



BOARD GOVERNANCE INDEX, FINANCIAL PERFORMANCE AND  
ACCOUNTABILITY-EMPHASIS IN GOVERNMENT BUSINESS  
CORPORATIONS

*Cheaseth Seng\**

**Abstract**

This study contributes to the growing literature on corporate governance index (CGI) by investigating the impacts a board governance index (BGI) developed in context of government business corporations (GBCs) on their financial performance. In addition, the study tests relevant corporate governance theories, namely agency, networking and resource dependence theories, in the context of GBCs. Concurrently, the study also conducts an exploratory investigation of the relationship between board governance arrangements and emphasis provided by GBCs' management to processes and systems for discharging accountability requirements (accountability-emphasis). The study found that the current board governance arrangement of GBCs is positively related to financial performance. This finding is consistent with majority of prior studies in context of private sector entities. However, there isn't any significant relationship found between board governance index and accountability-emphasis.

**Keywords:** Board governance index, government business corporations, financial performance and accountability-emphasis

*\*RMIT University*

*Phone: (61) 0399255509, Mobile: 0433206261*

*Email: cheaseth.seng@rmit.edu.au, cheaseth@hotmail.com*

**1. Introduction**

The inconclusive findings of the impacts of individual board governance mechanisms on organisational performance (Dalton et al., 1998; Dalton et al., 1999) have called for new methods to investigate their relationships, if there is any at all. Two alternative methods were developed by researchers, in the light of this call, namely the study of corporate governance index (CGI) and the study of internal behaviours of boards of directors and their effects on organisational performance (Leblanc, 2001; Leblanc and Schwartz, 2007; Black, 2001; Klein et al., 2005). Due to the availability of data, the former has received much more attention by the researchers than the later (Leblanc and Schwartz, 2007). The relationship

between CGI and performance, particularly financial performance, is found to be positively related (Chen et al., 2007; Haat et al., 2008; Kiel and Nicholson, 2003; Klein et al., 2005; Daily et al., 2003; Feng et al., 2005). This finding is consistent among the studies. The context of the prior studies is however constrained to private sector entities only. The current study seeks to extent this dimension of corporate governance study to Australia government business corporations (GBCs) context. In addition, the study will test a combination of agency, networking and resource dependence theories of corporate governance arrangement in the context of GBCs. Lastly, the study explores the relationship between board governance of GBCs and the emphasis that GBCs' management has on processes and systems designed for rendering their

accountability requirements (Accountability-emphasis). This is because GBCs are required to achieve dual objectives of financial performance and accountability requirements (Thynne and Wettenhall, 2001; Thynne, 1998a, 1998b; Bottomley, 2001; Luke, 2008). Thynne (1998b) states the conditions that GBCs' operating environment must have as follow:

The establishment and operation of a company in government requires that some form of balance be achieved between and among a number of opposing forces. The most apparent of these involve the demands of...economic efficiency leading to wealth maximization (in pursuit of clearly defined commercial objectives) and price-capping on the goods and services provided (as a means of being socially responsible or discharging what are referred to as community service obligations) (p.302).

Given the limited literature and theoretical underpinning the relationship between corporate governance and accountability-emphasis, the investigation is considered as an exploratory study; to provide grounding for future research.

Using a combination of archival and primary data from 141 GBCs, 97% of the population, the study found that the current board governance arrangements of GBCs, as proxy by board governance index, is positively related to financial performance. This finding is consistent with majority of prior studies in context of private sector entities. In addition, it infers that agency theory is a preferred theory in constructing GBCs board governance index and structuring their boards. The study, however, did not find any significant relationship between board governance index and accountability-emphasis.

The structure of the paper is as followed. The first section describes the context of study. The second and third sections review literature on the relationships between corporate governance index and performance and provide the development of board governance index (BGI) for GBCs' boards. The fourth and fifth sections provide the research methodology and discuss the empirical findings. The last section discusses the findings and provides conclusion.

## 2. GBC in Australia

Government business corporations (GBCs) are formed at territory, state and commonwealth government levels. The organisational form and operation objectives of these entities have been subjected to many reforms over the years (Wettenhall, 1998), which resulted in a unique context of operating environment. GBCs are required, in this operating environment, to achieve economic efficiency and fulfil accountability requirements in the course of their day-to-day business operations (Thynne and Wettenhall, 2001; Thynne, 1998a, 1998b; Bottomley, 2001; Luke,

2008). This operating environment is the third and final stage of Seidman's (1954; 1968) three stages of evolution of GBCs organisational form. GBCs are operated in a corporatised form, which provided them a considerable amount of managerial autonomy enabling their boards of directors to set internal governance mechanisms and commercial strategies (Government Businesses Advice Branch, 1997; Tasmania Treasury & Finance, 1998; Queensland Treasury, 2005; NSW Treasury, 1991; Bottomley, 2001). On the other hand, GBCs are controlled by their owner-governments through statutes and policies directives.

There are two distinct industry types of GBCs, namely public trading enterprises (or public non-financial corporations) and public financial enterprises (or public financial corporations) (McDonough, 1998; SA Department of Treasury, 2007; WA Treasury, 2007). Public trading enterprises include water services, electricity (retailers, distributors and generators), transportation (rail and buses) and port authorities. Public financial enterprises include investment fund authorities, managed funds (e.g. SuperSA) and treasury corporations.

The management and administration of GBCs is similar to their private sector counterpart. A GBC is a legal entity that owns its own assets and governed by a board of directors that has power to set commercial objectives, organisational structure, operation plans and appoint or approve the appointment of the chief-executive officer (Thynne, 1998a; Queensland Treasury, 2005; Department of Finance and Administration, 2005; Department of Treasury and Finance, 1998; The Audit Office of New South Wales, 1998; Uhrig, 2003). GBCs are financially independent in term of day-to-day operation. The dividend policy employed by GBCs is a modified residual approach, where the government has a strong preference for dividend over capital gain (NSW Treasury, 2002; TTI, 2003; QT, 2004; GBAB, 1997). The National Competition Policy (NCP), which based on the Hilmer's Report (Hilmer, 1993), further identifies similarities between the operating environment and market competitiveness of the two sectors (Matilla, 1997). The NCP's main contributions include the competitive neutrality policy, the restructuring of any government monopoly and the removal of taxes, duties and charges exemptions.

The central feature that draws GBCs into the web of public sector accountability is their 'publicness', as they are owned by the government and ultimately the public. This ownership requires that they be controlled and called to account in ways that enable them to meet their responsibilities to the government, parliament and the public (Thynne, 1998a; Thynne and Wettenhall, 2001; Aharoni, 1981). More specifically, GBCs are subject to the traditional accountability dimensions of political, managerial, public and to fiduciary accountability.

Despite there is a considerable of body of literature on accountability and its dimensions in government department, agencies and local government authorities (Stewart, 1984; Luke, 2008; Taylor and Rosair, 2000; Othman and Taylor, 2006; Sinclair, 1995), little attention is paid to accountability of GBCs. One exception is Luke (2008), who studied accountability in New Zealand state-owned enterprises (SOE) through combination of in-depth interviews and secondary data. Her finding is somewhat consistent to Sinclair (1995) as she found that accountability of GBCs can be seen as “similar to a web, encompassing numerous and complex dimensions” (p. 24). Nevertheless, three of the four traditional dimensions of accountability are clearly presented in the executives’ discussions. Political accountability, in context of SOE, is seen as an upward reporting responsibility to relevant ministers and to oversight bodies. In addition, it involves due approval process, which minister approval is required for major developments and investment projects. The executives mentioned that they work on a “no surprises policy” (p. 17). Second, public accountability is found by Luke (2008) to be a significant factor to SOEs according to the interviews. Lastly, managerial accountability was seen by SOE executives as a demand for commercial

or financial success of the SOE. As cited in Luke (2008) one of the executives stated that:

I think the biggest risk is not being able to recoup your investment...so SOE framework is about being able to justify the investment... [and] we need a return that above market (p.16).

Therefore, GBEs are hybrid organisations that have the characteristics of both private and public sectors’ organisations.

### 3. Corporate governance index and financial performance

Corporate governance index (CGI) is developed with a purpose to measure the quality of governance practices and easy comparison between one set of governance practices to another. CGI is developed by both scholarly researchers and commercial firms. The scope of governance mechanisms included in a governance index is varied and depending on the nature of study. Table 1 provides a summary of some methodologies used to develop governance index in the literature.

**Table 1.** Summary of corporate governance index development methodologies

Authors/year	Governance mechanisms	Scoring system	Context
Black (2001)	Centred on governance risk index and comprises of eight categories of governance mechanisms and state rules on governing companies.	Index score is allocated to each category differently with the lower the score the better the quality of corporate governance.	Russian listed companies
Gompers et al (2003)	Centred on governance provisions that either increase shareholder rights or increase management power.	Index score is allocated based on governance provisions that retracting shareholder rights. A point is added to the index for such governance practice.	US listed companies
Mothanty (2003)	Centred on stakeholder governance arrangements, which included shareholders, bondholders, employees, customers, suppliers, government and society.	Index score is allocated based on firm interactions toward each stakeholder. Three forms of interaction, positive, neutral and negative with index score allocated each form respectively.	Indian companies
Xanthaski et al (2004)	Centred on OECD principles of corporate governance practices.	0, 1, 2 points are allocated to the index in corresponding to adequate, inadequate and top compliance with OECD principles.	Greece listed companies
Feng et al (2005)	Centred on board composition, which board leadership, board size and board composition	Index score is allocated as follow: 1 point is added when board size < 8, percentage of non-executive directors > 60%, separation of CEO-Chair positions.	US construction companies
Klien et al (2005)	Centred on board composition, shareholding and compensation policy, shareholder rights policy, disclosure policy	Index score is allocated to each governance components differently, with board composition has the highest weighting	Canadian listed companies
Chen et al (2007)	Centred on board composition and ownership structure and included board leadership, board size, managerial and blockshareholder ownerships.	Index score is allocated to each component equally, with maximum index score of 4.	Taiwan listed companies

The literature on the relationships between corporate governance index and performance is more conclusive than board characteristics (Chen et al., 2007; Haat et al., 2008; Kiel and Nicholson, 2003; Klein et al., 2005; Daily et al., 2003; Feng et al., 2005). The findings suggest that firms with high governance

quality have better performance than other firms. Feng et al, (2005) use a board governance index (Table 1) to explain firm performance. Their finding reveals that firms with board index of 3 out perform other firms in the group. Their ROA measures of firm performance are relatively greater than other firms. Chen et al,

(2007), in a context of Taiwan listed companies, also find a positive relationship between their board governance index and performance. They found a strong association between board governance index and market return. Klein et al., (2005), use a broad scope of governance index to predict the performance of Canadian firms. Their result also suggests a positive relationship between governance index and firm performance. Other governance index studies include Mothanty (2003), which look at the relationship between institutional investors and corporate governance in India and find a significant and positive relationship between a stakeholder-centric governance index and both Tobin's Q and excess return, as measures of firm performance. Black (2001) also uses governance index in his study of impact of corporate governance on corporate performance in the context of Russian firms. His findings support the hypothesis that lower risk governance arrangements, indicating better corporate governance quality, has a positive and very high statistically significant relationship to firm performance. Similarly, Drobetz et al, (2003), also find firms with high corporate rating have higher book value than other firms. These studies are however, constrained to private sector organisations only.

#### 4. Development of GBC board governance index

GBCs board governance index (BGI) is developed based on prior studies, recommended governance practices, GBCs' board characteristics and relevant theory. Theoretically, corporate governance index (CGI) is constructed base on a combination of theories and depending on components of the index. Agency, networking and resource dependence theories are the driving theories behind the construction of the BGI.

A review of GBCs annual reports indicates that all GBCs have CEO and chairperson positions separated. The composition of GBCs' boards comprises of executive directors, non-executive directors and politically-related directors. Politically-related directors are public servants, politicians and representatives of pressure groups i.e. unions that appointed to the board. Given these characteristics, GBCs' BGI will comprise of board size, proportion of non-executive directors and proportion of politically-related directors components. In addition, proportion of directors with finance and accounting knowledge is also included in the index. This is to recognise the growing recognition of the benefits of directors with finance and accounting knowledge in the literature (Deli and Gillian, 2008; Chen et al., 2005; Defond et al., 2005; McMullen and Raghunandan, 1996). The index has a maximum score of 4 and minimum score of zero. The scoring system of the index and their underlying rationales are as follow.

**Table 2.** Board governance index Scoring Mechanisms

Component	Criteria	Score
Board size	> 6	0
	< = 6	1
Proportion of non-executive directors	> = 50%	1
	< 50%	0
Proportion of politically-related directors	> = 50%	1
	< 50%	0
Proportion of finance and accounting knowledge directors	> = 50%	1
	< 50%	0

Prior studies on board size suggest that board size has a negative relationship with performance. Jensen (1993), Lipton and Lorsch (1992), Yermack (1996) and Eisenberg et al. (1998) respectively found that board size has a negative impact on firm performance. Bozec (2005) in the context of Canadian state-owned enterprises (SOE), also find board size having negative relationship with performance. Yermack's (1996) data suggests that firm value decreases when board size ranges between 5 to 10 members. A preliminary review of GBCs' board size indicates that their maximum board size is 12 and their minimum board size is 3 members. Based on these characteristics and prior empirical findings, the board size component of the index will

have a score of 1 if board size is less than or equal to 6 directors, otherwise it will have zero score.

Non-executive directors possess two characteristics that enable them to fulfil their monitoring function. First, their independence and second their reputation (Fama and Jensen, 1983; Gilson, 1990; Kaplan and Reishus, 1990). Empirical studies on non-executive directors reveal both positive and negative relationships with performance. For the purpose of developing the index, a positive stand is taken. This is consistent with agency theory. Moreover, the majority of best practice recommendations in both private and public sector spheres suggest that non-executive directors add value to the board (ASX Corporate Governance Council, 2003; Business Roundtable, 2005; Department of Finance and

Administration, 2005; Tasmania Treasury & Finance, 1998; Queensland Treasury, 2005). A preliminary analysis of the distribution of non-executive directors within the sample indicates that some boards comprise of solely non-executive directors and some comprise of only 50% of non-executive directors. Combining the literature and GBE characteristics, the proportion of non-executive directors' index score is designed to capture this positive relationship.

The proportion of politically-related directors is the proportion of board members who are tied to the government or pressure groups. The link between politically-related directors, GBC and the owner-government can be analysed through networking theory (Koenig and Gogel, 1981). The existence of politically-related directors provides close link with the government and community groups. Thynne (1998a) suggests that the greater the proportion of politically-related directors, the stronger the connection between the government and pressure groups in setting business strategy and operations. This would in turn assist the board to focus on strategy that best reflects wider performance targets than just financial performance. Moreover, it is likely to be beneficial to have more politically-related directors on the board when GBCs need to develop budgets and operation plans (Statement of Corporate Intent) through the process of due consultations with the portfolio and shareholding ministers on a regular basis. The politically-related directors can assist in clarify the requirements (Thynne, 1998a). Therefore, positive contribution from politically-related directors to GBC's performance is expected. An empirical study in the context of Canadian state-owned enterprise by Bozec (2005) suggests that the proportion of public servants has a positive effect on performance. This finding is consistent with those found in the context of Singapore state-owned corporation, where they found that the proportion of public servants on the board has a positive relationship with efficiency and profitability (Thynne and Ariff, 1990).

The proportion of finance and accounting knowledge directors is measured by dividing the number of directors with formal qualifications and experience in the fields of economics, finance or accounting by the total number of directors on the

board. Directors with financial knowledge are expected to have a positive influence through the board, on the organisation financial management. The financial literacy of the directors helps them to understand the implication of financial decisions. According to resource dependence theory (Hillman and Dalziel, 2003), directors with finance and accounting knowledge are considered as board capital, providing resources to firm and contribute to firm performance. Agrawal and Chandha (2005) report that financial expertise of board of directors limits the likelihood of accounting fraud. The findings of Bull and Sharp (1989) and DeZoort (1997) also suggest that financial literacy is important in carrying out board tasks, especially the general standards of care, skill and diligence. A survey of US top company directors finds 69% of the directors has accounting and public reporting expertise (Nadler, 2004).

## 4. Methodology

### 4.1 Research Model and Variable Measurement

The study uses linear multiple regression to analyse the relationships between the developed board governance index and financial performance and accountability-emphasis. In addition, four control variables, namely organisation size, GBC legal form, industry type and jurisdiction of the controlling government of the GBEs, will be added to the models. GBCs' legal forms and jurisdictions are measured using categorical data. The industry type is measured using dummy variable and the organisation size is measured in term of average of equity. These control variables are added to counter the endogeneity problem of corporate governance. In addition, lag measure of the dependent variables is also used. This method of addressing the endogeneity problem was used in Bhagat and Black (2002), Black (2001), Drobetz et al. (2003), Klein et al., (2005), Weir et al. (2002) and Seng and Taylor (2008).

For the dependent variable, performance is measured in term of economic rate of return (ERR) and accountability-emphasis (ACCBTY). ERR is measured as follow:

$$ERR = \frac{(EBIT + Da + NIBL + FL + CSO) + (Ae - Ab - NI)}{Ab + (NI/2)}$$

Where

- EBIT = Earning after abnormals and extraordinaries, but before interest and tax;
- Da = Accounting depreciation and amortisation;
- NIBL = An adjustment for the implicit interest cost of non-interest bearing liabilities;
- FL = An adjustment for interest cost of assets under financial leases (only made if no already included in EBIT);
- CSO = Net economic cost of community service obligations (if applicable);
- Ae = End period total value of asset;
- Ab = Beginning period total value of asset; and
- NI = Value of net investment through out the year.

The numerator part comprises of two components with the first component represents cash component and the second represents the capital component. The sum of the two components gives rise to economic income. GBEs are expected to be compensated by the government for the capital that forego in delivering community services obligations (CSOs). In this case the recoupment amount will be added back to the EBIT. The interest on NIBL is calculated by multiplying the value of trade creditors, other creditors and prepaid revenue by a prevailing

rate of return. The Australia Commonwealth Government's Steering Committee on National Performance Monitoring of Government Trading Enterprises (here onward known as Steering Committee) suggests prime overdraft rate for the year is suitable (Steering Committee, 1996). The current study will use National Australia Bank (NAB) prime business overdraft rate as of 2007.

The NI component of the equation is calculated as follow:

$$NI = Ae - Ab (AsRR_e - AsRR_b) + Da$$

Where

AsRR<sub>e</sub> = the end of period value of asset revaluation reserve; and

AsRR<sub>b</sub> = the beginning of period of value of the asset revaluation reserve.

As GBCs are not organisations listed on the stock exchange, performance measurement methods like Tobin's Q and other value-based performance measures (e.g., shareholder value added, and weighted average cost of capital) cannot be measured without substantive judgements. Moreover, ERR is the preferred method by the Steering Committee and employ by majority of state governments to measure performance of their GBCs. ERR is, therefore, a suitable measurement method to measure the financial performance of GBC.

Turning to the other dependent variable in this study, accountability-emphasis (ACCBTY), it will be measured using a survey questionnaire. A 6-point Likert scale questionnaire will be used to ask respondents (Management of GBEs) to indicate their agreement (1 as Strongly Disagree and 6 as Strongly Agree) on their organisation's attention given to managerial and public accountability processes and systems. The attributes of managerial and public accountabilities are developed base on prior normative discussions and empirical studies on managerial and public accountabilities (Kloot and Martin, 2001; Taylor and Rosair, 2000; Sinclair, 1995; Parker and Gould, 1999; Othman and Taylor, 2006; Roberts, 1991). In addition, these questionnaire scales will be informed by the findings of content analysis and interviews in this study.

ACCBTY is conceived in this study as the emphasis given by management to processes and systems for discharging accountability outcomes. It is defined as the aggregate of the following two dimensions:

- The extent of attention given by management to *managerial accountability* systems and processes for setting operating targets and strategic goals, monitoring the quality of service delivery and meeting organisational objectives in an efficient and effective ways; and

- The extent of attention given by management to *public accountability* systems and processes for considering customers and public feedback and

response rates, and informing the public about services, projects and plans.

An extract of the questionnaire is provided in the appendix.

#### 4.2 Sampling and Data

A census of GBC is conducted to determine the total number of GBCs across all government jurisdictions. The result provides a total of 160 GBCs, but 16 GBCs are found to be unsuitable for this study. The excluded GBCs comprise of 11 entities of a non-commercial nature, 3 GBCs no longer owned by their respective governments as of January 2008 and 2 GBCs with incomplete management structures (one does not have a management team and the other has no board of directors). Therefore, the GBC population applicable to this study is 144, and the sample used in the study is 141 GBCs, equivalent to 97% of the applicable population. There were a further three GBCs excluded because of their annual reports were not accessible publicly. Turning to the collection of primary data, the survey questionnaire was sent out in two stages. The first stage was in August 2008 and 423 survey questionnaires were sent to the 141 GBCs. Following common practices used in survey questionnaire data collection, three survey questionnaires were sent to three senior managers in a GBC. At the end of this first period, 94 responses- a 21% response rate were received. A total number of 3 respondents did not identify their organisations, thus an alignment with annual report data could not be made. This left 91 identifiable responses, representing 71 GBCs- approximately 50% of the sample applicable for data analysis. In order to maximise the coverage of number of GBCs in the responses, the follow up questionnaires were sent to GBCs that did not response in the first stage. A total of 95 questionnaires were sent out to 31 GBCs in September 2008. At the end of the period 22 responses- a 23% response rate were received. These responses represent 17 GBCs. Thus, at the end of the two periods a total of 115 responses, representing 91

GBCs-64% of the sample were available for data analysis. The study, thus, uses two datasets, one for the analysis of the relationships between corporate governance and financial performance and the other use to investigate the relationships between board governance index and accountability performance. The governance data is extracted from governance and board profile sections of the 2005-2006 annual reports. The financial statement and their notes for the 2006-2007 annual reports provide the necessary data to calculate control variables and the year-lagged ERR. The data will be analysed using SPSS software.

## 5. Analysis result

### 5.1 Variable construction and Descriptive statistics

The eight items accountability-emphasis construct is validated with factor analysis and test for reliability with Cronbach's alpha. Table 3 provides the result. According to Brayman and Cramer's (2005) two stages of elimination in selecting a factor, factor 1 is selected with omitting items Acct 3 and Acct 5.

Table 3. Factor analysis of accountability performance construct

Accountability scale items	Factor Loadings	
	1	2
Acct1	.804	.156
Acct7	.787	.117
Acct6	.759	.189
Acct2	.725	.288
Acct4	.647	.456
Acct8	.432	.343
Acct3	.248	.776
Acct5	.099	.665

Extraction method: Principle Axis Factoring; Rotation method: Varimax with Kaiser; Normalization; 3 Rotations; Factor 1: Eigenvalue = 3.77; % of variance = 47.16%; Factor 2: Eigenvalue = .80; % of variance = 10%; Cronbach's Alpha reliability test (excluded Acct3 and Acct5) = .86

Turning to descriptive statistics, the average board size of Australia's GBCs is 6.79 directors with range from 3 to 12. This board size is similar to board sizes of top Australian listed companies, which reported by Kiel and Nicholson (2003) having an average of 6.6 directors. However, this board size is significantly smaller than its Canadian state-owned

enterprises (SOE) counterpart. Bozec (2005) reported the average board sizes of Canadian SOE is 10.81 directors. The Pearson correlation analysis in Table 5 indicates that board size has a positive correlation with ACCBTY but not significant relationship with ERR and other variables.

Table 4. Descriptive statistics

Variables	Minimum	Maximum	Mean	St. Deviation
Board size	3	12	6.79	1.51
Proportion of non-executive directors	67%	100%	92.40%	9.02%
Proportion of politically-related directors	0%	60%	11.57%	13.82%
Proportion of finance and accounting knowledge directors	0%	100%	38.92%	22.52%
ERR	-26%	95%	10%	16%
ACCBTY	1.50	6.00	5.34	.72

The proportion of non-executive directors on GBCs boards is ranged from 67 per cent to 100 per cent with an average of 92.40 per cent. This proportion is much higher than those of Australian list companies and similar to Canadian SOE (Bozec, 2005; Kiel and Nicholson, 2003). This observation suggests that GBC boards and the responsible/shareholding ministers have followed the authoritative guidelines closely. The majority of authoritative bodies, namely ASX, Business Roundtable, OCED, Tasmania Treasury and Finance Department, NSW Audit Office and Queensland Treasury, suggest that the composition of the board of

directors should comprise of non-executive directors and directors with suitable skills, background qualifications and experiences (ASX Corporate Governance Council, 2003; Business Roundtable, 2005; Department of Treasury and Finance, 1998; OECD, 2004; The Audit Office of New South Wales, 1998; Tasmania Treasury and Finance Department, 1998; Queensland Department Treasury, 2005).

The proportion of non-executive directors has no significant correlation with both ERR and ACCBTY, however a positive correlation coefficient is observed for its association with ERR and a negative sign is observed for its correlation with ACCBTY.

**Table 5.** Pearson correlation

	Variable	1	2	3	4	5	6	7
1	Board size	1						
2	Proportion of non-executive directors	-.038	1					
3	Proportion of politically-related directors	.011	-.022	1				
4	Proportion of finance and accounting knowledge directors	.094	-.132	.083	1			
5	Board governance index	-.504**	-.051	.297**	.496**	1		
6	ERR	-.068	.133	.292**	.179*	.269**	1	
7	ACCBTY	.187*	-.038	-.003	.121	-.146	.032	1

Note. Two-tailed test; \*\* and \* indicate significance levels at .05 and .01 respectively

Moving to politically-related directors, its mean proportion is 11.57 per cent. The maximum number of politically-related directors represented on the board is 60 per cent and the minimum is zero per cent. The Pearson correlation analysis in Table 6 indicates that the proportion of politically-related directors is positive and highly correlated with ERR. In contrast, it

has no relationship with ACCBTY and a negative coefficient is observed.

These relationships are observed for the proportion of finance and accounting knowledge directors as well. It has a positive correlation with ERR and no significant relationship with ACCBTY. The mean proportion of finance and accounting knowledge directors is 38.92 per cent.

**Table 6.** Distribution of Board governance index

Board governance index Score	Frequency	Percent	Cumulative Percent
1	59	41.8	41.8
2	56	39.7	81.6
3	22	15.6	97.2
4	4	2.8	100.0

The distribution of the board governance index is provided in Table 6. It indicates that majority of GBC boards, 41.8 per cent, have an index score of 1 and only 2.8 per cent have index score of 4. The correlation analysis in Table 5 indicates that the index is highly correlated with ERR but not with ACCBTY.

The overall correlation pattern in Table 5 provides a preliminary insight into the relationships between board governance, financial performance and accountability-emphasis. It suggests a situation where current GBCs board configurations only support the achievement of financial performance.

## 5.2 Multivariate Analysis

The multivariate analysis result is presented in Table 7. Panel A presents the regression results for determining the relationship between GBCs' board governance arrangement and ERR. Model 1 provides that the control variables have no significant relationship with ERR. This result is expected as general organisational characteristics are not normally influence performance.

In Model 2, three of the four board governance variables show a positive relationship with ERR. The positive relationship between proportion of non-executive directors and ERR suggests that the inclusion of non-executive directors on the board improves board monitoring tasks. This finding is consistent with prior findings (Weir et al., 2002; Andres and Vallelado, 2008; Kiel and Nicholson,

2003). The result on the proportion of politically-related directors suggests that politically-related director is a vital link between the operational autonomous GBCs and their owner-governments, particularly their responsible and shareholding ministers. They can facilitate the setting of performance targets and the de-factor performance contract of Statement of Corporate Intent. This would add value to GBC and improve performance. The result on proportion of finance and accounting knowledge directors suggests that directors with finance and accounting knowledge can adequately review financial and accounting policies and approve only sound investment proposals; hence adding value to board performance and organisational performance.

Turning to board governance index, Models 3 indicates that the developed board governance index has a strong and positive relationship with ERR. Its coefficient is larger than the coefficients of individual governance variables. This infers that the governance index captures the interactions of the individual governance variables. Moreover, it implies that governance index is a good proxy for measuring governance practices. This positive relationship between board governance index and ERR as measure of financial performance is consistent with majority of prior findings (Chen et al., 2007; Drobetz et al., 2003; Feng et al., 2005; Mothanty, 2003). Therefore, current GBCs' board governance practices support GBCs to achieve their financial performance.



**Table 7.** Regression analyses of governance characteristics and governance

## Panel A: Dependent Variable: ERR

Variable	Model #1	Model #2	Model #3
Intercept	.116† (1.739)	-.281† (-1.748)	-.019 (-.265)
Organisation size	-1.02 (-1.178)	-1.114 (-1.429)	-1.08 (.190)
Legal form	.033 (.367)	.154 (1.778) †	.064 (.734)
Industry	.033 (.387)	.056 (.707)	.068 (.833)
Jurisdiction	-.062 (-.679)	-.084 (-.945)	-.070 (-.805)
Board size		-.111 (-1.382)	
Proportion of non-executive directors		.206** (2.485)	
Proportion of politically-related directors		.332*** (4.002)	
Proportion of finance and accounting knowledge directors		.200** (2.438)	
Board governance index			.316*** (3.850)
Adjusted-R <sup>2</sup>	-.013	.141	.080

## Panel B: Dependent Variable: ACCBTY

Variable	Model #1	Model #2	Model #3
Intercept	5.603*** (16.681)	4.737*** (5.982)	5.850*** (15.557)
Organisation size	.112 (1.284)		.123 (1.293)
Legal form	-.149 (-1.440)		-.150 (-1.455)
Industry	.056 (.590)		.322 (.748)
Jurisdiction	-.109 (-1.060)		-.892 (.374)
Board size		.187* (2.008)	
Proportion of non-executive directors		-.026 (-.274)	
Proportion of politically-related directors		.008 (.081)	
Proportion of finance and accounting knowledge directors		.116 (1.196)	
Board governance index			-1.434 (.155)
Adjusted-R <sup>2</sup>	.001	.016	.010

Notes: t statistics are in parentheses; †, \*\*\*, \*\* and \* represent significance levels at .10 .05, .01 and .001 respectively; Control variables are excluded in some models as because of small number of cases.

Panel B of Table 7 presents the regression results for determining the impact of GBCs' board governance arrangements on ACCBTY. The results provide a different picture to those of Panel A. Once again, the control variables are not significantly related with ACCBTY. Model 2 indicates that all governance variables except for board size have no significant relationship with ACCBTY. Board size has a positive relationship with ACCBTY. This result suggests that the larger the board size the more thorough discussions and attentions pay to

accountability requirements, particularly the requirements of managerial and public accountabilities. Thus, in turn, it leads to more scrutiny on processes and systems put in place by management to render accountability requirements. This observed relationship is contrast to its relationships with ERR. The proportion of politically-related directors, which represent s the linked between GBC and its owner-government, also has no impact on ACCBTY. The governance index also has no significant relationship with ACCBTY. In addition, negative coefficient is

observed in Models 3. These results suggest that GBCs' current board governance practices do not support GBCs' management to discharge their accountability requirements, particularly the managerial and public accountabilities.

## 6. Discussion and Conclusion

The results obtained in this study on relationships between board governance mechanisms and the attention given by GBCs' management to the rendering of managerial and public accountability (ACCBTY), are quite contrasting to the results obtained on the relationships between board governance mechanisms and financial performance (ERR). In particular, the greater presence on the board of a GBC of independent directors, politically-connected directors and financially expert directors provides a strong explanation for the GBC achieving a higher ERR, but provides no explanation for the GBCs extent of attention to the rendering of accountability.

Such contrasting findings pose a question as to whether GBC boards view the achievement of 'bottom line' financial performance to be incompatible with the achievement of broader accountability to the public. Although GBCs are given operating autonomy and can take a commercially competitive stance, they also face unique government-owner restrictions on their financing, investing and product/service pricing decisions. The rendering of accountability through various customer and general public-oriented programs and processes can be a costly exercise for GBCs. If these costs of rendering accountability can not generate incrementally higher financial returns to the GBC because of financial restrictions such as pricing controls on the GBC's products and services, then giving emphasis to initiatives and systems that improve public accountability may result in a weakening of the ability to meet the key financial performance indicator of ERR.

Apart from governance mechanisms, there will be other factors both internal and external to the organisation that could be affecting a GBC's financial and accountability-emphasis. A study that focuses on a boarder aspect of corporate governance and a more comprehensive driver of performance, i.e. an interaction between organisational capabilities and strategies, may provide a more insight into whether both financial performance and accountability requirements can be concurrently achieved.

In conclusion, the study has extended corporate governance index (CGI) studies to the context of GBCs. The positive relationship between BGI and financial performance supports agency, networking and resource dependence theories as theories to be employed in structuring GBCs' board of directors and constructing of the board governance index. These theories are, however, not suitable to structure GBCs' board of directors in a way that facilitates its management through thorough consideration of systems and processes to discharge accountabilities.

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## APPENDIX EXTRACT FROM THE QUESTIONNAIRE

To what extent do you agree with the following statements about how well your organisation discharges its managerial and public accountability in the following ways?

	Strongly Disagree	Somewhat Disagree	Slightly Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
Highly responsible to ensure the achievement of efficiency and effectiveness outcomes	1	2	3	4	5	6
Sets clear operating targets that integrate with broader strategic goals	1	2	3	4	5	6
Provide regular management reports to 'oversight bodies' on achievements and outcomes	1	2	3	4	5	6
Monitor the quality of service delivery through the use of relevant non-financial performance measures	1	2	3	4	5	6
Abide by quality assurance procedures, particularly those of a relevant quality assurance accrediting body	1	2	3	4	5	6
Strong emphasis on providing excellent service and responsiveness to customer enquiries and complaints	1	2	3	4	5	6
Consider customer and the public's feedback into the provision of services/product and operation of the organization	1	2	3	4	5	6
Provide considerable public information about the organization's services, projects and plans to customers and the public.	1	2	3	4	5	6