9) and Rajan and Zingales (1995: 1429) suggested that reliance on book leverage is not a serious limitation and most of the state corporations in Kenya are not listed on the stock exchange. This study applied the book leverage and different definitions of debt, i.e., long-term, short-term and total debt, as debt-financing level proxies.

### **3.7 FINANCIAL PERFORMANCE OF A CORPORATION**

Much of the theory in the corporate sector is based on the assumption that the main objective of a corporation should be to maximize the wealth of its current shareholders by improved financial performance (Salehi and Biglar 2009: 97). This is done through maximization of the profits of the corporation and its share value in the stock market (Colin *et al.* 2012: 8). Jones and Felps (2013: 350) argued that shareholders' wealth maximization should not be the sole objective of the corporation, since it takes care of only one stakeholder. The authors proposed that the objective of the corporation should include all the stakeholders' interests, but did not give a measurable alternative to the shareholders' wealth maximization objective. The performance of the corporation is, therefore, the main indicator of how best the corporation uses its resources or investments towards achieving the corporation's objectives (Jones and Felps 2013: 350).

The performance measures of corporations can be categorised into financial and non-financial performance (Milost 2013: 824). According to Milost (2013: 824), financial performance measures are parameters used to evaluate financial performance aspects of a corporation while non-financial performance measures are parameters to evaluate non-financial performance aspects of a corporation, like corporate social responsibility. Luft (2009: 310) acknowledged that non-financial performance measures have accuracy challenges and, therefore, financial performance may be superior in measuring a

corporation's performance. Furthermore, De Wet (2007: 59) argued that, over the years, a number of performance measures have been used on the assumption of having some correlation with corporations' performance, but most financial managers, analysts and researchers have been of the opinion that the performance of a corporation can be determined by using traditional accounting measures of performance like earnings per share, return on assets and dividends per share.

According to Tudose (2012: 78), the assessment of the performance of corporation using financial measures must be complemented by an assessment based on non-financial measures that express the quality of management, corporate culture, the effectiveness of executive compensation policies, the quality of shareholder communication system and others. They argued that, currently, there is a tendency of assessing corporation performance based on value creation, considered under the objective of sustainable development. However, the process of choosing an alternative performance measure may be influenced by the corporation's objective and the most widely used instruments to measure performance are return on assets (ROA) and return on equity (ROE.) (Tudose 2012: 78). Rao, Al-Yahyaee and Syed (2007: 9) also approved that most management researchers favour accounting measures of financial performance, such as return on equity (ROE), return on investment (ROI), and return on assets (ROA), along with the changeability in those returns' measures. As mentioned above, this study, therefore, used these financial performance measures.

### **3.7.1 Financial performance of a corporation and debt financing**

Debt-financing strategy should be designed to increase the rate of return on investment of owners by generating a greater return on borrowed funds than the cost of using the funds. This debt-financing strategy is referred to as financial leverage (Damodaran 1999: 103). The financial leverage increases the potential reward to shareholders (financial performance) and also increases the potential for financial distress and business failure (Colin *et al.* 2012: 23). Therefore, debt-financing strategy will have a positive effect if return on assets (ROA) is greater than the before-tax interest rate paid on debt. A negative effect will occur when a corporation generates a return on assets (ROA) that is less than the before-tax interest on debt. Studies on the relationship between corporations' financing choice and their performance often conclude that debt financing either hurts or boosts performance (Campello 2006: 168).

A study on corporations in the USA and other countries revealed that debt financing potentially increases the value of corporations through the tax deductibility of interest (Kaplan and Strömberg 2008: 14). The use of debt, therefore, reduces the amount of tax to be paid by the firm and increases the return to shareholders, whilst the use of equity does not enjoy such a benefit. In addition to the tax advantage, the cost of debt is generally low as compared to equity due to the lower risk associated with debt, as debt holders have the first claim in the case of insolvency (Colin *et al.* 2012: 508). Debt also makes planning easy because interest cost on debt is usually fixed which allows efficient planning as the cost will be known (Obert and Olawale 2010: 1710). As long as the interest on debt is lower than the return that can be earned on the funds supplied by lenders, this excess return accrues to the owners of the corporation as their benefit of using debt. Though debt has its fair portion of benefits, it does not come without costs. The major costs associated with debt, as discussed, include bankruptcy, agency costs and loss of flexibility.

According to debt financing theories, the relationship between debt-financing and financial performance of a corporation can either be positive or negative (Tudose 2012: 78). Tudose (2012: 78) argued that static trade-off theory, whose fundamental claim is that corporations set a target debt financing level which they attempt to reach, predicts a positive relationship between the debt financing level of a corporation and its financial performance. In addition, the agency costs theory advocates for debt financing as a way of disciplining managers as the debt financing level may be used to monitor managers and reduces agency costs (Berger and Bonaccorsi di Patti 2006: 1066). Thus, according to Tudose (2012: 78), it is expected that increased debt financing, in the perspective of reduced agency costs, may raise the level of efficiency and thereby contribute to upgrading firm performance.

Conversely, according to the pecking order theory, more profitable corporations generate higher earnings that can be used for self-financing, enabling them to opt less for debt financing (Lemmon and Zender 2010: 35). On the other hand, less profitable corporations may not enjoy the same opportunity and might be compelled to take on more debt financing in order to finance their ongoing activity. The pecking order theory, therefore asserts a negative relationship between the debt-financing level and the financial performance of the corporation (Tudose 2012: 78). Given the two propositions on how corporation debt financing relates with its financial performance, it would be important to also analyse the empirical findings from previous studies.

### **3.8 EMPIRICAL FINDINGS**

Myers (2001: 81) argued that there is no reason to expect a generally accepted theory of debt financing. However, several studies have been done and given various empirical results (Strebulaev 2007: 1749). In his additional work of 2003, Myers (2003: 1) argued that it is common to find evidence of each theory at work, since the debt-financing theories are conditional, but it is not easy to distinguish the theories empirically. In a later review of the same theories, Frank and Goyal (2005: 156) organised the available debt-financing evidence into several parts including debt-financing decisions at the aggregate level; cross-sectional evidence on debt financing; debt-financing changes; debt-financing factors and evidence on tests of the two main debt-financing theories (pecking order and trade-off theory). This section of the review looks at the empirical findings from previous studies following the format of Frank and Goyal (2005: 156) and reviews the findings on debt financing and financial performance of corporations.

#### **3.8.1 Empirical findings on levels of debt financing within corporations**

On the aggregate level, studies like Lemmon, Roberts and Zender (2008: 1584); Wright (2004: 573) and Frank and Goyal (2005: 156) found that debt-financing levels seem to be stationary in the long-run. On the other hand, Calabrese (2011: 137), analysing non-profit making organisations, found that debt-financing levels fluctuate over time. His study showed that debt-financing levels are best explained using the pecking order theory in which internal funds are preferred over external debt. This reasoning is in line with Myers (1984: 587), who highlighted that fluctuations in debt-financing levels may be a proof of the basic pecking order theory, while constancy behaviour may be a confirmation for basic trade-off theory of debt financing.

Analysing debt financing into bank loans and market securities, Hackbarth, Hennessy and Leland (2007: 1389) argued that weak firms have high bank loan capacity and exploit bank loans entirely while strong firms balance their lower bank debt capacity by utilizing both bank loans and market securities making bank loans usage senior. Their argument offers evidence for the trade-off theory since they explain why young or small firms use bank debt exclusively, why large or mature firms employ mixed debt financing and why bank debt is senior. Cassar and Holmes (2003: 133), studying small-medium enterprises which are

considered not mature, showed relatively low levels of bank financing amongst these firms and argued that the result was consistent with existing empirical evidence. Guo and Suliman (2010: 1903), in their analysis of debt financing according to industries, argued that debt-financing levels may differ even within homogeneous industries since there may be variations caused by time even when taxation, information differences and agency problems are the same. Their results established various debt-financing levels between the identified industries but the aggregate debt financing level remained quite consistent amongst the industries.

### **3.8.2 Empirical findings on factors influencing debt financing of corporations**

There is no consensus regarding the empirical findings on factors influencing debt financing within corporations. Different studies have given different results depending on the types of corporations, nature of the industry and the economic environment of the country (Mokhova and Zinecker 2014: 534).

#### **3.8.2.1 Profitability**

The pecking order theory assumes that corporations with higher profitability will prefer internal financing to debt financing and, hence, a negative relationship is expected between profitability and debt financing levels (Baltacı and Ayaydın 2014: 49). The majority of studies have confirmed this expected negative relationship, for instance, Deesomsak, Paudyal and Pescetto (2004: 398); Gaud *et al.* (2005: 60); Huang and Song (2006: 27); Antoniou, Guney and Paudyal (2008: 73); Frank and Goyal (2009: 26); Kayo and Kimura (2011: 367); Moosa and Li (2012: 10); Lemma and Negash (2013: 1083); Bassey, Arene and Okpukpara (2014: 43) and Baltacı and Ayaydın (2014: 54).

On the other hand, according to the trade-off theory, more profitable corporations are expected to have more debt repayment capacity and more tax saving from debt-tax shield (Baltacı and Ayaydın 2014: 49). Therefore, according to the trade off theory, when corporations are profitable they may prefer debt to other sources in order to benefit from the tax shield. Hence, a positive relationship between debt financing and profitability is expected (Chakraborty 2013: 117). Few studies, like Oyesola (2007: 22); Chang, Lee and Lee (2009: 211); Gungoraydinoglu and Öztekin (2011: 1467); Kouki and Said (2012: 221) and Chakraborty (2013: 117), have confirmed this positive relationship, especially when two different measures of profitability are used. The profitability in this study was expected to be

negatively related with the debt financing level of corporations since most studies have given a negative result.

### **3.8.2.2 Corporation size**

Most of the empirical findings on the size of the corporation, as a factor influencing debt financing, are consistent with the trade-off theory. According to Dang (2013: 176), the trade-off theory suggests that large corporations face lower financial distress and agency costs and, thus, are able to borrow more than small corporations. The proposition of this theory is that corporation size has a positive effect on debt financing levels. In addition, this expectation conforms to the fact that large-sized corporations with high tangible assets are known to access credits easier than smaller corporations with lack of tangible assets which can be used to secure long-term debt (Bassey, Arene and Okpukpara 2014: 44). The studies that have found a positive relationship between corporation size and debt financing include Bauer (2004: 171); Gaud *et al.* (2005: 61); Huang and Song (2006: 27); Oyesola (2007: 22); De Jong, Kabir and Nguyen (2008: 1961); Kayo and Kimura (2011: 366); Kouki and Said (2012: 221); Jõeveer (2013: 306); Forte, Barros and Nakamura (2013: 362); Dang (2013: 180); Bassey, Arene and Okpukpara (2014: 44) and Baltacı and Ayaydın (2014: 53).

However, according to Baltacı and Ayaydın (2014: 49), the larger corporations face lower information costs and can raise equity capital more easily than the smaller corporations. Therefore, according to the asymmetric information theory, corporation size and the debt financing level may have a negative relationship. Furthermore, the pecking order theory of debt financing predicts that larger corporations, which are more diversified, will use less debt and, hence, expects that the size of the corporation will be negatively related to debt financing. Some studies have observed this negative relation of debt financing and corporation size, for instance, Rajan and Zingales (1995: 1423); Titman and Wessels (1988: 14); Gaud, Hoesli and Bender (2007: 206); Smith (2012: 144); Majumdar (2012: 21) and Chakraborty (2013: 118).

### **3.8.2.3 Corporation nature of asset (tangibility)**

The pecking order theory recognizes a negative relationship between the asset tangibility and debt financing level, whereas the trade-off theory supports a positive one (Baltacı and Ayaydın 2014: 50). Baltacı and Ayaydın (2014: 50) argued that, from a trade-off perception, one expects that corporations with a higher ratio of tangible assets-to-total assets are subject

to lower costs of financial distress, as tangible assets suffer from a lesser loss of value in case of bankruptcy. Also, tangible assets are easier to price for outsiders, resulting in lower information asymmetry, a smaller amount of pronounced agency costs of debt, and a higher debt capacity. On the other hand, the pecking order theory predicts that firms with less collateral face higher information costs and, therefore, favours debt financing to equity financing. Some studies like Deesomsak, Paudyal and Pescetto (2004: 398); Gaud *et al.* (2005: 63); Huang and Song (2006: 29); Antoniou, Guney and Paudyal (2008: 73); Frank and Goyal (2009: 26); Gungoraydinoglu and Öztekin (2011: 1467); Kayo and Kimura (2011: 366); Smith (2012: 144); Dang (2013: 179); Drobetz *et al.* (2013: 51); Lemma and Negash (2013: 1104); Antonczyk and Salzmann (2014: 145) and Bassey, Arene and Okpukpara (2014: 44) have reported a positive relationship between tangibility and debt financing. Other studies, like Bauer (2004: 171); Huang and Song (2006: 29); Daskalakis and Psillaki (2008: 94); Öztekin and Flannery (2012: 107); (Kouki and Said 2012: 222); Lemma and Negash (2013: 1104); Jõeveer (2013: 306) and Baltacı and Ayaydın (2014: 54), reported a negative relationship, especially when more than one measure is used for debt financing levels.

#### **3.8.2.4 Corporation growth**

The expected theoretical relationship between corporation growth opportunities and debt is negative in line with trade-off and agency theories since a corporation's growth increases financial distress and agency cost of debt (Deesomsak, Paudyal and Pescetto 2004: 393). They also argued that, to a small extent, a positive relationship is also expected in line with the pecking order and signalling theories. Most observations have supported the negative relationship between a corporation's growth opportunities and its debt financing level (Bauer 2004: 172; Gaud *et al.* 2005: 63; Huang and Song 2006: 29; Gaud, Hoesli and Bender 2007: 208; Oyesola 2007: 22; Antoniou, Guney and Paudyal 2008: 73; De Jong, Kabir and Nguyen 2008: 1963; Gungoraydinoglu and Öztekin 2011: 1467; Kayo and Kimura 2011: 367; Chakraborty 2013: 117; Dang 2013: 180; Mateev, Poutziouris and Ivanov 2013: 43; Lemma and Negash 2013: 1104).

On the other hand, some observations, like Daskalakis and Psillaki (2008: 93); Chang, Lee and Lee (2009: 211); Kouki and Said (2012: 221); Majumdar (2012: 21); Cortez and Susanto (2012: 129); Forte, Barros and Nakamura (2013: 362); Alzomaia (2014: 61); Antonczyk and Salzmann (2014: 145) and Bassey, Arene and Okpukpara (2014: 44), have shown a positive relationship.

### **3.8.2.5 Corporation risk**

The debt financing of corporations is expected to decrease with increase in earnings' volatility, which is used as a measure of risk, since higher volatility of earnings increases the probability of financial distress as corporations may not be able to fulfil their debt-servicing contracts (Deesomsak, Paudyal and Pescetto 2004: 394). This implies that a corporation's debt-financing level decreases with increase in the corporation's risk, leading to an expected inverse relationship. Bauer (2004: 163) also accepted the fact that the relationship can be positive, especially when the variance of the corporation's assets increases and, in turn, reduces the systematic risk of the equity.

Studies, like Bauer (2004: 172); Deesomsak, Paudyal and Pescetto (2004: 398); Huang and Song (2006: 29); Antoniou, Guney and Paudyal (2008: 77); De Jong, Kabir and Nguyen (2008: 1961); Frank and Goyal (2009: 32); Lim (2012: 197); Drobetz *et al.* (2013: 51); Forte, Barros and Nakamura (2013: 364); Alzomaia (2014: 61) and Baltacı and Ayaydın (2014: 54), have found a negative relationship between corporation risk and debt financing. On the contrary, Gaud *et al.* (2005: 63); Foster and Young (2013: 7) and Lemma and Negash (2013: 1109) found both positive and negative relationships when they used different measures of debt financing level. Most of the studies, as highlighted above, showed a negative relationship, although most of them were not strong and statistically significant (Bauer 2004: 172; Deesomsak, Paudyal and Pescetto 2004: 398; Frank and Goyal 2009: 32).

### **3.8.2.6 Corporation tax**

Most studies fail to find plausible or significant tax effects on debt-financing behaviour since debt-financing measures of debt/equity ratios are the cumulative result of years of separate decisions and tax shields have a negligible effect on the marginal tax rate for most corporations (De Jong, Kabir and Nguyen 2008: 1961). Few studies that have found some reasonable results, like Huang and Song (2006: 32); Antoniou, Guney and Paudyal (2008: 73); De Jong, Kabir and Nguyen (2008: 1961); Foster and Young (2013: 6) and Jõeveer (2013: 306), have established a negative relationship. Conversely, Antonczyk and Salzmann (2014: 146), studying corporations across different countries, identified a positive relationship and Lemma and Negash (2013: 1104) observed both positive relationship, for some countries in Africa, and a negative relationship for others within the continent.

### **3.8.2.7 Liquidity**

The negative relation between debt financing and liquidity is commonly found in the capital structure literature (Smith 2012: 157). Smith argued that this could be because more profitable corporations try to shun the adverse selection costs of outside debt, or because those that are profitable and rich in growth options seek to avoid the debt overhang problem. Debt overhang is the condition where a corporation has great existing debt which cannot allow it to borrow more debt, even though the new debt may be beneficial. Empirically, studies such as Deesomsak, Paudyal and Pescetto (2004: 398); Smith (2012: 157) and Mateev, Poutziouris and Ivanov (2013: 43) confirmed this negative theoretical relationship, while Gungoraydinoglu and Öztekin (2011: 1467), looking at some new international evidence, found a positive relationship between liquidity and debt financing.

### **3.8.2.8 Non-debt tax shield**

As mentioned previously, the theoretical argument is that non-debt tax shields are substitutes for a debt-related tax shield and, therefore, the relationship between non-debt tax shields and debt financing should be negative (Lim 2012: 195). This fact has been confirmed by studies such as Bauer (2004: 172); Deesomsak, Paudyal and Pescetto (2004: 398); Huang and Song (2006: 27); Cortez and Susanto (2012: 130); Lim (2012: 197) and Lemma and Negash (2013: 1105). Contrary to this fact, studies like Oyesola (2007: 25); Antoniou, Guney and Paudyal (2008: 73); Kouki and Said (2012: 221); Chakraborty (2013: 117); Dang (2013: 179) and Antonczyk and Salzmann (2014: 145) found a positive relationship between non-debt tax shields and debt financing.

### **3.8.2.9 Probability of bankruptcy**

As mentioned earlier, higher probability of bankruptcy implies high bankruptcy costs. Hence, trade-off hypothesis predicts a negative relationship between probability of bankruptcy and debt financing (Kayo and Kimura 2011: 360). Justifying this hypothesis, Smith (2012: 160) found a negative relationship using total debt to total assets as a measure of debt-financing level, while Gaud *et al.* (2005: 63) and Kouki and Said (2012: 221) found a positive relationship in support of the pecking order theory of debt financing (Titman and Wessels 1988: 6).

#### **3.8.2.10 Gross domestic product**

Most studies on macroeconomic factors of debt financing have found statistically significant results between the countries' gross domestic products (GDP) and the corporations' debt financing levels. Good examples are De Jong, Kabir and Nguyen (2008: 1966); Gungoraydinoglu and Öztekin (2011: 1467) and Baltacı and Ayaydın (2014: 54) who found statistically significant positive relationships between the GDP and corporations' debt financing levels. In contrast, Kayo and Kimura (2011: 367); Drobetz *et al.* (2013: 67) and Jõeveer (2013: 306) also found statistically significant results but with a negative relationship. However, this study expected a statistically significant positive result, which implies that a corporation's debt financing level increases with the increase in the country's GDP, which indicates higher growth opportunities (Baltacı and Ayaydın 2014: 54).

#### **3.8.2.11 Inflation rate**

Another widely investigated macroeconomic factor is the inflation rate. However, the empirical results have not been consistent (Mokhova and Zinecker 2014: 533). Literature reviewed by Gungoraydinoglu and Öztekin (2011: 1467); Drobetz *et al.* (2013: 67); Jõeveer (2013: 306); Antonczyk and Salzmann (2014: 146) and Baltacı and Ayaydın (2014: 54) found a negative relationship between inflation and debt financing. This implies that higher inflation decreases the benefits of debt financing since higher bankruptcy costs of debt are imposed on corporations during high inflation levels. Interestingly, Frank and Goyal (2009: 26) found a positive relationship, in contrast to the above hypothesis.

#### **3.8.2.12 Interest rates**

It is believed that the effects of interest rates are incorporated within the inflation rate (Deesomsak, Paudyal and Pescetto 2004: 395). Therefore, few studies have found any statistically significant relationship between interest rates and debt financing. From the reviewed literature, Antoniou, Guney and Paudyal (2008: 32) and Mokhova and Zinecker (2014: 534) found a negative relationship while studying the macroeconomic factors of debt financing levels of corporations of European countries.

#### **3.8.2.13 Other factors**

Other studies have attempted to find observations on other factors which have not been frequently studied. For instance, Welch (2004: 120); Frank and Goyal (2009: 14) and Baltacı and Ayaydın (2014: 53) found a positive relationship between the industry's mean debt-

financing level with the corporation's debt financing level. De Jong, Kabir and Nguyen (2008: 1965) found a positive relationship between financial institutions' development and corporations' debt financing, while Kayo and Kimura (2011: 367) also found a positive relationship between the two. Smith (2012: 155) and Bassey, Arene and Okpukpara (2014: 44) observed a negative relationship between the corporation's age and its debt financing level, which is consistent with the theoretical expectation of the pecking order theory of debt financing.

Jõeveer (2013: 306) incorporated the corporation's corruption perception index in his study and found that it was positively related to the corporation's debt financing level. This study also incorporated the industry's mean, financial markets' development, corporation's age and the rule of law as some of the factors influencing debt financing within state corporations in Kenya. Table 3.1 gives a summary of the reviewed theoretical factors that influence corporations' debt financing with their empirical findings.

**Table 3.1: Summary of theoretical and empirical findings**

Factor	Measure	Theoretical prediction	Most empirical findings
Profitability	PROF	+/-	-
Corporation size	SIZ	+/-	+
Asset tangibility	TANG	+/-	-
Corporation growth	GROW	+/-	+
Corporation risk	RISK	+/-	+
Corporation tax rate	TAX	+	-
Liquidity	LIQ	-	-
Non-debt tax shield	NDTS	-	-
Probability of bankruptcy	BKCY	+/-	-
Gross domestic product	GDP	+/-	-/+
Inflation rate	INFL	+/-	+
Interest rates	INT	+/-	+
Industry median	INDM	+/-	-
Financial markets conditions	FMC	+/-	+
Corruption perception index	CORR	-	+
Age	AGE	-	+

This table presents the reviewed factors influencing corporations' debt financing decisions with their measures and theoretical, empirical and expected results.

**Source: Self generated by researcher**

### **3.8.3 Empirical findings on debt financing and financial performance of a corporation**

Under the agency costs' hypothesis, a high debt-financing level reduces the agency costs of outside equity and increases a corporation's value by constraining or encouraging managers to act more in the interests of the existing shareholders, thereby increasing a corporation's financial performance (Berger and Bonaccorsi di Patti 2006: 1066). Agency costs can also exist from conflicts between debt and equity holders when there is a risk of default (Margaritis and Psillaki 2010: 622). This risk of default may create underinvestment which, in effect, tends to reduce the value of the corporations. Furthermore, the pecking order theory argues that more profitable corporations generate higher earnings that can be used for self-financing, enabling them to go for less debt financing, implying that good financial performance is equated to low debt financing levels (Lemmon and Zender 2010: 35). Debt financing is, therefore, theoretically expected to be either positively or negatively related with a corporation's financial performance.

The analysis of the results of empirical research indicates that the observations are contradictory, as they convey evidence both in favour of the positive relationship and in favour of the negative relationship between debt financing decisions and corporation performance (Tudose 2012: 80). Therefore, empirical evidence has supported both propositions, especially when deferent measures of financial performance are applied. For example, Welch (2004: 123), using share price as the measure of corporations performance, found a positive relationship. Berger and Bonaccorsi di Patti (2006: 1097), also using profit efficiency as a corporation performance measure, found a positive relationship. Margaritis and Psillaki (2010: 628), using corporation's efficiency as performance measure, equally found a statistically significant positive relationship. San and Heng (2011: 34), studying large construction corporations, found a positive relationship when they used return on capital (ROC) and earnings per share (EPS) as measures of corporations' financial performance. Fosu (2013: 146), using return on assets (ROA), return on equity (ROE) and Tobin's q as a corporation's performance measure also found a positive relationship between the debt-financing level and a corporation's performance. Park and Jang (2013: 59) also found a positive relationship while observing the interrelationships between free cash flow, diversification, debt financing and financial performance of corporations.

On the other hand, studies like Majumdar and Chhibber (1999: 297); Zeitun and Tian (2007: 44); King and Santor (2008: 2428); Salehi and Biglar (2009: 101); Obert and Olawale (2010:

1714); Akinlo and Asaolu (2012: 22); Norvaisiene (2012: 514) and Salim and Yadav (2012: 165) found a negative relationship between debt financing and a corporation's financial performance. Most of the studies used financial accounting measures of financial performance such as return on assets (ROA), return on equity (ROE), earnings per share (EPS) and operating profits. Thomas (2013: 45) used the graphical method to observe the relationship and found a behaviour that confirms the agency theory proposal. Thomas observed that debt increased with the increase of corporation performance, measured by earnings per share (EPS), up to some level (target debt), then declined as performance continued increasing steadily. This study used the common financial performance measures, such as return on asset (ROA), return on equity (ROE), and return on investment (ROI).

### 3.9 CONCEPTUAL MODELS

The conceptual models of debt financing for corporations are based on theoretical frameworks of factors influencing debt financing, financial performance and the debt-financing theories, which are discussed below.

#### 3.9.1 Conceptual model for types and level of debt financing within corporations

According to Calabrese (2011: 120), a corporations financing decisions are shortened by using the basic accounting equation:

$$\text{Assets} = \text{Total debt} + \text{Equity} \dots\dots\dots 1$$

Assets, representing capital investments and working capital, need to be financed either through borrowing (total debt) or accumulated net wealth (equity). Therefore, the financing of a corporation is shown on the left hand side of the equation and is normally represented on one side of the balance sheet (statement of financial position). As discussed above, borrowing can be classified even within the balance sheet either as a short-term debt or long-term debt, or public or private debt. A detailed classification can be provided for individual components of debt finance within the varied general class. Equity, on the other hand, is accumulated through capital contributed by owners or retained earnings from having revenues in excess of expenses.

In analysing the extent of debt financing within corporations, Frank and Goyal (2005: 155) and Smith (2012: 150) used the common size balance sheet and the common size cash flows to find the aggregate levels and cross-sectional evidence of debt financing. Coupled with other descriptive statistics, this study adopted the presentation of a common size balance, both aggregate and cross-sectional, to highlight the types of debt used and the extent of debt usage within the state corporations in Kenya.

### 3.9.2 Conceptual model for factors influencing debt financing within corporations

Most studies on factors influencing corporations' debt financing use a combination of longitudinal and cross-sectional data, i.e., panel data (Gaud *et al.* 2005: 58; Oyesola 2007: 19; Daskalakis and Psillaki 2008: 91; Frank and Goyal 2009: 14; Kayo and Kimura 2011: 365; Cortez and Susanto 2012: 128; Drobetz *et al.* 2013: 59; Dang 2013: 175; Alzomaia 2014: 62). This kind of data is best analysed using the panel data regression model since the model incorporates both longitudinal and cross-sectional measures (Daskalakis and Psillaki 2008: 91). According to them, the panel data regression model reduces co-linearity among the explanatory variables, thus improving the efficiency of econometric estimates. Secondly, they argued that panel data models can take into account a greater degree of the heterogeneity that characterizes corporations. Third, panel models also allow for the presence of dynamic effects. According to Kayo and Kimura (2011: 365), studies on factors of corporation debt financing use the simple regression or empty model to analyse the panel data. Cortez and Susanto (2012: 128) argued that panel data regressions are run in order to test the strength of the relationship between debt financing and the potential factors influencing it within the corporations. The data is grouped into their respective source (i.e., panel variable: corporation) and listed according to their respective time period (i.e., time variable: years).

The panel regression model is further believed to give a small standard error of estimate compared to the ordinary least squares method (Petersen 2009: 437, 473). The general form of the model can be specified as:

$$Y_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \dots \dots \dots 2$$

where the subscript *i* denotes the cross-sectional dimension and *t* represents the time-series dimension (Petersen 2009: 438). The left-hand variable, *Y*, represents the dependent variable in the model. This variable represents the corporation's debt financing measures (financial

leverage) and  $X$  contains the independent (explanatory) variable which represents the firm's specific factors and macroeconomic factors,  $\alpha$  is the constant and  $\beta$  represents the coefficient which measures the association between debt financing factors and debt (financial leverage) ratios. Finally,  $\varepsilon$  is the error disturbance term.

Other studies, such as Deesomsak, Paudyal and Pescetto (2004: 392); Huang and Song (2006: 27); Oyesola (2007: 19); Antoniou, Guney and Paudyal (2008: 69); Gungoraydinoglu and Öztekin (2011: 1461); Cortez and Susanto (2012: 128); Lim (2012: 196); Moosa and Li (2012: 7); Smith (2012: 146); Chakraborty (2013: 113); Drobetz *et al.* (2013: 59); Lemma and Negash (2013: 1092); Alzomaia (2014: 62) and Bassey, Arene and Okpukpara (2014: 41), expanded the above general model into a multiple linear regression model of the form:

$$Y_{it} = \alpha_0 + \sum_{k=1}^N \beta_k X_{kit} + \mu_{it} + \varepsilon_{it} \dots \dots \dots 3$$

where  $Y_{it}$  is a measure of debt financing (financial leverage) of firm  $i$  in year  $t$  and  $X$  represents the measure of explanatory variables (firm specific factors and macroeconomic factors).  $\mu$  represents unobserved factors (either firm-specific or macroeconomic) and  $\alpha_0$  is the constant.  $\beta$  from  $k = 1$  to  $N$  are unknown parameters to be estimated. The measure of explanatory variable  $X$  includes  $k$  factors which total the number of all studied factors influencing debt financing, discussed under the methodology chapter. The explanatory variables include both the firm-specific factors and macroeconomic factors. The regression model can, therefore, be put simply as:

$$\text{financial leverage} = f(\sum \text{firm - specific factors} + \sum \text{macroeconomic factors}) \dots \dots 4$$

In doing the regression analysis, most of the studies (Gaud *et al.* 2005: 58; Gaud, Hoesli and Bender 2007: 206; Antoniou, Guney and Paudyal 2008: 61; Gungoraydinoglu and Öztekin 2011: 1462; Öztekin and Flannery 2012: 90; Dang 2013: 175; Mateev, Poutziouris and Ivanov 2013: 42; Baltacı and Ayaydın 2014: 51) used the Generalized Method of Moments (GMM) by Blundell and Bond (1998: 115). Other studies, such as (Huang and Song (2006: 27); Oyesola (2007: 19); De Jong, Kabir and Nguyen (2008: 1961); Frank and Goyal (2009: 14); Jõeveer (2013: 300); Alzomaia (2014: 62) and Bassey, Arene and Okpukpara (2014: 41), on the other hand, have used the pooled Ordinary Least Squares (OLS) method to

analyse the debt financing (financial leverage) regression models. Few studies, like Chakraborty (2013: 112) and Forte, Barros and Nakamura (2013: 361), have used both pooled OLS and GMM in analysing the financial leverage regression models. Other econometric regression methods have also been used by other studies. Oyesola (2007: 19) and Lemma and Negash (2013: 1092), in addition to pooled OLS, also used the fixed effect (FE) model and the random effect (RE) model in their analysis. Chakraborty (2013: 112) added to the pooled OLS and GMM a time series analysis method known as “lagged” time series analysis. Drobetz *et al.* (2013: 59) also used pooled OLS and the fixed effect (FE) regression model analysis in their study. Foster and Young (2013: 11) argued that an alternative to the methods used in previous research is the use of a logistic transformation to correct the problems introduced by the use of proportional variables. They observed that since the use of proportional dependent variables lends itself to the use of logistic transformation, their study used a regression analysis method referred to as a logistic transformed regression.

As discussed earlier, the common regression model estimator, from the reviewed literature, appears to be the pooled Ordinary Least Squares (OLS) method and the generalized method of moments GMM. This study estimated the coefficients of multiple regression model 3 above, using the independent and dependent variables of the study, through the fixed effects (FE), random effects (RE) and GMM models. As explained under the methodology chapter, the study adopted the model used by Forte, Barros and Nakamura (2013: 361) and Lemma and Negash (2013: 1092), with a small modification to incorporate the variables of the macroeconomic factors.

### **3.9.3 Conceptual model for debt financing and financial performance of corporations**

Studies on how debt financing levels affect financial performance of corporations also use the regression models 2 and 3 given above (Majumdar and Chhibber 1999: 297; Zeitun and Tian 2007: 46; Obert and Olawale 2010: 1713; San and Heng 2011: 31; Norvaisiene 2012: 506; Tudose 2012: 79). When the general regression model 2 is used, the left-hand side variable,  $Y$ , represents the dependent variable which is the corporation’s financial measure.  $X$  contains the explanatory variable, which, in this case, represents the debt financing (financial leverage) measure and  $\alpha$  is the constant and  $\beta$  represents the coefficient which measures the association between financial performance ratios and debt financing (financial leverage) ratios. The subscript  $i$  still denotes the cross-sectional dimension (individual corporation),  $t$

represents the time-series dimension (year) and  $\varepsilon$  is the error disturbance term.

However, a number of studies, like Majumdar and Chhibber (1999: 294); Zeitun and Tian (2007: 46); Margaritis and Psillaki (2010: 624); Akinlo and Asaolu (2012: 19); Salim and Yadav (2012: 159); Fosu (2013: 145) and Pervan and Mlikota (2013: 280) argued that a number of other factors, apart from debt financing, can have an impact on a corporation's financial performance. These may be firm-specific or macroeconomic-related aspects, and have to be controlled. The objective is to control for other intrinsic and extrinsic factors which also impact on financial performance. In introducing the control variables in the model, the regression model 5 becomes more appropriate because it can incorporate the controlled variable as follows:

$$Y_{it} = \alpha_0 + \beta X_{it} + \sum_{k=1}^N \gamma_k Z_{kit} + \varepsilon_{it} \dots \dots \dots 5$$

In this model,  $Y_{it}$  is now a measure of financial performance of corporation  $i$  in year  $t$  and  $X$  represents the measure of the explanatory variable; debt financing (financial leverage). Variable  $Z$  represents controlled factors (either firm-specific or macroeconomic) from  $k = 1$  to  $N$  with their coefficients  $\gamma$  to be estimated.  $\alpha_0$  is the constant and  $\beta$  is coefficient of the measure of explanatory variable  $X$  which indicates the relationship between debt financing and financial performance of the corporations. The regression model can, therefore, be put simply as:

$$\text{financial performance} = f(\text{financial leverage}) \dots \dots \dots 6$$

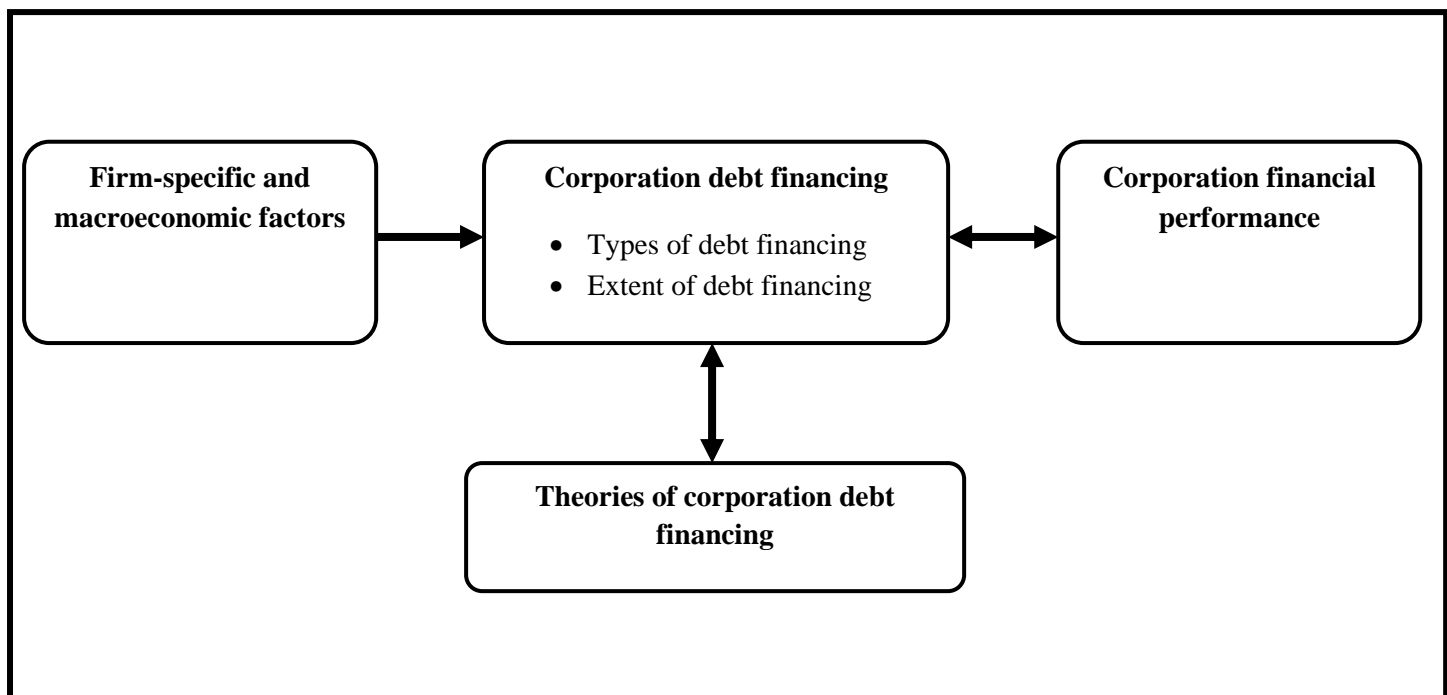
In estimating the parameters of the regression models of financial performance and debt financing, Majumdar and Chhibber (1999: 297); Obert and Olawale (2010: 1713); San and Heng (2011: 31); Akinlo and Asaolu (2012: 19) and Salim and Yadav (2012: 159) have applied the ordinary least squares (OLS). Salehi and Biglar (2009: 100) also used the OLS model and used the Statistical Package for Social Sciences (SPSS) in calculating the Pearson's correlations and the analysis of variance (ANOVA) tests. Margaritis and Psillaki (2010: 624), on the other hand, used the data envelopment analysis (DEA) method in their study. However, Pervan and Mlikota (2013: 282) applied the modern econometric regression estimator model; the Generalized Method of Moments (GMM).

The financial performance measures and the measures of controlled variables commonly applied in the literature are discussed under the methodology chapter. This study applied the regression model 4 and analysed it using the fixed effects (FE), random effects (RE) and the generalized method of moments (GMM) models.

### 3.9.4 Conceptual model for the study

The conceptual framework for the study in line with its objectives can therefore be summarised diagrammatically in Figure 3.1.

**Figure 3.1: Conceptual model of the study**



**Source: Self generated by researcher**

Figure 3.1 shows that the factors influencing corporation debt financing are both firm specific and macroeconomic factors. These factors influence corporation debt financing decisions which, in turn, determine the type of debt financing and their extent within the corporation. The debt financing levels within the corporation will also affect the corporation's financial performance. The corporation debt financing adopted strategy can be explained by the existing theories of debt financing.

### **3.10 CONCLUSION**

It can be concluded that debt financing decisions within the corporation are influenced by both firm-specific factors and macroeconomic factors. The firm specific factors include profitability, corporation size, nature of asset, growth opportunity, corporation risk, corporation tax rate, liquidity, non-debt tax shield, probability of bankruptcy, corporation age and its corruption perception index. The macroeconomic factors include gross domestic product, inflation rate, interest rates, industry influence and financial markets conditions. The factors will influence the corporation's debt financing decisions based on the types of debt financing used and the extent of debt usage within the corporation. These mentioned factors are conceptualised to be the main contributors towards a corporation's financial performance. It is shown from the literature that debt financing levels (financial leverage), in turn, affect the financial performance of the corporations. The corporation's financial performance indicators are either accounting-based or market-based. The most common financial performance accounting-based indicators include ROA, ROE, operating margin and net profit margin. The market-based indicators, like return on stock, Tobin's q and earnings per share, are only common for corporations whose stocks are trading in the stock markets. The literature has also analysed the debt financing theories that explain the nature of the debt financing strategy in response to the changes in these factors. This study is on state corporations in Kenya and the management of state corporations is believed to be slightly different from the private-sector corporations.

For a clearer understanding of how the study was undertaken, chapter four will focus on the methodology applied in the study.

## **CHAPTER FOUR**

### **METHODOLOGY**

#### **4.1 INTRODUCTION**

This chapter provides a review of the research methods applied in this study. The chapter represents the overall research methodology which includes the type of data gathered and its origin, the way the collected data was analysed and interpreted, and how it will help in answering the study research questions (Altinay and Paraskevas 2008: 69). The chapter begins by presenting the research design followed by the population and sampling. The chapter further outlines the data collection tools and procedures and the data analysis techniques, including the models of diagnostic tests used in this study. Validity and reliability of data, together with the ethical considerations of the study conclude the chapter.

#### **4.2 RESEARCH DESIGN**

This is a non-experimental study, since it does not test the hypotheses by imposing conditions on the respondents (Altinay and Paraskevas 2008: 75). Picardi and Masick (2014: 131) argued that applied researchers and field professionals attest to the adaptability feature of non-experimental studies due to changing research needs and expectations, settings, conditions and parameters. Hence, non-experimental research designs can be incorporated into different levels of applied research circumstances. However, Picardi and Masick (2014: 131) noted that the limitation of a non-experimental research is the inability to make a casual inference when it is used as a standalone method. However, this study is also a quantitative research, with the main purpose of testing the idea and theory about the factors influencing debt financing and the relationship between debt financing and financial performance of state corporations, which are all done using inferential statistics tests (Struwig and Stead 2013: 4).

According to Bryman (2012: 75-78), there are five main preoccupations among quantitative researchers that make quantitative research preferred over qualitative research. Firstly, quantitative research allows for measurement of the constructs studied, i.e., debt financing, factors influencing debt financing and financial performance, usually through the use of questionnaires and/or some form of structured observation, such as observations from

secondary data (financial statements). This study applied data from both the questionnaire and financial statements of the state-owned corporations. Secondly, quantitative research allows researchers to use independent and dependent variables to establish causal relationships between the constructs. In this case, this study applied the quantitative research to determine the causal relationship between the factors influencing debt and debt financing levels, and debt financing and financial performance of state-owned corporations. According to Struwig and Stead (2013: 5), causality is essential to quantitative researchers because they tend to take a basic scientific approach to research and, as such, the quantitative research is usually positivist.

Positivism is a research paradigm that combines a deductive approach with a precise measurement of quantitative data, in order for researchers to identify the causal relationships which help in predicting human behaviour (Altinay and Paraskevas 2008: 67-71). Thirdly, quantitative research allows researchers to generalise results beyond the research sample. However, much attention should be given to sampling issues, particularly to the representativeness of the sample, before generalisation to a wider population. This fact allowed the study to generalise application of the findings of the study to all state-owned corporations in Kenya. Fourthly, replication under quantitative research is possible when the research process is clearly and accurately described. This ensures that findings can be practical in other circumstances. Lastly, in a quantitative research, the individual, in this case each state-owned corporation, is the focus of the empirical inquiry. The survey instruments are administered to individuals and the responses and observations on the individuals, not the groups, are required. Therefore, Struwig and Stead (2013: 6) argued that the individual or the respondent is a source of data and is normally considered independent from each other.

Further, Struwig and Stead (2013: 6) noted that there are many different types of research design but the common methods used to conduct quantitative research are exploratory, descriptive and experimental, among others. The research design applied in this study, therefore, was a combination of descriptive and explanatory research design, which reduced the limitations of non-experimental research by an inclusion of independent variables that are manipulated along with the measurement of dependent variables (Picardi and Masick 2014: 131). The independent variables in this study included factors influencing debt financing and debt financing levels, while the dependent variables included debt financing levels and financial performance, respectively. The main aim in a descriptive study is to assess a sample

at one specific point in time (year) without attempting to change its behaviour or the conditions in which it exists (Altinay and Paraskevas 2008: 75). According to Hedström (2004: 14), a descriptive research design shows how something is constituted, or how something varies over time, or between different groups or social settings. The author argued that an explanatory research design, on the other hand, shows why something looks, changes, or varies as it does. It is an attempt to connect ideas to understand cause and effect, meaning researchers want to explain what is going on between the constructs.

The study used a combination of descriptive and explanatory approaches. The description approach of the study enabled the researcher to analyse the different types of debt financing, determine the extent of debt financing, and identify the factors influencing debt financing within state-owned corporations in Kenya. The explanatory approach of the study also enabled the researcher to determine the relationship between debt financing and financial performance and identify the debt-financing theory applicable in explanation of debt capital structure within the state-owned corporations in Kenya. In addition, the study applied a hybrid of cross sectional and longitudinal quantitative surveys. Rindfleisch, Malter, Ganesan and Moorman (2008: 276), in their study of cross-sectional versus longitudinal surveys, argued that both the designs have limitations and a combination will give a strong output. Therefore, the combination of the techniques allowed the researcher to investigate the constructs of the study, i.e., debt financing, factors influencing debt financing and financial performance, across the state-owned corporations and also derive the trend over a period of five years from 2007 to 2011. To help in achieving these study objectives, different research models were applied.

### **4.3 RESEARCH MODELS**

#### **4.3.1 Model for the extent of debt financing**

In the analysis of the extent of debt financing within corporations, Frank and Goyal (2005: 155) and Smith (2012: 150) used the common-size balance sheet and the common-size cash flows to find the aggregate levels and cross-sectional evidence of debt financing. Together with other descriptive statistics, this study adopted the presentation of a common-size balance sheet using the basic accounting equation 1 and aggregate cross-sectional measures for each period, to highlight the types of debt used and the extent of debt usage within the state corporations in Kenya.

### 4.3.2 Model for factors influencing debt financing

Since the study used a combination of cross-sectional and longitudinal data, a panel data regression model was used (Daskalakis and Psillaki 2008: 91). According to the authors, a panel data regression model reduces co-linearity among the explanatory variables, thus improving the efficiency of econometric estimates. Secondly, they argued that panel data models can take into account a greater degree of the heterogeneity that characterizes corporations. Thirdly, panel models also allow for the presence of dynamic effects. According to Kayo and Kimura (2011: 365), studies on factors of corporation debt financing use the simple regression or empty model to analyse the panel data. Cortez and Susanto (2012: 128) argued that panel data regressions are run in order to test the strength of the relationship between debt financing and the potential factors influencing it within the corporations. The data is grouped into their respective source (i.e., panel variable: corporation) and listed according to their respective time period (i.e., time variable: year). The panel regression model is further believed to give a small standard error of estimate compared to the aggregate ordinary least squares method (Petersen 2009: 437, 473).

Therefore, in the identification of factors influencing debt financing, the study used a multiple-linear panel-data regression model 3, which has been applied by most studies such as Deesomsak, Paudyal and Pescetto (2004: 392); Huang and Song (2006: 27); Oyesola (2007: 19); Antoniou, Guney and Paudyal (2008: 69); Gungoraydinoglu and Öztekin (2011: 1461); Cortez and Susanto (2012: 128); Lim (2012: 196); Moosa and Li (2012: 7); Smith (2012: 146); Chakraborty (2013: 113); Drobetz *et al.* (2013: 59); Lemma and Negash (2013: 1092); Alzomaia (2014: 62) and Bassey, Arene and Okpukpara (2014: 41). The applied multiple regression panel data model is of the form:

$$Y_{it} = \alpha_0 + \sum_{k=1}^N \beta_k X_{kit} + \mu_{it} + \varepsilon_{it} \dots \dots \dots 3$$

Where  $Y_{it}$  is a measure of debt financing (financial leverage) of firm  $i$  in year  $t$  and  $X$  represents the measure of explanatory variables (firm specific factors and macroeconomic factors).  $\mu$  represents unobserved factors (either firm-specific or macroeconomic) and  $\alpha_0$  is the constant.  $\beta$  form  $k = 1$  to  $N$  are unknown parameters to be estimated. The measure of explanatory variables  $X$  includes  $k$  factors which are the total number of all factors

influencing debt financing observed in this study. The explanatory variables and their respective measures are given in table 3.1. The explanatory variables include both the firm-specific factors and macroeconomic factors.

### 4.3.3 Model for debt financing and financial performance of corporations

In the process of determining the relationship between debt financing and financial performance of state-owned corporations, the study applied the multiple regression model 5. As aforementioned, a number of studies, like Majumdar and Chhibber (1999: 294); Zeitun and Tian (2007: 46); Margaritis and Psillaki (2010: 624); Akinlo and Asaolu (2012: 19); Salim and Yadav (2012: 159); Fosu (2013: 145) and Pervan and Mlikota (2013: 280), argued that a number of other factors apart from debt financing, can have an impact on the financial performance of the corporation. These may be firm-specific or macroeconomic-related aspects, and have to be controlled. The objective is to control for other intrinsic and extrinsic factors which also impact on financial performance. In introducing the control variables in the model, the regression model 5 becomes more appropriate because it can incorporate the controlled variable as follows:

$$Y_{it} = \alpha_0 + \beta X_{it} + \sum_{k=1}^N \gamma_k Z_{kit} + \varepsilon_{it} \dots \dots \dots 5$$

In this model,  $Y_{it}$  is now a measure of financial performance of corporation  $i$  in year  $t$  and  $X$  represents the measure of the explanatory variable, i.e., debt financing (financial leverage). Variable  $Z$  represents controlled factors (either firm-specific or macroeconomic), from  $k = 1$  to  $N$  with their coefficients  $\gamma$  to be estimated.  $\alpha_0$  is the constant and  $\beta$  is coefficient of the measure of explanatory variable  $X$  which indicates the relationship between debt financing and financial performance of the corporations. The financial performance measures and the measures of controlled variables commonly applied in the study are discussed under the section of variables and measures below.

## 4.4 RESEARCH VARIABLES AND MEASURES

### 4.4.1 Variables and measures for debt financing

The debt-financing variable in this study is both a dependent variable and an explanatory (independent) variable. Under model 3 above, which is used to identify factors influencing

debt financing of state corporations, the debt financing variable (financial leverage) is a dependent variable. On the other hand, under model 5 above, which is applied to determine the relationship between debt financing and financial performance of the state corporation, debt financing is an explanatory (independent) variable. However, it has been noted under the literature review that many different empirical measures have been used to show debt financing levels within corporations (Frank and Goyal 2009: 2). They argued that some scholars advocate for book leverage, which is the proportion of corporation debt finance to the total book value of the assets of the corporation.

Others scholars advocate for market leverage, which is the proportion of corporation debt to market value of the corporation. However, calculation of market values for corporations which are not listed in the stock exchange is not easy; this may make book value leverage popular for studies on unlisted corporations like Brav (2009: 274). In addition to the aforementioned debate on the debt-financing level measure, varied studies also use deferent definitions of debt. Brav (2009: 273), Fan, Titman and Twite (2012: 33) and others use total debt as the numerator while De Jong, Kabir and Nguyen (2008: 1956) and others use long-term debt. There are other studies, like Huang and Song (2006: 21) and Jõeveer (2013: 299), which used both long-term debt and total debt as numerators of the leverage ratio.

Since Fama and French (2002: 9) and Rajan and Zingales (1995: 1429) suggested that reliance on book leverage is not a serious limitation and most of the state corporations in Kenya are not listed in the stock exchange, this study applied the book leverage and definitions of debt, i.e., long-term, short-term and total debt, as debt financing level proxies. As summarised in table 3.1, the study used book values to measure long-term debt leverage (LDL) using long-term debt of the state corporation divided by the total assets, short-term debt leverage (SDL) using short-term debt of the state corporation divided by the total assets and, total debt leverage (TDL) using total debt of the state corporation divided by the total assets.

#### **4.4.2 Variables and measures for factors influencing debt financing**

The factors influencing debt financing decisions within corporations, being explanatory (independent) variables in model 3, have been measured using different proxies by different studies, as discussed below.

#### **4.4.2.1 Profitability**

Bauer (2004: 162); Deesomsak, Paudyal and Pescetto (2004: 394); Gaud *et al.* (2005: 56); Huang and Song (2006: 18); Gaud, Hoesli and Bender (2007: 206); Daskalakis and Psillaki (2008: 91); Gungoraydinoglu and Öztekin (2011: 360); Cortez and Susanto (2012: 130); Forte, Barros and Nakamura (2013: 356) and; Bassey, Arene and Okpukpara (2014: 41) measured profitability as the corporation's operating profit divided by its total assets for each year. Other studies like Chang, Lee and Lee (2009: 208), in addition, used operating profit divided by annual sales. Smith (2012: 148); Alzomaia (2014); and Baltacı and Ayaydın (2014: 52) used profit after tax divided by total assets, while Chakraborty (2013: 113) measured profitability as net annual cashflow divided by total assets. This study used the operating profit of the corporation divided by annual sales as a measure of profitability.

#### **4.4.2.2 Corporation size**

Corporation size variable is measured as either a natural logarithm of sales or total assets by studies like Bauer (2004); Gaud, Hoesli and Bender (2007: 206); De Jong, Kabir and Nguyen (2008: 1956); Frank and Goyal (2009: 8); Kayo and Kimura (2011: 360); Lim (2012: 195); Forte, Barros and Nakamura (2013: 356); Drobetz *et al.* (2013: 55); Alzomaia (2014: 60) and Baltacı and Ayaydın (2014: 41). However, Daskalakis and Psillaki (2008: 91) and Moosa and Li (2012: 4) used tangible assets divided by total assets as a measure of corporation size. Smith (2012: 149), on the other hand, used the natural logarithm of gross income. This study used the natural logarithm of total assets as the measure of corporation size since this is the common measure in the literature.

#### **4.4.2.3 Asset tangibility**

The nature of corporation assets has been represented by asset tangibility by most studies such as Gaud *et al.* (2005: 56); Huang and Song (2006: 18); Oyesola (2007: 20); De Jong, Kabir and Nguyen (2008: 1956); Frank and Goyal (2009: 9); Kayo and Kimura (2011: 360); Lim (2012: 194); Chakraborty (2013: 113); and Baltacı and Ayaydın (2014: 52), and measured as tangible or fixed assets over total assets. In this study, asset tangibility was measured using tangible assets divided by the total assets of the state corporations.

#### **4.4.2.4 Corporation growth**

Corporation growth variable had different measures from various studies. Most studies, like Bauer (2004: 163); Gaud *et al.* (2005: 56); Gaud, Hoesli and Bender (2007: 206); De Jong,

Kabir and Nguyen (2008: 1956); Kayo and Kimura (2011: 360); Kouki and Said (2012: 219); Dang (2013: 176); and Drobetz *et al.* (2013: 55), used the market to book value ratio which is measured as the market value of the corporation divided by its book value (total assets). Other studies, like Oyesola (2007: 20); Daskalakis and Psillaki (2008: 91); Cortez and Susanto (2012: 130); Lim (2012: 195); Smith (2012: 148); Chakraborty (2013: 113); Forte, Barros and Nakamura (2013: 356); Alzomaia (2014: 60); and Bassey, Arene and Okpukpara (2014: 41), used either the percentage change in total assets or in sales as a measure of corporation growth.

Frank and Goyal (2009: 9) and Chang, Lee and Lee (2009: 208), in addition to the change in total assets, used capital expenditure divided by total assets and research and development expenditure divided by sales. Baltacı and Ayaydın (2014: 52) used rate of change of gross domestic product (GDP) as a measure of corporation growth. The percentage change in total assets was used in this study as a measure of corporation growth.

#### ***4.4.2.5 Corporation risk***

Standard deviation of operating profit over total assets has been the dominant measure of the risk or volatility of corporations in debt-financing studies like Bauer (2004: 164); Huang and Song (2006: 20); Lim (2012: 195); Moosa and Li (2012: 6); Forte, Barros and Nakamura (2013: 357); and Alzomaia (2014: 61). Deesomsak, Paudyal and Pescetto (2004: 394) used absolute change in annual operating profits, while Chang, Lee and Lee (2009: 208) used standard deviation of percentage change in annual operating income. Baltacı and Ayaydın (2014: 52), on the other hand, used the corporation financial risk index and Bassey, Arene and Okpukpara (2014: 44) used the absolute coefficient of variation of annual operating profit as their measure of corporation risk variable. This study used the measure of standard deviation of operating profit divided by total assets to represent corporation risk.

#### ***4.4.2.6 Corporation tax rate***

Few studies included the corporation tax rate as a variable. The few that included it as a variable, such as Huang and Song (2006: 19) and De Jong, Kabir and Nguyen (2008: 1956), used the measure of average tax rate for the period of study. Frank and Goyal (2009: 9) used the prior year tax rate, while Öztekin and Flannery (2012: 91) and Bassey, Arene and Okpukpara (2014: 41) used current income tax charges divided by the profit before tax as a measure of corporation tax rate variable, which was the case in this study.

#### **4.4.2.7 Liquidity**

The common measure of liquidity is current assets divided by current liability. Studies such as Deesomsak, Paudyal and Pescetto (2004: 394), De Jong, Kabir and Nguyen (2008: 1956), Moosa and Li (2012: 5) and Öztekin and Flannery (2012: 91) applied this common measure. However, Smith (2012: 148) used the measure of current assets as a percentage of total assets to measure the liquidity of corporations. This study used the common accounting liquidity ratio (current ratio), which is measured as current assets divided by current liability, as the proxy for liquidity.

#### **4.4.2.8 Non-debt tax shield**

Non-debt tax shield is a common variable especially where corporation tax rate is ignored. Studies such as Bauer (2004: 163); Deesomsak, Paudyal and Pescetto (2004: 394); Huang and Song (2006: 20); Gaud, Hoesli and Bender (2007: 206); (Chang, Lee and Lee (2009); Cortez and Susanto 2012); Lim (2012: 195); Chakraborty (2013: 113) and Dang (2013: 176) used depreciation and amortization charge divided by total assets as the measure of non-debt tax shield variable with the exception of Forte, Barros and Nakamura (2013: 357) used depreciation charge divided by operating profit. This study also used non-debt tax shield measured by depreciation charge divided by operating profit.

#### **4.4.2.9 Probability of bankruptcy**

A corporation's probability of bankruptcy as an explanatory variable has been used in a few studies. In cases where it has been used, the measure is interest expense divided by operating profit (Kouki and Said 2012: 220). Gaud *et al.* (2005: 57) and Kayo and Kimura (2011: 360) used Altman's Z score which is a good measure of financial distress. This study used the interest expense divided by the operating profit as a measure of probability of bankruptcy.

#### **4.4.2.10 Gross domestic product**

The gross domestic product (GDP) variable, being a macroeconomic factor, has been measured using the country's measure of GDP. De Jong, Kabir and Nguyen (2008: 1959), studying corporations around the world, used GDP figures from the World Bank database. Other studies such as Frank and Goyal (2009: 11), Öztekin and Flannery (2012: 91) and Baltacı and Ayaydın (2014: 52) used annual change or growth on the GDP of the country. This study used the country's GDP figures shown in table 2.2 under the Kenyan economic status review.

#### **4.4.2.11 Inflation and interest rate**

Studies used inflation rates and interest rates interchangeably. Booth *et al.* (2001: 97) and Frank and Goyal (2009: 11) used the country's expected inflation rates, while Öztekin and Flannery (2012: 91) and Baltacı and Ayaydın (2014: 52) used the country's consumer index as a measure for the inflation rate variable in their respective studies. The country's interest lending rate was used by Deesomsak, Paudyal and Pescetto (2004: 395) to measure the interest rate variable. In this study, both the inflation rate and interest rate, measured as annual average inflation rates and average annual commercial banks' lending rates, respectively, as shown in table 2.2.

#### **4.4.2.12 Other factors**

Other variables, such as industry influence, referred to as industry median, have been measured using the mean of financial leverage values within the corporation's industry by studies like Titman and Wessels (1988: 4-5); Frank and Goyal (2009: 8) and Öztekin and Flannery (2012: 91). This study used the industry mean of financial leverage, using long-term debt leverage (LDL) figures, as a measure for the industry median.

The condition on financial markets has not been a popular variable. However, Deesomsak, Paudyal and Pescetto (2004: 395) and Kayo and Kimura (2011: 361) used the country's value of market capitalization. De Jong, Kabir and Nguyen (2008: 1959) used the average of normalized values of market base and stock to measure stock market development. Frank and Goyal (2009: 10) used the cumulative market returns' measure for the stock market condition. In this study, the condition on financial markets was measured using market capitalization values in table 2.2 above.

Studies such as Moosa and Li (2012: 6); Forte, Barros and Nakamura (2013: 356) and Bassey, Arene and Okpukpara (2014: 41) used the number of years of existence of corporations since incorporation as a measure for the age variable of corporations. This study also used the number of years in existence since incorporation as a measure of age. The newly introduced corruption variable has been measured by Jõeveer (2013: 297) using the corruption perception index. For this study, the contract performance rankings done by the Ministry of Planning was to be used as a measure of the corruption index, but was dropped since, that report could not be availed by the Ministry.

### 4.4.3 Variables and measures for financial performance

The financial performance variables, as applied under model 5, were dependent variables while debt-financing (financial leverage) variables and the controlled factors were explanatory (independent) variables. According to Rao, Al-Yahyaee and Syed (2007: 9), most management researchers favour accounting measures of financial performance, such as return on equity (ROE) return on investment (ROI), and return on assets (ROA), along with the changeability in those returns measures.

**Table 4.1 : Research variables and measures**

Variable	Measure	Formulae (Proxy)
<i>Debt financing levels (financial leverage)</i>		
Total debt leverage	TDL	Total debt/Total assets
Long-term debt leverage	LDL	Long-term debt/Total assets
Short-term debt leverage	SDL	Short-term debt/Total assets
<i>Factors influencing debt financing</i>		
Profitability	PROF	Operating profit/Annual sales
Corporation size	SIZ	Natural logarithm of total assets
Asset tangibility	TANG	Tangible assets/Total assets
Corporation growth	GROW	Percentage (%) change in total assets
Corporation risk	RISK	Standard deviation of operating profits/Total assets
Corporation tax rate	TAX	Income tax charge/Profit before tax
Liquidity	LIQ	Current assets/Current liabilities
Non-debt tax shield	NDTS	Depreciation charge/Operating profit
Probability of bankruptcy	BKCY	Interest charge/Operating profit
Gross domestic product	GDP	Annual GDP of the country (in table 2.2)
Inflation rate	INFL	Annual average inflation rate (in table 2.2)
Interest rates	INT	Annual average commercial banks lending rates (in table 2.2)
Industry median	INDM	Mean of long-term debt leverage
Financial markets conditions	FMC	Market capitalization (in table 2.2)
Age	AGE	Number of years in existence
<i>Financial performance</i>		
Return on assets	ROA	Operating profit/Total assets
Return on investment	ROI	Net profit (profit after tax)/Total assets
Return on equity	ROE	Net profit (profit after tax)/Equity

Table 4.1 represents the research variables and measures, followed by their proxies.

**Source: Self generated by researcher**

As indicated in table 4.1, this study used these accounting financial performance measures. The return on equity (ROE) was measured by net profit (earnings after tax) divided by equity, return on assets (ROA) was measured by operating profits divided by total assets and return on investment (ROI) was measured using net profit (earning after tax) divided by total assets (Surroca, Tribó and Waddock 2010: 44; Norvaisiene 2012: 514). The controlled explanatory variables applied were other factors influencing financial performance. These included corporation size (SIZ), asset tangibility (TANG), corporation growth (GROW), corporation risk (RISK), liquidity (LIQ), inflation (INFL) and corporation age (AGE).

## 4.5 RESEARCH HYPOTHESES

The study tested the following hypotheses:

### 4.5.1 Hypotheses for factors influencing debt financing

- *H<sub>01</sub>: Profitability influences debt financing negatively;*
- *H<sub>02</sub>: Corporation size influences debt financing positively;*
- *H<sub>03</sub>: Asset tangibility influences debt financing positively;*
- *H<sub>04</sub>: Corporation growth influences debt financing negatively;*
- *H<sub>05</sub>: Corporation risk influences debt financing negatively;*
- *H<sub>06</sub>: Corporation tax rate influences debt financing negatively;*
- *H<sub>07</sub>: Liquidity influences debt financing negatively;*
- *H<sub>08</sub>: Non-debt tax shield influences debt financing negatively;*
- *H<sub>09</sub>: Probability of bankruptcy influences debt financing positively;*
- *H<sub>010</sub>: Gross domestic product influences debt financing positively;*
- *H<sub>011</sub>: Inflation rate influences debt financing negatively;*
- *H<sub>012</sub>: Interest rate influences debt financing negatively;*
- *H<sub>013</sub>: Industry median influences debt financing positively;*
- *H<sub>014</sub>: Financial market conditions influence debt financing positively; and*
- *H<sub>015</sub>: Corporation age influences debt financing positively.*

#### **4.5.2 Hypotheses for the relationship between debt financing and financial performance**

- *H<sub>0</sub>16: There is a positive relationship between debt financing and ROA;*
- *H<sub>0</sub>17: There is a positive relationship between debt financing and ROI; and*
- *H<sub>0</sub>18: There is a positive relationship between debt financing and ROE.*

#### **4.6 TARGET POPULATION**

The population of this study is defined in terms of the number of state-owned corporations established by the Acts of parliament in Kenya as at June 30, 2011. The population frame data is from the office of the Inspector General in charge of state corporations under the Ministry of Public Service in the office of the Prime Minister of Kenya. According to this data, there are 206 established state corporations in Kenya, out of which 50 are income-generating corporations (Republic of Kenya 2013: 189-192). Hence, the target population for this study was made up of the 50 income-generating state-owned corporations in Kenya as at 31<sup>st</sup> December, 2011 (Republic of Kenya 2013: 189-192). The target population for a study is the entire set of units (income-generating state-owned corporations) for which the study data was applied to make inferences (Cox 2008: 876). Therefore, the target population defines those units for which the findings of the study are meant to generalize; in this case, the state-owned corporations in Kenya (Cox 2008: 876).

#### **4.7 SAMPLE SIZE**

The sample size for the study is made up of all the 50 income-generating corporations (state-owned corporations), selected from the general population using the stratified non-probability sampling technique. The non-income generating corporations are excluded from the study, since their financial performance is not profit based and may not be influenced by market-oriented decisions, such as debt-financing strategies. Struwig and Stead (2013: 116) argued that the non-probability sampling technique should be used in special cases, usually when the population has a lot in common, like, in this case, income-generating state corporations.

In selecting the respondents within the population of income-generating state corporations in Kenya, a census study was applied to collect data for all the 50 income-generating state

corporations. According to Zhang, Wang, Su, Liu, Shen and Bi (2007), a census study is more straightforward and suitable to be used in a local setting where the population frame exists with certainty. The study, therefore, used a combination of non-probability sampling and census techniques and collected data for all the units of the target population, i.e., 50 established income-generating corporations in Kenya.

Regrettably, the response (shown in Table 4.2 and Table 4.3) from the corporations was not 100%. Only 50% of the sampled corporations filled and returned the questionnaires, 34% did not respond, while 16% of the sampled corporations declined to participate in the study. According to Altinay and Paraskevas (2008: 99), there is no generally agreed standard for a minimum acceptable response rate. However, the author argued that researchers generally consider an acceptable response rate to be anything from 15% to 20% and above, with 10% being the minimum. Table 4.2 illustrates the response of the state corporations to the questionnaires.

**Table 4.2: Response to the questionnaires**

	Frequency	Percent %
Filled the questionnaire	25	50
No response	17	34
Declined to participate	8	16
Total	50	100

**Source: Self generated by researcher**

In response to the request for financial statements, out of the visited corporations, only 26% gave copies of their financial statements personally. The rest of the financial statements of state corporations, not obtained from the state corporations directly, were acquired by the researcher from the Department of Investment within the Ministry of Finance. The researcher obtained, in total, 80% of the copies of financial statements both from the corporations and the Ministry of Finance Office. Table 4.3 illustrates the financial statements issued by the corporations and the Ministry of Finance.

**Table 4.3 : Issue of financial statements**

	Frequency	Percent %
Issued by the corporations	13	26
Issued by the Ministry	27	54
Missing	10	20
Total	50	100

**Source: Self generated by researcher**

Further, for the purpose of the third research objective and first research question, convenience sampling technique was used to select data for the income generating state-owned corporations from different economies of the world. Table 4.4 shows the number of global state-owned corporations whose data were used in analysing the types of debt financing used by state-owned corporations across continents.

**Table 4.4: Global state-owned corporations**

<i>Continent/country</i>	Number of state corporations	Percentage %
<i>America</i>		
USA	4	57
Canada	3	43
Total	7	100
<i>Europe</i>		
UK	6	40
Australia	6	40
New Zealand	3	20
Total	15	100
<i>Asia</i>		
India	7	58
Indonesia	3	25
Japan	2	17
Total	12	100
<i>Africa</i>		
South Africa	9	100
Total	9	100

**Source: Self generated by researcher**

The convenience sampling technique was applied since the data was extracted from the financial statements of income generating state-owned corporations, subject to availability on their official websites (Altinay and Paraskevas 2008: 95). The sample of state-owned corporations from America was made up of 7 state-owned corporations, with 4 from the U.S.A. and 3 from Canada. The Europe sample was made of 15 state-owned corporations, with 6 from U.K., 6 from Australia and 3 from New Zealand. The sample of Asian state-owned corporations was made up of 12 state-owned corporations, with 2 from Japan, 7 from India and 3 from Indonesia. The African sample was made up of 9 state-owned corporations, all from South Africa.

#### **4.8 DATA COLLECTION TOOLS AND PROCEDURES**

The study used two measuring instruments to make the results valid and reliable as per the content and predictability of the research. The questionnaires, together with the information from the financial statements, were used to measure the variables across the state-owned corporations. In addition, ratio analysis was used to measure the variables from the financial statements over the five-year period. Most of the study variable measures were extracted from the financial statements of the state-owned corporations for the five-year period from 2007 to 2011. The information from questionnaires and the state-owned corporations' official websites were used to give clarity, especially on the different types of debt financing, where the financial statements were not specific.

Since the headquarters of the state-owned corporations in Kenya are spread all over the country, the researcher travelled to the entire sampled state corporations' headquarters to administer the questionnaires and collect the copies of the financial statements personally. Though self-administered questionnaires are time consuming, Picardi and Masick (2014: 156) argued that they provide a real-time data collection and the researcher can provide clarification to questions not easily understood by the respondents. Regrettably, the response from the corporations was not so good.

As shown in Table 4.2 and 4.3, 50% of the sampled state-owned corporations filled and returned the questionnaires, 34% did not respond, while 16% of the sampled corporation declined to participate in the study. On the issue of copies of financial statements, out of the sampled state-owned corporations, only 26% gave copies of their financial statements.

Nevertheless, all the state-owned corporations in Kenya are required by the Public Financial Management Act number 18 of 2012 to submit their annual financial statements to the investment department in the Ministry of Finance. The rest of the financial statements of state-owned corporations not obtained from the corporations directly, being public documents, were acquired by the researcher from the Department of Investment within the Ministry of Finance. The researcher obtained, in total, 80% of the copies of financial statements both from the corporations and the Ministry of Finance Office.

#### **4.9 DATA ANALYSIS**

The study, therefore, used both the primary and secondary data in the analysis. Since the debt financing procedures of state-owned corporations within the financial sector are unique, the data from the state-owned corporations within the Kenyan financial sector were excluded from all data analyses (Lemma and Negash 2013: 1093; Alzomaia 2014: 59). The cross-sectional primary data from the questionnaires and extracted information from the financial statements and the state-owned corporations' websites were used to analyse the types of debt financing used by the state-owned corporations in Kenya and across the world. Copies of the financial statements of the corporations obtained from the financial managers or the Ministry of Finance Office and the state-owned corporations' websites were used as secondary data for longitudinal analysis of the extent of debt financing within the state corporations using debt financial ratios. In addition, the secondary data from the financial statements were also used for running the regression test models above.

Hence, the secondary data was the main source of information in this study, and, the primary data, from the questionnaires, were only used to provide clarity, where needed. Houston (2004: 154) argued that secondary data measures are widely accepted and strongly preferred over self-report scale measures, i.e., primary data, in finance discipline, in which this study falls. However, the study also used the primary data to improve the reliability and validity of the test scores. Subsequently, the descriptive statistical analysis method was used to determine the extent of debt financing and compare the relationships between the study variables. The aggregate figures for all the sampled state corporations were shown using the common balance sheet and cash flow statements. In addition, graphs were used to show the levels of long-term debt ratios, short-term debt ratios and net long-term debt issuance ratios

for the aggregate, sectors and stock-market listed categories of state-owned corporations in Kenya.

A regression analysis was also done using the conceptual models previously mentioned: Model 3, to identify the factors influencing debt financing of state-owned corporations; and model 5, to determine the relationship between debt financing and financial performance of state-owned corporations in Kenya. In addition, to establish the significance of the variables in each of the regression models, the *t*-test was applied at 90%, 95% and 99% levels of confidence.

The common regression model estimator, from the reviewed literature, appears to be the pooled ordinary least squares (OLS) method and the generalized method of moments (GMM). However, this study estimated the coefficients of multiple regression models 3 and 5 above, using the independent and dependent variables of the study, through the fixed effects (FE), random effects (RE) and GMM system panel regression models. According to Bond (2002: 141-142), panel data models have an advantage over pooled ordinary least squares (OLS) model since the former incorporates the cross-sectional and longitudinal variables of the model. The panel data advantages over pooled ordinary least squares (OLS), therefore, include the possibility that underlying microeconomic dynamics (heterogeneity) may be concealed by pooling biases, and the scope panel data offers to investigate heterogeneity in adjustment dynamics between different types of individuals, household or corporations.

On the other hand, Lemma and Negash (2013: 1092) argued that empirical literature favours fixed effects (FE) over random effects (RE) in basic debt-financing research, since the fixed effects allow for controls on biasness that may be caused by the corporation's specific characteristics and time effects. However, fixed effects assume that the time-invariant characteristics are unique to the specific corporation and should not be correlated with other corporation's characteristics. Therefore, each corporation is assumed to be different and the corporation's error term and the constant (which captures individual corporation's characteristics) should not be correlated with each other. If the error terms are correlated i.e., endogeneity exists, then fixed effects model is not suitable since inferences may not be correct, therefore, there is need to model the relationship by using either random effects or GMM.

The Hausman test is applied to test whether the error terms are correlated with the constants. If the test is significant, at 95% level of confidence ( $p < 0.05$ ), then there is no correlation and the fixed effects model figures are reliable. However, Greene (2008: 183) argued that if there is reason to believe that differences across entities (corporations) have some influence on the dependent variables (like in this case financial leverage or financial performance), then the random effects method is appropriate. In addition, random effects allow for the inclusion of time invariant variables, such as gender. In contrast, the random effects model assumes that the individual (variables) characteristics are not correlated by the time effects (i.e., there is no autocorrelation or serial correlation) and there is need to specify those individual (corporation's) characteristics that may or may not influence the predictor variables. The problem with this is that some variables may not be available, therefore, leading to omitted variable bias in the model. All the same, the random effects model allows for generalization of the inferences beyond the sample used in the model.

As aforementioned, it has been observed that endogeneity is a common problem that econometric model research, such as debt financing, has to deal with. In regard to this observation, Lemma and Negash (2013: 1092) argued that modern debt-financing research should apply system-GMM procedures, which are robust to data endogeneity problems (Gaud *et al.* 2005: 58; Gaud, Hoesli and Bender 2007: 206; Antoniou, Guney and Paudyal 2008: 61; Gungoraydinoglu and Öztekin 2011: 1462; Öztekin and Flannery 2012: 90; Dang 2013: 175; Mateev, Poutziouris and Ivanov 2013: 42; Baltacı and Ayaydın 2014: 51). In other words, the system-GMM estimator controls for the presence of unobserved firm-specific effects and for the endogeneity of explanatory variables (Mateev, Poutziouris and Ivanov 2013: 42). According to Bond (2002: 160), the system-GMM method is particularly useful when the panel regression model of interest contains endogenous or predetermined explanatory variables, but the processes generating these series are not completely specified. Therefore, a specification test is done to show that the excluded variables have explanatory power for the right-hand-side endogenous variables, the instruments are uncorrelated with the error term and that the exclusion restrictions are valid. Lastly, the specification test helps to show that there are endogenous explanatory variables in the model since system-GMM is inefficient relative to OLS if all variables are exogenous.

Further, the system-GMM estimator can be used to obtain consistent parameter estimates in a wide range of micro-econometric applications, including debt financing strategies of state-

owned corporations. However, Bond (2002: 160) noted that the estimator may be subject to large finite sample biases when the instruments available are weak, and this is particularly likely to be a problem when using the basic first differenced estimator with series that are highly persistent, like the case in this study. Therefore, a careful comparison of the consistent of system-GMM regression estimator results with other panel regression models, like fixed effects and random effects, can help in avoiding more biases in the study results. In addition, the use of these different panel data regression estimator models helped to check the robustness of the results.

Under the system-GMM estimator procedure, the form of both panel regression equation 3, for factors influencing debt financing, and equation 5, for the relationship between debt financing and financial performance, will be changed into equation 10 and 11, respectively.

$$Y_{it} = \alpha_0 + \lambda Y_{it-1} + \sum_{k=1}^N \beta_k X_{kit} + \mu_{it} + \varepsilon_{it} \dots \dots \dots 10$$

$$Y_{it} = \alpha_0 + \lambda Y_{it-1} + \beta X_{it} + \sum_{k=1}^N \gamma_k Z_{kit} + \varepsilon_{it} \dots \dots \dots 11$$

Where the new variable  $Y_{it-1}$  is the lagged value of the dependent variable, i.e., lagged value of financial leverage for equation 10 and lagged value of financial performance for equation 11, with its coefficient  $\lambda$  in each case. The presence of the lagged dependent variable  $Y_{it-1}$  controls for autocorrelation or serial correlation within the dependent variables.

In addition, the regression analysis process required data cleaning in order to achieve better results. Since, the debt financing procedures of state-owned corporations within the financial sector are unique, the data from nine state-owned corporations from the financial sector were excluded from the regression analysis (Lemma and Negash 2013: 1093; Alzomaia 2014: 59). Further, for a better trend analysis, the data from financial statements used in the regression analysis included figures for the five-year period from 2007 to 2011, subject to availability of the statements.

The data analysis was done using both the Statistical Package for the Social Sciences (SPSS) and Data analysis and Statistically Software (STATA) and the presentations and discussions of the results are shown in chapter five. The SPSS software was used for the analysis of

primary data from the questionnaires and STATA software was used for the analysis of secondary panel data for the fixed effects, random effects and system-GMM regression models. In the analysis of GMM panel data regression model, the Arellano-Bond GMM estimator in STATA software was applied, since, in addition to the aforementioned benefits of using system-GMM estimator, it was designed for small-time series (T), in this case a minimum of 3 years and a maximum of 11 years, and large cross-sectional individual observations (N), in this case, 31 non-financial state-owned corporations.

#### **4.10 DELIMITATIONS**

As aforementioned, the study focused on income-generating state corporations in Kenya. The sample size for the study was made up of the 50 income-generating state corporations using a stratified non-probability sampling technique. The non-income generating state corporations were excluded from the study, since their financial performance is not profit based. The sampled 50 state-owned corporations are mostly “profit” motivated and, to some extent, they also pursue socio-economic country growth and development goals. Further, according to Zhang, Wang, Su, Liu, Shen and Bi (2007), a census study is more straightforward and suitable to be used in a local setting where the population frame exists with certainty. The study, therefore, after sampling the income-generating state corporations, used a census technique and collected data for 40 established income-generating state corporations in Kenya.

#### **4.11 LIMITATIONS**

The study used two measuring instruments to make the results valid and reliable as per the content and predictability of the research. The questionnaires together with the information from the financial statements were used to measure the variables across the corporations. Ratio analysis was used to measure the variables from the financial statements over the five-year period. Since the state-owned corporations’ headquarters are spread all over the country, the researcher travelled to all of the sampled state corporations’ headquarters to administer the questionnaires and collect the copies of the financial statements personally. Regrettably, the response (shown in table 4.2 and table 4.3) from the corporations was not so good. 50% of the sampled corporations filled and returned the questionnaires, 34% did not respond, while 16% of the sampled corporations declined to participate in the study. According to

Altinay and Paraskevas (2008: 99), there is no generally agreed standard for a minimum acceptable response rate. However, the author argued that researchers generally consider an acceptable response rate to be anything from 15% to 20% and above, with 10% being the minimum.

In response to the request of financial statements, out of the visited corporations, only 26% gave copies of their financial statements personally. All the state corporations in Kenya are required by the Public Financial Management Act number 18 of 2012 to submit their annual financial statements to the Investment Department in the Ministry of Finance. The rest of the financial statements of state corporations, not obtained from the state corporations directly, being public documents, were acquired by the researcher from the Department of Investment within the Ministry of Finance. The researcher obtained, in total, 80% of the copies of financial statements both from the corporations and the Ministry of Finance office. The study used both the primary and secondary data to complement each other in the analysis.

Further, for a better trend analysis, the data from financial statements used in the regression analysis included figures for the eleven-year period from 2007 to 2011, subject to availability of the statements. The panel data regression analysis was done using the fixed effects (FE), random effects (RE) and system-GMM regression models. The system-GMM estimator was applied since it was designed for small time series (T), in this case a minimum of 3 years and a maximum of 5 years, and large cross-sectional individual observations (N), in this case 31 non-financial state-owned corporations.

#### **4.12 VALIDITY AND RELIABILITY**

Reliability is the extent to which test scores are accurate, consistent or stable (Struwig and Stead 2013: 138). In other words, reliability normally refers to the extent to which a variable or set of variables is consistent in what it is intended to measure (Eeva-Mari and Lili-Anne 2011: 43). Therefore, if measurement results are not reliable, it becomes more difficult and uncertain to test hypotheses or to make inferences about the relations between variables in quantitative research. The authors also noted that the validity of a test score is dependent on the reliability of the test scores because, if the reliability is insufficient, the validity will also be poor. Therefore, the validity of scores of a measuring instrument refers to the extent to which the instrument measures what it is intended to measure.

In this study, the reliability and validity were determined using the correlation coefficient tests, such as Pearson product moment correlation coefficient ( $r$ ) and coefficient of determination ( $R^2$ ). The  $t$ -tests, at 99%, 95% and 90% levels of confidence, were applied to determine internal and external validity.

Further, the robustness and Arellano-Bond tests were applied to test the validity and reliability of the study regression models and variables under system-GMM panel data regression models. According to Eeva-Mari and Lili-Anne (2011: 41), internal validity asserts that variations in the dependent variable result from variations in the independent variables, and not from other confounding factors. They argued that, to an extent, internal validity is about the logic between a research work and the existing theories. Consequently, Struwig and Stead (2013: 147-148) noted that external validity refers to the extent to which one can generalise the results of a study to other populations, settings, conditions, treatments or measurements. External validity determines whether one can draw more general conclusions on the basis of the model used and data collected, and whether results may be generalized to other samples, time periods and settings (Eeva-Mari and Lili-Anne 2011: 42).

The Arellano-Bond AR (1) and AR (2)  $p$  tests are applied under system-GMM models, to test for autocorrelation or serial correlation within the first difference (Kiplagat, Wang and Li) level and the second difference (Kiplagat, Wang and Li) level, respectively. It is expected that autocorrelation should only exist at level one, and not at level two. If there is autocorrelation in level one then the system-GMM model should report AR (1)  $p < 0.05$  at 95% level of confidence, and if there is autocorrelation in level two, then AR (2)  $p > 0.05$  at 95% level of confidence (Blundell and Bond 1998: 116; Bond 2002: 149). Therefore, the system-GMM estimator results are more efficient when AR (1) is significant and AR (2) is insignificant, and are believed to be more accurate than the fixed effects (FE) and the random effects (RE) results.

The  $F$  test are also applied under fixed effects (FE) and random effects (RE), and Wald test applied under system-GMM, to test the reliability of the estimators (coefficients) of the models, i.e., whether they are different from zero, symmetric and the estimator itself not seriously biased (Windmeijer 2005: 26). The  $p < 0.05$  values of  $F$  test and  $p(\chi^2) < 0.05$  of Wald test indicate that the model coefficients or estimators are reliable at 95% level of

confidence for both cases. Further, Sargan tests are applied to test the validity of the models under system-GMM by testing the over-identifying restrictions of the instruments (variables) (Bond 2002: 149; Windmeijer 2005: 37-41). Higher values of p (chi2) indicate that the model is robust, but weakened by many instruments, and low values indicate that the model is not robust, but not weakened by many instruments.

In addition, the Hausman test is applied to test the validity of fixed effects (FE) or random effects (RE). It tests whether the error terms (unique errors) are correlated with the regressors (coefficients). If Hausman test is  $p(\text{chi}^2) < 0.05$ , then it shows that error terms are not correlated with the regressors, and, therefore, fixed effects (FE) results are valid (significant at 95% level of significant). In contrast, if  $p(\text{chi}^2) > 0.05$ , then it indicates that error terms are correlated with the regressors and, random effects (RE) results are more valid than fixed effects (FE) results.

#### **4.13 ANONYMITY AND CONFIDENTIALITY**

The data collection process did not involve getting personal confidential data and, therefore, the anonymity of the participants is upheld. Since the study is on public organizations, the Kenyan law does not restrict the researcher from making the findings of the study public. However, the researcher intends to maintain the confidentiality of the information and the identity of the participants to the extent of the research work only. The data from the participants will be retained for fifteen years after the study, for any further analysis and then disposed off by shredding.

#### **4.14 ETHICAL CONSIDERATION**

It is a general requirement for researchers to be cognizant of the laws that apply to the area in which they are conducting research so that they can provide the areas of protection to their subjects and avoid legal violations (Picardi and Masick 2014: 28). Picardi and Masick also noted that laws vary quite a bit across countries and there are many practices that are perfectly legal but are not ethical. Therefore, the authors observed that researchers should, in addition to abiding by the law, defer to a common core of ethical standards and practices agreed upon and abided by the community and enforced by the intuition in which they work.

Accordingly, this study was strictly conducted according to the Durban University of Technology research ethics policy and guidelines. This ensured that all ethical issues, identified before and during the study, were addressed in the most appropriate manner. The ethics policy takes into consideration the rights of human subjects and freedom from harm, in line with confidentiality, anonymity and voluntary participation. Fortunately, no ethical issues arose during the study.

#### **4.15 CONCLUSION**

In terms of the research methodology applied, this chapter observed that this study was a non-experimental quantitative research, which used a combination of descriptive and explanatory research design. The chapter noted that the research applied both cross-sectional and longitudinal research techniques to analyse data across the sampled state-owned corporations and for the five-year period from 2007 to 2011. Further, the research models, variables and measures and the research hypotheses, which were used in answering the research questions, have been discussed. The chapter also noted that the entire population of state-owned corporations in Kenya was 262, out of which, 50 income-generating state-owned corporations were sampled using the non-probability sampling technique. It has been observed that, primary and secondary data were collected, and both descriptive and inferential statistics were used in the process of data analysis. The chapter also highlighted the delimitations, limitations, and validity and reliability tests and ethical considerations.

Chapter five will present the data analysis and discussion of results of the study.

## CHAPTER FIVE

### DATA ANALYSIS AND DISCUSSION OF RESULTS

#### 5.1 INTRODUCTION

This chapter presents the data analysis and results of the study which have been discussed under key sub-sections in line with the research objectives. The presentation starts with findings on the different types of debt financing used by the various state-owned corporations in Kenya, followed by the presentation of the extent of debt financing within the state-owned corporations in Kenya. In addition, an analysis of the types of debt financing used by state-owned corporations from developed and developing economies is presented. The chapter also presents the descriptive statistics and the regression results for the identification of factors influencing debt financing and the determination of the relationship between debt financing and financial performance of state-owned corporations in Kenya.

#### 5.2 TYPES OF DEBT FINANCING

The study analysed the different types of debt financing used by the various state-owned corporations using the data from state-owned corporations presented in Tables 5.1 and 5.2. Table 5.1 shows the number of non-financial state-owned corporations in Kenya whose data was applied in the analysis from different sectors in Kenya.

**Table 5.1: Kenyan state-owned corporations**

Sector	Number of state corporations	Percentage %
Manufacturing	10	32
Energy	6	19
Transport and communication	4	13
Trade	4	13
Education	4	13
Others	3	10
Total	31	100

Table 5.1 illustrates that 32% of the sample state-owned corporations were found within the manufacturing sector, followed by the energy sector at 19%. Transport and communication,

trade, and education sectors each comprised of 13% of the sample state-owned corporations. Only 10% of the sample state-owned corporations were found within other sectors of the Kenyan economy.

Table 5.2 shows the number of non-financial state-owned corporations from different continents whose data were used in analysing the types of debt financing used by state-owned corporations across continents.

**Table 5.2: Continental state-owned corporations**

<i>Continent/county</i>	Number of state corporations	Percentage %
<i>America</i>		
USA	4	57
Canada	3	43
Total	7	100
<i>Europe</i>		
UK	6	40
Australia	6	40
New Zealand	3	20
Total	15	100
<i>Asia</i>		
India	7	58
Indonesia	3	25
Japan	2	17
Total	12	100
<i>Africa</i>		
South Africa	9	100
Total	9	100

**Source: Self generated by researcher**

The convenience sampling technique was used to select data for the non-financial income-generating state-owned corporations from different developed and developing economies. The convenience sampling technique was applied since the data was extracted from the financial statements of income-generating state-owned corporations, subject to availability on their official websites (Altinay and Paraskevas 2008: 95). The sample of state-owned corporations from America was made up of seven non-financial state-owned corporations, with four from the USA and three from Canada. The Europe sample was made of 15 non-financial state-owned corporations, with six from UK, six from Australia and three from New

Zealand. The sample of Asian non-financial state-owned corporations was made up of 12 state-owned corporations, with two from Japan, seven from India and three from Indonesia. The African sample was made up of nine non-financial state-owned corporations, all from South Africa. The results demonstrate the specific types of debt financing used by state-owned corporations in Kenya and those used by state-owned corporations from developed and developing economies.

### 5.2.1 Types of debt financing: Kenyan perspective

Tables 5.3 and 5.4 clearly illustrate that debt financing is a common practice within state-owned corporations in Kenya. Table 5.3 illustrates the descriptive statistics of the types of debt financing used by the 31 state-owned corporations in Kenya, as a fraction of the corporation's total assets, for the five-year period from 2007 to 2011. Table 5.4 illustrates the types of debt financing used by the income-generating state-owned corporations in Kenya, showing the number of corporations using each type and the percentage usage. The data used in these analyses was extracted from the financial statements of the state-owned corporations. Both the tables show that trade payables and bank loans are the most common types of debt financing used by state-owned corporations in Kenya.

**Table 5.3: Descriptive statistics of types of debt financing- Kenyan perspective from 2007 to 2011.**

	Observations	Minimum	Maximum	Mean	Std. Deviation
Trade and other payables	139	.0076	2.7344	.247407	.3443950
Bank overdraft	53	.0000	.3849	.036244	.0697891
Loans from local financial institutions	26	.0046	.3865	.084493	.0889758
Loans from international financial institutions	31	.0078	1.1999	.363923	.3852640
Loans from the government	45	.0015	1.2328	.251909	.3309376
Total loans	87	.0078	2.6304	.474651	.6192794
Bonds	1	.0095	.02048	0.1162	0.0876
Lease financing	9	.0001	.0144	.002499	.0046409
Provisions	49	.0005	.2918	.029115	.0494374
Deferred tax liability	49	.0001	.2347	.061924	.0565793
Dividend payable	29	.0005	.0202	.006321	.0053384

**Table 5.4: Types of debt usage-Kenyan perspective from 2007 to 2011**

Type of debt financing	Number of corporations using	Percentage of corporations using (%)
Trade payables	31	100
Other payables	31	100
Bank overdrafts	23	74
Loans from local financial institutions	22	71
Provisions	16	52
Loans from the government	14	45
Deferred tax liability	10	32
Loans from international financial institutions	9	29
Dividend payable	9	29
Finance lease	2	6
Bonds	1	3

**Source: Self generated by researcher**

The tables also demonstrate that over 60% of the state-owned corporations use loans which are either from the local financial institutions, international institutions or from the government. This finding confirms the argument of Frank and Goyal (2009: 156) that debt neither vanishes from corporate accounts nor explodes to overwhelm equity. However, the maximum figure of total loans, as highlighted in Table 5.3, was 2.6304, indicating that, in some cases during the period, the total loans' ratio was greater than 1, which means that loans were more than the equity and assets, which is a sign of insolvency. It is also an indication that low performing state-owned corporations may be using more of loans either from government or any governmental agencies.

Interestingly, Table 5.3 shows that the mean of the ratio of loans from international financial institutions (0.3639) is greater than the mean of loans from either the government (0.2519) or from the local financial institutions (0.0845). This result indicates that large amounts of loans are obtained by the state-owned corporations in Kenya from foreign financial institutions on the basis of political connections and the government as guarantor. In addition, Table 5.3 demonstrates that state-owned corporations prefer short-term credits, through trade and other payables, more than long-term loans from the local banks. The mean ratio of trade and other payables of 0.2474 are much higher than that of loans from the local financial institutions of 0.0845. This may be an indication that state-owned corporations, which cannot access the government guaranteed loans, would rather use trade and other payables rather than expose

the investment activities of the corporations for monitoring by the local financial institutions. It is a sign of state-owned corporations in Kenya perusing the agency cost theory of debt financing.

Table 5.4 observes that all the state-owned corporations in Kenya use trade and other payables as a form of short-term credits. It also highlights that, though the loans from international financial institutions are of large amounts, as shown in Table 5.3, few state-corporations are privy to this kind of source. Only 29% of the state-owned corporations used the source during the period of study. On the other hand, 71% used loans from local financial institutions, and 45% percent used direct loans from the government.

The other types of debt financing, used by Kenyan state-owned corporations, apart from loans and payables, include bonds, lease financing, provisions, deferred tax liability and dividend payable. Table 5.4 shows that the bond type of debt financing is being used by only 3% of state-owned corporations. This result indicates that stock market debt instruments (public debt) are not common types of debt financing amongst the state-owned corporations in Kenya. This may be because of the under-developed capital market in Kenya and the fear of the politically appointed managers to expose their investments for monitoring by the debt investors (Frank and Goyal 2005: 154; Randa and Gubbins 2013: 15). These results are further presented graphically in Figure 5.1, which presents the percentage of the number of state-owned corporations using the various types of debt financing in Kenya.

**Figure 5.1: Percentage usage of types of debt financing in Kenya, from 2007 to 2011**

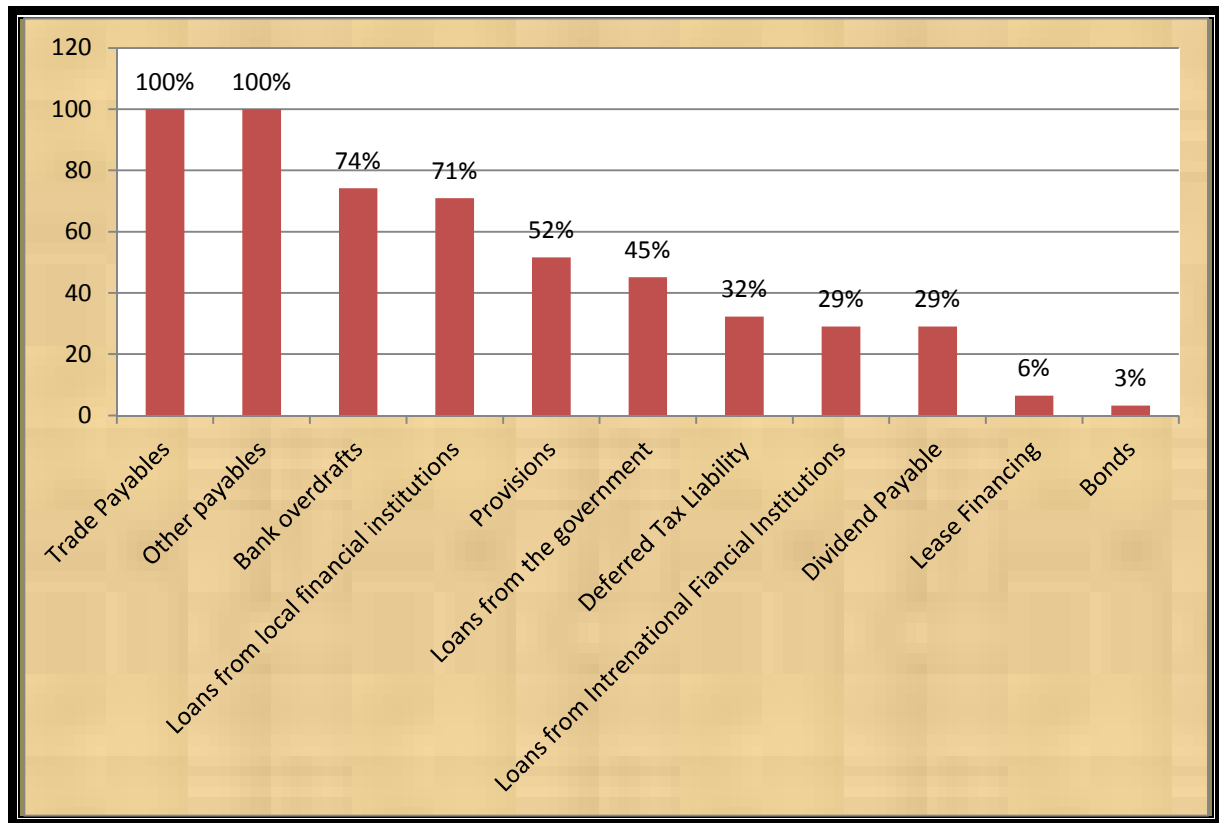


Figure 5.1, shows that private debt, from both local and international financial institutions, is the common types of debt financing used by the state-owned corporations in Kenya. In addition, Figure 5.1 and Table 5.4 show loans from the government at 45%, with 16 state-owned corporations using this type of debt financing strategy. Hence, it implies that the agency theory may be the best explanation of debt financing strategies applied by most state-owned corporations in Kenya (Jiraporn *et al.* 2012: 210; Chen *et al.* 2013: 755). Further, unlike most of sub-Saharan Africa banks, Kenyan banks have been experiencing low liquid assets reserve requirements over the last decade, allowing them to expand credit facilities to organisations such as state-owned corporations (Nketcha Nana and Samson 2014: 33 & 36).

The scenario is confirmed by the results of the data from the study questionnaires presented in Table 5.5 and Table 5.6. Table 5.5 presents the frequency and percentage response to the questionnaire question on how the state-owned corporations' investments are financed. Table 5.5 confirms further that, apart from loans and debt instruments in the stock market, the state-owned corporations also prefer to use internally-generated funds and grants from the government or international organisations.

**Table 5.5: Ways of financing investments of state-owned corporations in Kenya**

	Frequency	Percent
Internally generated funds	14	56
Borrowings from the banks	13	52
Borrowings from international organisations	6	24
Grants form government or international organisations	6	24
Government (budget) allocations	5	20
Borrowing from the government	3	12
Debt instruments in the stock exchange	2	8

This is an indication of the pecking order theory. However, Table 5.5 shows that state-owned corporations prefer using internally-generated funds, followed by debt, in terms local and international loans, and equity, in terms of grants and government allocations. The debt instruments in the stock exchange, which should also follow after internally-generated funds, with other debt forms, like loans, ranks last, which contradicts the pecking order theory. This indicates a sign of the agency costs theory, since more use of debt from the stock exchange exposes the investments of the state-owned corporations to the debt providers (Frank and Goyal 2005: 154; Randa and Gubbins 2013: 15). The agency cost theory was further confirmed by the response on the question of the banks from which the managers prefer to borrow. From the results, 62.5% of the state-owned corporations prefer borrowing from the government-owned banks, while 37.5% preferred non-government owned banks. There are more than five fully and partially government-owned banks in Kenya. This result indicates that even when the state-owned corporations use loans, they would not like to expose their investments to non-government institutions.

The response to the question of whether the state-owned corporations are allowed to issue debt instruments in any capital market indicates why the stock markets' debt instruments are not types of debt within the corporations. The result shows that 26% of the respondents agree that they are allowed to issue debt instruments in the stock markets. In contrast, 43% showed that they are not allowed and 31% were not sure. The results indicate that the managers of 76% of the state-owned corporations are not aware of the fact that the Public Financial Management Act number 18 of 2012 allows them to access stock market debt financing (Republic of Kenya 2012b: 930).

Table 5.6 presents the frequency and percentage of responses of the state-owned corporations on the maximum repayment period of their debt. Table 5.6 also confirms that the use of short-

term debt (maturing within 1 year) is common amongst state-owned corporations in Kenya, at 23%, following after the long-term debt which matures after five years, at 59%.

**Table 5.6: The maximum debt repayment period**

	Frequency	Percent
	22	100
Within 1 year	5	23
Between 3 to 5 years	4	18
Above 5 years	13	59
Total	22	100

### 5.2.2 Types of debt financing: perspective of developed and developing economies

There are common problems associated with international comparisons of corporate sector strategies, such as the valuation of assets, the treatment of reserves and classification of liabilities (Mayer 1990: 308). Consequently, this study, in an attempt to analyse the types of debt financing used by state-owned corporations from developed and developing economies, focused only on the types of liabilities shown on the financial statements of some non-financial state-owned corporations across the continent of America, Europe, Asia and Africa. The analysed results were presented in Table 5.7 across the continents as follows.

**Table 5.7: Types of debt financing: developed and developing economies' perspective**

Type of debt financing	America	Europe	Asia	Africa
Short-term debt				
Trade and other payables	√	√	√	√
Bank overdrafts		√		√
Commercial papers		√	√	√
Local discount notes	√			
Foreign exchange discount notes	√			
Long-term debt				
Loans from local financial institutions		√	√	√
Loans from International financial institutions			√	√
Loans from the government			√	√
Domestic debt securities (bonds, notes or debentures)	√	√	√	√
International debt securities (bonds, notes or debentures)	√	√	√	
Derivative financial instruments (swaps, options and forward contracts)	√	√	√	√
Finance lease	√	√	√	√
Provisions	√	√	√	√
Pension liabilities	√	√	√	√
Deferred tax liability	√	√	√	√

#### **5.2.2.1 America**

American state-owned corporations have a diversified debt financing base of domestic and international investors (United States Securities and Exchange Commission 2013: 111). According to the report, purchasers of state-owned corporations' debt securities are geographically diversified and include fund managers, commercial banks, pension funds, insurance companies, foreign central banks, corporations, state and local governments, and other municipal authorities. In both the USA and Canada, types of debt financing within state-owned corporations, as shown in Table 5.5, include long-term and short-term debt.

According to the financial statements of these state-owned corporations, the long-term debt includes both local and international bonds, which are referred to as debt securities, notes or debentures. They also include derivative financial instruments and preferred stocks, which are traded in both the local and international capital markets. Other long-term liabilities like finance lease, provisions, pension liabilities and deferred tax liability are also common, especially under Canadian state-owned corporations. The short-term debt, on the other hand, includes trade and other payables, local discount notes and foreign exchange discount notes. Therefore, a common general type of debt financing in America is public debt financing, with very few bank loans, since their capital markets are more developed (Chen *et al.* 2013: 755).

#### **5.2.2.2 Europe**

Unlike in America, as shown in Table 5.7, European state-owned corporations have bank loans featuring in most of their financial statements. It is believed that private debt, such as bank loans in a developed economy, with advanced capital markets, improves the country's economic growth in the short-term (Choong *et al.* 2010: 108; Agbloyor *et al.* 2014: 138 & 151). This may be the reason why private debt, like bank loans, is still common amongst European state-owned corporations although these economies have efficient and active capital markets. The common public debt used amongst the European state-owned corporations is derivative financial instruments, which mostly consist of swaps and forward foreign exchange contracts. In addition, they also use debt securities (either loan notes or medium-term loan notes), finance lease, provisions and pension and deferred tax liabilities. The other unique type of debt financing used, under short-term debt, is the commercial papers, which are traded both in the local and international capital markets. The other short-term debt used by state-owned corporations in Europe includes bank overdrafts and trade and other payables.

### 5.2.2.3 Asia

Table 5.7 also shows that Asian state-owned corporations use different types of debt financing under long-term debt and short-term debt. The various financial statements from these state-owned corporations indicate that bank loans, from local financial institutions, international financial institutions and governments, are common types of long-term debt being used. In addition, public debt, such as bonds and derivative financial instruments, and commercial papers, are also types of debt used in Asia, particularly in Japan and India. The other types of long-term debt include finance lease, provisions, and pension and deferred tax liabilities. However, trade and other payables also appear under Asian state-owned corporations, as a common type of short-term debt. It is noted that public debt, such as bonds, derivative financial instruments and commercial papers, appear to be common types of debt used by Asian countries, such as Japan, whose capital markets are more developed (Choong *et al.* 2010: 108). Nevertheless, developing Asian countries, such as India and Indonesia, also use local bonds (convertible and non-convertible), but not as much as private debt.

### 5.2.2.4 South Africa (Africa)

South Africa is classified under developing economies and its capital market is slightly better than the Kenyan capital market. Table 5.7 shows that most state-owned corporations in a developing economy in Africa (South Africa) also use types of public debt, such as bonds, commercial papers and derivative financial instruments, like swaps, options and forward foreign exchange contracts. However, since most African countries are categorised as underdeveloped economies, the long-term debt of state-owned corporations are dominated by bank loans, either from local financial institutions, international financial institutions or from the government (Nielsen 2011: 41-44). Other long-term debt, such as provisions and pension and deferred tax liabilities are also common amongst African state-owned corporations. All the same, as it is a common practice world over, all African state-owned corporations also use bank overdrafts and trade and other payables as part of their short-term debt financing. In Kenya, 20% of the state-owned corporations used only the bank overdrafts and trade and other payables as the type of debt financing strategy.

Figure 5.2 shows the overall percentage usage of common different types of debt financing across the five continents (America, Europe, Asia and Africa). Generally, trade and other payables are the common type of short-term debt used by all the state-owned corporations

across the five continents, indicating 100% percent continental usage. On the other hand, the other types of short-term debt, such as commercial papers, bank overdrafts and discount notes, are not common across all the continents. Only 75 % of the continents show the usage of commercial papers and bank overdrafts amongst their state-owned corporations, while, both the local and foreign discount notes are used within 25% of the continents.

**Figure 5.2: Percentage usage of types of debt financing across the continents from 2007 to 2011**

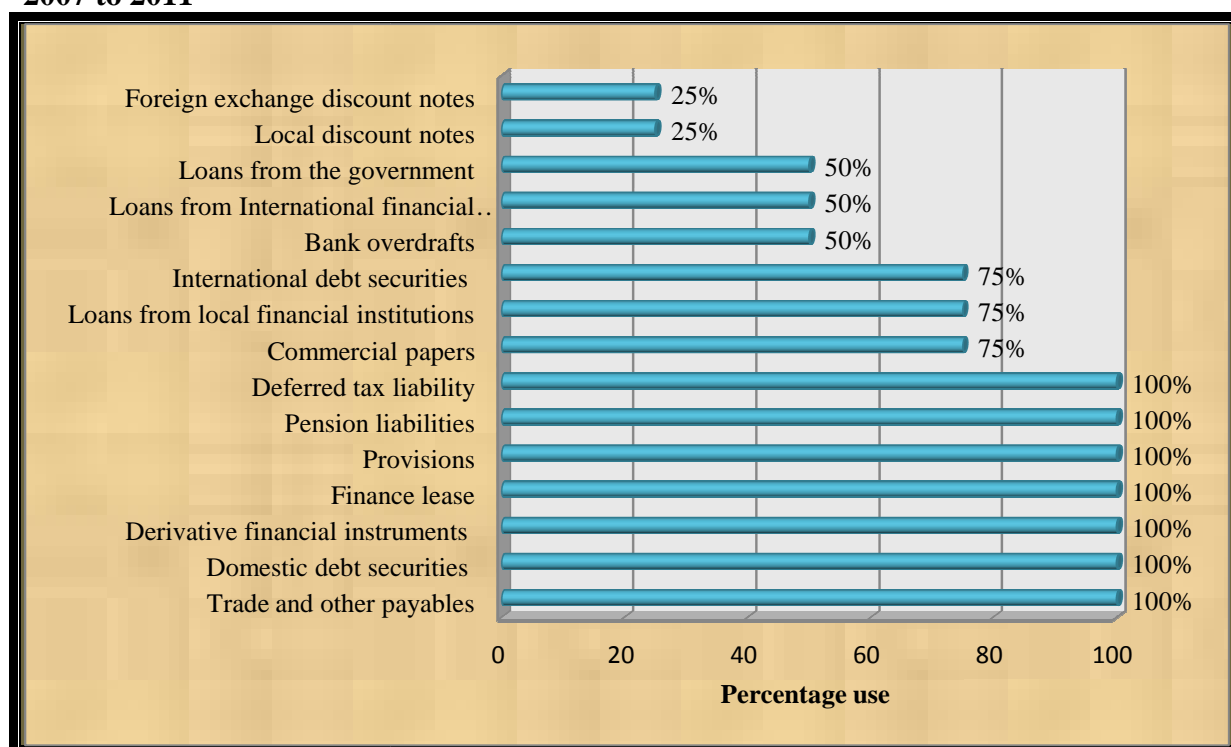


Figure 5.2, further, shows that the types of long-term debt commonly used by state-owned corporations amongst the five continents include domestic debt securities, derivative financial instruments, finance lease, provisions, and pension and deferred tax liabilities. All types of loans, either from both local and international financial institutions or from the governments, are not used commonly in all the five continents. The usage of loans from local financial institutions within the state-owned corporations is at 75% of the continents. Loans from both international financial institutions and governments only appear as a type of state-owned corporations' debt financing within 50% of the continents. In general, Figure 5.2 shows that the types of debt financing used by state-owned corporations from developed and developing economies are almost similar, with very few variations, especially on extent of usage.

## 5.3 THE EXTENT OF DEBT FINANCING WITHIN STATE-OWNED CORPORATIONS IN KENYA

### 5.3.1 Descriptive statistics for items of common-size financial statements

Table 5.8 presents the descriptive statistics of the common statement of financial position and the common cash flow, which are used to illustrate the extent of debt financing within the non-financial state-owned corporations in Kenya for the five-year period from 2007 to 2011. The table shows that the maximum value of total debt ratio was 2.736, and of long-term debt and short-term debt were 2.736 and 2.630, respectively. These results indicate that, during this period, some state-owned corporations borrowed more than their total assets, meaning that they were insolvent and have a high risk of being put under receivership.

**Table 5.8 : Descriptive statistics for items of common-size financial statements from 2007 to 2011**

	Observations	Minimum	Maximum	Mean	Std. Deviation
Non-current assets	135	0.018	0.970	0.636	0.022
Current assets	135	0.030	0.982	0.364	0.022
Long-term debt	136	0.000	2.630	0.337	0.027
Short-term debt	136	0.008	2.736	0.276	0.135
Total Debt	136	0.008	2.736	0.610	0.080
Equity	136	-1.736	0.992	0.390	0.080
Dividend payment	133	0.000	0.508	0.007	0.042
Capital expenditure	133	-0.070	0.805	0.050	0.053
Net increase in working capital	133	-2.589	1.095	-0.007	0.205
Operating cash flows after interest and taxes	133	-2.535	0.450	0.014	0.199
Financing deficit	133	-0.588	1.139	0.037	0.074
Net equity financing	133	-0.069	1.042	0.037	0.075
Net debt financing	133	-0.341	0.304	0.009	0.015

On the other hand, minimum debt ratios were low, with the long-term debt ratio figure being zero. This shows that, at some point during this period, there were state-owned corporations

using only short-term debt as a way of borrowing. The standard deviation shows that there was a moderate deviation on long-term debt figures, at 0.027, compared to short-term figures' deviation, which was at 0.135, during the five-year period from 2007 to 2011. However, when the two are combined as total debt, the deviation was at 0.080. This highlights that there were some state-owned corporations with very low figures of total debt and very high figures at the same time, during the period.

Table 5.8 also shows a minimum negative financing deficit of 0.588 and maximum net equity financing being (1.042) more than net debt financing (0.304). These results indicate a contradiction of the findings of Shyam-Sunder and Myers (1999: 224) and Atiyet (2012: 3) pecking order model, which assume that the financing deficits will be filled entirely with new debt issues, except for firms at or near their debt capacity. In addition, the mean and the standard deviation of net equity financing of 0.037 and 0.0753, respectively, are greater than those of net debt financing of 0.009 and 0.015, respectively.

It can, therefore, be assumed that the majority of Kenyan state-owned corporations prefer equity financing to debt financing as a source of external finance, mostly in terms of grants and government allocations. This behaviour supports the argument that debt-financing strategies within the state-owned corporations in Kenya can be best explained by the agency theory concept (Jiraporn *et al.* 2012: 210; Chen *et al.* 2013: 755). The agency theory concept highlights that the managers of the corporations try to avoid financing strategies, such as external debt financing, which will expose their investments to external monitoring, but choose financing strategies, such as equity financing, which will not expose them to external monitoring (Frank and Goyal 2005: 154).

### **5.3.2 Common-size statement of financial position and statement of cash flow**

Table 5.9 presents an aggregate common-size statement of financial position for state-owned corporations in Kenya for the five-year period from 2007 to 2011. The value of each item of the common-size statement of financial position is calculated as a percentage of the book value of total assets and then averaged for each corporation reporting data in their statement of financial position in that year. The table shows remarkable stability of total debt over the five-year period, with a slight decline in 2011. This behaviour is consistent with the findings of Frank and Goyal (2009: 156) and Lemmon *et al.* (2008: 1589), who also found stability in total debt ratios of the U.S. corporations. According to Lemmon *et al.* (2008: 1589), leverage

ratios, such as total debt, long-term and short-term debt ratios are generally relatively stable over time.

**Table 5.9: Common-size statements of financial position from 2007 to 2011**

Average statement of financial position's item as a fraction of total assets					
Year	2007	2008	2009	2010	2011
Non-current assets	0.610	0.627	0.664	0.645	0.633
Current assets	0.390	0.373	0.336	0.355	0.367
Total assets	1.000	1.000	1.000	1.000	1.000
Long-term debt	0.339	0.331	0.372	0.342	0.299
Short-term debt	0.374	0.296	0.262	0.233	0.217
Total debt	0.717	0.625	0.624	0.577	0.507
Equity	0.283	0.375	0.376	0.423	0.483
Total equity and liabilities	1.000	1.000	1.000	1.000	1.000

Further, Table 5.9 highlights stability in short-term debt ratios, with some slight declining trend, throughout the five-year period. The aggregate total debt ratios, on the other hand, seem to be quite stationary over the period. It is remarkable how the assets, particularly non-current assets, also remained stable over the period.

However, it is interesting to note that equity grew steadily over the five-year period. This confirms the results in Table 5.5, which indicate preference of equity financing, in terms of grants and government allocations, over debt financing. If the increase in equity is due to increase in profits, then it is an indication that this increase in equity, with a decrease in debt levels, can be explained by the pecking order theory. The theory basically states that the corporation will use debt financing, rather than equity financing when internal cash flow is not sufficient to finance investment expenditures (Myers 2001: 81).

Table 5.10 presents common-size cash flows data for state-owned corporations in Kenya. The value of each item of the cash flow is calculated as a fraction of the book value of total assets and then averaged across each corporation reporting data in its statement of cash flow for the five year period from 2007 to 2011.

**Table 5.10: Common-size statements of cash inflows and outflows from 2007 to 2011**

Average cash flow items as a fraction of total assets					
Year	2007	2008	2009	2010	2011
a) Dividend payment	0.0241	0.0060	0.0013	0.0016	0.0037
b) Capital expenditure	0.0284	0.0475	0.0445	0.0597	0.0723
c) Net increase in working capital	-0.0920	0.0220	0.0411	-0.0439	0.0360
d) Operating cash flows after interest and taxes	-0.0388	0.0344	0.0229	0.0089	0.0405
Financing deficit (a+b+c-d)	-0.0007	0.0410	0.0640	0.0084	0.0714
Net equity financing	0.0031	0.0467	0.0245	0.0588	0.0522
Net debt financing	0.0147	-0.0052	0.0201	-0.0004	0.0136

In contrast, Table 5.10 shows that operating cash flows after interest and taxes, which indicates profits in cash basis, declined during the last three years from 2008 to 2010, while net equity financing increased over these periods. Therefore, this increase in equity, while debt financing decreased, can be best explained by the aforementioned agency theory. The theory indicates that there was external financing during these periods, but equity external financing was preferred over external debt financing because of the fear of managers to expose their investments for external screening (Frank and Goyal 2005: 154).

In addition, Table 5.10 shows that the capital expenditure of the state-owned corporations in Kenya displayed an increasing trend over the five-year period, from 2007 to 2011. The major increase is witnessed in 2008 and 2011, when there is also an increase in net equity financing. This confirms, further, that state-owned corporations used more of equity financing to fund the capital investments. Nevertheless, Table 5.10 also shows negative net working capital in 2007 and 2010, confirming the use of short-term debt, such as trade and other payables, in financing the operations and investments of state-owned corporations in Kenya. The table also shows that dividend payment amongst state-owned corporations exists but at a very low level. The levels indicate a declining trend of dividend payment over the period, with a slight increase in 2011. These low declining levels of dividend payment demonstrate that managers of state-owned corporations in Kenya prefer to plough back profits rather than pay dividend to the government and other owners. The aggregate levels of debt ratios and net external

financing ratios in Table 5.10 can further be used to show the extent of debt financing within the state-owned corporations graphically.

### 5.3.3 Graphical presentation of aggregate debt ratio levels

The graphical presentation of debt ratio levels, presented in Figure 5.3 shows some stability on total debt, with a slight declining trend, of less than 5%, towards the end of the period-in 2011. As advocated by Lemmon *et al.* (2008: 1589), a very steady stability of total debt is observed between 2008 and 2009, where the values were stationary.

**Figure 5.3: Aggregate debt ratio levels from 2007 to 2011**

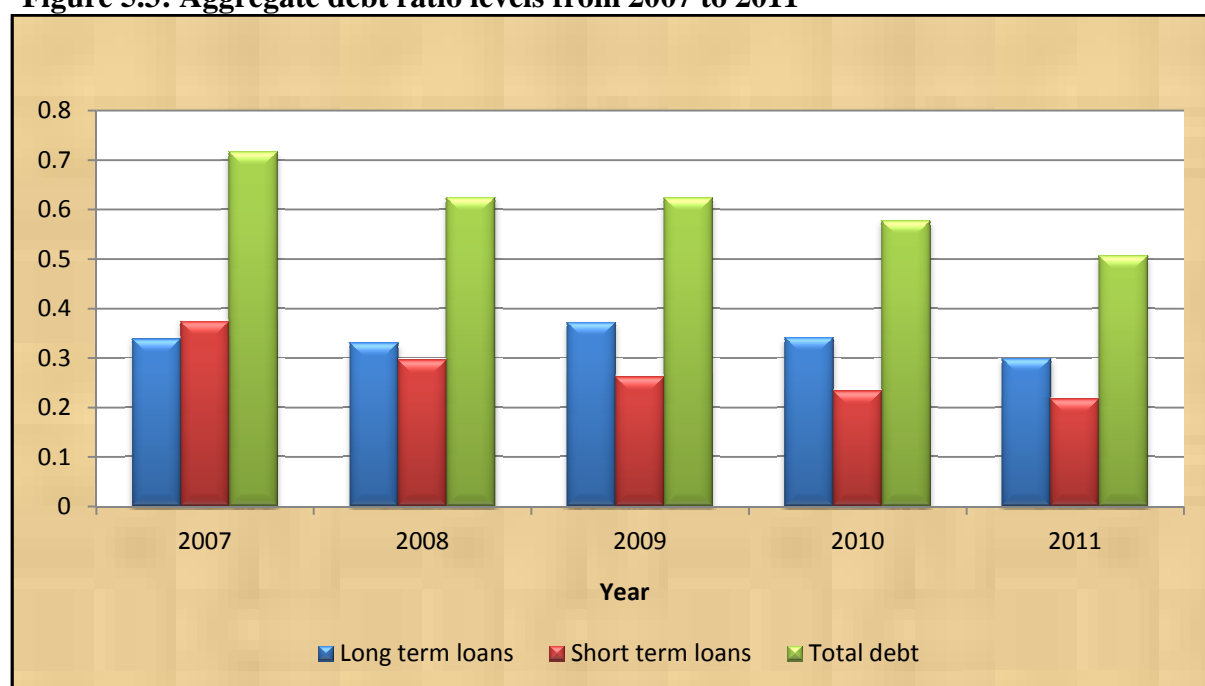


Figure 5.3 also shows that short-term debt somehow follows the same trend of total debt, with a steady slight average decline of about 6% throughout the years. This may be an indication of the state-owned corporations changing their debt financing strategy to use more of long-term debt, compared to short-term debt, over the period, because of the steady commercial banks' interest rates. Interestingly, the long-term debt levels shows some "trade-off theory" debt pattern, where there exists an optimal or target level, and the state-corporations adjust their debt levels towards that target (Frank and Goyal 2005: 150 - 158). Figure 5.3 shows an existence of optimal or target level in 2009 and the firms adjust towards it at a rate of about 2%. However, the figure also shows an immediate deviation, at the same

rate (2%), from the target level in the following years i.e., 2010 and 2011. According to the trade-off theory, stationary behaviour is expected when the debt level of the corporation has reached the optimum level. In general, the stability behaviour of the debt-financing levels, highlighted in Figure 5.3, also pose a problem for the pecking order theory (Frank and Goyal 2005: 158).

In order to further understand the debt-financing levels within the state-owned corporations in Kenya, the aggregate levels of individual types of debt financing during the five-year period from 2007 to 2011, are illustrated in Figure 5.4. Figure 5.4 represents the levels of average figures for different types of debt used by the state-owned corporations in Kenya as a fraction of total assets for the five-year period from 2007 to 2011.

**Figure 5.4: Aggregate levels of individual types of debt financing from 2007 to 2011**

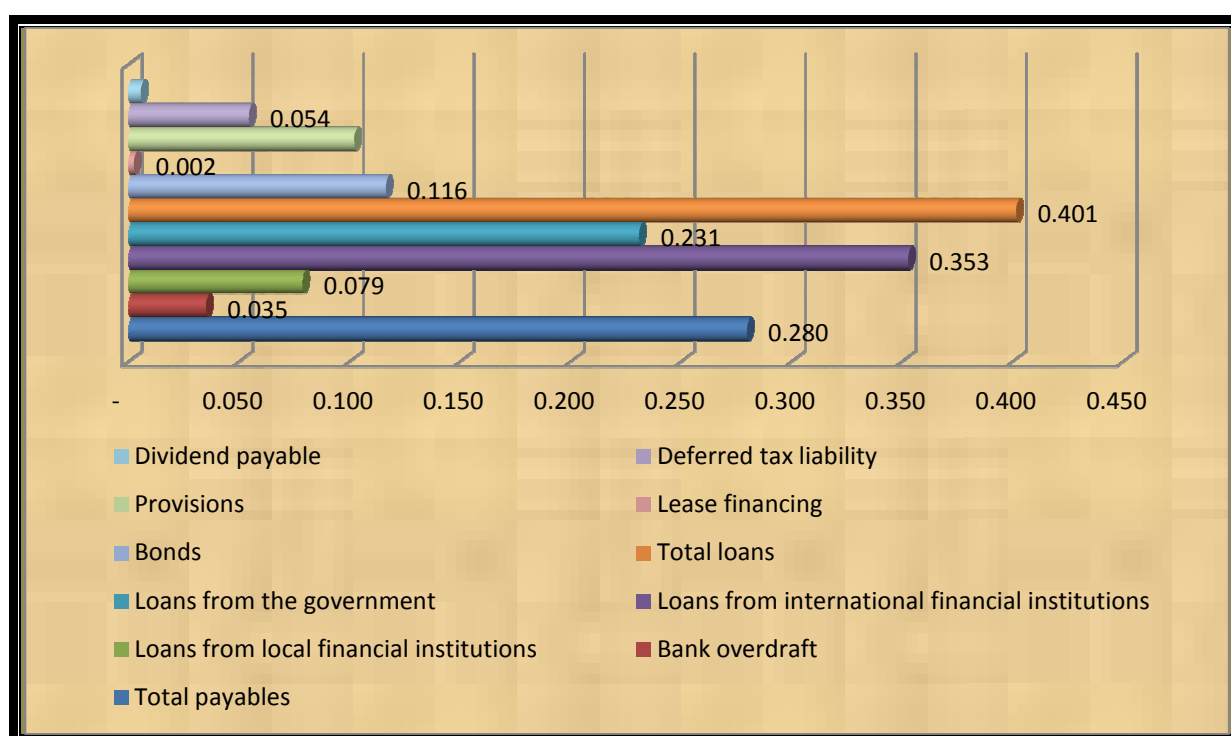


Figure 5.4 shows that the average levels of bank loans, in total, were higher than all the other types of debt, such as bonds and total payables, during the five-year period from 2007 to 2011. It is further observed that loans from international financial institutions were higher (0.353) than the loans from the government (0.231) and loans from local institutions (0.079). These results indicate that the state-owned corporations in Kenya prefer borrowing from international financial institutions, since the local commercial banks' interest rates in Kenya

have been higher than most of the international banking rates during this period. Further, the state-owned corporations in Kenya may be using more of loans from international financial institutions as a foreign exchange rate risk hedging strategy.

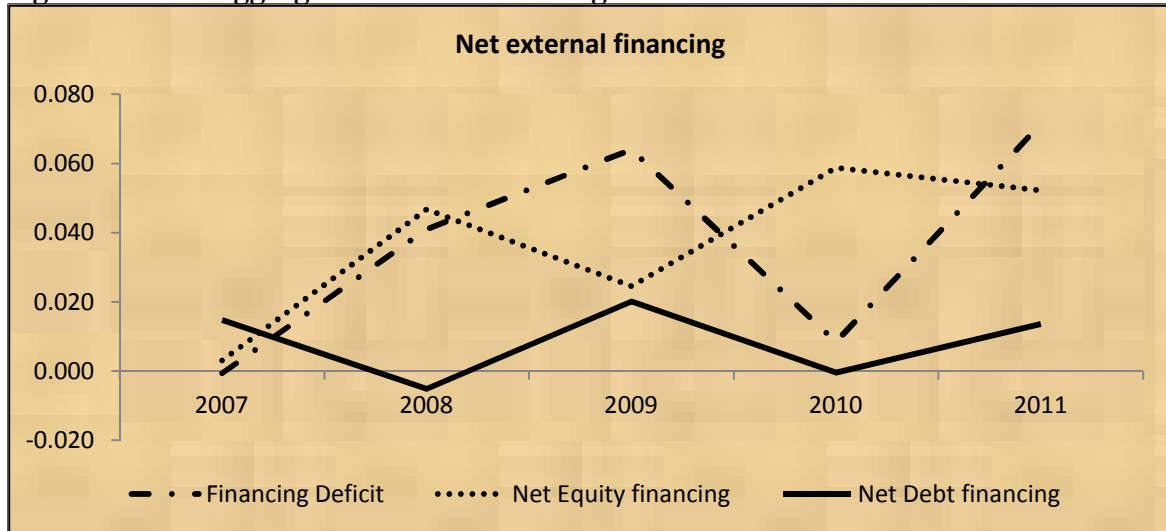
Figure 5.4 also shows that the levels of trade and other payables (0.280) were equally high during this period, second to loans from international financial institutions. On the other hand, the levels of bonds (0.054) and lease finance (0.002) are on the lower levels, though the level of bonds is, to some extent, higher than lease finance. This may be an indication that state-owned corporations in Kenya are starting to appreciate financing through debt securities, such as bonds. Aggregate bank overdraft level (0.035) was not very high, but Figure 5.4 indicates that it is also a type of debt financing used by some state-owned corporations in Kenya.

#### **5.3.4 Graphical presentation of aggregate net external financing levels**

Net external financing is made up of net equity financing and net debt financing. When the aggregate figures of net equity financing are positive, they show that part of external financing is through equity issues. A positive net debt financing also shows that the corporation issued debt or acquired some long-term loan as part of their external financing and the amount acquired or issued is greater than the long-term debt repayment in that period. A negative net debt financing shows that the total long-term debt repayment was greater than total new debt issuance.

Figure 5.5 presents the average net long-term debt financing/issuance, net equity financing/issuance and financing deficit for the state-owned corporations in Kenya for the five-year period from 2007 to 2011. The figures are calculated as a fraction of total assets. Net debt financing is increase in long-term debt minus long-term debt repayments. Net equity financing is the issue of equity stock minus any repurchase of equity stock. The financing deficit is calculated as dividend paid plus capital investments plus change in working capital minus operating cash flows.

**Figure 5.5: Net aggregate external financing levels from 2007 to 2011**



According to Frank and Goyal (2003: 230-231), it is expected that net debt financing and net equity financing ought to track the financing deficit. They argued that, under the pecking order theory, one would expect net debt financing to track the financing deficit much more closely than would net equity financing. Empirically, Figure 5.5 shows an interesting pattern between net debt financing, net equity financing and financing deficit for state-owned corporations in Kenya for the five-year period from 2007 to 2011. The correlation between aggregate net debt financing and aggregate financing deficit (0.3) is greater than that between aggregate net equity financing and aggregate financing deficit (0.2). As highlighted in Figure 5.5, aggregate net debt financing tends to track financing deficit more than the aggregate net equity financing.

However, the rate at which net debt financing tracks financing deficit is very low. This is an indication that state-owned corporations used debt to finance part of their financing deficits during the five-year period (Frank and Goyal 2005: 158). In contrast, in 2008 and 2010, Figure 5.5 shows that aggregate net equity financing were above financing deficit. This indicates that equity issues were also used by the state-owned corporations in Kenya, during the five-year period, to finance part of their financing deficits. In general, Figure 5.5 indicates that most of the state-owned corporations in Kenya use debt conservatively and that these corporations occasionally use more equity than debt.

According to Frank and Goyal (2005: 158), it is possible for the aggregate data to hide a lot of heterogeneity in the debt-financing decisions of corporations and that large increases in

long-term debt financing by a certain sector of the economy offsets increasing numbers of corporations not using long-term debt financing. Therefore, analysis of debt-financing levels of Kenyan state-owned corporations within various economic sectors reduces heterogeneity between the corporations and the sectors.

### 5.3.5 Debt financing levels of Kenyan state-owned corporations within various sectors

Table 5.11 presents the descriptive statistics for the analysis of long-term debt financing of state-owned corporations within the various sectors of the economy in Kenya. Table 5.11 shows that the level of long-term debt financing within the state-owned corporations in Kenya, during the five-year period from 2007 to 2011 was higher within the manufacturing sector. The mean of the long-term debt ratio is the highest (0.514), with the highest maximum ratio of 2.630 and standard deviation of 0.710. These results indicate that the use of long-term debt is common amongst state-owned corporations within the manufacturing sector in Kenya. However, the minimum value of zero indicates that some state-owned corporations within the sector also did not have long-term debt as a type of debt financing within the financial statements during the five-year period from 2007 to 2011.

**Table 5.11: Descriptive statistics for the long-term debt of the sectors from 2007 to 2011**

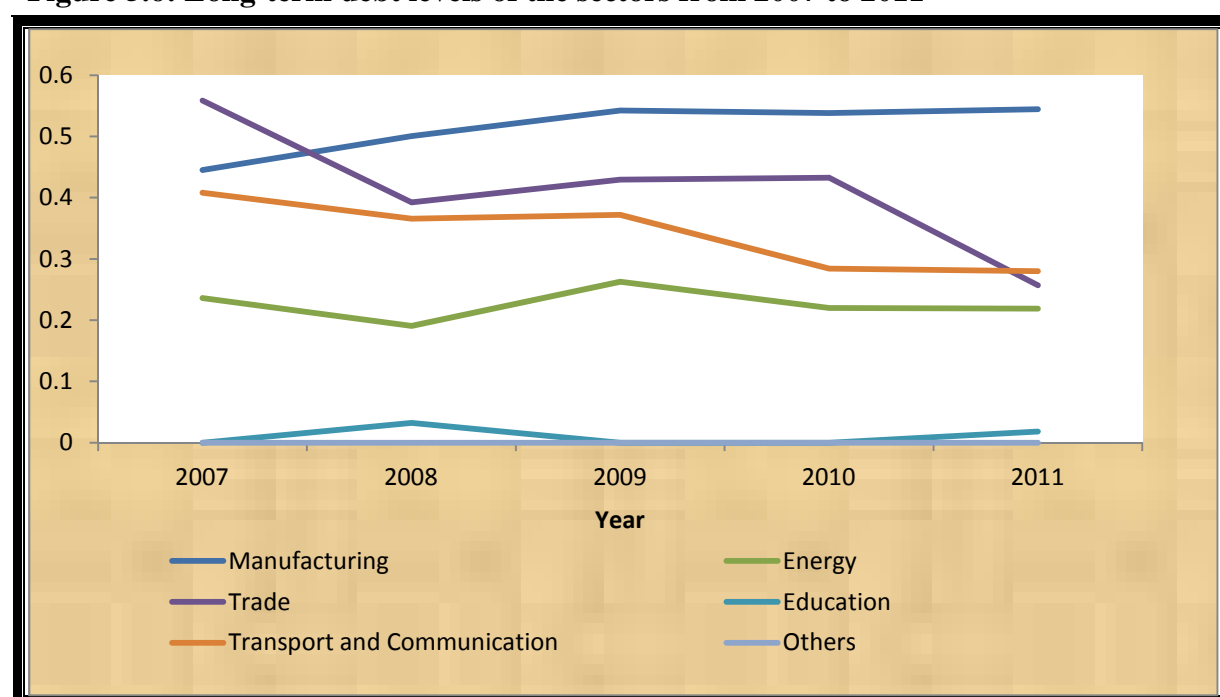
	Observations	Minimum	Maximum	Mean	Std. Deviation
Manufacturing	50	0.000	2.630	0.514	0.710
Energy	23	0.000	0.520	0.226	0.154
Transport and telecommunication	20	0.014	1.200	0.342	0.474
Trade	19	0.000	1.672	0.414	0.725
Education	18	0.000	0.128	0.010	0.020
Other sectors	11	0.000	0.000	0.000	0.000
Unlisted state-owned corporations	154	0.000	2.630	0.302	0.528
Listed state-owned corporations	30	0.000	0.520	0.187	0.187

It can also be observed from Table 5.11 that state-owned corporations within the trading sector used more of long-term debt to finance their investments, since the highlighted long-term debt ratio mean of the sector is 0.414, with a maximum value of 1.672 and standard deviation of 0.725. The minimum long-term debt ratio of zero within this sector, as well, shows that there were some state-owned corporations within the trade sector which did not

have long-term debt under their financial statements during the period. Table 5.11 further shows that long-term debt is also a common financing strategy amongst the state-owned corporations within the transport and communication sector, with a long-term debt ratio mean of 0.342 and a maximum of 1.200. Nevertheless, the minimum long-term debt ratio was 0.014, indicating that all the state-owned corporations within the transport and communication sector had long-term debt in their financial statements throughout the five-year period from 2007 to 2011.

On the other hand, Table 5.11 shows that the levels of long-term debt ratios within the energy, education and other sectors are on the low side, with other sectors (Medical and housing) which have a mean, maximum and minimum values of zero each. These results indicate that the long-term debt financing was not a financing strategy used by state-owned corporations within the medical and housing construction sectors in Kenya. These long-term debt financing levels are clearly observed using a graphical presentation in Figure 5.6. Figure 5.6 presents the average long-term debt ratio for the state-owned corporations within the various economic sectors in Kenya for the five-year period from 2007 to 2011.

**Figure 5.6: Long-term debt levels of the sectors from 2007 to 2011**



It is observed in Figure 5.6 that the manufacturing sector had the highest levels of long-term debt financing within the state-owned corporations in Kenya over the five-year period from

2007 to 2011. This was followed by the levels within trade, transport and communication and energy sectors, respectively. Education and other sectors had the lowest levels, with other sectors presenting zero levels. In general, the sectors highlight some kind of stability throughout the years, with the trading sector showing a decline in 2008, followed by stability and then another decline in 2011. According to Murray and Vidhan (2008: 158), stability of long-term debt ratios acts as an evidence of trade-off theory. On the other hand, the authors argued that a fluctuation of long-term debt ratios tracking the corporation's financial deficits is a sign of the pecking order theory. Therefore, with more of stability amongst the long-term debt ratios within the sectors, a sign of trade-off theory is highlighted, though not steadily, since there are some fluctuations within the period.

Table 5.12 presents the descriptive statistics for the sector's short-term debt as a fraction of total assets for the state-owned corporations within the various economic sectors in Kenya for the five-year period from 2007 to 2011.

**Table 5.12: Descriptive statistics for the short-term debt of the sectors form 2007 to 2011**

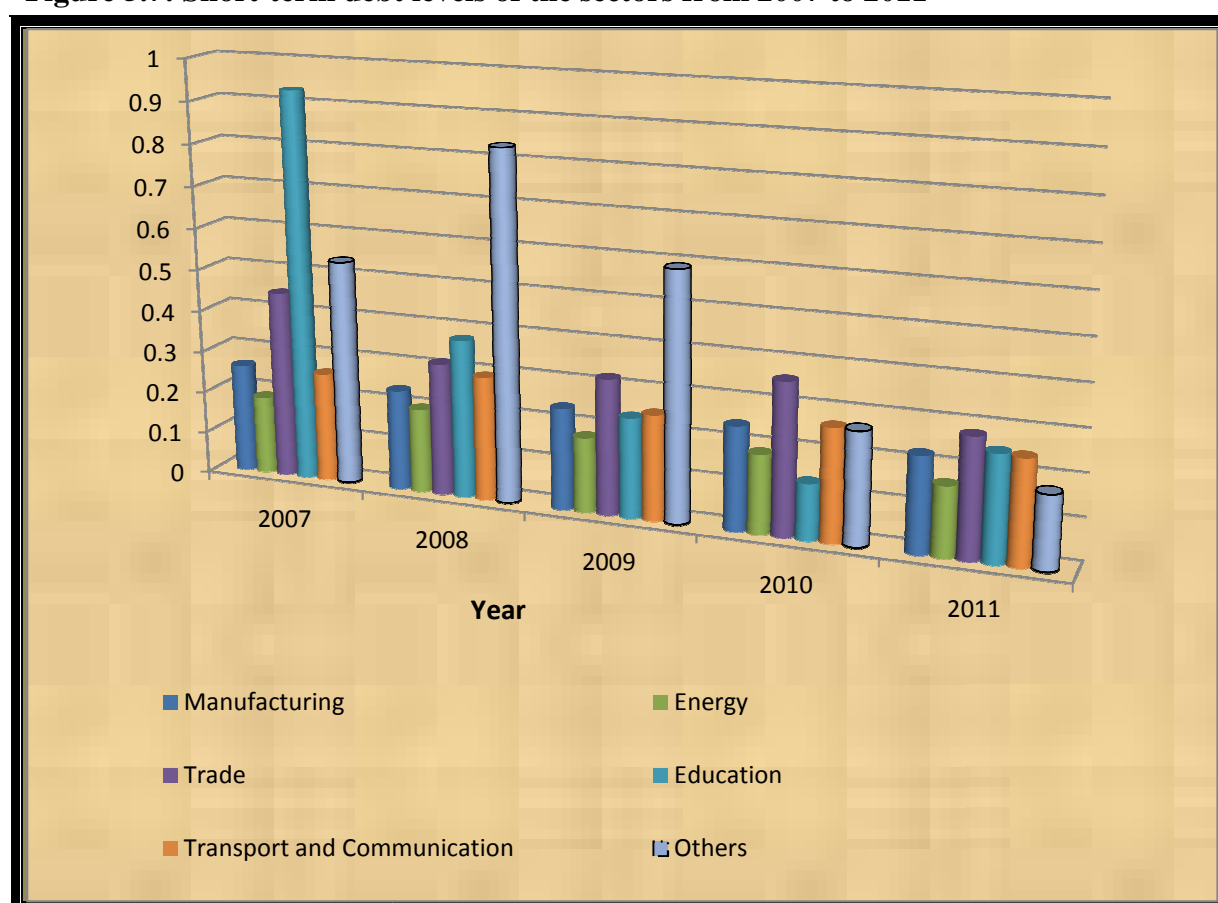
	Observations	Minimum	Maximum	Mean	Std. Deviation
Manufacturing	50	0.008	1.106	0.243	0.301
Trade	19	0.020	0.994	0.346	0.424
Energy	23	0.065	0.400	0.183	0.137
Transport and telecommunication	20	0.048	0.534	0.264	0.183
Education	18	0.048	2.736	0.386	0.436
Other sectors	11	0.026	1.005	0.480	0.264
Unlisted state-owned corporations	154	0.008	2.736	0.280	0.333
Listed state-owned corporations	30	0.020	0.896	0.374	0.389

Table 5.12 shows that the use of short-term debt is common amongst all the state-owned corporations from various economic sectors in Kenya. Unlike the long-term debt ratio, the mean of short-term debt ratio levels within the manufacturing sector did not demonstrate the highest value, though the maximum value still showed a high figure (1.106) amongst other sectors, being second to the education maximum value (2.736). Further, Table 5.12 shows that, except for the trade sector, most of the sectors, such as education and other sectors, which had mean levels of long-term debt, show high mean levels of short-term debt (0.386

and 0.480, respectively). These results indicate that those sectors, which were not using a lot of long-term debt financing, compensated the low levels of long-term debt with more of short-term debt levels in their financing strategies.

Figure 5.7 gives a better graphical presentation of short-term debt levels amongst these various economic sectors in Kenya over the five-year period from 2007 to 2011. It can be observed from the figure that most sectors had stable short-debt levels over the five-year period, with the exception of the educational and other sector categories. The highest level of short-term debt level amongst the sectors was experienced in 2007 and 2008 within the category of education and other sectors, respectively. In addition, the same sectors also observed the lowest levels amongst the sectors in 2010 and 2011, respectively.

**Figure 5.7: Short-term debt levels of the sectors from 2007 to 2011**



The state-owned corporations within the various economic sectors are further classified according to whether they are listed in the capital markets or not. In order to advance the reduction of heterogeneity of debt-financing levels of state-owned corporations that may be

caused by listing or non-listing, an additional analysis of levels of debt financing is done, taking into account whether the corporation is listed or not.

### 5.3.6 Debt financing levels of listed and unlisted state-owned corporations in Kenya

The percentage of listed state-owned corporations in Kenya has been increasing through the new public management reforms' privatisation process being adapted in Kenya. A total of 15% of the state-owned corporations included in this study sample are listed in the Kenyan capital market. Most of the state-owned corporations (75%) in Kenya are not listed in the capital market and, therefore, rarely access the stock market debt financing sources.

However, Figure 5.8 shows that long-term debt levels of unlisted state-owned corporations, though slightly fluctuating, have been above the long-term debt levels of listed state-owned corporations over the five-year period from 2007 to 2011.

**Figure 5.8: Long-term debt levels within listed and unlisted state-owned corporations**

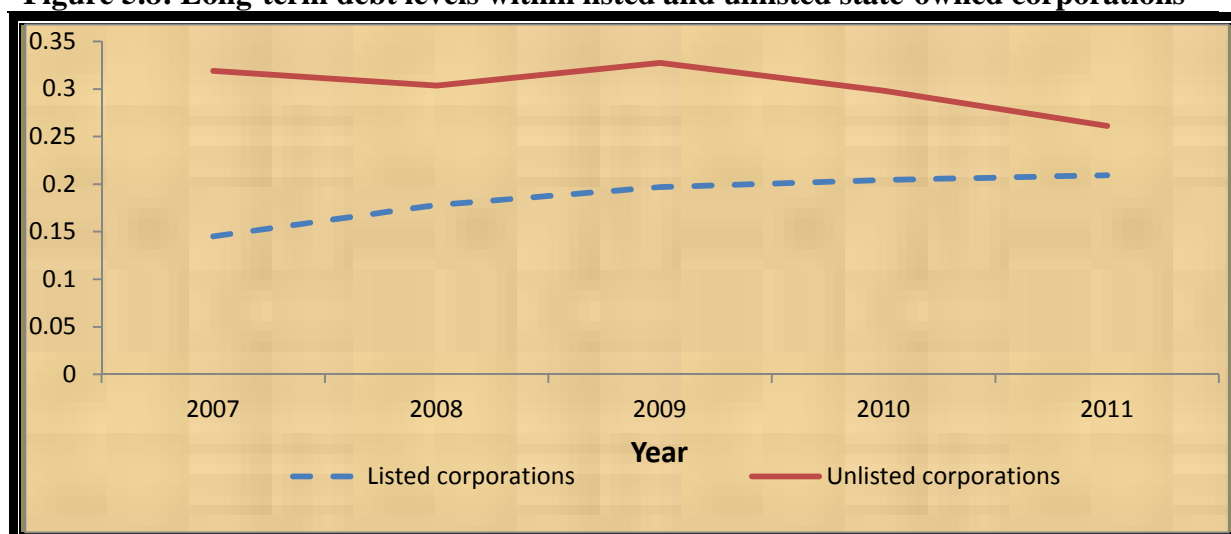
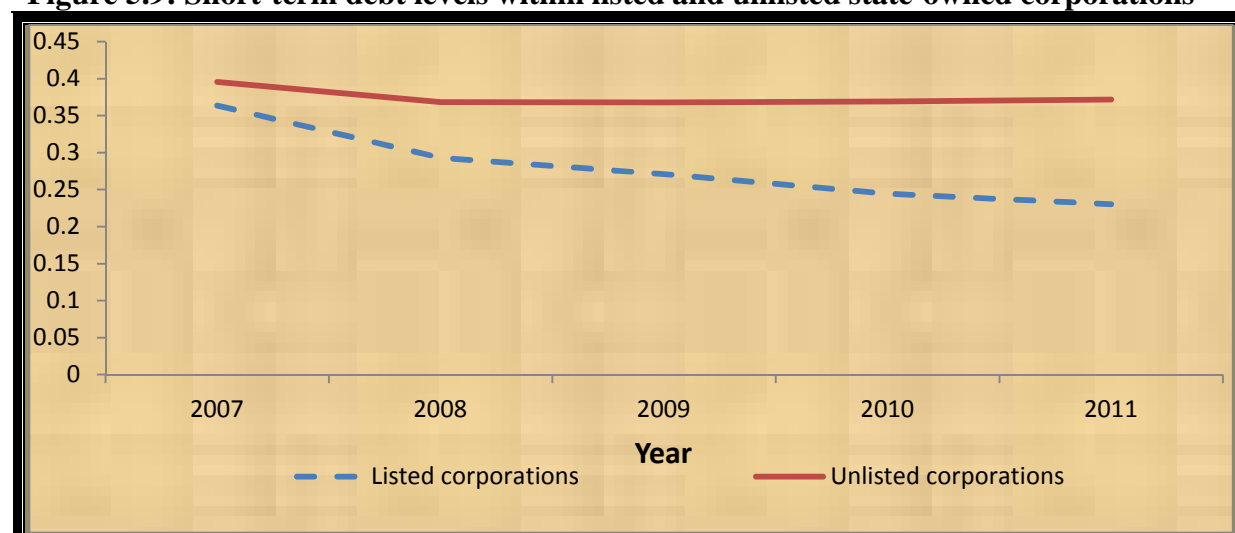


Figure 5.8 indicates that, even though the unlisted state-owned corporations in Kenya rarely access the capital market debt financing sources, their levels of long-term debt financing, through other non-capital market sources, are still higher than long-term debt financing levels of listed state-owned corporations. The slight fluctuations within the long-term debt of unlisted state-owned corporations is a sign of the pecking order theory if the fluctuations are tracking a financing deficit trend (Murray and Vidhan 2008: 158).

The long-term debt financing levels of listed state-owned corporations are lower throughout the period. However, they show some stability, with a slight incline towards 2011. The stability is a sign of the trade-off theory pattern amongst the listed state-owned corporations. It can be highlighted, though not proved, that long-term debt financing theories pursued by the listed state-owned corporations and unlisted state-owned corporations are not consistent.

However, Figure 5.9 shows that the levels of short-term debt within the same corporations have some consistency on the trends. The trend of the short-term debt levels for the unlisted state-owned corporations demonstrates some steady stability, while the levels of long-term debt financing look stable but with some decline towards 2011.

**Figure 5.9: Short-term debt levels within listed and unlisted state-owned corporations**



The figures of both the long-term debt ratios and the short-term debt ratios within the state-owned corporations in Kenya during the five-year period from 2007 to 2011 indicate that the levels of debt financing in total are slightly stable, but with some decline trend towards 2011. However, there is a lot of variation on debt financing levels amongst state-owned corporations from different economic sectors and whether the corporation is listed or unlisted. It is, therefore, important to identify the factors influencing these debt-financing levels within the state-owned corporations in Kenya.

## 5.4 REGRESSION RESULTS

In an attempt to identify factors influencing debt financing and to determine the relationship between debt financing and financial performance within the state-owned corporations in Kenya, the study used the panel data regression models 3 and 5, highlighted in chapter four. As aforementioned under the methodology chapter, the fixed effects (FE), random effects (RE) and system-GMM panel regression estimators were applied in the regression analysis.

### 5.4.1 Regression analysis descriptive statistics

The regression analysis process required data cleaning in order to eliminate outliers that may influence results. Since the debt financing procedures of state-owned corporations within the financial sector are unique, the data from these nine state-owned corporations were excluded from the regression analysis (Lemma and Negash 2013: 1093; Alzomaia 2014: 59). Table 5.13 presents the mean, standard deviation, minimum, maximum and total number of observations (N) and number of groups of state-owned corporations (n) for the dependent and explanatory variables applied in the panel data regression analysis of study models 3, 5, 8 and 9. Table 5.13 demonstrates the summary statistics for the regression analysis used for identifying factors influencing debt financing, determining the relationship between debt financing and financial performance, and identifying the debt financing theories applicable within the state-owned corporations in Kenya.

**Table 5.13: Descriptive statistics for regression analysis models from 2007 to 2011**

Variable		Mean	Std. Dev.	Min	Max
TDL	overall	0.6407	0.7099	0.0014	2.8261
	between		0.6457	0.0311	2.4388
	within		0.2002	-0.2267	2.4733
LDL	overall	0.3374	0.5696	0	2.6522
	between		0.4820	0	2.3255
	within		0.1444	-0.2011	1.1268
SDL	overall	0.3052	0.3950	0.0013	2.75
	between		0.3625	0.0216	1.5817
	within		0.2028	-0.5594	2.1436
PROF	overall	-0.1229	1.4411	-18.25	0.9647
	between		1.2363	-6.3317	0.5025
	within		1.1211	-12.0412	5.9701
SIZ	overall	22.3640	1.6479	16.8112	25.7984
	between		1.5921	18.3986	25.4765
	within		0.4127	20.7766	24.9484

TANG	overall	0.5358	0.2407	0	0.9583
	between		0.2261	0.0252	0.8748
	within		0.1193	0.0206	0.9724
GROW	overall	15.6531	47.6608	-47.6379	350.007
	between		34.6437	-1.9065	143.7855
	within		39.3134	-137.6344	294.8826
RISK	overall	0.0797	0.1232	0	1
	between		0.0989	0.0056	0.4583
	within		0.0764	-0.2296	0.6252
TAX	overall	0.1671	0.7842	-2	9.0243
	between		0.2847	-0.3413	1.0758
	within		0.7236	-1.8451	8.1827
LIQ	overall	4.8742	14.8634	0.0142	191.0231
	between		6.9453	0.1613	35.4482
	within		13.1485	-29.5740	160.4491
NDTS	overall	1.1039	9.5492	-4.5161	131.25
	between		4.1252	-1.2127	22.6193
	within		8.7101	-22.3791	109.7346
BKCY	overall	0.3913	3.2122	-1.0769	44.3750
	between		1.4365	-0.1155	7.5541
	within		2.9124	-7.4901	37.2121
GDP	overall	4.4045	1.9252	0	7.1
	between		0.3477	3.625	5.1
	within		1.8996	0.5211	7.6211
INFL	overall	11.6149	6.9892	0	26.2
	between		1.6959	7.1	13.6571
	within		6.8417	0.9815	27.5048
INT	overall	15.2060	2.6523	0	20.04
	between		0.9338	11.76	17.3533
	within		2.527867	3.44599	20.7447
INDM	overall	0.5154	0.5992	0	5.0394
	between		0.6308	0	3.1136
	within		0.2633	-0.5633	2.4411
AGE	overall	3.1930	0.8012	0	4.1896
	between		0.8417	1.2369	4.1344
	within		0.1697	1.9560	4.0354
ROA	overall	0.0131	0.2161	-2.6	0.2997
	between		0.1271	-0.5819	0.1420
	within		0.1830	-2.0050	0.5750
ROE	overall	-0.0081	4.5142	-48.3803	41.1437
	between		0.2700	-1.0229	0.5481
	within		4.5070	-47.3655	42.1585
ROI	overall	-0.0035	0.2136	-2.6	0.2990
	between		0.1186	-0.5713	0.1420
	within		0.1854	-2.0322	0.6060

Table 5.13 shows that the means for total debt leverage (TDL), long-term debt leverage (LDL) and short-term debt leverage (SDL) of 0.641, 0.337 and 0.3052 are slightly different with the ones recorded in Table 5.9, since the number of observations in Table 5.13 have increased to 201 from 183, as shown in Table 5.9. The table shows the mean of profitability (PROF), which is operating profit as a ratio of annual sales, as -0.123. This negative profitability is also highlighted by financial performance measures, such as return on equity (ROE) and return on investment (ROI), except for return on assets (ROA). These negative means confirm the Kenyan presidential report on state corporations (Republic of Kenya 2013: xii-xiv), which also indicated that the state-owned corporations have been making losses during this period.

Interestingly, Table 5.13 also shows that liquidity (LIQ), which is measured by current assets as a fraction of current liabilities, is 4.874, which is above the conventional 2 (Colin, Stephen, Randolph and Bradford 2012: 50-51). This result indicates high overall liquidity amongst the state-owned corporations. This pattern could be an indication of low external debt financing within the corporations and more of internal financing supported by the pecking order theory (Murray and Vidhan 2008: 158). Table 5.13 shows the overall growth rate (GROW) of state-owned corporations, measured as a percentage change in total assets, at 15.65% over the period, indicating the need for financing the long-term investment expansions.

#### **5.4.2 Correlation analysis**

Table 5.14 presents the Pearson correlation coefficients ( $r$ ) for the panel data regression analysis variables used in the study. The table presents all the variables used in identification of the factors influencing debt financing, in the determination of the relationship between financial leverage and financial performance, and in the identification of the debt financing theories within the state-owned corporations in Kenya.

**Table 5.14: Correlation analysis**

	TDL	LDL	SDL	PROF	SIZ	TANG	GROW	RISK	TAX	LIQ	NDTS	BKCY	GDP	INFL	INT	INGM
TDL	1															
LDL	0.8415***	1														
SDL	0.6451***	0.1301*	1													
PROF	-0.1395**	-0.0868	-0.1326*	1												
SIZ	0.383***	0.2958***	0.2842***	0.1331*	1											
TANG	0.2592***	0.3065***	0.0408	-0.0576	0.7536***	1										
GROW	0.0626	-0.0429	0.1683**	0.0037	0.1644**	0.0402	1									
RISK	0.3563***	0.2286***	0.3291***	-0.0705	0.2452***	0.2308***	-0.0435	1								
TAX	-0.0569	-0.0324	-0.0588	0.0371	0.1274*	0.1054	-0.0563	0.0099	1							
LIQ	-0.0724	-0.0125	-0.1151*	0.0456	0.1025	0.1449*	0.0293	0.1953***	-0.0112	1						
NDTS	0.0131	-0.0203	0.0529	0.0115	0.0529	0.045	-0.0188	0.0125	-0.0036	-0.0148	1					
BKCY	0.0416	-0.0128	0.0947	0.0166	0.0563	0.0412	0.0059	0.004	-0.0025	-0.0226	0.9678	1				
GDP	0.3149***	0.2239***	0.2609***	-0.0488	0.7254***	0.5242***	0.0917	0.3063***	0.1197*	0.1242*	-0.0271	-0.0242	1			
INFL	0.26***	0.1546**	0.2574***	0.0371	0.5885***	0.4122***	0.1637**	0.2089***	0.0449	0.0626	0.1597**	0.1659**	0.234***	1		
INT	0.3983***	0.2941***	0.3143***	-0.0129	0.9436***	0.6953***	0.169**	0.2475***	0.0965	0.095	0.0485	0.049	0.6348***	0.58***	1	
INDM	0.2702***	0.2933***	0.0808	-0.2959***	0.3777***	0.3674***	-0.034	0.2309***	-0.0712	0.1221*	0.0425	0.0453	0.286***	0.2651***	0.3566***	1
AGE	0.0922	0.0816	0.0539	0.0945	-0.0524	-0.1793**	-0.1965***	-0.0825	0.0212	-0.2306***	-0.0687	-0.0688	-0.1077	-0.0207	-0.053	-0.1922***
ROA	-0.2576***	0.021	-0.4999***	0.2453***	0.0872*	0.1082	0.0597	-0.6149***	0.0509	0.0926	0.0055	0.0042	-0.0218	0.0302	0.0455	0.0193
ROE	0.045	-0.0213	0.1128	-0.1404*	0.0084	-0.0855	0.0431	0.0831	-0.005	0.0317	-0.0051	0.0049	0.0793	0.0411	0.0466	0.0118
ROI	-0.3519***	-0.0925	-0.5127***	0.2159***	0.0328*	0.0504	0.0791	-0.6535***	0.0373	0.0987	0.0035	-0.0074	-0.0592	0.0132	0.0023	-0.0063
	AGE	ROA	ROE	ROI												
AGE	1															
ROA	-0.0492	1														
ROE	-0.1189*	-0.1033	1													
ROI	-0.0636	0.9723***	-0.1153*	1												

The symbols \*\*\*, \*\*, and \* indicate significance at the 1, 5 and 10 percent levels, respectively.

Table 5.14 shows that debt financing measures of total debt leverage (TDL) and short-term debt leverage (SDL) are significantly negatively correlated with the financial performance measures of profitability (PROF), return on assets (ROA) and return on investment (ROI), though not strongly. In addition, the long-term debt leverage (LDL) is also negatively correlated with PROF, ROA and ROI, but are very weak and not significant. The negative correlation between financial leverage and financial performance is an indication of the pecking order theory (Baltacı and Ayaydın 2014: 49). However, there is a conflicting correlation between the financial leverage measure and the financial performance measure of return on equity (ROE). Table 5.11 shows a positive correlation between ROE and, TDL and SDL, while the correlation with LDL is negative. Further, the correlations between ROE and these financial leverage measures are not significant. Hence, ROE is not a good variable for determining the relationship between financial leverage and financial performance of state-owned corporations in Kenya.

For the factors influencing debt-financing variables, Table 5.14 demonstrates that the financing leverage measures, TDL, LDL and SDL, are positively and significantly correlated with several measures of factors influencing debt financing. These factors include corporation size (SIZ), asset tangibility (TANG), corporation risk (RISK), gross domestic product (GDP), inflation rate (INFL), interest rate (INT) and industry median (INDM). In addition, the table also highlights a non-significant positive correlation between corporation growth (GROW), non-debt tax shield (NDTS), probability of bankruptcy (BKCY) and corporation age (AGE), and TDL and SDL. The positive correlation, especially for SIZ, TANG, GDP and AGE, is a sign of trade-off and agency theory as postulated by Dang (2013: 176); Bassey, Arene and Okpukpara (2014: 44) and Baltacı and Ayaydın (2014: 50).

On the other hand, Table 5.14 shows a negative correlation between corporation tax rate (TAX) and liquidity (LIQ), and all the financial leverage measures, though weak and not significant. This negative correlation of TAX and LIQ may be a sign of state-owned corporations pursuing the pecking order and agency debt-financing theories (Deesomsak, Paudyal and Pescetto 2004: 394; Öztekin and Flannery 2012: 91; Jõeveer 2013: 295). The table also shows that there is a significant positive correlation between firm-specific factors, such as SIZ, TANG, GROW and RISK, and macroeconomic factors, such as GDP, INFL, INT and INDM.

Further, Table 5.14 also shows that there are weak positive and negative significant correlations between financial performance measures (i.e., ROI, ROA and PROF) and firm-specific measures of SIZ and RISK, respectively. However, the table shows a strong significant negative correlation between financial performance measures (i.e., ROI and ROA). Interestingly, the correlation coefficient of ROE and most variables, except AGE, are not significant. These results indicate why ROE is not a popular measure of financial performance in debt-financing analysis.

The Pearson correlation coefficients ( $r$ ) reported in Table 5.14 only show the pair-wise relationship between the variables used in the study regression analysis. Therefore, to help in identifying factors influencing debt financing and to determine its relationship with financial performance, the panel data regression analysis was applied using the fixed effects (FE), random effects (RE) and system-GMM panel data regression model estimators.

## **5.5 FACTORS INFLUENCING DEBT FINANCING WITHIN THE STATE-OWNED CORPORATIONS IN KENYA**

Table 5.15 represents the fixed effects, random effects and system-GMM panel data regression analysis results of the research model 3, which was applied to identify the factors influencing debt financing within the state-owned corporations in Kenya. It also presents the validity and reliability tests (i.e.,  $R^2$ , Wald  $\chi^2$  (F), AR (1), AR (2) and Sargan test) for the models. The table presents the financial leverage variables (TDL, LDL and SDL) under three panel regression models: Fixed effects (FE), Random effects (RE) and system-GMM.

**Table 5.15: Factors influencing debt financing regression model results from 2007 to 2011**

Variable	Fixed effects (FE)			Random effects (RE)			System-GMM		
	TDL	LDL	SDL	TDL	LDL	SDL	TDL	LDL	SDL
L1.							0.9206***	0.9418***	0.7736***
PROF	-0.0712**	-0.0038	-0.0713**	-0.0798***	-0.0067	-0.0889***	-0.0689**	0.0004	-0.0863***
SIZ	-0.3106***	-0.0936	-0.2128***	-0.1430***	-0.0186	-0.0559*	0.0064	0.0100	-0.0079
TANG	-0.6876***	0.1463	-0.8332***	-0.6694***	0.1372	-0.7356***	-0.2665**	0.0293	-0.3201***
GROW	-0.0011***	-0.0001	-0.0011**	-0.0013***	-0.0001	-0.0012***	-0.0016***	-0.0003	-0.0012***
RISK	0.7238***	-0.1771	0.9077***	0.8700	-0.1105	0.9982***	-0.2161	0.1716	-0.1986
TAX	0.0019	0.0098	-0.0078	-0.0016	0.0076	-0.0104	-0.0054	0.0022	-0.0095
LIQ	-0.0025**	0.0005	-0.0030**	-0.0034***	-0.0001	-0.0035***	-0.0011	0.0003	-0.0020
NDTS	-0.0055	0.0034	-0.0085	-0.0044	0.0041	-0.0097	-0.0029	0.0036	-0.0097
BKCY	0.0192	-0.0105	0.0289	0.0154	-0.0129	0.0323	0.0088	-0.0118	0.0318
GDP	-0.0093	-0.0015	-0.0070	-0.0076	-0.0016	-0.0032	0.0127	0.0041	0.0090
INFL	-0.0077**	-0.0003	-0.0072**	-0.0062**	0.0001	-0.0049*	-0.0008	0.0006	-0.0013
INT	0.0121	-0.0008	0.0120	0.0106	-0.0001	0.0069	-0.0042	0.0022	-0.0062
INDM	0.4450	-0.0282	0.4102	0.2386	0.0529	0.1455	0.0567	0.0399*	0.00414
FMC	0.0008	0.0002	0.0006	0.0006	0.0001	0.0003	-0.0001	-0.0003	-0.00002
AGE	0.2989	0.2728*	0.0295	0.0319	0.0968	-0.0644	-0.0660**	-0.0079	-0.0543**
Constant	7.1226***	1.5175	5.5079***	4.1194***	0.3369	2.1743**	0.3020**	-0.2823	0.7098**
observations	168	168	168	168	168	168	160	160	160
R <sup>2</sup>	0.5661	0.1592	0.527	0.5412	0.1412	0.5994			
Hausman test- Prob>chi2	0.0024***	0.9958	-104.63	0.0024***	0.9958	-104.63			
Prob > F (Wald chi2)	0.000***	0.930	0.000***	0.000***	0.9876	0.000***	0.000***	0.000***	0.000***
AR(1) Pr > z							0.090*	0.000***	0.000***
AR(2) Pr > z							0.537	0.810	0.593
Sargan test-Prob > chi2							0.277	0.179	0.158

The symbols \*\*\*, \*\*, and \* indicate significance at the 1, 5 and 10 percent levels, respectively.

Since, there is expectation of autocorrelation or serial correlation within the financial leverage variables under system-GMM, Table 5.15 includes the lagged values (L1) for the TDL, LDL and SDL. The Arellano-Bond AR (1) and AR (2) p tests are also included under system-GMM results, to test for autocorrelation or serial correlation within the first difference level and the second difference level, respectively. It is expected that autocorrelation should only exist at level one and not at level two. If there is autocorrelation in level one, then the system-GMM model should report AR (1)  $p < 0.05$  at 95% level of confidence, and if there is autocorrelation in level two, then AR (2)  $p > 0.05$  at 95% level of confidence (Blundell and Bond 1998: 116; Bond 2002: 149). Therefore, system-GMM estimator results are more efficient when AR (1) is significant and AR (2) is insignificant, and are believed to be more accurate than the fixed effects (FE) and the random effects (RE) results.

The F test applied under fixed effects (FE) and random effects (RE), and the Wald test applied under system-GMM results are used to test the reliability of the estimators (coefficients) of the models, i.e., whether they are different from zero, symmetric and the estimator itself not seriously biased (Windmeijer 2005: 26). The  $p < 0.05$  values of F test and  $p(\chi^2) < 0.05$  of the Wald test indicate that the model coefficients or estimators are reliable at 95% level of confidence for both cases. Table 5.15 also shows the results for the Sargan test, which indicates the validity of the models under system-GMM by testing the over-identifying restrictions of the instruments (variables) (Bond 2002: 149; Windmeijer 2005: 37-41). Higher values of  $p(\chi^2)$  indicate that the model is robust, but weakened by many instruments, and low values indicate that the model is not robust, but not weakened by many instruments.

In addition, Table 5.15 shows the test results, which are applied to test the validity of fixed effects (FE) or random effects (RE). The Hausman tests whether the error terms (unique errors) are correlated with the regressors (coefficients). If the Hausman test is  $p(\chi^2) < 0.05$ , then it shows that error terms are not correlated with the regressors, and, therefore, fixed effects (FE) results are valid (significant at 95% level of significant). In contrast, if  $p(\chi^2) > 0.05$ , then it indicates that error terms are correlated with the regressors and random effects' (RE) results are more valid than fixed effects' (FE) results. Table 5.15 also shows the coefficient of determination ( $R^2$ ) results, which indicate the amount of variance of the dependent variable (financial leverage) explained by the independent variables (factors influencing debt financing), under the fixed effects (FE) and random effects (RE) models.

Table 5.15 shows some consistency on the results, which is a good test for robustness of the models and the variables (Lemma and Negash 2013: 1104). However,  $R^2$  results of long-term debt leverage under FE and RE models are below 2, which indicate that the amount of variance of LDL explained by the factors under the model is very low. The p values of F-tests for FE and RE models are insignificant, indicating a low explanatory power of LDL variables under these models. In addition, the coefficients of the factors influencing LDL under the system-GMM are all insignificant, though the model passed the Arellano-Bond (AR) tests. Hence, the study focused on the results of the TDL and SDL to identify factors influencing debt financing within the state-owned corporations in Kenya. It is observed, from these empirical results in Table 5.12, that both corporation or firm-specific factors and macroeconomic factors have influence on debt-financing strategies within state-owned corporations in Kenya.

### **5.5.1 Empirical results of firm-specific factors**

Table 5.15 shows that the main firm-specific factors influencing debt financing within state-owned corporations in Kenya include profitability, corporation nature of asset (tangibility) and corporation growth. The table also highlights that corporation size, risk and liquidity, although not very strong, are also other firm-specific factors influencing debt financing within state-owned corporations in Kenya.

#### **5.5.1.1 Profitability**

The results in Table 5.15 confirms that profitability, measured by corporations' operating profit, as a ratio of annual sales, influences debt financing of state-owned corporations in Kenya negatively. The pecking order theory assumes that corporations with higher profitability will prefer internal financing to debt financing and, hence, a negative relationship is expected between profitability and debt financing levels (Baltacı and Ayaydın 2014: 49). Although, coefficients show a weak negative relationship of around -0.1, they are significant at 95% level of confidence amongst all the models except for the system-GMM of LDL, which, as aforementioned, is not a strong model estimator in this study. However, it is a sign that the few state-owned corporations in Kenya, that may be using long-term debt financing, could be pursuing the trade-off theory.

All the same, the negative relationship results are consistent with the findings in many previous studies (Bauer 2004: 164; Gaud, Hoesli and Bender 2007: 207; De Jong, Kabir and Nguyen 2008: 1961; Cortez and Susanto 2012: 130; Smith 2012: 157; Chakraborty 2013: 117; Dang 2013: 179; Drobetz *et al.* 2013: 51; Jöeveer 2013: 306; Alzomaia 2014: 61; Antonczyk and Salzmann 2014: 145). Therefore, as highlighted earlier under types and extent of debt financing results, the negative relationship result of profitability indicates that state-owned corporations in Kenya use less of debt financing as a means of funding their investments. This may be because of a lack of total independence in decision making by the state-owned corporations' managers, to explore external debt financing sources, due to political influence on major decisions, such as debt financing (Palcic and Reeves 2013: 121). Another reason for less use of debt amongst the state-owned corporations in Kenya may be because the lack of efficient financial market and institutions in Kenya, to attract issue of debt securities by the state-owned corporations (Frank and Goyal 2005: 154; Randa and Gubbins 2013: 15).

#### **5.5.1.2 Corporation nature of assets (tangibility)**

The study empirical results in Table 5.15 show a consistent strong negative influence of asset tangibility on financial leverage measures for all the models except for LDL, which reports a very low positive result. According to Baltacı and Ayaydın (2014: 50) the pecking order theory recognizes a negative relationship between tangibility and leverage, whereas the trade-off theory defends a positive one. Therefore, the significant negative strong coefficients of tangibility under the TDL and SDL, for all the models of FE, RE and system-GMM, are strong indications of the pecking order theory assumption that state-owned corporations with less collateral face higher information costs and, thus, prefer debt to equity (Baltacı and Ayaydın 2014: 54). Empirically, the study results of positive relationship with long-term leverage (LDL) are consistent with the previous empirical evidence of Lemma and Negash (2013: 1105) who argued that the relationship is generally negative and statistically significant for short-term leverage (SDL) while it is somehow positive for long-term leverage (LDL). This seems to suggest that some state-owned corporations in Kenya, with more tangible assets, tend to use their tangible assets as collateral to access long-term debt, and, hence, depend less on short-term debt.

Further, in support of both the pecking order and agency theories, the study results may be an indication that state-owned corporations in Kenya, with less collateral and facing higher

information costs prefer short-term debt to long-term debt and equity financing. On the contrary, state-owned corporations in Kenya, with more tangible assets and less information costs (reduced agency costs), prefer equity external financing to long-term debt. In addition, the implication of results of the pecking order theory is in line with the earlier implication of the profitability in this study, and other previous studies (Gaud, Hoesli and Bender 2007: 206; Smith 2012: 157; Chakraborty 2013: 117; Forte, Barros and Nakamura 2013: 222; Alzomaia 2014: 61).

#### ***5.5.1.3 Corporation growth***

As shown in Table 5.15, corporation growth is also a significant firm-specific factor that influences debt financing within state-owned corporations in Kenya. The results indicate that there is a significant negative influence of corporation growth on all the debt-financing (financial leverage) measures, though not strong, but very consistent throughout all the models. Except for LDL, the TDL and SDL results are significant under all the three models: FE, RE and system-GMM. Generally, theoretical studies suggest that corporation growth opportunities are negatively related with debt financing levels (Huang and Song 2006: 20).

The negative relationship is in line with the trade-off and agency theories since the growth of corporations increases financial distress and agency cost of debt (Deesomsak, Paudyal and Pescetto 2004: 393). Most previous studies have observed the negative relationship between the growth opportunities of a corporation and its debt financing levels (Deesomsak, Paudyal and Pescetto 2004: 398; Kayo and Kimura 2011: 367; Chakraborty 2013: 117; Lemma and Negash 2013: 1104; Mateev, Poutziouris and Ivanov 2013: 43).

The results may be an indication that the cost of financial distress rises with expected growth within state-owned corporations in Kenya, forcing managers to reduce debt in the capital structure, in line with the trade-off theory. However, since the government is the major shareholder within the state-owned corporations in Kenya, the agency cost theory offers a better explanation of this negative relation. According to the theory, the state-owned corporations issue equity instead of debt to avoid conflict of interest between shareholders (government) and creditors when the values of future growth opportunities are higher (Kouki and Said 2012: 219; Moosa and Li 2012: 115012). This also confirms why net equity financing levels of state-owned corporations in Kenya have demonstrated higher levels compared to net debt financing levels, as shown on Figure 5.5.

#### **5.5.1.4 Corporation size**

Although, size is not significant under the system-GMM, whose estimation procedures are more advanced, the fixed effects (FE) and random effects (RE) show significant results of the negative relationship between size and debt financing variables (TDL, LDL and SDL). The negative result is also highlighted under SDL by the system-GMM model, though not significant. However, the system-GMM shows a non-significant, very weak positive relationship under TDL and LDL. Therefore, the significant negative relationship results under the FE and RE can be an indication that debt-financing strategies of state-owned corporations in Kenya are also negatively influenced by their sizes.

In support of a negative relationship between size and debt financing, Rajan and Zingales (1995: 1451) and Baltacı and Ayaydın (2014: 49) argued that asymmetric information problems are likely to be smaller in larger corporations. Hence, it would be possible for larger state-owned corporations in Kenya to issue new shares instead of debt financing without a reduction in their values, since most of them are not listed in the capital markets. This is another confirmation of the earlier results, which indicated the level of net equity financing amongst the state-owned corporations in Kenya to above net debt financing, under Figure 5.5.

Furthermore, the pecking order theory of debt financing also predicts that larger state-owned corporations, which are more diversified, will use less debt and, hence, expects that the size of the corporation will be negatively related to debt financing (Baltacı and Ayaydın 2014: 49). Some studies have also observed this negative relation of debt financing and corporation size. These studies include Rajan and Zingales (1995: 1423); Titman and Wessels (1988: 14); Gaud, Hoesli and Bender (2007: 206); Smith (2012: 144); Majumdar (2012: 21) and Chakraborty (2013: 118).

#### **5.5.1.5 Corporation risk**

Table 5.15 shows mixed results for corporation risk as a factor influencing debt financing. The fixed effects (FE) and random effects (RE) models highlight a significant strong positive relationship between the volatility of operating profits (risk) of state-owned corporations in Kenya and their debt-financing strategies, under the TDL and SDL. In contrast, under LDL, for both the FE and RE models, Table 5.15 shows a weak negative relationship, though not significant. The non-significant, weak negative relationship results are also highlighted by the

system-GMM model, under the TDL and SDL. On the contrary, a non-significant and weak positive relationship result is observed under LDL.

The debt financing of corporations is expected to decrease with an increase in earnings volatility, which is used as a measure of risk, since higher volatility of earnings increases the probability of financial distress as corporations may not be able to fulfil their debt-servicing contacts (Deesomsak, Paudyal and Pescetto 2004: 394). This implies that a corporation's debt-financing level decreases with an increase in the corporation's risk, leading to an expected inverse relationship. Bauer (2004: 163) also accepted the fact that the relationship can be positive, especially when the variance of the corporation's assets increases and, in turn, reduces the systematic risk of the equity.

Studies like Bauer (2004: 172); Deesomsak, Paudyal and Pescetto (2004: 398); Huang and Song (2006: 29); Antoniou, Guney and Paudyal (2008: 77); De Jong, Kabir and Nguyen (2008: 1961); Frank and Goyal (2009: 32); Lim (2012: 197); Drobetz *et al.* (2013: 51); Forte, Barros and Nakamura (2013: 364); Alzomaia (2014: 61) and Baltacı and Ayaydin (2014: 54), have found a negative relationship between corporation risk and debt financing. On the contrary, Gaud *et al.* (2005: 63); Foster and Young (2013: 7) and Lemma and Negash (2013: 1109) found both positive and negative relationships when they used different measures of debt financing level. Most of the studies, just like the results under system-GMM in Table 5.15, showed a negative relationship, although most of them were not strong and statistically significant (Bauer 2004: 172; Deesomsak, Paudyal and Pescetto 2004: 398; Frank and Goyal 2009: 32).

#### **5.5.1.6 Liquidity**

Table 5.15 shows some consistent negative relationship between liquidity of the state-owned corporation and its financial leverage (debt financing). However, the long-term debt leverage (LDL) highlighted a positive relationship with liquidity of the state-owned corporations, under the FE and system-GMM models. The negative relation between debt financing and liquidity is commonly found in the capital structure literature (Smith 2012: 157). Smith argued that this could be because more profitable corporations try to shun the adverse selection costs of outside debt, or because those that are profitable and rich in growth options seek to avoid the debt overhang problem.

Empirically, studies such as Deesomsak, Paudyal and Pescetto (2004: 398); Smith (2012: 157) and Mateev, Poutziouris and Ivanov (2013: 43) confirmed this negative theoretical relationship, while Gungoraydinoglu and Öztekin (2011: 1467), looking at some new international evidence, found a positive relationship between liquidity and debt financing. Therefore, according to the pecking order theory, the prominent negative relationship result can be an indication that the state-owned corporations in Kenya, with more liquid assets, use them as an internal source of funds instead of debt.

## **5.5.2 Empirical results of macroeconomic factors**

Table 5.15 shows that debt financing strategies of state-owned corporations in Kenya are rarely influenced by the macroeconomic factors. The table only highlights some significant results on inflation (INFL), under the fixed effects (FE) and random effects (RE) models. The other macroeconomics factors, such as gross domestic product (GDP), interest rate (INT) and industry median (INDM) and financial markets conditions (FMC), highlighted insignificant results under all the models.

### **5.5.2.1 Inflation**

Inflation is considered as one of the main indicators of a country's stability and an increase in the inflation rate causes uncertainty in economic conditions (Baltacı and Ayaydın 2014: 50). According to the results in Table 5.15, the inflation rate in Kenya generally influences debt financing of state-owned corporations negatively, though at a weak rate. This may be because an increase in inflation causes an increase in interest rates and the increase in interest rates may cause a decrease in new debt or loans. Table 5.15 confirms the inflation weak significant negative relationship with TDL and SDL, under all the three models. However, a very weak positive relationship is also highlighted, under the random effects (RE) and system-GMM models, with the long-term debt leverage (LDL).

According to Gungoraydinoglu and Öztekin (2011: 1467), higher inflation decreases the benefits of debt financing because of higher bankruptcy costs of debt imposed on corporations. The negative relationship results confirm the argument of that higher inflation lowers debt financing levels and indicate that the state-owned corporations shun debt financing during periods of high inflation rates to reduce their bankruptcy costs. On the other hand, Jõeveer (2013: 295) maintained that the inflation can be positively related to debt

financing due to higher real value of tax deductions on debt, which may be the case for LDL results.

Previous studies have also not given consistent results on inflation. Gungoraydinoglu and Öztekin (2011: 1467); Drobetz *et al.* (2013: 67); Jöeveer (2013: 306); Antonczyk and Salzmann (2014: 146) and Baltacı and Ayaydın (2014: 54) found a negative relationship between inflation and debt financing. Interestingly, Frank and Goyal (2009: 26) found a positive relationship, in line with the Table 5.15 results under LDL.

### 5.5.2.2 Age

The other factor included under the explanatory variables for the three models was the age of the state-corporations, which was measured as the number of years in existence since incorporation. Table 5.15 shows that age is a factor influencing debt financing negatively and significant for TDL and SDL, under the system-GMM model. However, for fixed effects (FE) and random effects (RE), the results are mixed and not significant. Others studies, such as Smith (2012: 155) and Bassey, Arene and Okpukpara (2014: 44), also observed a negative relationship between the corporation's age and its debt financing level, which is consistent with the theoretical expectation of the pecking order theory of debt financing.

The system-GMM model results indicate that older state-owned corporations in Kenya use internal sources to fund their investments. In case internal funds are inadequate, they use equity financing more than debt financing. On other hand, young state-owned corporations, with less internal funds, are normally given grants or development funds by the government instead of using debt financing.

Since system-GMM estimator is a more advanced tool for panel data regression analysis, it can be generalised that the LDL and SDL are the best models for identifying the factors influencing debt financing amongst the state-owned corporations in Kenya. The main factors, therefore, are profitability, tangibility, corporation growth and age, all negatively influencing debt-financing strategies of state-owned corporations, mostly, in line with the pecking order and the agency theories.

Table 5.16 presents the questionnaire responses on the questions: a) what influences the corporation's borrowing; and b) who makes the borrowing decision within state-owned corporations in Kenya.

**Table 5.16: Other factors influencing debt financing**

	Frequency	Percent
<b>a) What influences the corporation's borrowing</b>		
Government policy	4	21
Market economic factors	12	63
Others (Both the government policy and market economic factors)	3	16
Total	19	100
<b>b) Who makes borrowing decision</b>		
Government Officers (Cabinet Secretaries)	2	11
Corporation's board of directors	16	84
Finance manager	1	5
Total	19	100

The main factors were the board of directors and market economic factors. The responses on who makes the decision on borrowing, indicated the board of directors at 84%, government officer (Cabinet Secretary) at 11% and the finance manager at 5%. This is a sign that the desired independence of management decisions, such as debt financing, under the new public sector financial management reforms, is yet to be achieved within the state-owned corporations in Kenya, since the major decision makers (i.e., board of directors and Cabinet Secretary) are political appointees.

However, the responses as to which is the main factor influencing debt financing decisions, between the government policies and the market economic factors highlighted some independency in management decision making. 63% of the corporations agreed that they follow market economic factors in making debt-financing decisions. On the other hand, 21% of the corporations highlighted government policies, and 16% agreed that they follow both government policies and market economic factors.

## **5.6 THE RELATIONSHIP BETWEEN DEBT FINANCING AND FINANCIAL PERFORMANCE OF STATE-OWNED CORPORATIONS IN KENYA**

The financial performance of state-owned corporations in Kenya was measured using the accounting variables. These variables include return on assets (ROA), return on equity (ROE) and return on investments (ROI). Each variable of the financial performance was applied under the panel regression model 5 as a dependent variable with the aforementioned firm-specific factors of debt financing, which may also influence financial performance, taken as explanatory variables. Therefore, for each financial performance panel regression model, debt financing (i.e., TDL, LDL and SDL), corporation size (SIZ), asset tangibility (TANG), corporation growth (GROW), corporation risk (RISK), liquidity (LIQ), inflation (INFL) and age (AGE) were taken as explanatory variables using the panel regression model 5. The regression analysis was done using the fixed effects (FE), random effects (RE) and system-GMM procedures and reported under the three different measures of financial leverage (TDL, LDL and SDL).

The results for the regression analysis of the relationship between financial performance variables, such as return on asset (ROA), return on investment (ROI) and return on equity (ROE), and the total debt leverage (TDL), are reported in Table 5.17, while, Table 5.18 represents the relationship between the same financial performance variables (ROA, ROI, and ROE) and the long-term debt leverage (LDL). The relationship between financial performance variables and short-term debt leverage (SDL) are reported in table 5.19.

### **5.6.1 The relationship between financial performance and total debt leverage**

Table 5.17 presents the regression results for the relationship between financial performance and total debt leverage (TDL) within the state-owned corporations in Kenya. The table also includes the other explanatory variables, such as corporation size (SIZ), asset tangibility (TANG), corporation growth (GROW), corporation risk (RISK), liquidity (LIQ), inflation (INFL) and corporation age (AGE). It also presents the validity and reliability tests (i.e.,  $R^2$  Wald chi2 (F), AR (1&2) and Sargan test) for the models. The table presents the financial performance (ROA, ROI and ROE) under three panel regression models (Fixed effects, Random effects and system-GMM).

**Table 5.17: Relationship between financial performance and total debt leverage from 2007 to 2011**

Variable	Fixed effects (FE)			Random effects (RE)			System-GMM		
	ROA	ROI	ROE	ROA	ROI	ROE	ROA	ROI	ROE
Ll.							0.0626	-0.0734	-0.4894***
TDL	-0.6781***	-0.6829***	0.3288	-0.1945***	-0.1832***	0.3287	-0.0705***	-0.0971***	-0.0992
SIZ	0.0413	0.0645	-2.0393	0.0254	0.0171	-0.3732	0.0342***	0.0240***	0.2251***
TANG	0.0658	0.0220	3.5482	0.1348	0.0973	-0.3816	0.0530	0.0276	-1.2819**
GROW	0.0009***	0.0008***	0.0221*	0.0013***	0.0013***	0.0071	0.0006**	0.0005*	-0.0090***
RISK	-0.3762**	-0.3591**	-41.3990**	-0.6831***	-0.6984***	-14.0834***	-0.2645	-0.5151***	11.7845***
LIQ	-0.00001	-0.0002	0.0150	0.0011	0.0011	0.0008	0.0014*	0.0014*	-0.0135**
INFL	0.0005	0.0008	0.0143	0.0010	0.0012	-0.0088	0.0013	0.0016	0.0207
AGE	0.1511	0.0662	-0.7469	0.0290	0.0127	-0.2904	0.0045	-0.0096	-0.6660***
Constant	-0.9998	-1.2403*	46.8966	-0.5964	-0.3595	10.4068*	-0.7643***	-0.4593**	-2.8002*
Observations	171	171	171	171	171	171	162	162	162
R <sup>2</sup>	0.8136	0.8094	0.3283	0.6871	0.6727	0.3058			
Hausman test- Prob>chi2	0.001***	0.000****	0.0041***	0.001***	0.000****	0.0041***			
Prob > F (Wald chi2)	0.000***	0.000***	0.000***	0.000***	0.000***	0.0295**	0.000***	0.000***	0.000***
AR(1) Pr > z							0.000***	0.045**	0.026**
AR(2) Pr > z							0.877	0.978	0.588
Sargan test-Prob > chi2							0.000	0.000	0.000

The symbols \*\*\*, \*\*, and \* indicate significance at the 1, 5 and 10 percent levels, respectively.

Table 5.17 shows that financial performance, under the more advanced panel regression model estimator (system-GMM model), is negatively related to total debt leverage of state-owned corporations in Kenya. The negative results are confirmed by the financial performance models under return on assets (ROA), return on investment (ROI) and return on equity (ROE). The negative relationship results are very significant and consistent, under the financial performance measures, such as return on assets (ROA) and return on investment (ROI). The results under the fixed effects (FE) and the random effects (RE) models are significantly strong, with both ROA and ROI, highlighting a significant coefficient of about -0.7 (-70% variation), under the FE model, and -0.3 (-30% variation), under the RE model. However, the coefficient between financial performance measures, including ROE, and total debt leverage (TDL) is not very strong (-20% or -0.2), though significant under ROA and ROE.

Table 5.17 also shows some positive relationship results between the financial performance measure of ROE and total debt leverage, under the fixed effects (FE) and random effects (RE) models. This positive relationship highlighted by the ROE is not significant and the model's R-sq. of about 0.33, indicates that only 33% of the variance in financial performance (ROE) is explained by the independent variables, including debt financing. Therefore, ROE is not a strong model for measuring financial performance in this case.

On the other hand, ROA and ROE models, both under FE and RE, highlight very strong R-sq. values of about 0.82 (82%) and very strong significant F tests of 0.000, under each case. These reliability and validity tests indicate the ROA and ROI are better models in determining the relationship between debt financing and financial performance of the state-owned corporations in Kenya. Their significant negative relationship results can be interpreted in line with the pecking order theory of debt financing. According to the pecking order theory, more profitable state-owned corporations generate higher earnings that can be used for self-financing, enabling them to opt less for debt financing (Lemmon and Zender 2010: 35).

While less profitable, state-owned corporations may not enjoy the same opportunity and might be compelled to take on more debt financing in order to finance their ongoing activity. The pecking order theory, therefore, asserts a negative relationship between the debt financing level and the financial performance of the corporation (Tudose 2012: 78).

However, the insignificant results of FE and RE models, under ROE, may be a sign but not a proof of the agency costs theory. The agency costs theory advocates for debt financing as a way of disciplining managers of state-owned corporations, as the debt financing level may be used to monitor managers and reduces agency costs (Berger and Bonaccorsi di Patti 2006: 1066). Thus, according to Tudose (2012: 78), it is to be expected that increased debt financing, in the perspective of reduced agency costs, may raise the level of efficiency and thereby contribute to upgrading firm performance, making the relationship positive. In addition to the debt financing effects on financial performance of state-owned corporations in Kenya, Table 5.17 shows other variables that affect their financial performance. The corporation size (SIZ), corporation growth (GROW) and liquidity (LIQ) are significant factors that affect their financial performance positively, while, corporation risk (RISK) affects it negatively.

### **5.6.2 The relationship between financial performance and long-term debt leverage**

The negative relationship between debt financing and financial performance of state-owned corporations can also be observed in Table 5.18 using the long-term debt leverage (LDL) results. Though, the validity and reliability tests of  $R^2$  are low (less than 0.5), under the fixed effects (FE) and random effects (RE) models, there is consistency of the negative sign under the models, including the system-GMM. However, the financial performance measure of ROE highlights a positive sign under the random effects (RE) model.

Table 5.18 presents the regression results for the relationship between financial performance and long-term debt leverage (LDL) within the state-owned corporations in Kenya. The table also includes the other explanatory variables, such as corporation size (SIZ), asset tangibility (TANG), corporation growth (GROW), corporation risk (RISK), liquidity (LIQ), inflation (INFL) and corporation age (AGE). It also presents the validity and reliability tests (i.e.,  $R^2$ , Wald chi2 (F), AR (1&2) and Sargan test) for the models. The table presents the financial performance (ROA, ROI and ROE) under three panel regression models (Fixed effects, Random effects and system-GMM).

**Table 5.18: Relationship between financial performance and long-term debt leverage from 2007 to 2011**

Variable	Fixed effects (FE)			Random effects (RE)			System-GMM		
	ROA	ROI	ROE	ROA	ROI	ROE	ROA	ROI	ROE
L1							0.0520	-0.0282	-0.4893***
LDL	-0.0246	-0.0195	-0.3595	-0.0006	-0.0260	0.2502	-0.0101	-0.0211	-0.4047**
SIZ	0.1482**	0.1726***	-2.6876	0.0319**	0.0233*	-0.3909	0.0386***	0.0297***	0.2318***
TANG	0.5226***	0.4814***	1.5371	0.0874	0.0627	-0.4559	0.0413	0.0337	-1.1338**
GROW	0.0017***	0.0017***	0.0179*	0.0010***	0.0009**	0.0072	0.0006*	0.0006**	-0.0092***
RISK	-0.9924***	-0.9789***	-38.6646***	-0.6629***	-0.6735***	-13.8802***	-0.3628**	-0.5548***	11.9232***
LIQ	0.0018*	0.0017	0.0066	0.0020*	0.0020*	-0.0013	0.0020**	0.0021**	-0.0133**
INFL	0.0017	0.0020	0.0088	0.0013	0.0014	-0.0089	0.0016	0.0018	0.0199
AGE	-0.0993	-0.1873	0.8331	0.0103	-0.0016	-0.2961	-0.0019	-0.0120	-0.6358***
Constant	-3.2401***	-3.5043**	59.8878**	-0.7800**	-0.5396*	10.9844*	-0.8849***	-0.6436***	-3.0523*
Observations	171	171	171	171	171	171	162	162	162
R <sup>2</sup>	0.4901	0.4914	0.3176	0.4216	0.4041	0.3			
Hausman test- Prob>chi2	0.000***	0.000***	0.0086***	0.000***	0.000***	0.0086***			
Prob > F (Wald chi2)	0.000***	0.000***	0.0001***	0.000***	0.000***	0.0322**	0.000***	0.000***	0.000***
AR(1) Pr > z							0.000***	0.000***	0.017**
AR(2) Pr > z							0.864	0.975	0.575
Sargan test-Prob > chi2							0.000***	0.000***	0.000***

The symbols \*\*\*, \*\*, and \* indicate significance at the 1, 5 and 10 percent levels, respectively.

As aforementioned, the negative relationship result highlighted under the long-term debt leverage (LDL) is a further indication of the application of the pecking order theory within the state-owned corporations in Kenya. According to the pecking order theory, more profitable state-owned corporations generate higher earnings that can be used for self-financing, enabling them to opt less for long-term debt financing (Lemmon and Zender 2010: 35). The element of an agency costs theory is also highlighted by the positive result of ROE under RE.

This implies that the state-owned corporations may be advocating for long-term debt financing as a way of disciplining managers, as the long-term debt financing level may be used to monitor managers and reduces agency costs, hence, increasing financial performance (Berger and Bonaccorsi di Patti 2006: 1066). Table 5.18 also shows other variables, such as corporation size (SIZ), asset tangibility (TANG), and corporation growth (GROW), as significant factors that affect the financial performance of state-owned corporations in Kenya. The corporation size (SIZ), asset tangibility (TANG) and corporation growth (GROW) affect financial performance positively, while corporation risk (RISK) affects it negatively.

### **5.6.3 The relationship between financial performance and short-term debt leverage**

Table 5.19 presents the regression results for the relationship between financial performance and short-term debt leverage (SDL) within the state-owned corporations in Kenya. The table also includes the other explanatory variables, such as corporation size (SIZ), asset tangibility (TANG), corporation growth (GROW), corporation risk (RISK), liquidity (LIQ), inflation (INFL) and corporation age (AGE). It also presents the validity and reliability tests (i.e.,  $R^2$ , Wald chi2 (F), AR (1&2) and Sargan test) for the models.

A further significant negative relationship between financial performance and debt financing is highlighted by the short-term leverage (SDL) results in Table 5.19. The table shows a significant negative relationship between financial performance measures of ROA and ROI, and short-term debt leverage (SDL), under all the models (FE, RE and system-GMM). The negative relationship of ROA and ROI is very strong under the FE and RE, reporting coefficients of -0.6 (-60% variation) and -0.4 (-40% variation), respectively. However, the negative relationship of the same measures (ROA and ROI) have slightly strong coefficients of about -0.3 (-30% variation), which are also very significant.

**Table 5.19: Relationship between financial performance and short-term debt leverage from 2007 to 2011**

Variable	Fixed effects (FE)			Random effects (RE)			System-GMM		
	ROA	ROI	ROE	ROA	ROI	ROE	ROA	ROI	ROE
Ll.							-0.0202	-0.1392**	-0.4884***
SDL	-0.6113***	-0.6190***	0.7052	-0.3813***	-0.3594***	0.5187	-0.2619***	-0.2805***	0.5806
SIZ	0.1053**	0.1288***	-2.2952	0.0136	0.0055	-0.3623	0.0227***	0.0119	0.2690***
TANG	0.0241	-0.0226	4.3501	-0.0299	-0.0520	-0.1917	-0.0435	-0.0733	-1.1201**
GROW	0.0009***	0.0009***	0.0225*	0.0011***	0.0011***	0.0070	0.0006**	0.0005**	-0.0091***
RISK	-0.3293*	-0.3084*	-42.4247**	-0.5098***	-0.5483***	-14.0873***	-0.3100**	-0.5726***	11.3916***
LIQ	-0.0001	-0.0003	0.0177	0.0003	0.0003	0.0014	0.0005	0.0005	-0.0092
INFL	0.0005	0.0008	0.0157	0.0007	0.0012	-0.0093	0.0014	0.0017	0.0214
AGE	-0.0246	-0.1103	0.0069	0.0107	-0.0059	-0.2526	-0.0095	-0.0261*	-0.6612***
Constant	-2.0918*	-2.3337***	50.7575*	-0.1859	0.0390	9.9916	-0.3667**	-0.0506*	-4.1291**
Observations	171	171	171	171	171	171	162	162	162
R-sq	0.7754	0.7748	0.3328	0.7465	0.7331	0.3092			
Hausman test- Prob>chi2	0.000***	0.000***	0.0027***	0.000***	0.000***	0.0027***			
Prob > F (Wald chi2)	0.000***	0.000***	0.000***	0.000***	0.000***	0.0306**	0.000***	0.000***	0.000***
AR(1) Pr > z							0.000***	0.075*	0.010***
AR(2) Pr > z							0.333	0.675	0.689
Sargan test-Prob > chi2							0.000***	0.000***	0.000***

The symbols \*\*\*, \*\*, and \* indicate significance at the 1, 5 and 10 percent levels, respectively.

Just like the results under total debt leverage (TDL) and long-term debt leverage (LDL), the financial performance measure of ROE also highlights a positive relationship with the short-term debt leverage (SDL). Though, not significant, the positive relationship coefficients under all the models (FE, RE and system-GMM) are strong, at about 0.6 (60% variation), for each case. This is an indication that, though the state-owned corporations of Kenya's debt financing strategies may be explained by the pecking order theory, the element of agency costs theory cannot be totally ignored. It, therefore, implies that more profitable state-owned corporations generate higher earnings that can be used for self-financing, enabling them to opt less for short-term debt financing. On the other hand, there is also an indication that, in the case of insufficient self-financing, the profitable state-owned corporations use more of short-term debt than the long-term type of debt financing.

Table 5.19 also highlights the other state-owned corporation factors that affect their financial performance. The table reports significant results for corporation size (SIZ), corporation growth (GROW) as other factors that affect financial performance of state-owned corporations positively. On the other hand, corporation risk (RISK) and corporation age (AGE) affect financial performance negatively. These consistent results of other corporation factors influencing state-owned financial performance is a good test of robustness for the financial models under TDL, LDL and SDL.

Further, the negative significant results on the relationship between debt financing and financial performance are also highlighted by introducing the profitability (PROF) measure used under factors of debt financing as a measure of financial performance. The significant negative relationship between financial performance (PROF) and debt financing is also reported under all the debt-financing measures (TDL, LDL and SDL). The combined results for all financial performance measures, including profitability (PROF), are included under the section of appendices.

In general, the regression results for fixed effects (FE), random effects (RE) and system-GMM show that there is a significant negative relationship between financial debt financing and financial performance of state-owned corporations in Kenya. Studies by Majumdar and Chhibber (1999: 297); Zeitun and Tian (2007: 44); King and Santor (2008: 2428); Salehi and Biglar (2009: 101); Obert and Olawale (2010: 1714); Akinlo and Asaolu (2012: 22); Norvaisiene (2012: 514) and Salim and Yadav (2012: 165) found a negative relationship

between debt financing and a corporation's financial performance using the ROA. Most of the studies also used financial accounting measures of financial performance such as return on assets (ROA), return on equity (ROE), earnings per share (EPS) and operating profits. This is in line with the pecking order theory of debt financing.

However, the few positive signs under the return on equity measures in the study results may be an indication of the agency theory. Thomas (2013: 45) used the graphical method to observe the relationship and found a behaviour that confirms the agency theory proposal. Thomas observed that debt increased with the increase of corporation financial performance, up to some level (target debt), then declined as performance continued increasing steadily. Therefore, a further study should be done to identify whether the pecking order theory or the agency theory, under the trade-off model is applicable in the explanation of debt-financing strategies within the state-owned corporations.

## **5.7 CONCLUSION**

The chapter presented and discussed the study results in line with the study objectives. In analysing the different types of debt financing used by the state-owned corporations in Kenya, various types of long-term and short-term debt were highlighted by the results. The results showed that the common types of short-term debt used by all state-owned corporations are the trade and other payables, followed by bank overdraft, which is used by 65% of the state-owned corporations in Kenya. The results also confirmed the common use of bank loans amongst the Kenyan state-owned corporations, with loans from local financial institutions ranking higher than those from government and international institutions. The capital market debt instruments, in terms of bonds, and finance leases are also highlighted by the study results, although they are not a very common type of long-term debt amongst the state-owned corporations in Kenya.

Under the types of debt financing used by state-owned corporations from developed and developing economies, commercial papers and discount notes, both local and foreign, were observed, in addition to trade and other payables. Due to more efficient capital markets in developed and developing economies, the results showed more use of debt securities, in terms of bonds, notes and debentures, more than the bank loans. In addition, the use of derivate financial instruments, such as swaps, options and forward contracts, and finance

leases are also observed as common types of debt financing amongst the state-owned corporations from these economies.

Further, the results presented the extent of debt financing amongst the Kenyan state-owned corporations for the five-year period from 2007 to 2011. The results observed some level of satiability on total debt and long-term debt ratios, which is a sign of the trade-off theory. However, the results demonstrated that the net equity financing levels were slightly higher than the net debt-financing levels during the period. The net debt financing levels also demonstrated up and down trends, indicating some sign of target adjustment, proposed under the trade-off and agency costs theories. This is an indication that the state-owned corporations in Kenya do not apply the pecking order theory fully. In addition, the chapter also analysed the levels of debt financing within the state-owned corporations according to the main economic sectors in Kenya.

The chapter also presented the results on factors influencing debt financing within state-owned corporations in Kenya, using the fixed effects (FE), random effects (RE) and system-GMM models. The models results demonstrated that the main factors influencing debt financing within state-owned corporations in Kenya are profitability, asset tangibility and corporation growth. However, corporation size, corporation risk, liquidity and corporation age were also observed, by the FE and RE models results, as other firm specific factors that may influence debt financing of state-owned corporations in Kenya. The only macroeconomic factor highlighted by the model results to have some significant influence on debt financing of state-owned corporations in Kenya is the country's inflation rate.

The results on the relationship between debt financing and financial performance of state-owned corporations were also presented in this chapter. Using the financial measures of ROA and ROI, the fixed effects (FE), random effects (RE) and system-GMM models' results indicated that there is a negative relationship between debt financing and financial performance of state-owned corporations in Kenya. However, the financial performance measure of ROE demonstrated mixed results under different models. However, these mixed results of ROE were insignificant in most cases and the models did not report strong results on validity and reliability tests.

## **CHAPTER SIX**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **6.1 INTRODUCTION**

The aim of the study was to investigate the factors influencing debt financing and its effects on financial performance of state-owned corporations in Kenya. In particular, the study, attempted to identify the different types of debt financing used by the state-owned corporations in Kenya and how they compare with those used from developed and developing economies. The study also attempted to determine the extent of use of debt financing within the state-owned corporations and how it varies between different sectors in the Kenyan economy. In addition, the study endeavoured to identify the factors influencing debt financing and determined its relationship with financial performance within state-owned corporations in Kenya. Based on the findings of the study, this chapter concludes the research work by providing an overview of the study, key findings, implications, contribution to the literature and recommendations of the study. The chapter also provides suggestions for further research emerging from the study.

#### **6.2 SUMMARY OF THE STUDY**

The information on the extent of borrowing within the state corporations is only available to government officials and, to a small extent, to the public through the legislative assemblies. Most of the reporting systems for the public sector in developing countries are still in the process of modernisation and this makes the availability of their financial information complicated. In recognition of this fact, studies on debt financing have been done mostly using data from developed economies with more private-sector corporations (Foster and Young 2013: 6). This study, therefore, attempted to fill the gap in the literature by using data from corporations within the public sector and from a developing economy, like Kenya.

Given the fact that the goals or objectives of state-owned corporations have some political influence, it was of interest to find out whether the debt-financing decisions within these corporations follow the conventional debt-financing theories of corporations (Capalbo and Palumbo 2013: 39; Simpson 2014: 242). The major debt-financing theories have been found

to empirically apply, mostly, to debt-financing strategies within the private sector corporations. These theories include the trade-off, pecking order, agency costs and market timing theories, amongst others (Kayhan and Titman 2007: 26; Lemmon and Zender 2010: 35; Cole 2013: 777).

Further, the public sector financial management reforms, being adopted by many countries, such as Kenya, have encouraged the adoption of private-sector management style, such as debt management, within the state-owned corporations (Koppell 2007: 255). The reforms are geared towards the improvement of financial performance of state-owned corporations from emerging economies, like Kenya. The reform agenda on debt financing is that state-owned corporations should face competitive conditions regarding access to finance (OECD 2005: 21). Their relations with state-owned banks, state-owned financial institutions and other state-owned companies should be based on purely commercial grounds. The state-owned corporations should further be subject to the same high quality accounting and auditing standards as listed companies.

To achieve the objectives of these reforms, this study explored the questions as to whether the factors influencing debt financing and its relationship with financial performance within state-owned corporations in Kenya are similar to those of private-sector corporations. Further, the study analysed whether the types of debt financing used by state-owned corporations in Kenya, and developed and developing economies are similar to the ones used by those from the private sector. The study also attempted to determine the extent of debt financing within the state-owned corporations in the various sectors in the Kenyan economy.

In an attempt to answer the research questions, the study adopted a combination of the descriptive and explanatory research design, by applying a hybrid of cross-sectional and longitudinal quantitative surveys. Samples of 40 state-owned corporations, from Kenya, and 43, from developed and developing economies, were selected using the non-probability sampling technique. Further, both primary and secondary data were extracted from the study questionnaires and the financial statements of the corporations, which were analysed using both descriptive and inferential statistics. The fixed effects (FE), random effects (RE) and generalised methods of moments (system-GMM) regression estimators were applied to improve the reliability and validity of the results.

The methodology was very instrumental and effectively, it facilitated the achievement of the overall research objectives. The achieved research objectives highlighted under the study results included: the types of debt financing used by various state-owned corporations in Kenya and those from developed and developing economies; the extent of debt financing within state-owned corporations in Kenya; the factors influencing debt financing within state-owned corporations in Kenya; and the relationship between debt financing and financial performance of state-owned corporations in Kenya.

### **6.3 KEY FINDINGS, CONCLUSIONS AND IMPLICATIONS**

The key findings, conclusions and implications gained from the study focused on the main research objectives. The objectives of the study included:

- The analysis of the different types of debt financing used by the various state-owned corporations in Kenya;
- The analysis of the different types of debt financing used by the various state-owned corporations from developed and developing economies;
- Determination of the extent of debt financing within the state-owned corporations in Kenya;
- Identification of factors influencing debt financing within the state-owned corporations in Kenya; and
- Determination of the relationship between debt financing and financial performance of state-owned corporations in Kenya.

#### **6.3.1 The different types of debt financing used by the various state-owned corporations, both in Kenya and from developed and developing economies**

The study was premised in the assumption that various types of long-term and short-term debt are used to finance the investments of state-owned corporations. In analysing the different types of debt financing used by the state-owned corporations in Kenya and from developed and developing economies, various types of long-term and short-term debt were highlighted by the results, both from literature and the study.

### **6.3.1.1 Literature findings**

The study generally observed the lack of literature on the empirical findings on the types of debt financing used by the state-owned corporations. However, theoretically, from the literature, it is believed that state-owned corporations are financed through internally generated revenues, equity financing and debt financing (OECD 2005: 21; Cato 2012: 275; Wang 2012: 77-78; Balmaceda, Fischer and Ramirez 2014: 47-48; Huyghebaert, Qj and Lijian 2014: 31). The common types of debt financing used by the state-owned corporations include bank loans, either from government banks, local or international financial institutions and agencies (Adamolekun 1999: 42-43). Capital market debt instruments, such as bonds and notes, are also used by state-owned corporations which use the stock markets as a source of debt financing (OECD 2005: 21; Balmaceda, Fischer and Ramirez 2014: 47-48).

On the other hand, there is much literature on the types debt financing used by private sector corporations. According to empirical literature, the common types of debt financing within private-sector corporations can be categorised in terms of long-term or short-term debt, or in terms of public or private debt (Gatchev, Spindt and Tarhan 2009: 179; Benmelech and Dvir 2013: 485; Chen 2013: 3; Chen, Cheng and Lo 2013: 755). The types of long-term public debt include capital market debt instruments, such as domestic or international bonds and notes, and both international and local bank loans (Frank and Goyal 2005: 157; Smith 2012: 151). The long-term-private debt used by most private-sector corporations includes bank loans, finance lease, deferred tax and pension liabilities (Robicheaux, Xudong and Ligon 2008: 432; Chen, Cheng and Lo 2013: 755; Laux 2013: 1358; Logotheti 2014: 1). The other long-term debt, which can either be public or private, used mostly by private sector corporations from developed and developing economies, are the derivative financial instruments, such as swaps, options and forward contracts (Colin *et al.* 2012: 672-685).

The types of short-term-public debt, mostly used by private sector corporations are the commercial papers and the discount notes (Frank and Goyal 2005: 157). On the other hand, the common types of short-term private debt used by the corporations are the trade and other payables, bank overdrafts and the short-term derivative financial instruments, such as swaps, options and forward contracts (Frank and Goyal 2005: 157; Colin *et al.* 2012: 672). Therefore, with the enhanced public-sector financial-management reforms, which focus on the adoption of private-sector financial-management practice, it was expected that the types

of debt financing used by the state-owned corporations should be the same with those commonly used by their private counterparts.

#### ***6.3.1.2 Study findings on the types of debt financing used by state-owned corporations from Kenya***

The study results showed that the common types of short-term-private debt used by all state-owned corporations are the trade and other payables, followed by bank overdraft, which is used by 65% of the state-owned corporations in Kenya. The results also confirmed the common use of long-term-private debt, such as bank loans, amongst the Kenyan state-owned corporations. Interestingly, the results showed that the sum of loans from international financial institutions and government are greater than the amounts from local financial institutions, during the five-year period from 2007 to 2011. The other long-term-private debt highlighted by the results were the finance lease, deferred tax liabilities and provisions, which are not very common types of long-term debt amongst the state-owned corporations in Kenya.

On the other hand, the results observed that few state-owned corporations in Kenya use the long-term and the short-time public debt in financing their operations. Capital market debt instrument, in terms of bonds, was observed as the only public debt used by very few (5%) state-owned corporations in Kenya. This was confirmed by the questionnaire results which showed the use of capital market debt instruments at 8%. The questionnaire results also highlighted that the use of short-term debt financing was common amongst the state-owned corporations in Kenya (23%), following after the long-term debt which mature after five years (59%).

#### ***6.3.1.3 Study findings on types of debt financing used by state-owned corporations from developed and developing economies***

Under the results on the types of debt financing used by state-owned corporations from developed and developing economies, the use of public debt was more prominent than the use of private debt. Overall, trade and other payables, and bank overdrafts are the common types of short-term-private debt used by state-owned corporations from developed and developing economies. Only 50% of state-owned corporations from developed and developing economies, across the continents of America, Europe, Asia and Africa, indicated the use bank overdrafts, compared to 65% from Kenya. The results also indicated that the use

of short-term-public debt, such as commercial papers and discount notes, are common amongst the state-owned corporations from developed and developing economies. A total of 50% of them indicated the use of commercial papers and 25% practised the use of both local and foreign exchange discount notes.

Due to more efficient capital markets in developed and developing economies, the results showed more use of long-term public debt, such as capital market instruments, in terms of bonds, notes and debentures, more than the bank loans. The results highlighted that all state-owned corporations from developed and developing economies issue domestic capital market instruments or securities, with 75% of them using additional foreign debt-securities. The use of derivate financial instruments, such as swaps, options and forward contracts, and finance lease, deferred tax and pension liabilities are also observed as common types of debt financing amongst the state-owned corporations from these economies.

#### ***6.3.1.4 Conclusion and implications***

It can be concluded that the results suggest that state-owned corporations in Kenya prefer to use more bank loans than capital market instruments in financing their investments. Further, they borrow huge sums from the international financial institutions and the government, which are greater than the sums borrowed from the local financial institutions. The Kenyan bond market is believed to be under-developed and inefficient making it unpopular as a borrowing place for the state-owned corporations in Kenya. The result also revealed that very few managers (26%) are aware that the corporations are allowed by the Public Financial Management Act, number 18 of 2012, to access the bond markets (Republic of Kenya 2012: 930).

In addition, the political influence on the board of directors, which is the key organ on debt financing decisions within the state-owned corporations in Kenya, may be the determining factor towards the greater amounts borrowed from the international financial institutions and the government. In most cases, borrowing from the foreign financial institutions and government institutions are done under arranged interest rates, which may be lower than the prevailing interest rates of the local commercial banks. The implication may be that the desired state-owned corporation financial management reforms are yet to be achieved in Kenya. Just as the GoK is dependent on foreign aid in financing its expenditures, the state-

owned corporations, which should follow the pattern of financing of private sector corporations, also borrow huge sums from the foreign financial institutions.

In contrast, it can be concluded that the capital markets of the developed economies in America, Europe and part of Asia are more efficient and active (Choong *et al.* 2010: 108). Public debt (capital market debt securities), such as bonds, notes and debentures, and derivative financial instruments, such as swaps, options and forward contracts, are commonly used as debt financing strategies within these economies. These types of debt financing have become common amongst the corporations of these economies, including their state-owned corporations. However, in Asia, one of the major reasons behind the Asian financial crisis in 1997 was the excessive dependence of the Asian economies on commercial banks for corporate debt financing (Bhattacharyay 2013: 124-125).

The Kenyan region failed to diversify its sources of corporate financing as it relied mainly on bank loans since its capital markets were still underdeveloped and their sizes were quite small. This trend can still be seen within the debt financing strategies of state-owned corporations in Asia, where most of them are still reporting bank loans as one of their major sources of funds. In the last decade, Asia has witnessed most of the best growing economies in the world and their capital markets are experiencing growth of activities and efficiency (Bhattacharyay 2013: 124-125). Hence, public debt, such as capital market debt securities and derivative financial instruments has become a common type of debt financing strategy used by most of Asian corporations, including state-owned corporations.

The results from the developed and developing economies indicated many similarities with the common types of debt financing used by private-sector corporations highlighted under literature findings. This may imply that the desired public-sector financial-management reforms, under the state-owned corporations, have been embraced positively by the governments from these economies. The management of their state-owned corporations have been left to compete effectively with the private-sector counterparts in the area of debt financing.

### **6.3.2 The extent of debt financing within the state-owned corporations in Kenya**

The theory of principal and agent suggests that accountability problems are inherently worse in the public sector and particularly within the state-owned corporations, since they operate

commercially and are government-owned (Hughes 2003: 108). According to the agency costs theory, the use of debt financing is assumed to reduce the agency costs, by exposing the investments of state-owned corporations for monitoring by external debt funders (Frank and Goyal 2005: 154). The private-sector corporations use debt financing extensively, as a way of helping the equity shareholders (owners) to monitor the investment activities of the managers, hence, improving their performance. However, for state-owned corporations, especially in an emerging economy like Kenya, the political control conflict may not allow their managers to use debt financing extensively (Hughes 2003: 108). The study, therefore, attempted to determine the extent of debt financing within the state-owned corporations in Kenya.

#### ***6.3.2.1 Literature findings***

Several studies on the extent of debt financing have been applied on data from private-sector corporations, mostly listed corporations, which may include listed state-owned corporations. Few or none has been done entirely for state-owned corporations, more particularly from Kenya. Studies on listed corporations have found that their aggregate debt financing levels seems to be stationary in the long-run (Wright 2004: 573; Frank and Goyal 2005: 156; Lemmon, Roberts and Zender 2008: 1584). The stationary pattern of aggregate debt financing levels is a sign of the trade-off theory (Myers 1984: 587; Frank and Goyal 2005: 158). On the other hand, Calabrese (2011: 137), analysing non-profit making organisations, found that debt-financing levels fluctuate over time. His study showed that debt-financing levels are best explained using the pecking order theory in which internal funds are preferred over external debt (Myers 1984: 587).

Analysing debt financing by means of bank loans and market securities, Hackbarth, Hennessy and Leland (2007: 1389) found that weak corporations have high bank loan capacity and exploit bank loans entirely while strong firms balance their lower bank debt capacity by utilizing both bank loans and market securities making bank loans usage senior to market securities. Their argument offers evidence for the trade-off theory since they explain why young or small corporations use bank debt exclusively, why large or mature firms employ mixed-debt financing and why bank debt is senior to market securities. Guo and Suliman (2010: 1903), in their analysis of debt financing according to industries, argued that debt financing levels may differ even within homogeneous industries since there may be variations caused by time even when taxation, information differences and agency problems are the same. Their results established various debt-financing levels between the identified

industries, but the aggregate debt-financing level remained quite consistent amongst the industries.

### **6.3.2.2 Study findings**

The study results presented the extent of debt financing amongst the Kenyan state-owned corporations for the five-year period from 2007 to 2011. The results observed some level of stability on aggregate long-term debt ratios, which is a sign of the trade-off theory. The results indicate an existence of optimal or target level in 2009 and the firms adjust towards it at a rate of about 2%. In contrast, it also shows an immediate deviation, at the same rate (2%), from the target level in the following years from 2010 and 2011. According to the trade-off theory, the debt financing levels should be stationary after attaining the optimum target level.

On the other hand, the aggregate total debt and short-term debt results showed some stability, with a slightly declining trend of less than 5% towards the end of the period in 2011. As advocated by Lemmon *et al.* (2008: 1589), a very steady stability of total debt was observed between 2008 and 2009, where the values were stationary. The results also demonstrated that the net equity financing levels were slightly higher than the net debt financing levels during the period. The net debt financing levels also demonstrated up and down trends, but the fluctuations did not closely track the financing deficit. Under the pecking order theory, one would expect that net debt financing would track financing deficit much more closely than net equity financing (Frank and Goyal 2003: 230).

The study results also observed that, on aggregate, bank loan levels were higher than capital market instruments, such as bonds, with loans from international financial institutions and the government higher than loans from local financial institutions. In confirmation to literature results on debt-financing levels between industries by Guo and Suliman (2010: 1903), the study results highlighted different debt-financing levels of Kenyan state-owned corporations from various sectors of the economy. The results indicated steady stability on aggregate long-term debt of listed state-owned corporations in Kenya, compared to the fluctuations under the unlisted state-owned corporations. The aggregate short-term debt results of listed state-owned corporations in Kenya also showed a steady decline over the five-year period from 2007 to 2011.

### **6.3.2.3 Conclusion and implications**

It can be concluded that the extent of debt financing within the state-owned corporations in Kenya is not much different from the behaviour exhibited in earlier studies under private-sector corporations. The stability of aggregate debt levels was experienced under long-term debt, while slight fluctuations were observed under aggregate total debt and short-term debt results. This implies that the state-owned corporations in Kenya do not apply the pecking order theory fully. The results demonstrated that state-owned corporations prefer using internally generated funds followed by debt, in terms of local and international loans, and equity, in terms of grants and government allocations. The debt instruments in the stock exchange, which should also follow after internally generated funds, with other debt forms, like loans, rank last, which somehow contradicts the pecking order theory. Hence, the results may be a sign of the agency costs theory, since more use of debt from the stock exchange exposes the investments of the state-owned corporations to the debt providers (Frank and Goyal 2005: 154; Randa and Gubbins 2013: 15).

The agency costs theory was further confirmed by the response on the question of the banks from which the managers prefer to borrow. From the results, the majority (62.5%) of the state-owned corporations prefer borrowing from the government-owned banks, than from non-government-owned banks. It could be that the interest rates of government-owned banks are expected to be lower than those of private banks. In addition, this result implies that even when the state-owned corporations in Kenya use loans, they would still not like to expose their investments to non-governmental financial institutions, such as commercial banks and capital markets.

### **6.3.3 Factors influencing debt financing within the state-owned corporations in Kenya**

This study further explored the question as to whether the debt financing decisions within the state-owned corporations in Kenya are influenced by similar factors to those of their private counterparts. The hypotheses tested included:

- *H<sub>01</sub>: Profitability influences debt financing negatively;*
- *H<sub>02</sub>: Corporation size influences debt financing positively;*
- *H<sub>03</sub>: Asset tangibility influences debt financing positively;*
- *H<sub>04</sub>: Corporation growth influences debt financing negatively;*
- *H<sub>05</sub>: Corporation risk influences debt financing negatively;*

- *H<sub>06</sub>: Corporation tax rate influences debt financing negatively;*
- *H<sub>07</sub>: Liquidity influences debt financing negatively;*
- *H<sub>08</sub>: Non-debt tax shield influences debt financing negatively;*
- *H<sub>09</sub>: Probability of bankruptcy influences debt financing positively;*
- *H<sub>010</sub>: Gross domestic product influences debt financing positively;*
- *H<sub>011</sub>: Inflation rate influences debt financing negatively;*
- *H<sub>012</sub>: Interest rate influences debt financing negatively;*
- *H<sub>013</sub>: Industry median influences debt financing positively;*
- *H<sub>014</sub>: Financial market conditions influence debt financing positively; and*
- *H<sub>015</sub>: Corporation age influences debt financing positively.*

#### **6.3.3.1 Literature findings**

There are extensive studies on factors influencing debt financing within private-sector corporations. However, very few or none has been applied entirely on state-owned corporations, more so from Kenya. The few studies, such as Majumdar and Chhibber (1999: 291); Dewenter and Malatesta (2001: 320); King and Santor (2008: 2426); Huang and Song (2006: 16-17) and Lim (2012: 191), that have attempted to look at the factors influencing debt-financing decisions within state-owned corporations, have only concentrated on stock exchange-listed corporations, which included some state-owned corporations which are listed in the stock exchange.

The empirical results from most studies on private-sector corporations have identified different factors depending on the industry and the economic environment of the country (Mokhova and Zinecker 2014: 534). The previous studies have identified the specific factors of corporations, such as profitability, corporation size, asset tangibility, corporation growth, corporation risk, corporation tax, liquidity, probability of bankruptcy and corporation age. In addition, macroeconomic factors, such as gross domestic product, inflation and interest rates, have also been identified as factors influencing debt-financing decisions within corporations.

#### ***Profitability***

Some studies have identified that profitability influences debt-financing decisions negatively within corporations, under the pecking order theory (Moosa and Li 2012: 10; Lemma and Negash 2013: 1083; Baltacı and Ayaydın 2014: 54; Bassey, Arene and Okpukpara 2014: 43).

Other studies also identified a positive influence of profitability on debt-financing decisions within corporations, in support of the trade-off theory (Gungoraydinoglu and Öztekin 2011: 1467; Kouki and Said 2012: 221; Chakraborty 2013: 117).

### ***Corporation size***

Further, in line with the trade-off theory, many studies have identified corporation size to have a positive influence on debt financing of corporations (Kouki and Said 2012: 221; Dang 2013: 180; Forte, Barros and Nakamura 2013: 362; Jõeveer 2013: 306; Baltacı and Ayaydın 2014: 53; Bassey, Arene and Okpukpara 2014: 44). Some studies also observed a negative influence of corporation size on debt financing of corporations, confirming the proposition of the pecking order theory (Gaud, Hoesli and Bender 2007: 206; Majumdar 2012: 21; Smith 2012: 144; Chakraborty 2013: 118).

### ***Asset tangibility***

The pecking order theory recognizes a negative relationship between the asset tangibility and debt-financing level, whereas the trade-off theory supports a positive one (Baltacı and Ayaydın 2014: 50). Some studies like Smith (2012: 144); Dang (2013: 179); Drobetz *et al.* (2013: 51); Lemma and Negash (2013: 1104); Antonczyk and Salzmann (2014: 145) and Bassey, Arene and Okpukpara (2014: 44) have reported a positive relationship between tangibility and debt financing. Other studies, like Öztekin and Flannery (2012: 107); (Kouki and Said 2012: 222); Lemma and Negash (2013: 1104); Jõeveer (2013: 306) and Baltacı and Ayaydın (2014: 54), reported a negative relationship, especially when more than one measure is used for debt-financing levels.

### ***Corporation growth***

The expected theoretical relationship between corporation growth opportunities and debt is negative in line with the trade-off and agency theories since the growth of corporations increases financial distress and the agency costs of debt (Deesomsak, Paudyal and Pescetto 2004: 393). Most observations have supported the negative relationship between a corporation's growth opportunities and its debt financing level (Chakraborty 2013: 117; Dang 2013: 180; Lemma and Negash 2013: 1104; Mateev, Poutziouris and Ivanov 2013: 43). On the other hand, some observations, like Cortez and Susanto (2012: 129); Forte, Barros and Nakamura (2013: 362); Alzomaia (2014: 61); Antonczyk and Salzmann (2014: 145) and Bassey, Arene and Okpukpara (2014: 44), have shown a positive relationship.

### ***Corporation risk***

Studies, like Lim (2012: 197); Drobetz *et al.* (2013: 51); Forte, Barros and Nakamura (2013: 364); Alzomaia (2014: 61) and Baltacı and Ayaydın (2014: 54), have found a negative relationships between corporation risk and debt financing. On the contrary, Gaud *et al.* (2005: 63); Foster and Young (2013: 7) and Lemma and Negash (2013: 1109) found both positive and negative relationships when they used different measures of debt-financing level.

### ***Corporation tax***

Few studies that have found some reasonable results for taxation, like Huang and Song (2006: 32); Antoniou, Guney and Paudyal (2008: 73); De Jong, Kabir and Nguyen (2008: 1961); Foster and Young (2013: 6) and Jöeveer (2013: 306), have established a negative relationship. Conversely, Antonczyk and Salzmann (2014: 146), studying corporations across different countries, identified a positive relationship and Lemma and Negash (2013: 1104) observed both a positive relationship, for some countries in Africa, and a negative relationship for others within the continent.

### ***Liquidity***

Empirically, studies such as Deesomsak, Paudyal and Pescetto (2004: 398); Smith (2012: 157) and Mateev, Poutziouris and Ivanov (2013: 43) confirmed the expected negative theoretical relationship between liquidity and debt financing of corporations. On the contrary, Gungoraydinoglu and Öztekin (2011: 1467), looking at some new international evidence, found a positive relationship between liquidity and debt financing.

### ***Non-debt tax shield***

Studies, such as Cortez and Susanto (2012: 130); Lim (2012: 197) and Lemma and Negash (2013: 1105), found a negative influence of non-debt tax shield on debt financing of corporations. On the contrary, studies like Kouki and Said (2012: 221); Chakraborty (2013: 117); Dang (2013: 179) and Antonczyk and Salzmann (2014: 145), found a positive relationship between non-debt tax shields and debt financing.

### ***Probability of bankruptcy***

Trade-off hypothesis predicts a negative relationship between probability of bankruptcy and debt financing (Kayo and Kimura 2011: 360). Justifying this hypothesis, Smith (2012: 160) found a negative relationship using total debt to total assets as a measure of debt financing

level, while Gaud *et al.* (2005: 63) and Kouki and Said (2012: 221) found a positive relationship in support of the pecking order theory of debt financing (Titman and Wessels 1988: 6).

### ***Gross domestic product***

Most studies on macroeconomic factors of debt financing have found statistically significant results between the gross domestic products (GDP) of countries and the debt-financing levels of corporations. Good examples are De Jong, Kabir and Nguyen (2008: 1966); Gungoraydinoglu and Öztekin (2011: 1467) and Baltacı and Ayaydın (2014: 54) which found a statistically significant positive relationship between the GDP and corporations' debt financing levels. In contrast, Kayo and Kimura (2011: 367); Drobetz *et al.* (2013: 67) and Jõeveer (2013: 306) also found statistically significant results but with a negative relationship.

### ***Inflation rate***

The empirical results of the inflation rate have not been consistent (Mokhova and Zinecker 2014: 533). Literature reviewed by Gungoraydinoglu and Öztekin (2011: 1467); Drobetz *et al.* (2013: 67); Jõeveer (2013: 306); Antonczyk and Salzmann (2014: 146) and Baltacı and Ayaydın (2014: 54) found a negative relationship between inflation and debt financing. On the other hand, Frank and Goyal (2009: 26) found a positive relationship, in contrast to the above hypothesis.

### ***Interest rates***

Few studies have found any statistically significant relationships between interest rates and debt financing. Antoniou, Guney and Paudyal (2008: 32) and Mokhova and Zinecker (2014: 534) found a negative relationship while studying the macroeconomic factors of debt financing levels of corporations of European countries.

### ***Other factors***

Other studies have attempted to find observations on other factors which have not been frequently studied. For instance, Welch (2004: 120); Frank and Goyal (2009: 14) and Baltacı and Ayaydın (2014: 53) found a positive relationship between the industry's mean debt financing level with the corporation's debt-financing level. De Jong, Kabir and Nguyen (2008: 1965) found a positive relationship between financial institutions' development and

corporations' debt financing, while Kayo and Kimura (2011: 367) found a positive relationship between the two. Smith (2012: 155) and Bassey, Arene and Okpukpara (2014: 44) also observed a negative relationship between the corporation's age and its debt financing level, which is consistent with the theoretical expectation of the pecking order theory of debt financing. Jõeveer (2013: 306) incorporated the corporation's corruption perception index in his study and found that it was positively related to the corporation's debt financing level.

#### ***6.3.3.2 Study findings***

The results, using the fixed effects (FE), random effects (RE) and system-GMM models demonstrated that the main factors influencing debt financing within state-owned corporations in Kenya are profitability, asset tangibility and corporation growth. However, corporation size, corporation risk, liquidity and corporation age, were also observed, by the FE and RE models results, as other firm specific factors that may have an influence on debt-financing strategies of state-owned corporations in Kenya. The only macroeconomic factor highlighted by the model results, to have some significant influence on debt financing of state-owned corporations in Kenya, is the country's inflation rate. These results were a confirmation that many of the attributes associated with debt financing within state-owned corporations in Kenya are similar to those from the local and international private-sector corporations.

#### ***Profitability***

The results of the study confirmed that profitability influences debt financing of state-owned corporations in Kenya negatively. The pecking order theory assumes that corporations with higher profitability will prefer internal financing to debt financing and, hence, a negative relationship is expected between profitability and debt financing levels (Baltacı and Ayaydın 2014: 49). Although coefficients showed a weak negative relationship of around -0.1, they were significant at the 95% level of confidence amongst all the debt financing models except for the system-GMM of long-term debt. This may be a sign that the few state-owned corporations in Kenya, that may be using long-term debt financing, could be pursuing the trade-off theory. However, the prominent negative relationship results, which indicate a pursuit of the pecking order theory, are confirmed by the asset tangibility results.

### ***Assets tangibility***

The empirical results of the study showed a consistent strong negative influence of asset tangibility on financial leverage measures for all the models except for long-term debt leverage, which reported a very low positive result. According to Baltacı and Ayaydın (2014: 50), the pecking order theory recognizes a negative relationship between tangibility and leverage, whereas the trade-off theory defends a positive one. Therefore, the significant negative strong coefficients of tangibility under the total debt leverage (TDL) and short-term debt leverage (SDL), for all the models of FE, RE and system-GMM, are strong indications of the pecking order theory assumption that state-owned corporations with less collateral face higher information costs and, thus, prefer debt to equity (Baltacı and Ayaydın 2014: 54).

### ***Corporation growth***

The study results highlighted that corporation growth is also a significant corporation-specific factor that influences debt financing within state-owned corporations in Kenya. The results indicate that there is a significant negative influence of corporation growth on all the debt financing (financial leverage) measures, though not strong, but very consistent throughout all the models. Except for LDL, the TDL and SDL results are significant under all the three models, i.e., FE, RE and system-GMM. Generally, theoretical studies suggest that corporation growth opportunities are negatively related with debt-financing levels (Huang and Song 2006: 20). The negative relationship is in line with the trade-off and agency theories since the growth of corporations increases financial distress and the agency costs of debt (Deesomsak, Paudyal and Pescetto 2004: 393).

### ***Corporation size***

Although size is not significant under the system-GMM, whose estimation procedures are more advanced, the fixed effects (FE) and random effects (RE) show significant results of negative relationship between size and debt financing variables (TDL, LDL and SDL). The negative result is also highlighted under SDL by the system-GMM model, though not significant. However, the system-GMM shows non-significant and very weak positive relationships under TDL and LDL. Therefore, the significant negative relationship results under the FE and RE can be an indication that debt-financing strategies of state-owned corporations in Kenya are also negatively influenced by their sizes. This negative influence is a confirmation of the pecking order theory of debt financing suggested by the profitability and asset tangibility factors. The theory predicts that larger state-owned corporations, which

are more diversified, will use less debt and, hence, expects that the size of the corporation will be negatively related to debt financing (Baltacı and Ayaydın 2014: 49).

### ***Corporation risk***

The study showed mixed results for corporation risk as a factor influencing debt financing. The fixed effects (FE) and random effects (RE) models highlighted a significantly strong positive relationship between the risk of state-owned corporations in Kenya and their debt financing strategies, under the TDL and SDL. However, under LDL, for both the FE and RE models, the results showed a weak negative relationship, though not significant. The non-significant weak negative relationship results are also highlighted by the system-GMM model, under the TDL and SDL. On the contrary, non-significant and a weak positive relationship result is observed under LDL. The mixed results of the corporations, though most insignificant, pose a problem for the pecking order theory, as indicated by the other factors.

### ***Liquidity***

The study results showed some consistent negative relationships between liquidity of the state-owned corporation and its financial leverage (debt financing). However, the long-term debt leverage (LDL) highlighted a positive relationship with liquidity of the state-owned corporations, under FE and system-GMM models. The negative relation between debt financing and liquidity is commonly found in the capital structure literature (Smith 2012: 157). Smith argued that this could be because more profitable corporations try to shun the adverse selection costs of outside debt, or because those that are profitable and rich in growth options seek to avoid the debt overhang problem. The negative result is also a further sign for the pecking order theory. According to the pecking order theory, the prominent negative relationship result can be an indication that the state-owned corporations in Kenya, with more liquid assets, use them as an internal source of funds instead of debt.

### ***Inflation***

According to the study results, the inflation rate in Kenya generally influences the debt financing of state-owned corporations negatively, though at a weak rate. The results showed that inflation have weak significant negative relationship with TDL and SDL, under all the three models. This may be because an increase in inflation causes an increase in interest rates and the increase in interest rates may cause a decrease in new debt or loans. However, a very

weak positive relationship is also highlighted, under the random effects (RE) and system-GMM models, with the long-term debt leverage (LDL).

### ***Other factors***

The other factor included for the explanatory variables under the three models was the age of the state-corporations, which was measured as the number of years in existence since incorporation. The results showed that age is a factor influencing debt financing negatively and are significant for TDL and SDL, under the system-GMM model. However, for fixed effects (FE) and random effects (RE), the results are mixed and not significant. Others studies, such as Smith (2012: 155) and Bassey, Arene and Okpukpara (2014: 44), also observed a negative relationship between the corporation's age and its debt financing level, which is consistent with the theoretical expectation of the pecking order theory of debt financing.

The questionnaire data results also highlighted other factors that may be influencing debt financing within state-owned corporations in Kenya, such as board of directors and market economic factors. The response on who makes the decision on borrowing, indicated the board of directors at 84%, the government officer (Cabinet Secretary) at 11% and the finance manager at 5%. This is a sign that the desired independence of management decisions, such as debt financing, under the new public sector financial management reforms, is yet to be achieved within the state-owned corporations in Kenya, since the major decision makers (i.e., board of directors and Cabinet Secretaries) are political appointees.

Further, the response as to which is the main factor influencing debt-financing decisions, between the government policies and the market economic factors highlighted some independency in management decision making. A total of 63% of the corporations agreed that they follow market economic factors in making debt-financing decisions. On the other hand, 21% of the corporations, highlighted government policies, and 16% agreed that they follow both government policies and market economic factors.

### ***6.3.3.3 Conclusion and implications***

Prominently, the results from the advanced panel regression model estimator (system-GMM) only identified the three main factors, namely, profitability, asset tangibility and corporation growth. These factors were also highlighted significantly by the other panel regression model

estimators (i.e., FE and RE). Further, the models indicated that these factors negatively influence debt financing decisions within the state-owned corporations in Kenya. The other factors influencing debt financing within state-owned corporations in Kenya highlighted by the study results, especially under the fixed effects (FE) and random effects (RE), include corporation size, risk, liquidity, inflation rate and corporation age. The study results showed that the corporation size, liquidity and age had a significant negative influence, while corporation risk highlighted a positive influence and the inflation rate observed mixed results.

In conclusion, the study accepted the null hypotheses  $H_{01}$ ,  $H_{04}$  and  $H_{05}$ , and rejected the null hypotheses  $H_{02}$ ,  $H_{03}$  and  $H_{015}$ , accepting their respective alternative hypotheses:  $H_{12}$ : *Corporation size influences debt financing negatively*;  $H_{13}$ : *Asset tangibility influences debt financing negatively*; and  $H_{115}$ : *Corporation age influences debt financing negatively*. Further, the study rejected the hypotheses  $H_{06}$ ,  $H_{07}$ ,  $H_{08}$ ,  $H_{09}$ ,  $H_{010}$ ,  $H_{011}$ ,  $H_{012}$ ,  $H_{013}$  and  $H_{014}$ , and accepted their respective alternative hypotheses:  $H_{16}$ : *Corporation tax rate does not influence debt financing*;  $H_{17}$ : *Liquidity does not influence debt financing*;  $H_{18}$ : *Non-debt tax shield does not influence debt financing*;  $H_{19}$ : *Probability of bankruptcy does not influence debt financing*;  $H_{110}$ : *Gross domestic product does not influence debt financing*;  $H_{111}$ : *Inflation rate influences debt financing both negatively and positively*;  $H_{112}$ : *Interest rate does not influence debt financing*;  $H_{113}$ : *Industry median does not influence debt financing*; and  $H_{114}$ : *Financial market conditions do not influence debt financing*. It can, therefore, be concluded that the main factors influencing debt-financing decisions within the state-owned corporations in Kenya are profitability, asset tangibility and corporation growth.

### ***Profitability***

According to the pecking order theory, a negative influence of profitability on debt financing is an indication that managers of profitable state-owned corporations prefer to finance investments using internally-generated resources because of the informational asymmetry between managers and outside investors (Deesomsak, Paudyal and Pescetto 2004: 394). In contrast, if the managers use more of equity, in the form of grants and government allocations, when internal funds are inadequate, then the negative relationship may be an indication of the agency theory. The other results of high levels of net equity financing within these state-owned corporations, during the five-year period from 2007 to 2011, pose a problem for the pecking order theory and give a pointer towards the agency theory. However, the asset tangibility result also implies an application of the pecking order theory.

### ***Asset tangibility***

The negative influence of asset tangibility on debt-financing decisions, just like for profitability, is also an indication of the pecking order theory. The pecking order theory predicts that state-owned corporations with less collateral face higher information costs and, therefore, favours debt financing to equity financing (Baltacı and Ayaydın 2014: 49). In addition, the strong governmental influence of state-owned corporations may also discourage the managers from using the tangible assets as collateral and encourage them to use their strong asset base to issue more equity and negotiate for more grants, government budget allocations and subsidies. This may imply that the pecking order theory is not applied strictly by the Kenyan state-owned corporations, as indicated by the corporation growth results.

### ***Corporation growth***

Interestingly, the negative influence of growth opportunities of a state-owned corporation on its debt financing decisions, is an indication of the trade-off and agency theories (Dang 2013: 180). The theories indicate that growth increases costs of financial distress, reduces free cash flow problems, which the state-owned corporation managers tend to protect, thereby making worse debt-financing related agency problems (Frank and Goyal 2009: 8). Titman and Wessels (2012: 4) also agreed with this argument and suggested that the cost associated with the agency relationship is expected to be higher for corporations in growing industries, which have more flexibility in their choice of future investments. This implies that the pecking order theory proposed under the profitability and asset tangibility results does not fully explain the debt-financing decisions within state-owned corporations in Kenya.

Since the government is the major shareholder within the state-owned corporations in Kenya, the agency costs theory offers some explanation of this negative influence of corporation growth. According to the theory, the state-owned corporations with higher growth opportunities issue equity instead of debt to avoid conflict of interest between shareholders (government) and creditors when the values of future growth opportunities are higher (Kouki and Said 2012: 219; Moosa and Li 2012: 115007-115005). In addition, the system-GMM results, with significant lagged coefficients of debt financing measures, also indicate some element of target adjustment on the debt financing of state-owned corporations in Kenya. These coefficients demonstrate that the state-owned corporations in Kenya also pursue target or optimal debt levels, though at a very low speed of adjustment, which is an indication of the effect of the agency theory, under the dynamic trade-off theory (Frank and Goyal 2005: 150).

It can be concluded, from the study results, that the pecking order theory offers a more prominent explanation of debt financing decisions amongst the state-owned corporations in Kenya. However, the results show some elements of target adjustments and a strong influence of a politically appointed board of directors, which may be better explained by the agency theory. It is, therefore, recommended that a further study be done, using more data, to test the theories applicable in explanation of debt-financing patterns amongst the state-owned corporations in Kenya.

### **6.3.4 The relationship between debt financing and financial performance of state-owned corporations in Kenya**

The study also sought to determine how debt financing decisions of state-owned corporations in Kenya affect their financial performance. The study tested the following hypotheses:

- *H<sub>0</sub>16: There is a positive relationship between debt financing and ROA;*
- *H<sub>0</sub>17: There is a positive relationship between debt financing and ROI; and*
- *H<sub>0</sub>18: There is a positive relationship between debt financing and ROE.*

#### **6.3.4.1 Literature results**

Similar to factors influencing debt financing, few studies or none on the effect of debt financing on financial performance has been entirely applied to state-owned corporations, more so from Kenya. Several studies have been applied on private-sector corporations. The analysis of the results of these empirical research studies indicates that the observations are contradictory, as they convey evidence both in favour of the positive relationship and in favour of the negative relationship between debt-financing decisions and corporation performance (Tudose 2012: 80). For example, San and Heng (2011: 34), studying large construction corporations, found a positive relationship when they used return on capital (ROC) and earnings per share (EPS) as measures of financial performance of corporations. Fosu (2013: 146), using return on assets (ROA), return on equity (ROE) and Tobin's q as a corporation's performance measure, also found a positive relationship between the debt-financing level and a corporation's performance.

On the other hand, studies like Zeitun and Tian (2007: 44); King and Santor (2008: 2428); Salehi and Biglar (2009: 101); Obert and Olawale (2010: 1714); Akinlo and Asaolu (2012:

22); Norvaisiene (2012: 514) and Salim and Yadav (2012: 165) found a negative relationship between debt financing and a corporation's financial performance. Most of the studies used financial accounting measures of financial performance such as return on assets (ROA), return on equity (ROE), earnings per share (EPS) and operating profits. Thomas (2013: 45) used the graphical method to observe the relationship and found a behaviour that confirms the agency theory proposal. Thomas observed that debt increased with the increase of corporation performance, measured by earnings per share, up to some level (target level), then declined as performance continued increasing steadily.

#### **6.3.4.2 Study findings**

Using the financial measures of ROA and ROI, the FE, RE and system-GMM models' results indicated that there is a negative relationship between debt financing and financial performance of state-owned corporations in Kenya. However, the financial performance measure of ROE demonstrated mixed results under different models. These mixed results of ROE were insignificant in most cases with the models not reporting strong results on validity and reliability tests.

The results showed that financial performance, under the more advanced panel regression model estimator (system-GMM model), is negatively related to total debt leverage of state-owned corporations in Kenya. The negative results were confirmed by the financial performance models under return on assets (ROA), return on investment (ROI) and return on equity (ROE). The negative relationship results were very significant and consistent, under the financial performance measures, such as ROA and ROI. The results under the fixed effects (FE) and the random effects (RE) models were significantly strong, with both ROA and ROI, highlighting a significant coefficient of about -0.7 (-70% variation), under the FE model, and -0.3 (-30% variation), under the RE model. However, the coefficient between financial performance measures, including ROE, and total debt leverage (TDL) were not very strong (-20% or -0.2), though significant under ROA and ROE.

The negative relationship between debt financing and financial performance of state-owned corporations was also observed using the long-term debt leverage (LDL) results. However, the validity and reliability test of R-sq were low (less than 0.5) under the fixed effects (FE) and random effects (RE) models. There was consistency of the negative sign under the

models, including the system-GMM. However, the financial performance measure of ROE highlighted a positive sign under the random effects (RE) model.

A further significant negative relationship between financial performance and debt financing was highlighted by the short-term leverage (SDL) results. The results showed a significant negative relationship between financial performance measures of ROA and ROI, and short-term debt leverage (SDL), under all the models (FE, RE and system-GMM). The negative relationship of ROA and ROI was very strong under the FE and RE, reporting coefficients of -0.6 (-60% variation) and -0.4 (-40% variation), respectively. However, the negative relationship of the same measures (ROA and ROI) had slightly strong coefficients of about -0.3 (-30% variation), which are also very significant, under the system-GMM.

Just like the results under total debt leverage (TDL) and long-term debt leverage (LDL), the financial performance measure of ROE also highlighted a positive relationship with the short-term debt leverage (SDL). Though, not significant, the positive relationship coefficients under all the models (FE, RE and system-GMM) were strong, at about 0.6 (60% variation), for each case.

#### **6.3.4.3 Conclusion and implications**

It can be concluded for the study results that debt financing strategies within state-owned corporations in Kenya have a negative effect on their financial performance. Therefore, null hypotheses  $H_{016}$ ,  $H_{017}$  and  $H_{018}$  of the study were rejected and their respective alternative hypotheses:  $H_{116}$ : *There is a negative relationship between debt financing and ROA*;  $H_{117}$ : *There is a negative relationship between debt financing and ROI*; and  $H_{118}$ : *There is no relationship between debt financing and ROE*, were accepted. The pecking order theory suggests that corporations with high financial performance generate more earnings that are used for self-financing, enabling them to go for less debt financing (Lemmon and Zender 2010: 35). This implies that state-owned corporations in Kenya with better financial performance have less debt levels, since they use self-generated resources to finance their investments. In addition, the agency cost theory can also explain this negative relationship. Agency costs can also exist from conflicts between debt and equity holders when there is a risk of default amongst the state-owned corporations with high levels of debt (Margaritis and Psillaki 2010: 622). This risk of default may create underinvestment which, in effect, tends to reduce the financial performance of the corporations.

However, the positive results of ROE may also be an implication of agency theory. This is an indication that though the debt-financing strategies of state-owned corporations in Kenya may be explained by the pecking order theory, the element of agency costs theory cannot be totally ignored. Therefore, the state-owned corporations in Kenya, with high levels of debt financing, may use them to reduce the agency costs of outside equity and increase the financial performance of the corporation by constraining or encouraging managers to act more on the interest of the existing shareholder, mostly the government (Berger and Bonaccorsi di Patti 2006: 1066).

## **6.4 CONTRIBUTIONS OF THE STUDY TO THE LITERATURE**

Given the fact that literature on debt financing patterns within the state-owned corporations, particularly from Kenya, is limited, this study contributed to the literature through the main findings of its objectives. The findings of the study were majorly in three areas, i.e., types of debt financing used by state-owned corporations, the extent of debt financing within state-owned corporations in Kenya, factors influencing debt financing within state-owned corporations in Kenya, and the relationship between debt financing and financial performance of state-owned corporations in Kenya.

### **6.4.1 Types of debt financing used by the state-owned corporations**

The findings contributed to literature by identifying different types of long-term and short-term debt used by the state-owned corporations in Kenya and those used by state-owned corporations from developed and developing economies.

#### ***6.4.1.1 The types of debt financing used by state-owned corporations in Kenya***

The types of long-term debt used by state-owned corporations in Kenya include: loans from local financial institutions; loans from the government and its agencies; loans from international financial institutions; bonds and finance leases. The types of short-term debt used by state-owned corporations in Kenya include trade and other payables, and bank overdrafts. The other types of liabilities used are the provisions and deferred tax liabilities.

#### ***6.4.1.2 The types of debt financing used by state-owned corporations from developed and developing economies***

The study found that the types of debt financing used by state-owned corporations from developed and developing economies are similar to those commonly used by the private-sector counterparts. This is a confirmation that the economic environment determines the type of debt used by the state-owned corporations. Further, it is confirmation that when the desired public sector financial management reforms are fully embraced, the management decisions, particularly in debt financing of state-owned corporations, become similar to those of private-sector corporations.

The types of long-term debt financing used by state-owned corporations from these economies include loans from the government, local and international financial institutions, both local and international capital market instruments, such as bonds, notes and debentures, and derivative financial instruments, such as swaps, options and forward contracts. Other types of long-term debt used by these corporations are finance leases, provisions, deferred tax and pension liabilities. On the other hand, additional types of short-term debt used by these state-owned corporations, compared to Kenyan counterparts, are the commercial papers and both local and international discount notes. These may be due to the developed and more efficient capital markets from developed and developing economies.

#### **6.4.2 Extent of debt financing within state-owned corporations in Kenya**

The results showed that, in aggregate, the debt financing levels of the state-owned corporations in Kenya tend to indicate stability in the long-run. However, the levels of bank loans from international, government and local financial institutions, are higher than capital market instruments, such as bonds. The results also confirmed that debt financing of state-owned corporations in Kenya fluctuates amongst different economic sectors in Kenya, with listed corporations using more long-term than short-term debt.

#### **6.4.3 Factors influencing debt financing within state-owned corporations in Kenya**

The findings identified three major corporation specific factors that influence debt financing within state-owned corporations in Kenya. These are profitability, nature of used assets within the corporation and the level of corporation growth. Further, the findings showed that all these factors influence debt financing negatively, making the pecking order theory to be the prominent debt-financing theory explaining this pattern. The other minor factors

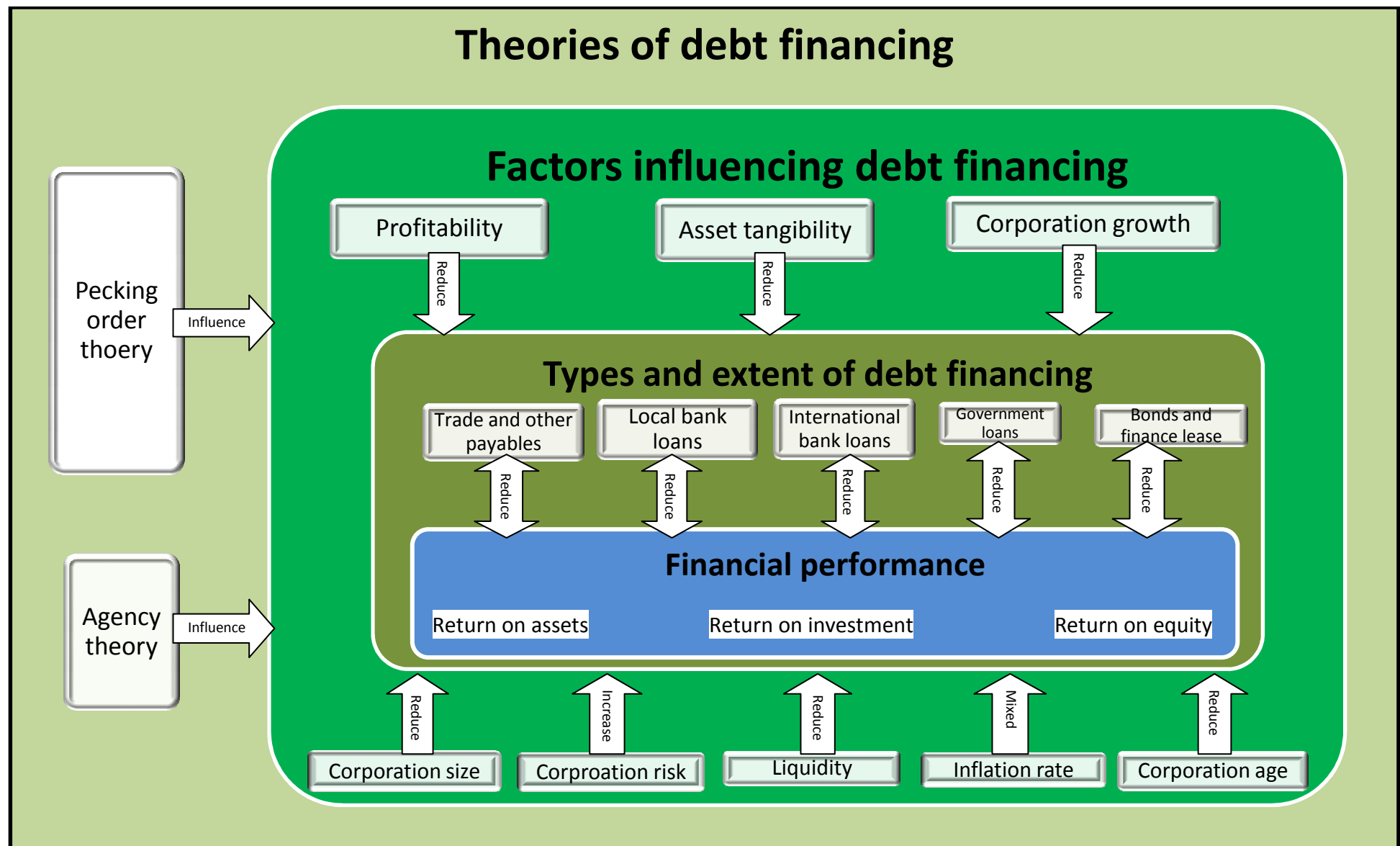
highlighted by the results were corporation size, corporation risk, liquidity, inflation and age. These factors also indicated more support for the pecking order theory, with slight variance towards the agency costs theory.

#### **6.4.4 Relationship between debt financing and financial performance of state-owned corporations in Kenya**

The findings determined that the level of debt financing within the state-owned corporations has a negative influence on financial performance of state-owned corporations in Kenya. This implies that state-owned corporations in Kenya with high financial performance use less of debt financing and more of, either internally-generated funds or more of equity, in terms of grants. It may also imply that more use of debt financing within state-owned corporations in Kenya reduces financial performance either through high costs of borrowings or through embezzlements, due to control of managers by the politicians. The embezzlement of funds by the management, through political influence may be a strong fact, since the results highlighted some state-owned corporations having more total debt than total assets, i.e., they were insolvent. However, these findings also showed a strong support for the pecking order theory and an element of the agency costs theory under principal-agent (government-management) relationship.

Generally, the major contributions to literature by the study can be summarised under the debt financing model within the state-owned corporations in Kenya in Figure 6.1. Figure 6.1 highlights that the different types of debt financing used by state-owned corporations in Kenya include trade and other payables, loans, such as loans from government, local and international financial institutions, capital market debt instrument, such as bonds, and finance lease. The model also shows that the levels of these types of debt financing are influenced negatively, majorly, by the profitability, asset tangibility and the growth within the state-owned corporation. The other highlighted factors include corporation size, risk, liquidity, and age and inflation rate.

Figure 6.1: Debt financing model within state-owned corporations in Kenya



Source: Self generated by researcher

In addition, the model shows that financial performance, mostly measured by return on investment, return on assets and return on equity, relates negatively with the extent and types of debt financing within the state-owned corporation in Kenya. As shown on the model, this kind of debt-financing pattern within the state-owned corporation in Kenya is mainly supported by the pecking order theory, with some elements of agency theory, due to the political influence on the management of state-owned corporations.

The model implies that profitable state-owned corporations in Kenya, with more tangible assets and high potential for business growth, use minimal debt to finance their investments and operations. In contrast, the model also implies that less profitable state-owned corporations in Kenya, with few tangible assets and low probable business growth, use more debt financing to generate funds. In addition, these low profitable state-corporations use more of bank loans, either from local and international financial institutions or from the government. This scenario may lead to less investment expansions or diversifications by the profitable state-owned corporations in Kenya, since the reliance on internally-generated funds may be inadequate for the aspired expansions or diversifications.

On the other hand, less profitable state-corporations, using more of bank loans than the capital market securities, such as bonds, may find it difficult to repay these expensive types of debt financing in the long-run. The loan repayment deficiency may lead to these state-owned corporations being insolvent and eventually being put under receivership management. Receivership management has been a common incident amongst the Kenyan state-owned corporation, and this debt financing pattern may be the cause. Based on this debt-financing pattern, the recommendations of the study were directed to the government of Kenya and its policy makers, the management of state-owned corporations in Kenya and the Capital Market Authority in Kenya.

## **6.5 RECOMMENDATIONS OF THE STUDY**

The implications of these study results may have a major effect on the management of state-owned corporations, government policy makers and capital market regulatory bodies, both in Kenya and Africa. In addition, finance students and academic researchers may use the findings and the recommendations to stimulate further research in this area. Therefore, based on the study findings, the recommendations are made to the government and policy makers in

Kenya, to the Capital Market Authority in Kenya and to the management of state-owned corporations in Kenya.

### **6.5.1 To government and policy makers**

#### ***6.5.1.1 Encourage use of local and international capital market debt securities***

The findings under the types of debt financing demonstrated that state-owned corporations in Kenya use less of capital markets instruments, such as bonds, debentures or notes, and derivative financial instruments, such as swaps, options or forward contracts. However, the results highlighted that their counterparts from developed and developing economies are making use of these types of debt financing, which are majorly used by the private-owned corporations. The results under the extent of debt financing also highlighted huge borrowing from the international financial institutions and the government, by the state-owned corporations in Kenya.

The study recommends that the government of Kenya and its policy makers should encourage the state-owned corporations, through their board of directors, to balance the use of different types of debt financing. More particularly, the Kenyan government should encourage the state-owned corporations to explore both the local and the international capital markets. This will enhance better performance within the state-owned corporations by reducing the agency costs and exposing the investments of the corporations for external monitoring by the capital market debt providers.

#### ***6.5.1.2 Enhance the implementation of public sector financial management reforms under the state-owned corporations***

Further, the negative relationship result between debt financing and financial performance of state-owned corporations in Kenya may indicate the lack of proper monitoring of investment activities of the corporations and encourage misappropriation of funds. This may be a confirmation that the desired state-owned corporations' financial management reforms are yet to be achieved in Kenya. Just as the GoK and most African governments are dependent on foreign aid to finance their expenditures, so, too, are their state-owned corporations. These state-owned corporations should follow the pattern of financing of private-sector corporations, according to the state-owned financial management reforms agenda, instead of making financing decisions that serve their political masters.

In contrast, the results from the developed and developing economies indicated many similarities with the normal types of debt financing used by private-sector corporations. This may suggest that the desired public sector financial management reforms, under the state-owned corporations, have been embraced positively by the governments from these economies. The management of their state-owned corporations have been left to compete effectively with the private-sector counterparts.

In accordance with these findings, the study recommends that the government and policy makers should enhance the public sector reforms agenda within the state-owned corporations. The government and its policy makers should foster to increase independence in management decisions through managerial structural reforms which allow the managers of state-owned corporations to be accountable for their decisions. The government should strictly follow the (OECD 2005: 49) guidelines in making board and management appointments and promotions.

### **6.5.2 To the management of state-owned corporations in Kenya**

The study recommendations to the management are strongly reinforced by the questionnaire results. These results indicated that the Kenyan state-owned corporations use bank loans instead of capital market debt instruments in raising funds. The results also showed a very high percentage of use of short-term borrowing. The questionnaire results further indicated that most managers of state-owned corporations in Kenya are not aware of the fact that the Public Financial Management Act of Kenya allows them to access capital market debt financing. Further, the results on who makes the borrowing decisions indicated the board of directors as the major decision makers on matters of borrowing. However, a greater percentage of the respondents indicated that the corporations should follow market economic factors when making borrowing decisions. The study makes the following recommendations to the managers of state-owned corporations.

#### ***6.5.2.1 Cost effective balanced use of different types of debt financing***

Based on these findings, the study recommends that the managers of state-owned corporations should cost effectively balance the types of debt financing used. They should try to issue more of capital market debt instruments, such as bonds and commercial papers, and derivative financial instruments, such as swaps, options and forward contracts. The bank loans and short-term debt, which are currently mostly used by most Kenyan state-owned

corporations, are normally more expensive than the capital market instruments and derivative financial instruments, mostly used by their counterparts from developed economies.

#### ***6.5.2.2 Familiarisation with the guidelines of new public sector financial management reforms under state-owned corporations***

The management of state-owned corporations should try to update themselves with the new public sector reforms guidelines, such as OECD (2005: 21), and the Public Financial Management Act (Republic of Kenya 2012: 930), under the Kenyan New Constitution which addresses the procedures of making debt-financing decisions. The managers should not leave the debt financing decisions to the board of directors only, but should continue to use market economic factors in making debt-financing decisions.

#### ***6.5.2.3 Increase use of debt financing***

The findings on factors influencing debt financing within Kenyan state-owned corporations indicated that profitability, asset tangibility and corporation growth influence debt financing negatively. This implies that profitable state-owned corporations in Kenya, with more tangible assets and high growth potential, use less debt financing. Less use of debt financing by such state-owned corporations will limit the investment potential and, in turn, reduce their financial performance in the short term. This has been confirmed by the results on the effect of debt financing of Kenyan state-owned corporations on their financial performance. The results show that high financially performing state-owned corporations in Kenya use less debt financing, which prevents them from expanding since their investments are majorly limited to internally generated funds.

The study, therefore, recommends to the management of such state-owned corporations to use the tangible assets as collateral and increase the debt-financing levels to make them utilise positively their high growth potentials, by increasing their investments. The effect of increased borrowing and increased investments will increase financial performance and, in turn, give more returns to the government in terms of dividends.

### **6.5.3 To Capital Market Authorities**

The study findings indicated less use of capital market instruments by the state-owned corporations in Kenya, compared to their counterparts from developed and developing economies. These findings may imply that the capital markets from emerging economies,

such as Kenya and other African countries, are still inefficient and less attractive to corporations, such as state-owned, as a forum for raising funds. In addition, the results showed that few managers are aware that the corporations can issue debt instruments in the capital markets. The study recommends that the Kenyan Capital Market Authority, which ensures the efficiency and promotion of use of the market as a viable place for raising funds, should ensure efficient trading within the market. They should aim towards total reduction of insider trading within the market and promote its use amongst the state-owned corporations through training and using particular state-owned corporation bonds as sample tests for others.

## **6.6 SUGGESTIONS FOR FURTHER RESEARCH**

In the light of the findings under factors influencing debt financing and the relationship between debt financing and financial performance within state-owned corporations, three major recommendations are made for further research. Firstly, the study recommends further research on factors influencing debt financing and its effect on financial performance of state-owned corporations, using international data. In this research, more data from state-owned corporations for both developed and developing economies, for a period longer than 5 years should be used for better cross-sectional and longitudinal analysis. Secondly, for the state-owned corporations in Kenya, further research work should seek to identify the actual debt financing theory applicable in explanation of their debt-capital structure. This study should also try to apply more data for a period greater than 10 years. Finally, in terms of whether state-owned corporations in Kenya have fully embraced the public-sector financial-management reforms, further research should be done on factors influencing investment decisions of state-owned corporations in Kenya.

## **6.7 CONCLUSION**

The literature review revealed that few studies have focused on debt-financing strategies within state-owned corporations, raising the question as to whether their debt-financing patterns are similar to those of their private-sector counterparts. This study, majorly focusing on state-owned corporations for Kenya and around the world, revealed that debt financing is used by state-owned corporations as much as they are used by private-sector corporations. Further, the common factors influencing debt financing within private-sector corporations,

such as profitability, asset tangibility and corporation growth, were found to be the main factors influencing debt financing within state-owned corporations in Kenya. The relationship between debt financing and financial performance of state-owned corporations was also found to be negative, which is a common phenomena, especially when corporations are pursuing the pecking order and agency theories. However, there was some element of political influence in their debt-financing decisions, implying that as much as the management of the state-owned corporations would want to follow the economic market factors in making decisions, they still have to please their political masters.

The study found that debt-financing patterns within state-owned corporations in Kenya pursue the pecking order theory, with some elements of principal versus agent relationship conflicts under the agency theory. Therefore, it can be concluded, from the findings, that those profitable state-owned corporations in Kenya, with more tangible assets and high growth potential, use less debt financing. This has been confirmed by the results on the effect of debt financing of Kenyan state-owned corporations on their financial performance. The results show that high financially performing state-owned corporations in Kenya use less debt financing, which, in turn, prevents them from expanding since their investments are majorly limited to internally-generated funds. Therefore, to expand and increase their investments, the study recommends increased use of debt financing by the state-owned corporations in Kenya, particularly capital market securities, such as local and international bonds and derivative financial instruments, which may be less expensive than bank loans in the long term.

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## APPENDIX A: LETTER OF PERMISSION



### THE STATE CORPORATIONS ADVISORY COMMITTEE

Telephone: Nairobi 2227411

When replying please quote

Ref. No. **OP/SCAC.9/1** .....  
and date

OFFICE OF THE SECRETARY

K.I.C.C.

P.O. Box 42145-00100

NAIROBI

..... 20.....

**15<sup>th</sup> August, 2013**

**Mr. Micah Odhiambo Nyamita**

Department of Public Management and Economics,

Faculty of Sciences,

Durban University of Technology,

P. O. Box 1334,

Durban 4000,

**SOUTH AFRICA**

Dear Sir


#### PERMISSION TO CONDUCT RESEARCH IN STATE CORPORATIONS

Reference is made to your letter dated 30<sup>th</sup> June, 2013 addressed to the Inspector-General (Corporations) permission to carry out public finance research in income generating State Corporations to meet requirements for Ph.D thesis. The Inspector General referred your request to the State Corporations Advisory Committee for consideration.

We have noted that your focus is debt financing in State Corporations and that you will donate a copy of your thesis to us for purposes of sharing knowledge.

We have no objection to your undertaking of the proposed study and wish you all the best in the research. Please to seek any other support you may require.

Yours *Sincerely,*

  
**Jane Mugambi**  
**SECRETARY**

**Copy to. Mr. B. A. Ntshangase**  
Head of Department,  
Public Management & Economics,  
Faculty of Sciences,  
Durban University of Technology,  
SOUTH AFRICA

## APPENDIX B: LETTER OF INFORMATION



### LETTER OF INFORMATION

**Title of the Research Study:** Effects of Debt Financing on Financial Performance of State Corporations in Kenya

**Principal Investigator/s/researcher:** Odhiambo Micah Nyamita, MBA, B Ed (Arts) and CPA (K)

**Co-Investigator/s/supervisor/s:** Dr. H.L. Garbharan, D.P.A and Professor Nirmala Dorasamy, PhD

#### **Brief Introduction and Purpose of the Study:**

The few studies that analyze the debt finance or capital structure and its impact on the firm performance in emerging markets are somewhat dated, use limited data, or have narrow focus and most of them are based on private sector firms. Identifying the optimal debt level of the corporations and its determinants is a main issue in financial theory, as it has an important influence on the corporations' performance. The main aim of this study is to investigate whether the use of debt by state corporations in Kenya positively influences their financial performance. The study will focus on the financial performance of the identified corporations for the ten years period from 2002 to 2012. The results of the study will help in identifying the potential of anticipation for future financing options for state corporations in Kenya.

#### **Outline of the Procedures:**

Since the study will target all the state owned corporations, the financial managers or officers of the one hundred and sixty seven income generating state owned corporations in Kenya will be responsible for their corporation's financial statements. They will be expected to respond to the study's questionnaire on behalf of their corporations. A copy of each year's financial statement of every corporation for the ten years from 2002 to 2012 attached to duly filled questionnaire will also be required from them. Since the state owned corporations' headquarters are spread all over the country, the researcher will have to travel to all the entire corporations' headquarters to administer the questionnaires and collect the copies of the financial statements. The researcher intends to spend, on average, half an hour in every organization which may translate, on average, to twenty days in order to cover all the corporations. A letter of permission will be requested from the Inspector General in charge of state corporations under the Ministry of State for Public Service before commencement of the study. The inspector general is the principal overseer of all the state owned corporations in Kenya. In data analysis and reporting, the services of professional statistical analyst and editor and language practitioner will be acquired to give a professional touch to the data analysis and the report.

**Risks or Discomforts to the Participant:**

In view of the fact that the study is on humans and organizations, there are no foreseeable risks or discomforts to the participants except that the researcher has to travel around the country in order to cover all the firms within the study.

**Benefits:**

The findings of this study should be relevant in the Kenyan context given the important role the public sector is expected to play as the engine of growth in Kenya. The recently developed performance contracting for public institutions in Kenya and the vision 2030 articulate government's commitment to facilitating public sector growth through enhanced good governance. It is, therefore, expected that the findings of this study should have important policy implications for Kenyan state owned corporations.

The regulatory bodies that are responsible for the licensing, regulation and supervision of operators in the capital markets, including policy formulation, monitoring and evaluation, can make informed decisions on the basis of the findings of the study. Africa, as a continent with most nations having state owned corporations, should also benefit from this study, by helping investors interested in this continent to make justified decisions.

The study should, in addition, make a significant contribution to the growing body of research on capital structure and performance, especially in the public sector and a nation considered to be less developed. Out of the three envisaged publications, the findings may also be used as a source of reference for other researchers. In addition, finance students and academic researchers may need the study findings to stimulate further research in this area.

**Reason/s why the Participant May Be Withdrawn from the Study:**

The financial information of a state owned corporation is public information and, therefore, the participants may have no reason to withdraw from the study. In any case, should the individual participants opt to withdraw from the study; the researcher will have the authority of the inspector general in charge of state corporations which may compel them to comply. In case they withdraw from the study, the copies of the financial statements will be obtained from the inspector general's office and the questionnaires could be responded to by the inspector general office, being the principal overseer of all the state owned corporations in Kenya. Nevertheless, their participation is voluntary and they can withdraw from the study at any stage should they wish to.

**Remuneration:**

The participants will not receive any monetary or other types of remuneration except for the professional statistician and the editor and language practitioner who will be paid for their professional services according to the budget of the study.

**Costs of the Study:**

The participants will not be expected to cover any costs towards the study except their time for the interview and the cost of copies of the financial statements.

**Confidentiality:**

The data collection process does not involve getting personal confidential data and, therefore, the confidentiality of the participants will not be a big issue. Since the study is on public organizations, the Kenyan law does not restrict the researcher from making the findings of the study public. However, the researcher intends to maintain the confidentiality of the information and the participants' identity to the extent of the research work only. The data from the participants will be retained for fifteen years after the study, for any further analysis and then disposed of by shredding.

**Research-related Injury:**

Few injuries are normally associated with social research, where data is collected from individuals through questionnaires. The researcher anticipates no research-related injuries and, in case of any, there will be compensation to the extent of what is legal.

**Persons to Contact in the Event of Any Problems or Queries:**

Please contact the researcher: Micah Odhiambo Nyamita on +27745612067 or [mnyamita@yahoo.com](mailto:mnyamita@yahoo.com), my supervisor: Dr. H.L. Garbharran on +27313735740 or [GarbharranHL@dut.ac.za](mailto:GarbharranHL@dut.ac.za), my co-supervisor: Prof. Nirmala Dorasamy on +27313736862 or [nirmala@dut.ac.za](mailto:nirmala@dut.ac.za) or the Institutional Research Ethics administrator on +2731 373 2900. Complaints can be reported to the DVC: TIP, Prof F. Otieno on +2731 373 2382 or [dvctip@dut.ac.za](mailto:dvctip@dut.ac.za).

## APPENDIX C: CONSENT LETTER



### CONSENT

#### Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Micah Odhiambo Nyamita, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: 12/13FREC.
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
<b>Full Name of Participant Thumbprint</b>	<b>Date</b>	<b>Time</b>	<b>Signature / Right</b>

I, Micah Odhiambo Nyamita, herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
<b>Full Name of Researcher</b>	<b>Date</b>	<b>Signature</b>

_____	_____	_____
<b>Full Name of Witness (If applicable)</b>	<b>Date</b>	<b>Signature</b>

_____	_____	_____
<b>Full Name of Legal Guardian (If applicable)</b>	<b>Date</b>	<b>Signature</b>

**Please note the following:**

Research details must be provided in a clear, simple and culturally appropriate manner and prospective participants should be helped to arrive at an informed decision by use of appropriate language (grade 10 level - use Flesch Reading Ease Scores on Microsoft Word), selecting of a non-threatening environment for interaction and the availability of peer counseling (Department of Health, 2004)

If the potential participant is unable to read/illiterate, then a right thumb print is required and an impartial witness, who is literate and knows the participant e.g. parent, sibling, friend, pastor, etc. should verify in writing, duly signed that informed verbal consent was obtained (Department of Health, 2004).

If anyone makes a mistake completing this document e.g. wrong date or spelling mistake a new document has to be completed. The incomplete original document has to be kept in the participant file and not thrown away and copies thereof must be issued to the participant.

**References:**

Department of Health: 2004. *Ethics in Health Research: Principles, Structures and Processes*  
<http://www.doh.gov.za/docs/factsheets/guidelines/ethnics/>

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[http://www.nhrec.org.za/?page\\_id=14](http://www.nhrec.org.za/?page_id=14)

## APPENDIX D: LETTER OF ETHICS



### MANAGEMENT SCIENCES: FACULTY RESEARCH ETHICS COMMITTEE (FREC)

16 October 2013  
Student No: 21347531  
FREC No: 12/13FREC

Dear Mr Nyamita

#### DOCTORAL DEGREE IN TECHNOLOGY: PUBLIC MANAGEMENT

#### **TITLE: FACTORS INFLUENCING DEBT FINANCING AND ITS EFFECTS ON FINANCIAL PERFORMANCE OF STATE CORPORATIONS IN KENYA**

Please be advised that the FREC Committee has reviewed your proposal and the following decision was made: Full Approval, ethics level 1

Approval has been granted for a period of one year, after which you are required to apply for safety monitoring and annual recertification. Please use the form located at the Faculty. This form must be submitted to the FREC at least 3 months before the ethics approval for the study expires.

Any adverse events [serious or minor] which occur in connection with this study and/or which may alter its ethical consideration must be reported to the FREC according to the FREC SOP's.

Please note that ANY amendments in the approved proposal require the approval of the FREC as outlined in the FREC SOP's.

Yours Sincerely

FREC: Chairperson

## APPENDIX E: A SAMPLE OF FINANCIAL STATEMENTS

### Statement of Financial Position for the year ended:

	Notes	30 June 2011 Shs'000	30 June 2010 (Restated) Shs'000	30 June 2009 (Restated) Shs'000
<b>ASSETS</b>				
<b>Non-current assets</b>				
Property, plant and equipment	11	3,560,113 ✓	2,047,301 ✓	1,996,357
<b>Current assets</b>				
Biological assets	12	592,220	590,269	517,769
Inventories	13	529,288	498,506	413,033
Trade and other receivables	14	136,556	222,349	169,070
Receivables from outgrowers	15	666,260	593,083	571,516
Cash and bank balances	16	339,915	47,188	24,101
		2,264,239 ✓	1,951,395 ✓	1,695,489
<b>TOTAL ASSETS</b>		<b>5,824,352</b>	<b>3,998,696</b>	<b>3,691,846</b>
<b>EQUITY AND LIABILITIES</b>				
<b>Equity attributable to owners</b>				
Share capital	17	353,970	353,970	353,970
Revaluation reserve	18	1,838,686	800,428	849,268
Retained earnings		633,580	143,311	(41,536)
<b>Total equity</b>		<b>2,826,236</b>	<b>1,297,709</b>	<b>1,161,702</b>
<b>Liabilities</b>				
<b>Non-current liabilities</b>				
Grants	19	50,323	56,723	63,123
Deferred income tax	20	872,823	240,413	171,496
		<b>923,146</b>	<b>297,136</b>	<b>234,619</b>
<b>Current liabilities</b>				
Trade and other payables	21	1,025,455	1,038,524	950,632
Current income tax		40,268	-	-
Borrowings	22	1,009,247	1,365,327	1,344,893
		<b>2,074,970</b>	<b>2,403,851</b>	<b>2,295,525</b>
<b>TOTAL EQUITY AND LIABILITIES</b>		<b>5,824,352</b>	<b>3,998,696</b>	<b>3,691,846</b>

The notes on pages 19 to 45 are an integral part of these financial statements.

The financial statements on pages 15 to 45 were approved for issue by the board of directors on 2012 and signed on its behalf by:

**Statement of Comprehensive Income for the:**

Year ended 30 June			
	Notes	2011 Shs'000	2010 Shs'000 (Restated)
<b>Gross sales</b>		<b>5,920,272</b>	<b>4,122,302</b>
Indirect taxes:			
- Value Added Tax (VAT)		(801,920)	(553,481)
- Sugar Development Levy (SDL)		(192,659)	(133,050)
<b>Revenue</b>	<b>5</b>	<b>4,925,693</b>	<b>3,435,771</b>
(Losses)/gains arising from changes in fair value less costs to sell of biological assets	12	(16,507)	29,628
		4,909,186 ✓	3,465,399 ✓
Cost of sales		(3,459,829) ✗	(2,571,841) ✗
<b>Gross profit</b>		<b>1,449,357</b>	<b>893,558</b>
Other income	6	44,662 ✓	32,943 ✓
Distribution costs		(62,800) ✗	(55,619) ✗
Administrative expenses		(796,112) ✗	(601,794) ✗
<b>Operating profit</b>		<b>635,107</b>	<b>269,088</b>
Finance cost	7	(72,012) ✓	(64,164) ✓
<b>Profit before income tax</b>		<b>563,095</b>	<b>204,924</b>
Income tax expense	10	(181,705)	(68,917)
<b>Profit for the year</b>		<b>381,390</b>	<b>136,007</b>
<b>Other comprehensive income, net of tax:</b>			
Gains on revaluation of property, plant and equipment.	18	1,147,137	-
<b>Total comprehensive income for the year</b>		<b>1,528,527</b>	<b>136,007</b>

The notes on pages 19 to 45 are an integral part of these financial statements.

### Statement of Changes in Equity for the:

	Notes	Share capital Shs'000	Revaluation reserves Shs'000	Retained earnings Shs'000	Total equity Shs'000
<b>Year ended 30 June 2010</b>					
At start of year					
- as previously reported		353,9702,	215,910	(1,632,653)	937,227
- prior year adjustment	27	-	-	224,475	224,475
- transfer of deferred income tax on revaluations	18	-	(359,038)	359,038	-
- transfer of excess depreciation (net of tax)		-	(1,007,604)	1,007,604	-
- as restated		353,970	849,268	(41,536 )	1,161,702
<b>Comprehensive income for the year</b>					
Profit for the year (restated)	-	-	136,007	136,007	
Transfer of excess depreciation	18	-	(111,290)	111,290	-
Deferred income tax on transfer of excess depreciation	18	-	62,450	(62,450)	-
<b>At end of year</b>		<b>353,970</b>	<b>800,428</b>	<b>143,311</b>	<b>1,297,709</b>
<b>Year ended 30 June 2011</b>					
At start of year					
- as previously reported		353,970	2,215,910	(1,447,370)	1,122,510
- prior year adjustment	27	-	-	175,199	175,199
- transfer of deferred income tax on revaluations		-	(359,038)	359,038	-
- transfer of excess depreciation (net of tax)		-	(1,056,444)	1,056,444	-
- as restated		353,970	800,428	143,311	1,297,709
<b>Comprehensive income for the year</b>					
Profit for the year		-	-	381,390	381,390
Gain on revaluation of property, plant and equipment	11	-	1,638,110	-	1,638,110
Deferred income tax on revaluation gains	18	-	(490,973)	-	(490,973)
Transfer of excess depreciation	18	-	(155,540)		155,540
-					
Deferred income tax on transfer of excess depreciation	18	-	46,661	(46,661)	-
<b>Total comprehensive income</b>		<b>-</b>	<b>1,038,258</b>	<b>490,269</b>	<b>1,528,527</b>
<b>At end of year</b>		<b>353,970</b>	<b>1,838,686</b>	<b>633,580</b>	<b>2,826,236</b>

The notes on pages 19 to 45 are an integral part of these financial statements.

# Statement of cash flows

		Year ended 30 June	
	Notes	2011	2010 (Restated)
		Shs'000	Shs'000
Cash flows from operating activities			
Cash generated from operations	23	874,100	436,691
Interest received		34,699	19,943
Interest paid		(69,046)	(59,815)
<b>Net cash generated from operating activities</b>		<b>839,753</b>	<b>396,819</b>
Cash flows from investing activities			
Purchase of property, plant and equipment	11	(190,945)	(282,917)
Cash flows from financing activities			
Repayment of borrowings		(174,172)	(141,853)
Net increase/(decrease) in cash and cash equivalents		474,636	(27,951)
Cash and cash equivalents at start of year		(134,721)	(106,770)
<b>Cash and cash equivalents at end of year</b>	<b>16</b>	<b>339,915</b>	<b>(134,721)</b>

The notes on pages 19 to 45 are an integral part of these financial statements.

## APPENDIX F: QUESTIONNAIRE

### RESEARCH QUESTIONNAIRE

The purpose of the questionnaire is to assist in evaluating some of the perceived factors that influence debt financing within the state-owned corporations in Kenya. Please answer the questions on the space provided.

- 1) Location.....
- 2) Sector.....

**Tick the appropriate box for each of the following questions.**

- 3) How are the corporation's investments financed?

- ☐ by government allocations
- ☐ borrowing from the banks
- ☐ issuing debt instruments in the stock exchange
- ☐ borrowing from International organizations
- ☐ Government and international organization's grants
- ☐ borrowing from the government

- 4) Does the corporation pay tax on net profits according to the country's prevailing rates?

- ☐ yes
- ☐ no (specify.....)

- 5) What influences the corporation's borrowing? (if any)

- ☐ Government policy
- ☐ market economic factors
- ☐ others (specify.....)

- 6) Who makes the decision on borrowing?

- ☐ finance manager
- ☐ Government officers (Cabinet Secretaries)
- ☐ the corporation's board of directors
- ☐ others (specify.....)

7) What is the composition of the board of directors?

- ☐ more than half female
- ☐ less than half female
- ☐ more than half graduates
- ☐ less than half graduates

8) What is the maximum period of the corporation's debt repayment?

- ☐ within 1 year
- ☐ between 1 to 3 years
- ☐ between 3 to 5 years
- ☐ above 5 years

9) Is the corporation allowed to issue debt instruments in any capital market?

- ☐ yes
- ☐ no

10) From which banks does the corporation get loans?

- ☐ government owned banks
- ☐ non-government owned banks

## APPENDIX G: ADDITIONAL TABLES OF REGRESSION RESULTS

### Relationship between total debt leverage (TDL) and financial performance regression results

**Table G1.1: Fixed effects (FE) results**

Factor	PROF	ROA	ROI	NPM	ROE
Ll.					
TDL	-0.6404287***	-0.6780392***	-0.6829241***	-0.72879***	0.32881
SIZ	0.0108278	0.0412881	0.0645249	0.0819856	-2.039297
TANG	-0.3601457	0.0657767	0.0219828	-0.5136169**	3.548249
GROW	0.0004696	0.0008531***	0.0008277***	0.0000847	0.0220535*
RISK	0.3301606	-0.3761709**	-0.3591025**	0.1123134	-41.39899**
LIQ	0.000355	-6.80E-06	-0.0001749	0.0017733	0.0150242
INFL	-0.0097598*	0.0005365	0.0007979	-0.0002212	0.0143184
AGE	-0.0381454	0.1510628	0.066215	-0.1510209	-0.7468906
Constant	0.5173076	-0.9997809	-1.240257*	-0.6829529	46.89658
Observations	171	171	171	171	171
R-sq	0.0954	0.7136	0.7094	0.4783	0.2283
rho	0.61788373	0.93322037	0.92553584	0.72337045	0.3988165
Hausman test- Prob>chi2	0.2766	0.001***	0.000***	0.0041***	0.0041***
Prob > F (Wald chi2)	0.095	0.000***	0.000***	0.000***	0.000***

**Table G1.2: Random effects (RE) results**

Factor	PROF	ROA	ROI	NPM	ROE
Ll.					
TDL	-0.2819357**	-0.1944738***	-0.1832352***	-0.4696054***	0.3286714
SIZ	0.1425663**	0.0254161	0.0170668	0.0650785**	-0.3731956
TANG	-0.3328532	0.1347631	0.0973117	-0.3411909**	-0.3815357
GROW	0.0003841	0.0013033***	0.0012656***	0.000349	0.0071229
RISK	0.5873171	-0.6830627***	-0.6984457***	0.0026092	-14.08341***
LIQ	0.0016782	0.0010732	0.0010533	0.0026794*	0.0008005
INFL	-0.0086587	0.0009098	0.0011799	-0.000193	-0.0087545
AGE	-0.0191591	0.0289745	0.0127335	-0.0789885	-0.2904479
Constant	-2.810087**	-0.5963575	-0.3595143	-0.8255132	10.4068*
Observations	171	171	171	171	171
R-sq	0.0702	0.5871	0.5727	0.4698	0.2058
rho	0.47716898	0.33358659	0.24470305	0.54859338	0
Hausman test-Prob>chi2	0.2766	0.001***	0.000***	0.0041***	0.0041***
Prob > F (Wald chi2)	0.036	0.000***	0.000***	0.000***	0.0295

**Table G1.3: System-GMM results**

Factor	PROF	ROA	ROI	NPM	ROE
LI.	0.0899425***	0.0626016	-0.0734183	0.0476823***	-0.4893936***
TDL	-0.0926595*	-0.0705313***	-0.0970552***	-0.262587***	-0.0991515
SIZ	0.1816567***	0.0341641***	0.0240033***	0.0822112***	0.2250762***
TANG	-0.4838912**	0.052972	0.0275833	-0.2243256**	-1.28193**
GROW	0.0002709	0.0006011**	0.0004835*	-0.0002667	-0.008985***
RISK	1.252295**	-0.2645159	-0.5150955***	0.5666948**	11.78448***
LIQ	0.0008909	0.0014445*	0.0014228*	0.0032433**	-0.0134825**
INFL	-0.009308	0.0013453	0.0015825	-0.0016741	0.0206635
AGE	-0.0449462	0.0044628	-0.0096178	-0.0611206**	-0.6660834***
Constant	-3.63905***	-0.7642905***	-0.4592925**	-1.445746	-2.800169*
Observations	162	162	162	162	162
Prob > F (Wald chi2)	0.000***	0.000***	0.000***	0.000***	0.000***
AR(1) Pr > z	0.011**	0.000***	0.345	0.000***	0.026*
AR(2) Pr > z	0.836	0.877	0.978	0.480	0.588
Sargan test-Prob > chi2	0.007	0.000	0.000	0.000	0.000

### Relationship between long-term debt leverage (LDL) and financial performance regression results

**Table G2.1: Fixed effects (FE) results**

Factor	PROF	ROA	ROI	NPM	ROE
LI.					
LDL	-0.0854004	-0.0245806	-0.0194912	0.1867851	-1.359508
SIZ	0.1062964	0.1481534**	0.1726233***	0.2156008**	-2.687582
TANG	0.0799356	0.5226114***	0.4813815***	-0.0520303	1.53706
GROW	0.0012702	0.0017036***	0.0016846***	0.0010081	0.0178645*
RISK	-0.262585	-0.9924149***	-0.9788812***	-0.5134227	-38.66464***
LIQ	0.0021278	0.0018444*	0.0016876	0.0036798*	0.0066244
INFL	-0.0086647	0.0016918	0.0019611	0.0010068	0.0088109
AGE	-0.2592675	-0.0993286	-0.1872829	-0.4728877*	0.8331044
Constant	-1.5093	-3.240098***	-3.50429**	-3.397619**	59.88772**
Observations	171	171	171	171	171
R-sq	0.0442	0.3901	0.3914	0.2619	0.2176
rho	0.56414746	0.80563368	0.84602244	0.82330554	0.39575736
Hausman test-Prob>chi2	0.7349	0.000***	0.000***	0.0015***	0.0086***
Prob > F (Wald chi2)	0.6366	0.000***	0.000***	0.0024***	0.0001***

**Table G2.2: Random effects (RE) results**

Factor	PROF	ROA	ROI	NPM	ROE
LI.					
LDL	-0.021456	0.0006049	-0.0260315	-0.0727343	0.2501824
SIZ	0.1515141**	0.0319302**	0.0233237*	0.0778513**	-0.3909164
TANG	-0.2302618	0.0873658	0.0627171	-0.1307578	-0.4559223
GROW	0.0006524	0.000966***	0.0008595**	0.0008507	0.0071833
RISK	0.3684463	-0.6628517***	-0.6735473***	-0.3933116	-13.88023***
LIQ	0.00301	0.0019933*	0.0019625*	0.0048047***	-0.0013443
INFL	-0.0081474	0.0012524	0.0014369	0.0006418	-0.008909
AGE	-0.0167977	0.0102848	-0.0016351	-0.0728407	-0.2961424
Constant	-3.248538**	-0.7799971**	-0.5395722*	-1.523662*	10.98438*
Observations	171	171	171	171	171
R-sq	0.0312	0.3216	0.3041	0.2304	0.2
rho	0.46589646	0.1003418	0.04478868	0.53962907	0
Hausman test-					
Prob>chi2	0.7349	0.000***	0.000***	0.0015***	0.0086***
Prob > F (Wald chi2)	0.197	0.000***	0.000***	0.006***	0.0322

**Table G2.3: System-GMM results**

Factor	PROF	ROA	ROI	NPM	ROE
LI.	0.0944692***	0.0519858	-0.0281694	0.0665705***	-0.4892893***
LDL	-0.0593632	-0.010107	-0.0211001	-0.0717036**	-0.4046728**
SIZ	0.1860851***	0.0385994***	0.0297349***	0.0957793**	0.2317589***
TANG	-0.5079063**	0.0413407	0.0337424	-0.1980273*	-1.133802**
GROW	0.0003562	0.0006048*	0.0005673**	-0.0000825	-0.0091621***
RISK	1.097404**	-0.3628025**	-0.5547813***	0.2831942	11.92324***
LIQ	0.0016537	0.00201**	0.0020763**	0.0049976***	-0.0133543**
INFL	-0.0088436	0.0016143	0.0018323	-0.0010894	0.0198914
AGE	-0.0576632	-0.0018871	-0.0120059	-0.0742328	-0.6357503***
Constant	-3.763307***	-0.8848833***	-0.6436034***	-1.862258***	-3.052275*
Observations	162	162	162	162	162
Prob > F (Wald chi2)	0.000***	0.000***	0.000***	0.000***	0.000***
AR(1) Pr > z	0.004***	0.000***	0.000***	0.047**	0.017**
AR(2) Pr > z	0.812	0.864	0.975	0.620	0.575
Sargan test-Prob > chi2	0.009	0.000***	0.000***	0.000***	0.000***

## Relationship between short-term debt leverage (SDL) and financial performance regression results

**Table G3.1: Fixed effects (FE) results**

Factor	PROF	ROA	ROI	ROE
Ll.				
SDL	-0.5684958**	-0.6112865***	-0.6189712***	3.705175*
SIZ	0.0719496	0.1053069**	0.1287635***	-2.295208
TANG	-0.3922782	0.0241405	-0.0226104	4.350118
GROW	0.0005717	0.0009497***	0.0009209***	0.0225003*
RISK	0.3648462	-0.3293116*	-0.3083694*	-42.4247**
LIQ	0.0003104	-0.0000836	-0.0002626	0.0177215
INFL	-0.009734*	0.0005462	0.0008016	0.0156576
AGE	-0.2052197	-0.0245797	-0.1102591	0.0069225
Constant	-0.5312938	-2.091752*	-2.333743***	50.75754*
observations	171	171	171	171
R-sq	0.0879	0.6754	0.6748	0.2328
rho	0.5223966	0.85321058	0.87884888	0.38697443
Hausman test-Prob>chi2	0.8672	0.000***	0.000***	0.0027***
Prob > F (Wald chi2)	0.134	0.000***	0.000***	0.000***

**Table G3.2: Random effects (RE) results**

Factor	PROF	ROA	ROI	ROE
Ll.				
SDL	-0.5310339***	-0.3813201***	-0.359416***	0.5187438
SIZ	0.1309253**	0.013612	0.0054575	-0.3623065
TANG	-0.5625301*	-0.0299259	-0.0520198	-0.1916729
GROW	0.0001723	0.0011322***	0.0011124***	0.007012
RISK	0.8435435	-0.5098246***	-0.5482832***	-14.08736***
LIQ	0.0007253	0.0002902	0.0002825	0.0014467
INFL	-0.0090631*	0.0007136	0.0010699	-0.0092609
AGE	-0.036584	0.0106978	-0.0058711	-0.2525757
Constant	-2.378489*	-0.1858808	0.0390187	9.991629
Observations	171	171	171	171
R-sq	0.0791	0.6465	0.6331	0.2092
rho	0.45356424	0.28531912	0.19716271	0
Hausman test-Prob>chi2	0.8672	0.000***	0.000***	0.0027***
Prob > F (Wald chi2)	0.0045***	0.000***	0.000***	0.0306**

**Table G3.3 System-GMM results**

Factor	PROF	ROA	ROI	ROE
LI.	0.0856073***	-0.0202352	-0.1391868**	-0.4884315***
SDL	-0.4520346***	-0.2618692***	-0.2804951***	0.580584**
SIZ	0.1589149***	0.0227317***	0.011921	0.2689615***
TANG	-0.6327641***	-0.0434846	-0.0732945	-1.120133**
GROW	0.0003828	0.0005563**	0.0004776**	-0.0091261***
RISK	1.379012***	-0.3099379**	-0.5725694***	11.39159***
LIQ	-0.0011473	0.0004768	0.0005148	-0.0091655
INFL	-0.0093225	0.0013978	0.0017344	0.0213571
AGE	-0.0603815	-0.009458	-0.0260574*	-0.6611717***
Constant	-2.921289***	-0.3667158**	-0.0506086	-4.129137**
Observations	162	162	162	162
Prob > F (Wald chi2)	0.000***	0.000***	0.000***	0.000***
AR(1) Pr > z	0.004***	0.000***	0.705	0.01***
AR(2) Pr > z	0.769	0.333	0.675	0.689
Sargan test-Prob > chi2	0.02**	0.000***	0.000***	0.000***