CORPORATE GOVERNANCE, OWNERSHIP TYPE AND CORPORATE PERFORMANCE IN EMERGING ECONOMIES: EMPIRICAL EVIDENCE FROM SRI LANKA

Nambukara Gamage Bandula Sisira Kumara
M Com (Kelaniya, Sri Lanka), LICA (CA, Sri Lanka), BBA (Hons) (Ruhuna, Sri Lanka)

A dissertation Submitted for the Degree of Doctor of Philosophy of the University of New England, Australia

School of Business
Faculty of the Professions
University of New England
Armidale, NSW
Australia

February 2012
ACKNOWLEDGEMENTS

First and foremost, I wish to express my heartfelt gratitude to my principal supervisor A/Professor Martin Hovey for his excellent guidance throughout this research. I am forever grateful for his clear instructions, constructive criticisms, unwavering support, encouragement, patience and understanding. I thank him for being a supportive mentor and role model. It is his guidance and belief in my ability (and me) which helped me to be the ‘researcher’ I am today. I am also thankful to my associate supervisor Dr. Subba Reddy Yarram for his support and innumerable guidance extended throughout this research. I express my gratitude to Professor Babara Rywendyc, the dean of the faculty of Graduate Studies and all staff at research services of UNE. I also thank Professor Alison Sheridan, the head of the school of Business and her staff for their support.

I could not have embarked on this study if I had not being awarded a Presidential Scholarship by the Presidential Secretariat of Sri Lanka. These have provided me with financial help during my proposal stage. Also, I am extremely grateful to Professor Danny Atapattu of the Department of Economics, University of Ruhuna, Sri Lanka, for his generous support, advice and encouragement given to me throughout my academic life.

Likewise, I thankfully acknowledge the kind support and encouragement given to me to start a PhD project in Australia by my relative and great friend Dalas Alahapperuma (Hon. Minister for youth affairs in Sri Lanka).

Similarly thanks are also due to Professor Brian Gibson, Dr. Omar, and Dr. Kathy of UNE, Dr. Sarath at Flinders, Dr. Seelanatha at Victoria University, Mrs. Pavithra at RMIT University and Dr. Shrimal at Monash University for their support and advice. I also thank the School of Business, Economics and Public Policy staff for their support. I also gratefully acknowledge the advice, assistance and unconditional support offered to me by Dr. Deslagan Mihirat and his family. Also I gratefully acknowledge the immense service of Mr. Norbert Greulich who has corrected English errors in my thesis in timely manner.

A number of staff at the department of public policy of the ministry of finance in Sri Lanka, Accounting and Auditing Standard Board of Sri Lanka, Colombo Securities Exchange, and students from the Universities of Ruhuna, Kelaniya and Sri Jayawardenepura, also from
Dayananda, Sachithra, Krishan, Thamara and Nirosha were helpful in providing unpublished data.

I also gratefully acknowledge the support I received from my fellow research students in the faculty of Profession at UNE. Especially, I would like to thank Lalith, Sumudu, Disna, Aruni and Liyofold. I also wish to thank the Manel, Chathu, Buddhika and Yapa families for their enormous support and encouragement throughout this process.

Last but not least, I wish to thank my mother for all her sacrifices and unconditional love. To my mother and my late father, late grandmother and late grandfather; I am so proud to have walked the path you showed me from the childhood. I am deeply indebted to you for your continuous blessings and support. If not for you, I would not have developed my passion for reading and learning. To my uncles, all close relatives, all my friends, thank you for being a continuous source of encouragement. Thanks are also due to my one and only brother Dr. Shantha and sister-in-law for their good wishes. Finally, as ever, I turn to my wife and best friend (Shyamalee), two daughters (Mahimi and Tharushi) and my little Son (Sanupa). To Shyamalee, I am so privileged to walk beside you. I am grateful for your unconditional love, companionship, numerous sacrifices, endless patience and support. If not for you, I would not have come this far in my life. To my little bundles of joy, Mahimi, Tharushi and Sanupa, thank you for being an endless source of energy and for brightening our world.
ABSTRACT

This study examines the relationship between firm performance and ownership type and also the relationship between firm performance and corporate governance. In addition this study investigates whether there is a link between performance measures. Although many researchers have made an effort to investigate whether there is a link between ownership type and organizational performance, corporate governance and corporate performance in developed countries, the empirical evidence on these areas are weak in Sri Lanka, being a developing country and emerging economy with a unique economic situation. Another aspect of corporate performance studies are some potentially important biases related to the selection of the performance measures used in studies on corporate performance. This is due to many researchers having chosen only one or two measurement techniques out of financial/accounting, market based and production efficiency measurement techniques to measure corporate performance. Therefore different conclusions can be achieved using one or the other measures of empirical evidence. Consequently the validity of results of many studies on corporate performance in the literature is questioned (Bozec, Dia, & Breton, 2006). To overcome this problem, multi-dimensional measures are required (Carton & Hofer, 2006). Accordingly, three dimensions of performance measures (financial/accounting, market based and production efficiency) were used in this study. These performance measurement techniques have been compared to determine whether there are potential relationships among them.

This study makes four significant contributions to the study of the performance of - public, private and mixed enterprises in Sri Lanka, especially via multiple approaches to address the research issue of corporate performance. Firstly, it fills the gap in un-researched areas among the state, private and mixed enterprises performance evaluation. Secondly, this study employs two production efficiency measures: DEA-Malmquist and Bootstrap/Tobit method for the first time to augment the value of findings from this study using the more traditional accounting cum financial and Tobin’s Q performance measures. Thirdly, the application of the Bootstrap and the Tobit regression methods, enterprises allow us to investigate firm specific factors, if any, that may be contributing to the efficiency performance. Finally, this study observes for the first time the linkage between the firms’ performance using the traditional accounting/financial ratios with their production efficiency performance measures from employing the DEA- Malmquist
methodology. Therefore this study contributes greatly to the existing literature in that the previous studies conducted in Sri Lanka applied very small data sets or focused on only one industry. Furthermore, this approach is noteworthy in that the research methodology is an innovative approach to studying this area. In addition the data used in this study is unique to this study being compiled from sources within Sri Lanka. Taken as a whole, this is the first research published in Sri Lanka using the DEA- Malmquist index, accounting ratios and Tobin’s Q as well. Consequently, the findings of this study will be helpful to policy makers of the government of Sri Lanka particularly and policy makers of other emerging nations generally. Furthermore decision makers regarding privatization and board governance, analysts, and investors will be aided in determining the drivers of the value of firms and important corporate governance aspects in Sri Lanka.

This study adopts accounting ratios, Tobin’s q and a non parametric Data Envelopment Analysis (DEA) and the Malmquist Productivity Index (MPI) to measure accounting/financial, market-based and production efficiency performance of matched 38 State Owned Enterprises (SOE’s), 123 Private Enterprises (PE’s) and 36 Mixed Enterprises (ME’s) over a five year period from 2003 to 2007.

The results show that board size has a positive relationship with market performance levels and there is no significant relationship in relation to accounting and production efficiency performance levels of enterprises in Sri Lanka. While non executive directors’ ratio has a positive relationship with accounting and production efficiency performance, there is no significant relationship with market performance. CEO duality and corporate performance has a negative relationship with production, accounting and market performance measures. However, performance levels vary among industries.

In general the overall performance of private sector enterprises is better in terms of accounting and market performance measures applied, compared with SOEs and MEs. However the type of ownership explain the differences in production efficiency levels of SOEs PEs and MEs in Sri Lanka only with regard to technology (the technological development is higher in PEs), but no significant differences occur among ownership types based on managerial efficiency or labor efficiency.
The comparison among three performance measurement techniques indicates that even though most of financial/accounting performance measures are associated with production efficiency performance measures, they have very low correlation coefficients among them. However, Tobin’s Q does not have significant relationships with either accounting or production efficiency performance measures. In Conclusion, the use of one method to assign performance is not appropriate. Therefore it could be suggested that the use of all those three sets of measures are needed in order to pass judgment on corporate performance.
# TABLE OF CONTENTS

Acknowledgements                                      ii  
Abstract                                               iv  
Candidate’s Certification                              vii  
Table of Contents                                      viii 
List of Tables                                         xv  
List of Figures                                        xx  
Abbreviations                                          xxi 

## CHAPTER ONE – INTRODUCTION TO THE STUDY

1  Introduction                                          1  
   1.1 Background                                        1  
   1.2 Motivation                                        2  
   1.3 Statement of the Problem                          3  
   1.4 Objectives and Research Questions of the Study    5  
   1.5 Data and Methodology                              5  
   1.6 Significance of the Study                         6  
   1.7 Organization of the Study                         8  

## CHAPTER TWO – CORPORATE GOVERNANCE, FINANCIAL PERFORMANCE, MARKET-PERFORMANCE AND PRODUCTION EFFICIENCY: THEORIES AND EVIDENCE

2.1 Introduction                                        9  
2.2 Sri Lanka, its Economy and the Corporate Sector     10  
   2.2.1 Privatization in Sri Lanka                      12  
2.2.2 Corporate Performance Studies in Sri Lanka       14
2.3 Corporate Governance

2.3.1 Emergence of Corporate Governance

2.3.2 Dimensions of Corporate Governance

2.3.2.1 Cadbury Committee Report

2.3.2.2 Other Literature

2.3.3 Models of Corporate Governance

2.3.3.1 Financial Model

2.3.3.2 The Stewardship Model

2.3.3.3 The Stakeholder Model

2.3.3.4 The Political Model

2.4 Corporate Performance

2.4.1 Economics of Firm Performance

2.4.1.1 Theory of Competition

2.4.1.2 Theory of Monopoly

2.4.1.3 The Role of Competition

2.4.2 Financial Performance Theory

2.4.3 Production Efficiency Theory

2.4.3.1 Cobb-Douglas Production Function and Production Efficiency

2.4.3.2 DEA-Malmquist Productivity Index and Production Efficiency

2.4.4 The Linkage between Financial Performance and Productivity Efficiency

2.4.5 Critiques of Studies

2.5 Corporate Governance and Corporate Performance
2.5.1 The Board of Directors 38
2.5.2 Relationship between Board Size and Corporate Performances 40
2.5.3 Relationship between Non-Executive Directors and Corporate Performance 41
2.5.4 Relationship between CEO Duality and Company Performance 45
2.6 Chapter Summary 48

CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction 50
3.2 Conceptual Framework 50
3.2.1 Corporate Performance 51
3.3 Research Method 52
3.3.1 Research Questions and Hypotheses 54
3.4 Data and Variables 59
3.5 Test Models 67
3.5.1 Accounting-Finance Model 66
3.5.2 Market-Based Performance Model 69
3.5.3 DEA, Panel Data and Malmquist Productivity Index 70
3.5.3.1 Using DEA Estimated Data and the Tobit Regression Model 72
3.6 Bootstrap Method 73
3.7 Statistical Tests 74
3.7.1 Kruskal-Wallis Test and the Mann-Whitney U Test 74
3.7.2 Correlation and Chi-Squared Analysis 75
3.8 Methodological Problems 76
3.9 Chapter Summary 76
CHAPTER FOUR - TESTING THE LINK BETWEEN PERFORMANCE MEASURES

4.1 Introduction 77
4.2 Results for Hypotheses H1a and H2b 77
4.2.1 The Link between the Financial Performance Measures and the Productivity Performance Measures 78
4.2.1.1 Rank Order Correlations of Different Performance Techniques 78
4.2.1.2 Association of ‘Best Practice’ and ‘Worst Practice’ 81
4.3 Chapter Summary 84

CHAPTER FIVE - ACCOUNTING AND MARKET BASED PERFORMANCE OF SOES PES AND MES IN SRI LANKA

5.1 Introduction 86
5.2 Descriptive Statistics of Performance and other Variables 87
5.2.1 Sample Profile 88
5.2.2 Board Size 89
5.2.2.1 Board Size under Different Industries 89
5.2.3 Non-Executive Directors 90
5.2.4 CEO Duality 93
5.2.5 Dependent Variables used under Two Performance Measurement Techniques 95
5.2.6 Controllable Variables under Different Industries 97
5.2.7 Descriptive Statistics for Independent and Dependent Variables of the Sample 98
5.3 Determinants of Company Performance: OLS Analysis 100
5.3.1 Correlation Analysis 101
7.3 Determinants of production efficiency performance and Ownership Type: All Firms
7.3.1 Determinants of Production Efficiency Performance and Ownership Type: All Industries
7.4 Chapter Summary

CHAPTER EIGHT - CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCHS

8.1 Introduction
8.2 Findings
8.3 Limitations
8.4 Future Research
List of References
Appendices
LIST OF TABLES

Table 2.1 Outside director ratio by selected countries 45

Table 3.1 Sample Profile 60

Table 3.2 Summary statistics of the entire sample 65

Table 3.3 Summary statistics of the entire sample based on ownership types 66

Table 3.4 Variables related for the DEA-Malmquist index 66

Table 4.1 Spearman’s Correlation coefficients between the financial 79
    performance measures and the productivity performance measures

Table 4.2 Test results of Pearson’s Chi-Square test for relatedness— 82
    “Best Practice” enterprises

Table 4.3 Test results of Pearson’s Chi-Square test for relatedness – 83
    “Worst Practice” enterprises

Table 5.1.1 Sample Profile 88

Table 5.1.2 Board Size 89

Table 5.1.3 Average Size and minimum and maximum Ranges of 90
    a Board under each Industry for the period of 2003-2007

Table 5.1.4 Average size and minimum and maximum ranges of a board under 90
    each industry and each ownership type for the period of 2003-2007

Table 5.1.5 Non-executive Directors 91

Table 5.1.6 Average numbers of non executive directors and non- 92
    executive ratio under different industries

Table 5.1.7 Average numbers of non-executive directors under different 92
    industries and different ownership types

Table 5.1.8 Non-executive directors’ ratio under different industries 93
    and different ownership types
Table 5.1.9 CEO Duality

Table 5.1.10 CEO Duality under different industries

Table 5.1.11 CEO duality under different industries and different ownership types

Table 5.1.12 Average Performances under accounting / financial and Market-based measurement techniques

Table 5.1.13 Control variables under different industries

Table 5.1.14 Descriptive Statistics for Independent and Dependent variables

Table 5.1.15 Pearson Correlation coefficients among independent and dependent variables

Table 5.1.16 Pearson Correlation coefficients among independent Variables

Table 5.1.17 Multiple Regression Analyses

Table 5.2.1 Relative Accounting and Market Performance of PEs, SOEs and MEs in Sri Lanka over 2003 – 2007

Table 5.2.2 Relative Accounting and Market Performance of Constructions & Engineering Industry in Sri Lanka over 2003-2007

Table 5.2.3 Relative Accounting and Market Performance of Hotels & Travel Industry in Sri Lanka over 2003 – 2007

Table 5.2.4 Relative Accounting and Market Performance of Land and Property Industry in Sri Lanka over 2003 – 2007

Table 5.2.5 Relative Accounting and Market Performance of Manufacturing Industry in Sri Lanka over 2003 – 2007

Table 5.2.6 Relative Accounting and Market Performance of Plantation Industry in Sri Lanka over 2003 – 2007

Table 5.2.7 Relative Accounting and Market Performance of Services Industry in Sri Lanka over 2003 – 2007

Table 5.2.8 Relative Accounting and Market Performance of Trading Industry in Sri Lanka over 2003- 2007

Table 5.2.9 Descriptive Statistics for Independent and Dependent variables

Table 5.2.10 Multiple Regression Analyses
<table>
<thead>
<tr>
<th>Table Number</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.11</td>
<td>Performance Rankings based on ownership types (Panel 1 and 3 results)</td>
<td>139</td>
</tr>
<tr>
<td>5.2.12</td>
<td>Performance Rankings based on ownership types (Panel 2 results)</td>
<td>139</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Annual means and panel means of Production efficiency performance measures</td>
<td>150</td>
</tr>
<tr>
<td>6.2.2</td>
<td>Descriptive Statistics for Production efficiency performance measures</td>
<td>151</td>
</tr>
<tr>
<td>6.2.3</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007</td>
<td>153</td>
</tr>
<tr>
<td>6.2.4</td>
<td>Annual means and panel means of Production efficiency performance measures: Constructions &amp; Engineering Industry</td>
<td>155</td>
</tr>
<tr>
<td>6.2.5</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Constructions &amp; Engineering Industry</td>
<td>157</td>
</tr>
<tr>
<td>6.2.6</td>
<td>Annual means and panel means of Production efficiency performance measures: Hotels and Travel Industry</td>
<td>158</td>
</tr>
<tr>
<td>6.2.7</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Hotels and Travel Industry</td>
<td>160</td>
</tr>
<tr>
<td>6.2.8</td>
<td>Annual means and panel means of Production efficiency performance measures: Land and Property Industry</td>
<td>162</td>
</tr>
<tr>
<td>6.2.9</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Land and property Industry</td>
<td>164</td>
</tr>
<tr>
<td>6.2.10</td>
<td>Annual means and panel means of Production efficiency performance measures: Manufacturing Industry</td>
<td>166</td>
</tr>
<tr>
<td>6.2.11</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Manufacturing Industry</td>
<td>168</td>
</tr>
<tr>
<td>6.2.12</td>
<td>Annual means and panel means of Production efficiency performance measures: Plantation Industry</td>
<td>170</td>
</tr>
<tr>
<td>6.2.13</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Plantation Industry</td>
<td>171</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>6.2.14</td>
<td>Annual means and panel means of Production efficiency performance measures: Services Industry</td>
<td></td>
</tr>
<tr>
<td>6.2.15</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Services Industry</td>
<td></td>
</tr>
<tr>
<td>6.2.16</td>
<td>Annual means and panel means of Production efficiency performance measures: Trading Industry</td>
<td></td>
</tr>
<tr>
<td>6.2.17</td>
<td>Productivity Performance of PEs, SOEs and MEs in Sri Lanka from 2003 to 2007: Trading Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.1</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: All Firms</td>
<td></td>
</tr>
<tr>
<td>6.3.2</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Constructions &amp; Engineering Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.3</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Hotels and Travel Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.4</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Land and Property Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.5</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Manufacturing Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.6</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Plantation Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.7</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Services Industry</td>
<td></td>
</tr>
<tr>
<td>6.3.8</td>
<td>Spearmen's Correlation coefficient between Board Governance and Production efficiency performance variable: Trading Industry</td>
<td></td>
</tr>
<tr>
<td>7.1</td>
<td>Variables and definitions</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>Descriptive Statistics for Independent and Dependent variables</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>Spearmen’s Correlation Coefficients among Independent Variables</td>
<td></td>
</tr>
</tbody>
</table>
Table 7.4 Tobit Regression Analyses: All Firms 200
Table 7.5 Tobit Regression Analysis: All Industries 204
Table 7.6 Descriptive Statistics for Independent and Dependent variables 206
Table 7.7 Tobit Regression Analyses: All Firms 209
Table 7.8 Tobit Regression Analyses: Technical Efficiencies of all Industries 212
Table 7.9 Tobit Regression Analyses: Labor Contribution to technical efficiencies of all industries 214
LIST OF FIGURES

Figure 2.1: Monitoring and Control Mechanisms of Public Enterprises in Sri Lanka 12

Figure 2.2: Dimension of Corporate Governance 18

Figure 2.3: Deadweight Loss from Monopoly Power 25

Figure 2.4: The Malmquist Output-Based Index of Total Factor Productivity and Output Distance Functions 31

Figure 3.1 Conceptual model 51

Figure 6.1 Comparison of MPI of PEs, SOEs and MEs in Sri Lanka during 2003 – 2007 148

Figure 6.2 Comparison of MPI of PEs, SOEs and MEs in Constructions & Engineering Industry during 2003 – 2007 156

Figure 6.3 Comparison of MPI of PEs, SOEs and MEs in Hotels and Travel Industry during 2003 – 2007 159

Figure 6.4 Comparison of MPI of PEs, SOEs and MEs in Property and Investment Industry during 2003 – 2007 163

Figure 6.5 Comparison of MPI of PEs, SOEs and MEs in Manufacturing Industry during 2003 – 2007 167

Figure 6.6 Comparison of MPI of PEs, SOEs and MEs in Plantation Industry during 2003 – 2007 171

Figure 6.7 Comparison of MPI of PEs, SOEs and MEs in Services Industry during 2003 – 2007 174

Figure 6.8 Comparison of MPI of PEs, SOEs and MEs in Trading Industry during 2003 – 2007 177
ABBREVIATIONS

SOEs - State Owned Enterprises
PEs – Private Enterprises
MEs- Mixed Enterprises
CSE- Colombo Stock Exchange
DEA- Data Envelopment Analysis
MPI- Malmquist Productivity Index
TFP- Total Factor Productivity
GDP- Gross Domestic Product
IMF- International Monetary Fund
CRS- Constant Returns to Scale
VRS- Variable Returns to Scale
ROE - Return on Equity
ROA - Return on Assets
SPE - Sales Per Employee
NIE - Net Income Efficiency
ROS – Return on Sales
EM – Equity Multiplier
TE – Technical Efficiency
LCTE - Labor Contribution to Technical Efficiency
PERC- Public Enterprise Reform Commission
EBIT - Earnings Before Income and Taxation
TFPCH - Total Factor Productivity Change
EFFCH - Efficiency Change
TECHCH - Technology Change