THE EFFECT OF ICT INVESTMENT, ICT GOVERNANCE MECHANISMS, BOARDS WITH DIVERSE ICT EXPERTISE AND OWNERSHIP STRUCTURES ON FIRM PERFORMANCE

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ABSTRACT

This thesis examined the effects of ICT investment, ICT governance mechanisms, boards with diverse ICT expertise, and ownership structures on firm performance of Malaysian technology sector in the Malaysian Public Listed Companies from 2010 until 2014. This study employed the balanced panel data for a sample of 33 listed companies, with 165 observations. A dynamic model was built and estimation was carried out by using the System Generalized Method of Moments (SGMM). As predicted, ICT investment incurred in the current year displayed a significantly negative impact upon ROE. Even though ICT investment failed to exhibit a significantly positive effect upon firm performance during the initial period of spending, the findings portrayed that ICT spending in current year had the ability to positively influence Tobin's Q. In fact, ICT investment incurred in the lag of a year showed significantly positive impact on Tobin's Q. In terms of ICT governance mechanisms, the presence of ICT governance committee had been found to have a significantly negative effect on ROA, ROE, and Tobin's Q, whereas the presence of ICT senior management showed significantly positive effect upon Tobin's Q. The boards with ICT industrial experiences displayed a positive effect upon ROA, ROE, and Tobin's Q, but a significantly negative effect was discovered for boards with ICT professional qualifications on Tobin's Q. As for ownership structures, managerial ownership exhibited significantly positive effect on Tobin's Q, but negatively on ROA. Furthermore, the government and foreign ownerships were found to have significantly positive effect on ROA. Hence, the findings from this study are indeed beneficial not only for all stakeholders, including policymakers, regulators, and academics; but also for board of company and management level in ascertaining that their ICT implementation is properly governed under appropriate ICT standards.

Keywords: ICT investment, ICT governance, board diversity, ownership structures, firm performance

ABSTRAK

Tesis ini mengkaji kesan pelaburan ICT, mekanisme tadbir urus ICT, lembaga dengan pelbagai kepakaran ICT dan struktur pemilikan terhadap prestasi firma sektor teknologi Malaysia di Syarikat Awam Tersenarai Malaysia dari tahun 2010 hingga 2014. Kajian ini menggunakan data keseimbangan panel bagi sampel daripada 33 buah syarikat tersenarai, dengan 165 pemerhatian. Model dinamik dibina dan anggaran dilakukan menggunakan Sistem Kaedah Umum Momen (SGMM). Seperti yang diramalkan, pelaburan ICT yang berlaku pada tahun semasa menunjukkan kesan negatif terhadap ROE. Walaupun pelaburan ICT gagal menunjukkan kesan positif yang signifikan terhadap prestasi firma semasa tempoh awal perbelanjaan, hasil kajian menunjukkan bahawa perbelanjaan ICT pada tahun semasa mempunyai keupayaan untuk mempengaruhi *Tobin's Q* secara positif. Bahkan, pelaburan ICT yang berlaku pada lag setahun menunjukkan kesan positif yang signifikan terhadap *Tobin's Q*. Dari segi mekanisme tadbir urus ICT, kehadiran jawatankuasa tadbir urus ICT didapati mempunyai kesan negatif yang signifikan terhadap ROA, ROE, dan *Tobin's Q*, sedangkan kehadiran pengurusan senior ICT menunjukkan kesan positif pada *Tobin's Q*. Lembaga dengan pengalaman industri ICT menunjukkan kesan positif terhadap ROA, ROE, dan *Tobin's Q*, tetapi kesan negatif yang signifikan ditemui bagi lembaga dengan kelayakan profesional ICT pada *Tobin's Q*. Bagi struktur pemilikan pula, kepemilikan pengurusan mempamerkan kesan positif yang signifikan terhadap *Tobin's Q*, tetapi negatif terhadap ROA. Selain itu, kerajaan dan kepemilikan asing didapati mempunyai kesan positif yang signifikan terhadap ROA. Oleh itu, penemuan kajian ini memang bermanfaat bukan sahaja untuk semua pihak yang berkepentingan, termasuk penggubal dasar, pengawal selia, dan ahli akademik, tetapi juga untuk lembaga syarikat dan peringkat pengurusan dalam memastikan bahawa pelaksanaan ICT mereka disusun dengan baik di bawah piawaian ICT yang bersesuaian.

Kata kunci: pelaburan ICT, tadbir urus ICT, kepelbagaian lembaga, struktur pemilikan, prestasi firma

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LIST OF ABBREVIATIONS

4G	Fourth generation
ACA	Accelerated Capital Allowance
ADICTG	The adoption of ICT governance standards and frameworks
ASC	Architecture Steering Committee
BOC	Boards of commissioner
BSIZE	Board size
CAGR	Compound Annual Growth Rate
CEO	Chief of Executive
CGEIT	Certification of Governance of Enterprise IT
CGICT	Corporate governance of ICT
CIFI	Computer Information Forensics Investigator
CIO	Chief Information Officer
CISA	Certification of Information Systems Auditor
CISM	Certification of Information Security Manager
CISSP	Certified Information Systems Security Professional
CNIIs	Critical national information infrastructures
COBIT	Control Objectives for Information and Related Technologies
COGS	Cost of goods sold
CRISC	Certification of Risk and Information Systems Control
CSO	Chief Security Officer
CTO	Chief Technology Officer
DGMM	Difference GMM
DOS	Malaysian Department of Statistics
DPM	Dynamic panel model
EAITs	Earnings after interest expenses and taxes
EBITs	Earnings before interest expenses and taxes
EGIT	Enterprise Governance of IT
EPF	Employee Provident Funds
ERP	Enterprise Resource Planning
FDI	Foreign direct investment
G7	Group of Seven
GCFs	Government-controlled funds
GDP	Gross domestic product
GLCs	Government Linked Companies
GLICs	Government Linked Investment Companies
GMM	Generalized Method of Moments
GOCs	Government-Owned-Corporations
HDI	Human Development Index
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IC	Intellectual capital
ICT DR	ICT Disaster Recovery Services
ICT	Information and communication technology
ICTC	Information and Communications Technology Council
ICTSC	ICT Security Committee
IEC	IEC the International Electrotechnical Commission

IFRS	International Financial Reporting Standard
IP	Intellectual Property
IPSC	ICT Project Steering Committee
IRRC	Investor Responsibility Research Center
IS	Information security
ISACA	Information Systems Audit and Control Association
ISC	International Information Systems Security Certification Consortium
ISMS	Information Security Management System
ISO	International Organization for Standardization
IT	Information technology
ITAA	Information Technology Association of America
ITGI	IT Governance Institute
ITIL	Information Technology Infrastructure Library
ITIM	ICT investment management
ITSM	IT Service Management
KWAP	Kumpulan Wang Amanah Pencen
LII	Legal Information Institute
MAMPU	Malaysia Administrative Modernization and Management Planning Unit
MASB	Malaysian Accounting Standard Board
MCCG	Malaysian Code on Corporate Governance
MIP	Intellectual Property Management and Digital
MKD	Menteri Kewangan (Diperbadankankan)
MOSTI	Malaysian Ministry of Science, Technology and Innovation
MPLCs	Malaysian Public Listed Companies
MPSD	Malaysian Public Service Department
MSC	Malaysian status companies
MSIC	Malaysia Standard Industrial Classification
MTB	Market-to-book value ratio
MyBOL	My Benefits Online
NACD	National Association of Corporate Directors
NEP	New Economic Policy
OECD	Organization for Economic Co-Operation and Development
OLS	Ordinary Least Square
PIKOM	National ICT Association of Malaysia
PNB	Permodalan Nasional Berhad
R&D	Research and development
SALGA	South African Local Government Association
SC	Securities Commission Malaysia
SEC	Securities and Exchange Commission
SFA	Stochastic frontier analysis
SGMM	System Generalized Method of Moments
SOEs	State-Owned Enterprises
T&D	Training and development
TRBC	Thomson Reuters Business Classification
U.S. GAO	United States General Accounting Office
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nation Development Programme
VAGO	Victorian Auditor-General's Office

APPENDICES

CHAPTER ONE

INTRODUCTION

1.1 Overview of the Chapter

This chapter begins with background of the information technology infrastructure development in Malaysia. Then, it is followed by the problem statement and justification, the purpose of the research and the main objectives and the significance of the study. The main questions which are investigated within scope of research are introduced. Finally, the contribution and overview of entire thesis are presented.

1.2 Background of the Study

The rapid growth of the information technology (IT) industry in Malaysia occurring in business environment has been prominent in South East Asia over the last few years due to the vast advancement of IT evolution. Convergence and reinforcement of information, cloud, mobile and other social elements (Carlton, 2012) are supported by a wide range of latest multi facet technological capabilities including seamless communication, speed, wireless, the development of technological innovations and sophisticated of various software and hardware. This technological advancement has been seen as a good opportunity and competitive advantage for the industry to further develop the information and communication technology (ICT) usage. In general, the advancement in Information Technology (IT) has brought about countless positive effects upon the progress of many sectors in Malaysia by shaking up the entire world

The contents of the thesis is for internal user only

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APPENDIX I

Sample Studies of the Effect of ICT Investment on Firm Performance

Author(s)	Sample	Method(s)	Independent Variables	Dependent Variables	Results
			ICT Measures	**Firm Performance Measures**	
Arabyat (2014)	22 banks based in Jordan, over 1993-2010 periods	Panel least squares regression	Computer budget ratio and the capital budget ratio	ROA and ROE	Positive and significant on both measures
Makinde (2014)	4 mega banks in Nigeria	Pooled multiple least square and panel multiple regression model	ICT investment , investments in other assets and operating costs (investments in non ICT, labor, overheads)	ROA and ROE	Positive
Safari & Zhen Yu (2014)	11 privately-owned banks and 6 publicly-owned banks over 1990 to 2011	Stochastic frontier analysis (SFA) methods	Hardware and software investment, IT services and ownership	Efficiency (Total Costs) Personnel expenses, interest expenses paid to term deposits, fixed assets depreciation Expenses, administrative costs and other expenses	Mixed
Spyros & Euripidis (2014)	743 European hospitals	Econometric analysis	R&D, ICT personnel, ICT investment, ICT budget, Website and E-business	Product innovation and process innovation	Mixed
Romdhane (2013)	15 Tunisian banks over the period 1998–2009	Data Envelopment Analysis (DEA) method and the Stochastic Frontier Analysis (SFA) method	Investments in tangible assets (hardware), intangible assets (software) and investments in training and maintenance	Cost Efficiency 1. The price of labour 2. The price of financial capital 3. The price of physical capital (wk)	Positive
Ugwuanyi & Ugwuanyi (2013)	4 banks in Nigeria for a seven year period (2005 to 2011)	OLS - Multiple regression	IT expenditures, total number of IT branches and ATM machines	ROA	Negative

Hung et al. (2012)	Banking	Two-stage least squares method	ATM investment	ROA, ROE, operating income ratio and net income ratio	Positive
Zhang et al. (2012)	126 stock exchange listed manufacturing firms from 1999 to 2007	Multiple regression model	Capital structure, capital intensity and time-lagged effects	Tobin‘s Q	Tobin‘s Q was not significant in the first 3 years but began to rise in the fourth year
Ekata (2011)	Banking		IT Expenditures **(**IT hardware cost, IT software cost, IT service cost, IT training cost, IT outsourcing cost), IT budget and IT employee	ROA, ROE and profits	Negative
Liang et al. (2010)	Mixed (meta-analysis), 50 published empirical studies between 1990 and 2009	Integrated model (direct and indirect model)	**Technology resources:** IT investment, IT infrastructure, IT assets, and Software system application **Organization resources:** Knowledge resource and human resource **Mediator:** Capability (Internal and external)	**Productivity:** Production manufacturing effectiveness, e-Business effectiveness **Efficiency:** Operational (production) cost reduce, COGS/S, SGA/S **Profitability:** ROI, ROA, ROS, income, profits, sales revenue & operational costs	Mixed
Zehir et al. (2010)	81 national and multinational companies, which traded on ISE (Istanbul Stock Exchange)	Questionnaire and regression analysis	IT decision making, IT level, IT perception and IT usage	Technology orientation, Future orientation, & Firm Performance (Sales profitability, market growth, profitability per customer, turnover profitability, investment profitability, growth of profitability & ROA)	Mixed
Gaith et al. (2008)	68 Malaysian construction firms	Regression analysis, Pearson‘s 2- tailed test	Investment in equipment, communication, IT specific labour, R&D and IT training	Firm performance	Positive

Chari et al. (2008)	117 firms and data obtained from obtained IT investment data from annual IT surveys reported in the publication Information Week for 1997	Regression analysis	The ratio of dollar investment in IT to sales **Other independent variable:** Diversification	Tobin's Q	Positive
Jun (2008)	22 Korean securities firm	Fixed and random effects models and panel GMM (generalized method of moments) techniques	The computer budget ratio and the capital budget ratio	ROA, ROE, and profits	Positive
Thouin et al. (2008)	Data obtained from the annual survey of IT usage in the U.S healthcare conducted by the Dorenfest Institute for Health Information Research and Education (for the year 2003)	Regression analysis	IT Budgets, IT outsourcing and IT personnel	Profits	Mixed
Beccalli (2007)	737 European banks over the period 1993-2000	Ordinary least squares (OLS) regressions, and two-stage least squares (2SLS)	Spending in hardware, software and IT	Total costs, cost efficiency, and profit efficiency, ROA and ROE	Mixed
Shin (2006)	A data set of IS budgets from 1995 to 1997	Ordinary least squares (OLS) regression Data obtained from the	IS budget **Moderator:** Strategic direction	ROA, ROE and profits	Positive

		Information Week, and the Compustat database			
Mahmood & Mann (2005)	Data was taken from the Computerworld's list of "The Premier 100" organizations for the years 1991, 1992, and 1993	Multidimensional cluster analysis and multivariate analysis	IT budget as a percentage of revenue, percentage of IT budget for staff, percentage of IT budget for training, market value of IT as a percentage of revenue & percentage of employees provided with PCs and terminals	ROI, ROS, Income, Revenue, Market value, Leverage, productivity measures (sales by total assets and sales by employees)	Mixed
Kim (2004)	Data on firm-level IT spending is a survey done by Korea In-formation Society Development Institute (KISDI) in 1996	Regression analysis	IT capital stock	Marginal product of IT capital, profitability, productivity, and market valuation of IT capital	Mixed
Yaylacicegi & Menon (2004)	48 hospitals for each year with a total of 1088 observations for the 23-years span (1979 to 2001)	Ordinary Least Squares regression (OLS) and the Polynomial Distributed Lagged (PDL) regression model Data was obtained from the Washington State Department of Health hospital database	IT Capital (data processing, communications, and patient records accounts) and Medical IT Capital (equipment used for diagnosis and therapeutic purposes, e.g., magnetic resonance imaging)	Productivity	The positive impact from IT spending is felt at the sixth year after the spending, and only for the next two years (8 year above not significant)

Anderson et al. (2003)	661 firm-year observations for automate firms and 542 observations for informative firms Data on firm performance:1987 to 2000 Data on IT spending: 1990 to 1996	Box-Jenkins methods Data of IT spending was obtained from InformationWeek surveys	IT spending	ROA	Positive
Brynjolfsson & Hitt (2003)	527 firms in all industries for 1987 to 1994	Cobb Douglass function and regression analysis Data was obtained from Computer Intelligence InfoCorp (CII), Compustat Database	Computer capital, non-computer capital, IS staff and non-IS labor and expense	Total sales and value added	Positive
Devaraj & Kohli (2000)	8 hospitals in healthcare industry for 36 monthly periods	Regression analysis	IT labor, IT support and IT capital	**Financial performance:** • Net patient revenue per day: the ratio of the total revenue realized by the hospital to the total number of days • Net patient revenue per admission: the ratio of the total revenue realized by the hospital to the total number of patient admissions **Quality index:** • Mortality rates: the percentage of mortalities within 30 days of an operative procedure divided	Mixed

				by the total number of operative procedures • Customer satisfaction: the percentage of top-box scores	
Francalanci & Galal (1998)	52 U.S life insurance companies from 1982 to 1995	Generalized estimating extension (GEE) of the Generalized Linear Models (GLM) random estimator Data was obtained from Life Office Management Association database, Annual and 10k reports, Best Insurance reports, Compustat database	IT expense, work composition (clerical, managerial, professional intensity) and combined effects (interaction between IT expense and work composition)	• Premium income per employee and • Total operating expenses to premium income	Mixed * Used of predefined lag effects
Byrd & Marshall (1997)	350 companies for the 3 years, 1989, 1990, and 1991	Structural Equation Modelling (SEM) Data was obtained from the IDG's ComputerWorld	• The value of supercomputers, mainframes, and minicomputers • The percentage of IT budget spent on IT staff • The IT budget as a percentage of revenue • The percentage of IT budget spent on IT staff training	ROI, ROS, market value, sales by total assets & sales by employees	Mixed
Brynjolfsson & Hitt (1996)	367 firms in all industries for 1987 to 1991	Cobb Douglas function, regression analysis: OLS and 2SLS Data was obtained from International Data Group (IDG) survey, Computer Database	Computer Capital, non- computer capital, IT staff and non-IT staff and expenses	Total sales (output)	Positive

Brynjolfsson & Hitt (1993)	380 firms from all industries for 1987 to 1991	Cobb Douglas function, Iterated Seemingly Unrelated Regressions (ISUR) and 3SLS Data was obtained from International Data Group (IDG) survey, Computer Database	Computer capital, non- computer capital, IT staff and non IT staff expenses	Productivity Output	Positive
Mahmood & Mann (1993)	100 firms in all industries for 1989	Pearson correlation and Canonical correlation analysis Data was obtained from Computerworld premier 100, Compact Disclosure database	• The annual IT budget as a percentage of the organization's revenue • Value of the organization's IT as a percentage of its revenue • Percentage of the IT budget spent on IT staff • Percentage of the IT budget spent on training IT staff • PCs and terminal per employees	Growth in revenue, sales by total assets, ROS, ROI, sales by employees and market-to-book value	Mixed Pearson: weak, negative (mixed) Canonical: more significant relationship (mixed)
Weill (1992)	33 valve manufacturing firms (6 years data) for 1982 to 1987	2SLS From survey and interview	IT investment (ratio of IT expenditures to total annual sales) was categorized into strategic, informational and transactional **Moderator**: Conversion effectiveness	Sales growth, ROA, Non-production labor per million dollars sales (LABOUR) and percent change in LABOUR	Mixed
Brynjolfsson et al. (1989)	Mixed sectors for the year 1975 to 1985	Data was obtained from Compustat	Total capital stock, IT stock capital and IT investment	Firm size	Increased IT investment was associated with decreasing firm size * Introduced the lagged effect model

APPENDIX II

Sample Studies of the Effect of Corporate Governance on Firm Performance

Author(s)	Sample	Method	Dependent variables Financial Performance Measures	Independent variables Corporate Governance Measures	Results Details
Haider et al. (2015)	Islamic banks in Punjab, Pakistan (2008-2012)	Correlation and linear regression	ROA, ROE, & EPS	Board size	Positive
				Number or meeting	
				Audit committee size	
Johl et al. (2015)	700 public listed firms in Malaysia for the year 2009	Ordinary Least Square (OLS) regression	ROA	Board independence and board meeting	Negative and insignificant
				Board size and accounting expertise	Positive
Naushad, & Malik (2015)	24 GCC banks based on the criteria of total assets for the financial year 2012 to 2013	Multiple regression	Tobin's Q & Return on Total Assets (ROTA)	Board size	Negative: ROTA & Tobin
				CEO Duality	Positive: ROTA & Tobin
				Agency costs (Block Ownership GCC)	Mixed
Yusoff et al. (2015)	60 financial companies in the MPLCs (2006 and 2013)	Spearman's rho correlation	ROE & EPS	Board size	Negative
				Board independence and CEO duality	Have not influenced
Wahba (2015)	40 Egyptian listed firms during the	The generalized least squares method	ROE & Tobin's Q	Board composition and board leadership structure	Negative

	period from 2008 to 2010				
Al-Matari et al. (2014)	162 non-financial companies (2011 and 2012)	Multiple linear regression	Tobin's Q	Board size, board meeting, audit and executive committee independence	Significant positive
				Board independence, legal counsel	Significant negative
				CEO tenure, CEO compensation, audit committee size	Insignificant positive
				Board change, role of secretary, executive committee size, audit committee meeting, executive committee meeting	Insignificant negative
Qasim (2014)	281 firm/year observations in the Abu Dhabi exchange Shareholding Company‘s guide for years 2007-2011	Pooled OLS regression models	ROA & Tobin's Q	Institutional ownership, governmental ownership and board size	Significant positive
				Audit quality	Insignificant positive
Zakaria et al. (2014)	73 Malaysian listed Trading and Services sector (2005 to 2010)	Panel random effects model	ROA	Concentrated ownership	Positive effect on firm performance but not significant for pre-crisis period
				Managerial ownership	Positive and significant effect on firm performance
				Government ownership	Negative effect on firm performance
				Foreign ownership	Positive effect on firm performance for post-crisis period

Aggarwal (2013a)	20 Indian companies, which are non-financial companies; listed on the NSE (during 1st April, 2010 to 31st March, 2012)	Multiple regression	ROA, ROE, Return on Capital Employed (ROCE) and Profit before Tax (PBT)	Board Size	The governance rating of company has a significant positive impact on its financial performance.
				Independence of Board from Management	
				Separation of CEO and Chairman	
				Financial Expertise of Directors	
				Number of Board Meetings	
				Role of External Auditors	
				Committees of the Board	
Aggarwal (2013b)	50 Indian companies listed on S&P CNX Nifty 50 Index (2010-11 to FY 2012-13)	Multiple regression	ROA, ROE, ROS, & ROCE	Governance rating	Positive, but not significant
Goh et al. (2013)	132 firm-year observations based on 32 plantation firms (annual report from 2003-2006)	Partial least squares (PLS) regression	ROA	**Ownership concentration:** High level ownership concentration	Negative
				Low level ownership concentration	Positive
				Moderator: Board independence & Separation of CEO-chairs	Negative
Wan Yusoff & Alhaji (2012)	813 listed companies representing nine sectors of the main board of Bursa Malaysia from 2009 to 2011	Spearman's correlation matrix	ROE & EPS	Non-executive directors and board size	Inconsistence relationship
				Board leadership structure	No relationship
Sami et al. (2011)	1236 firm-year observations (2001 to 2003)	Regression	ROA, ROE, & Tobin's Q	Board composition	Positive and significant
Ibrahim & Abdul Samad (2011)	2030 observations for 290 companies across seven years from 1999 to 2005	Descriptive and correlation	ROA, ROE, & Tobin's Q	Board size, duality and independent directors	Board size, independent director and duality for family and non-family ownership has a strong significant influence on firm performance

Haniffa & Hudaib (2006)	347 companies listed on the Kuala Lumpur Stock Exchange (KLSE) between 1996 and 2000	Cross-sectional OLS regression model	ROA & Tobin's Q	Board size	ROA: Positive & significant TQ: Positive & significant
				Board composition	ROA: No significant TQ: No significant
				Role duality	ROA: Negative & significant TQ: No significant
				Multiple directorships	ROA: No significant TQ: Positive & significant
				Top five largest shareholders	ROA: Positive & significant TQ: Positive & significant
				Managerial shareholdings	ROA: Negative & significant TQ: No significant

APPENDIX III

Sample Studies of the Effect of ICT Governance on Firm Performance

Author(s)	Method(s)	Sample	Issues	Variables		Results
				Dependent	Independent	
Jamba, Tsokota, & Mamboko (2013)	: Case study through a semi-structured interviews	A Zimbabwean based investment holding company	: Addressed on how proper IT governance practices impact on organization effectiveness and how these are influenced by enterprise leadership at boardroom level	**Effectiveness:** IT decision making, active participation, challenges of IT decision making structure and IT strategy and policy	**IT Governance:** Processes, structures and outcome metrics	: The results can be concluded that senior management involvement in IT governance issues contribute immensely to organization effectiveness.
Neff et al. (2013)	: Case studies	: 5 exploratory case studies in global multi-business firms	: Addressed on how IT governance, resource relatedness and business performance are related. : To determine which IT governance levers in organizations that will increase business performance.	**Business performance:** Operational efficiency of specific business processes, measures of which include customer service, flexibility, information sharing, and inventory management	**IT Governance:** Processes, Structures and Relational Mechanisms **Mediator:** IT relatedness and business process relatedness	: The study revealed that IT governance maturity was positively associated with business process performance with the consolidation initiatives in IT and business processes relatedness.
Kaur et al. (2012)	: Model development : Survey : Partial least square based structural equation modeling	: 144 surveys of Malaysian listed companies were relevant to the study	Analyzed the impact of IT governance effectiveness in private sector organizations in a developing country such as Malaysia	**Impact:** Organizational performance	**IT governance effectiveness:** Reporting structure, Committee structure, Corporate communication, Collaboration and Process	: The result found that Committee Structure and Collaboration were positively significant related with organizational performance while others effectiveness have weak relationship with organizational performance

Flores et al. (2011)	: Survey : 3 tools were utilized to analyze the results of the survey: box plots, tests for normality and statistical measurements	22 professionals answered the survey (15 IT Security, 9 IT Assurance and 11 IT governance)	Examined how COBIT associated with IT governance support information security and generate future value in terms of reducing negative consequences from security incidents.	**Future value of Investment:** Net Present Value (NPV)	**COBIT:** comprises 19 control objectives under Plan and Organize, Acquire and Implement, Deliver and Support, and Monitor and Evaluate	: Study result showed that investments in IT governance control objectives strengthen security objectives and beneficial for a firm to engage in.
Lazic et al. (2011a)	: Case studies : Theoretical framework development	11 multinational corporations	Considered how IT governance and business performance is related and how this relationship is moderated	**Business Performance:** (1) reputation among major customer segments, (2) frequency of new product or service introduction, (3) return on investment, (4) net profits, (5) technological developments and/or other innovations in business operations, (6) product quality, (7) market share gains (8) revenue growth.	**IT Governance:** Processes, Structures and Relational Mechanisms **Mediator:** IT relatedness and business process relatedness	: A theoretical based framework is proposed to further explain the relationship between IT governance and firm performance. : The result found that IT governance is positively related business performance through the increase of IT relatedness and business process relatedness

Lazic et al. (2011b)	Case studies	CIOs of the 100 largest firms in Germany were approached via email, which yielded 11 interviews in total	To analyse the impact of the governance of IT on the business performance of the firm	**Business Performance:** Cost savings, customer satisfaction, development of new business fields / products, time to market, agility in economic turmoil	**IT Governance Maturity:** IT governance processes, IT governance structures and IT governance relational mechanisms	The higher the maturity of IT governance processes, structures and relational mechanisms, the higher the business process relatedness
					Mediator: IT relatedness, Business process relatedness and Resource relatedness	**IT relatedness:** Positive relationship has been indicated **Business process relatedness:** Strongly supported the original hypothesis **Resouce relatedness:** The results could not be confirmed
					Moderator: Absorptive Capacity of IT Department	Strongly supported the original hypothesis
Estrada (2010)	: Mixed Approach Explicative – Causal: qualitative & quantitative : A quasi–experimental design was posited	The research universe encompasses medium and large Mexican firms, both those listed on the Mexican stock exchange, as well as unlisted firms.	Highlighted the importance of companies to have a board with sufficient IT proficiency to capitalize on the benefits of presently available technologies.	**Value creation** (or higher efficiency in relevant and selected management metrics)	Level/degree of alignment between IT governance practices and corporate governance practices	The result of this study is expected the positive impact on companies incorporating aligned IT governance and corporate governance practices to enhance board contributions to companies' results.

Simmonson, Johnson, & Ekstedt (2010)	Case studies	35 case studies at various types of organiations in financial services, manufacturing, telecommunications and public service	Considered the relationship between the maturity of IT governance and IT governance performance	IT Governance Performance	IT Governance Maturity: Based on COBIT domains and processes (Plan and Organize, Acquire and Implement, Deliver and Support, and Monitor and Evaluate	: The result found that IT governance maturity levels were positively correlated to IT governance performance. : Organizational structure and relationship, mature quality management and cost allocation were most correlated to IT governance performance.
Van Grembergen & De Haes (2010)	Correlation	ISACA members, from different worldwide regions from different types of industries 538 surveys were reliable out of total 572.	Explored the relationship between Enterprise Governance of IT practices and business performance	Business performance	**Enterprise governance of IT (EGIT):** COBIT and Val IT frameworks **Mediator:** Business/ IT alignment	: Little support to identify a direct link between EGIT practices and business performance.
De Haes & Grembergen (2009)	: Delphi method : one in-depth case and five mini-cases and are based on multiple interviews with both business and IT managers, questionnaire	22 experts out of 29 continued to be involved in the full Delphi research effort from various industries	Explored on how IT governance is implemented in companies and analyzed the relationship between the IT governance implementations and companies' business/IT alignment.	Business/IT Alignment	**IT Governance Implementations/ Practices:** Processes, Structures and Relational Mechanisms	The highly aligned companies did indeed leverage more mature IT governance practices compared to companies with poor business/IT alignment.

Boritz & Lim (2008)	: Regression	937 companies (474 companies in 2004 and 463 companies in 2005) that received adverse opinions on their ICOFR from January 2004 to December 2005	: Documented the impact of IT governance on the likelihood of reducing reporting material IT control weaknesses and its impact on firm financial performance. : Documented the relationship between IT governance effectiveness, IT controls effectiveness and firm financial performance.	**Financial performance: Growth** (measured as the percent change in sales from one year to the next calculated by dividing net sales by the inventory, accounts receivable, and total assets.) and **Profitability** (measured by Return on Assets and Return on Sales)	**IT Control Weaknesses IT Governance** (*IT knowledge* at top executives and boards, *IT governance mechanisms*-IT strategy committee and CIO's tenure)	The results showed that strengths (weaknesses) in these proxies (IT governance mechanisms and IT knowledge) are associated with the likelihood of a company reporting fewer (more) material IT control weaknesses.
Boritz & Lim (2007)	: Regression	84 US public companies that employed an important IT governance mechanism, the IT strategy committee in 2004	: Discussed on the contribution of top management's IT knowledge and the firm's use of IT governance mechanisms on firm's financial performance.	**Financial performance: Growth** (measured as the percent change in sales from one year to the next calculated by dividing net sales by the inventory, accounts receivable, and total assets.) and **Profitability** (measured by Return on Assets and Return on Sales).	**IT Governance mechanisms:** IT strategy committee and the CIO **IT knowledge:** IT knowledge of board of directors Board and IT knowledge of top executives	: The results found that top management's IT knowledge and companies that implemented IT governance mechanisms contribute to higher firm's financial performance
Guldentops (2007)	: Conceptual : Model development	15 interviewees (Chief Information Officers) were participated.	: Discussed the seven principles of the Val IT framework	N/A	N/A	: The study found that adoption of these seven principles was not yet well advanced.

APPENDIX IV

Sample Studies of the Effect of Board Diversity on Firm Performance

Author(s)	Method(s)	Sample	Issues	Variables		Results
				Dependent	Independent	
Al-Musali & Ku Ismail (2015)	Hierarchical regression analysis	128 Kuwaiti listed banks in the GCC countries during the period 2008 to 2010	Proposed that the effectiveness of board meetings (measured by the frequency of board meetings) would moderate the board diversity–IC performance relationship.	Intellectual capital performance (IC): Value Added Intellectual Coefficient (VAIC) method	Educational level diversity and nationality diversity (local and foreigners)	Not related to IC performance
					Moderator: Board meeting effectiveness	Significant negative on IC performance
Cimerova et al. (2015)	OLS regressions	UK firms that represent more than 95% of the market capitalization of the London Stock Exchange between 2002 and 2012	Examined the impact of cultural diversity in boards of directors on firm performance.	Tobin‘s Q and ROA	Cultural diversity	TQ: Negative ROA: Negative
					Board characteristics: Gender diversity	TQ: Negative ROA: Positive
					Board independence	TQ: Negative ROA: Negative
					Board age	TQ: Positive and significant ROA: Positive
					CEO/ Chairman duality	TQ: Positive ROA: Negative
					Board size	TQ: Negative ROA: Negative

Makhlouf et al. (2015)	The development of conceptual framework	N/A	Proposed a conceptual framework to investigate the relationship between board diversity, in terms of gender diversity and members' age, and the firm performance	Tobin‘s Q and ROA	1) Average age 2) Gender	1) Youngers directors are expected to carry out risky strategies to improve future firm performance 2) Women directors are expected to enhance firm performance
Thanh Tu et al. (2015)	OLS regression model	70 largest banks in the ASEAN banking system in period from 2009 to 2013	1) To study the level of gender diversity in board of directors and top executive of ASEAN banking sector. 2) To assess the impact of gender diversity on bank‘s performance, in case of ASEAN banking system.	ROA & ROE	Gender diversity in the board of managements (BOM)	Significant positive impact on firm performance
					Gender diversity in the board of directors (BOD)	Neutral effect on firm performance
Eulerich et al. (2014)	: Multiple regression model	: Annual financial statement based on 2009, 2010 and 2011. : 149 publicly traded German companies, which are listed in the blue-chip indices DAX301, MDAX2, SDAX3 and TecDAX	Examined and presented a comprehensive literature on the relationship between diversity within management boards and corporate performance for the German two-tier system	**Corporate performance:** Earnings before interest, tax, depreciation and amortization (EBITDA)	Gender	Negative significant impact on firm performance
					Age, nationality and functionality	Negative impact on firm performance

Lenard et al. (2014)	cross-sectional time series panel regressions	: Contained of boards' information which derived from Risk Metrics database from 2007 to 2011 : Compustat database and CRSP database for the years 2005-2011	To study gender diversity on the board of directors and the relation to risk management and corporate performance as measured by the variability of stock market return.	Firm risk: the variability of stock market return	Gender diversity	The higher the percentage of female directors on the board, the lower the variability of corporate performance
Tarus & Aime (2014)	: Fixed effects regression model : Moderated regression analysis	: 55 firms listed in Nairobi Stock Exchange (NSE) (2009) at the end of 2010 : Secondary data based on annual report from 2002 to 2010	Examined the effect of boards' demographic diversity on firms' strategic change and the interaction effect of firm performance	**Strategic change:** composed of six dimensions : 1) advertising intensity (advertising expenses/sales); 2) plant and equipment newness (net plant and equipment/gross plant and equipment); 3) nonproduction overhead (selling, general, and administrative expenses/sales); 4) inventory level (inventories/sales); 5) financial leverage (debt/equity).	1) Age 2) Educational 3) Tenure 4) Board functional background diversity **Moderator:** Firm Performance (ROA)	1) Age diversity produced less strategic change 2) Functional diversity was associated with greater levels of strategic change 3) The moderated regression results did not support hypothesis that high firm performance enhances board demographic diversity–strategic change relationship 4) High level of firm performance, board demographic diversity produced less strategic change
Abdullah & Ku Ismail (2013)	Multiple regression	: Data based on 2007 annual report of 100 non-financial firms listed on the Malaysian stock	Addressed on several diversity issues related to gender, age and ethnicity at directory level.	Tobin's Q and ROA	Director's gender	Negatively associated with Tobin's q and ROA.
					Ethnicity	Positively associated with ROA
					Age	Negatively related to ROA.

		exchange				
Galia & Zenou (2013)	: Conceptual paper : Longitudinal analysis : Probit regression models to examine the relationship between board diversity indicators (age and gender) and the probability to innovate in four types of innovation	176 French firms based on data from French Community Innovation Survey (CIS) in 2008 and annual reports	Provided better understanding of the link between board diversity and innovation, by considering various patterns of diversity as well as various types of innovation.	Innovation: 1) Product innovation 2) Process innovation 3) Organizational innovation 4) Marketing innovation	Board gender	1) Significant evidence of a positive relationship between gender diversity on boards and marketing innovation 2) Negative relationship between gender diversity and product innovation.
					Board age	Age diversity showed a positive relationship with product innovation and a negative impact one on organizational innovation.
Darmadi (2012)	: Cross-sectional regression model	Annual report based on 2008 based on 169 listed firms in the Indonesia Stock Exchange (IDX)	Examined the associations between diversity of board members and financial performance of the firms listed on the Indonesia Stock Exchange (IDX)	Tobin‘s Q and ROA	Gender	Both accounting and market performance have significant negative associations with gender diversity.
					Nationality	Nationality diversity was found to have no influence on firm performance
					Age	The proportion of young members was positively related to market performance

Van Ness et al. (2010)	Ordinary least square (OLS) regression analysis	: Data from Standard and Poor's (S&P) 500 companies (2006 and 2007) : Involved by 188 companies in the non-regulated industries	Focused on the contribution to the literature through examination of the influence of corporate boards and its impact on firm financial performance.	Financial performance: 1) Revenue 2) ROA 3) Financial leverage 4) Market Price to Book Ratio 5) Free Cash Flow to Net Income	1) Occupational experience 2) Board size 3) Tenure 4) Age 5) Gender 6) Proportion of Outside Directors 7) CEO/ COB Duality	1) Board size and heterogeneity of director expertise were positively related to revenue growth 2) The ratio of directors with education expertise and the ratio of directors of finance expertise have a negative effect on this performance measure 3) The results showed that both CEO/COB duality and average tenure of board of directors have a positive effect on return on asset growth. 4) Board size was negatively related to the debt to asset ratio but negatively related to free cash flow-to-net income 5) No significant impact of outside directors, gender, or average board age on financial performance

Marimuthu & Kolandaisamy (2009a)	: Non-probability sampling approach : Pooled Least Square (PLS) regression method	Top 100 non-financial listed companies over the period 2000 to 2006	Explored on how demographic diversity in top level management affects firm financial performance. : ***Top level management refers to both top management team (TMT) and board of directors (BOD)***	ROE	Ethnic and gender diversity of top management levels	1) Demographic diversity in TMTs had no impact on firm financial performance 2) Demographic diversity in BOD had a partial impact on firm financial performance : **gender effect** did not contribute significantly toward firm financial performance : **ethnic diversity** was significantly, positively and consistently correlated with financial performance
Marimuthu & Kolandaisamy (2009b)	: OLS regressions using on the cross-sectional data are	Secondary data of non-financial listed companies over the period 2000 to 2006	Examined the effect of demographic diversity on boards of directors with regard to firm financial performance	ROA & ROE	1) Gender 2) Ethnicity	**ROA:** : Ethnic diversity was significantly (positively) correlated with performance : Gender diversity was not correlated with performance **ROE:** : Gender effect did not have any impact on firm financial performance throughout the years except in year 2005 : Ethnic diversity had significant impact on financial performance in the second half of the period from 2004 to 2006
Marimuthu (2008)	: Statistical techniques such as correlation and regression	Secondary data from the top 100 non-financial companies listed on the Main Board over a period of 2000 to 2005	Examined the relationship between ethnic diversity on boards of directors with firm financial performance	ROA & ROE	Ethnic diversity is measured by the percentage of Non-Malay directors and	Increased ethnic diversity (board diversity) on boards of directors would lead to higher firm financial performance.

APPENDIX V

Sample Studies of the Effect of Concentrated Ownership on Firm Performance

Author(s)	Method(s)	Sample	Firm Performance Variables	Results
Basyith et al. (2015)	Tobit regression	45 listed firm in the Indonesian Stock Exchange, secondary data (2010- 2014)	ROA	Block holder ownership was positively significant associated
Lee & Lee (2014)	Hierarchical regression analysis	1827 observations listed on the Korean Stock Exchange (KSE) 2010 to 2012	Tobin's Q	Ownership concentration has a significant negative effect on firm performance
Zakaria et al. (2014)	1) Regression based on panel fixed effect model 2) Regression of 3 stage crisis periods (panel random effect model)	Secondary data from 2005 to 2010 at 73 Malaysia Public Listed Trading and Services Firms	ROA	Ownership concentration was positively related to firm performance
Mule et al. (2013)	Multiple regression analysis	Employed secondary data on 53 firms listed on the Nairobi Securities Exchange over a period of five years that is 2007 to 2011	ROA, ROE & Tobin's Q	Ownership concentration was found to be negatively related to all the three measures of performance in firms
Alimehmeti & Paletta (2012)	OLS regression	203 listed firms in Italy. The sample data are collected from Amadeus for two periods: pre and post crisis (2006-2007 and 2008-2009)	ROA	The positive relationship between ownership concentration and firm value.
Darmadi (2012)	Cross-sectional regression models	169 firms, the total number of public firms listed on the IDX as at 31 December 2007	ROA & Tobin's Q	Concentrated ownership (largest shareholders) was found significantly associated with accounting performance but has no significant impacts on Tobin‘s q. Block holder ownership was negatively influence the accounting measure
Fauzi & Locke (2012)	OLS regression	79 New Zealand listed firms for the period of 2007–2011	ROA & Tobin's Q	Block holder ownership decreased firm performance.

Wahla et al (2012)	Multiple regression analysis	138 firms of 7 non-financial companies of Karachi stock exchange (2008 to 2010)	Tobin's Q	No association
Garcı´a-Meca & Sa´nchez-Ballesta (2011)	Panel data	Spanish non-financial firms listed on the Madrid Stock Exchange that it was 254 firms - year observation for the period from 1999 to 2002.	Tobin's Q	Ownership concentration was positively effect on firm value, however at high levels of ownership concentration was negatively effect on market valuation.
Sulong & Mat Nor (2010)	Panel data analysis, hierarchical regression (generalized least square (GLS) estimation technique)	403 firms listed on the Bursa Malaysia over a four-year period from years 2002 to 2005.	Tobin's Q & Dividend	Positive
Ganguli & Agrawal (2009)	OLS & SLS regression	100 Indian firms which were listed in Indian Stock Exchange based on 2007	Tobin's Q	Positive
Sulong & Mat Nor (2008)	Regression	406 listed firms on the Main Board of Bursa Malaysia. A cross-sectional analysis, annual reports (2002 and 2005)	Tobin‘s Q Ratio (Q-Ratio)	There was insignificant relationship between ownership concentration and firm value.
Tam & Tan (2007)	Structural equation modelling (SEM)	The KLSE Annual Companies Handbook from 1994 to 2000 (Malaysia‘s top 150 publicly listed firm)	ROA & Tobin's Q	Negative impact of ownership concentration levels on firm performance
Haniffa & Hudaib (2006)	OLS regression	348 Malaysian listed companies on the main board of the KLSE between 1996 and 2000	Tobin's Q	Positive
Demsetz & Lehn (1985)	2-SLS	Cross-section sample over 511 U.S. companies, average of variables for 1976-1980	**Accounting profit rates:** Book value of assets, sales of capital expenditures, advertising expenses and R&D expenses	No relationship between ownership concentration (presence of block holders) and company performance

APPENDIX VI

Sample Studies of the Effect of Managerial Ownership on Firm Performance

Author(s)	Method(s)	Sample	Firm Performance Variables	Results
Basyith et al. (2015)	Tobit regression	45 listed firm in the Indonesian Stock Exchange, secondary data from 2010 to 2014	ROA	Negative and significant
Nath et al. (2015)	Regression	9 pharmaceutical companies listed on the Dhaka Stock Exchange (DSE), 10 years (2005-2014)	ROA	Positive but insignificant impact on ROA while negative insignificant impact on Tobin‘s Q.
Zakaria et al. (2014)	1) Regression based on panel fixed effect model 2) Regression of three stage crisis periods based on panel random effect model	Secondary data from 2005 to 2010 at 73 Malaysia Public Listed Trading and Services Firms	ROA	Positive and significant
Fauzi & Locke (2012)	OLS regression	79 New Zealand listed firms for the period of 2007–2011	ROA & Tobin-Q	Positive and significant
Uwuigbe & Olusanmi (2012)	Multivariate multiple regression	31 firms of all Nigerian firms in financial sector during 2006-2010.	ROA	Positive
Wahla et al. (2012)	Multiple regression	7 non-financial sectors of Karachi stock exchange. Total number of companies under these sectors is 138.	Tobin's Q	Negative
Din & Javid (2011)	2SLS regression	60 firm non-financial firms of manufacturing firms in Pakistan during 2000-2007.	ROA, ROE & Tobin's Q	Positive
Sulong & Mat Nor (2010)	Panel data analysis, hierarchical regression (generalized least square (GLS) estimation technique)	403 firms listed on the Bursa Malaysia over a four-year period from years 2002 to 2005.	Tobin's Q & Dividend	Negative and significant

Sulong & Mat Nor (2008)	Regression	406 listed firms on the Main Board of Bursa Malaysia. A cross-sectional analysis through annual reports for the years 2002 and 2005	Tobin‘s Q Ratio (Q-Ratio)	Negative
Haniffa & Hudaib (2006)	OLS	347 Malaysian companies listed on the main board of the KLSE between 1996 and 2000	ROA	Negative but insignificant

APPENDIX VII

Sample Studies of the Effect Government Ownership on Firm Performance

Author(s)	Method(s)	Sample	Firm Performance Variables	Results
Musallam (2015a)	Generalized Least Square (GLS) & OLS Regression	190 non-financial listed companies on Bursa Malaysia from 2009 to 2014	ROE	Negative and significant
Musallam (2015b)	Generalized Least Square (GLS) method	Companies that are listed on Bursa Malaysia during the period of 2000 to 2009	Total Investment Return of company	From 7 GLICs, only 2 GLICs showed positive and significant impact on market performance while other 5 GLICs did not affect market performance.
Tran et al. (2014)	Regression	38,143 Vietnamese firms-year observations for the period 2004-2012	ROA, ROE, Turnaround & Value added per employee	Negative effect on firm profitability
Zakaria et al. (2014)	1) Regression based on panel fixed effect model 2) Regression of three stage crisis periods (panel random effect model)	Secondary data from 2005 to 2010 at 73 Malaysia Public Listed Trading and Services Firms	ROA	Negative related to firm performance
Menon & Ng (2013)	Regression	28 non-financial GLCs from the Putrajaya Committee list from 16 industries (2007-2011 secondary data)	Tobin's Q	Negative and significant impacted on private firms

Phung & Hoang (2013)	Regression	Using data from Ho Chi Minh Stock Exchange and Hanoi Stock Exchange during the period of 2007 and 2012	Tobin's Q & ROA	A nonlinear relationship (U-shaped)
Goh, Khan, & Rasli (2013)	Ordinary least squares and two-stage least squares regressions	192 firms over the three-year sample period (2004 to 2006).	Tobin's Q	Positive
Najid & Rahman (2011)	Regression	47 GLCs and 47 non-GLCs companies listed on Bursa Malaysia over a 6-year period of 2001-2006	ROA, ROE, Expense to Assets, Cash to Assets, Sales to Assets, Expenses to Sale & Tobin's Q	Positive
Mohd Ghazali (2010)	Regression	2001 annual reports of 87 non-financial Malaysian listed companies	Tobin's Q	Positive and significant
Sulong & Mat Nor (2010)	Panel data analysis, hierarchical regression (generalized least square (GLS) estimation technique)	403 firms listed on the Bursa Malaysia over a four-year period from years 2002 to 2005.	Tobin's Q & Dividend	Positive and significant
Lau & Tong (2008)	Linear regression	15 Malaysian GLCs over six years—i.e. 2000 to 2005	Tobin's Q	Positive relationship between the degree of government ownership and firm value
Sulong & Mat Nor (2008)	Regression	406 listed firms on the Main Board of Bursa Malaysia. A cross-sectional analysis through annual reports for the years 2002 and 2005	Tobin‘s Q Ratio (Q-Ratio)	Positive and significant in 2002 and insignificant in 2005
Tam & Tan (2007)	: Regression : Structural equation modelling (SEM)	The KLSE Annual Companies Handbook from 1994 to 2000 (Malaysia‘s top 150 publicly listed firm)	ROA & Tobin's Q	Negative

APPENDIX VIII

Sample Studies of the Effect of Foreign Ownership on Firm Performance

Author(s)	Method(s)	Sample	Firm Performance Variables	Results
Musallam (2015b)	Generalized Least Square (GLS) method	Companies that are listed on Bursa Malaysia (2000 to 2009)	Total Investment Return of company	Positive impact on market performance
Zakaria et al. (2014)	1) Regression based on panel fixed effect model 2) Regression of three stage crisis periods based on panel random effect model	Secondary data from 2005 to 2010 at 73 Malaysia Public Listed Trading and Services Firms	ROA	Positive impact on firm performance
Phung & Hoang (2013)	Regression	Using data from Ho Chi Minh Stock Exchange and Hanoi Stock Exchange during the period of 2007 and 2012	Tobin's Q & ROA	Positive impact on both firm performance measurement
Darmadi (2012)	Cross-sectional regression models	169 firms, the total number of public firms listed on the IDX as at 31 December 2007	ROA & Tobin's Q	No significant association with market performance
Uwuigbe & Olusanmi (2012)	Multivariate multiple regression	31 firms of all Nigerian firms in financial sector during 2006-2010.	ROA	Positive and significant
Mohd Ghazali (2010)	Regression	2001 annual reports of 87 non-financial Malaysian listed companies	Tobin's Q	Positive and significant
Sulong & Mat Nor (2010)	Panel data analysis, hierarchical regression (generalized least square (GLS) estimation technique)	403 firms listed on the Bursa Malaysia over a four-year period from years 2002 to 2005.	Tobin's Q & Dividend	Positive and significant
Lau & Tong (2008)	Linear regression	15 Malaysian GLCs over six years—i.e. 2000 to 2005	Tobin's Q	Negative
Sulong & Mat Nor (2008)	Regression	406 listed firms on the Main Board of Bursa Malaysia. A cross-sectional analysis through annual reports (2002 and 2005)	Tobin‘s Q Ratio (Q-Ratio)	Negative and significant