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**Directors' Pay-Performance: A Study on Malaysian
Government Linked Companies**

Dr. Hooy Chee Wooi

Mr. Tee Chwee Ming

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ABSTRACT

Directors' Pay-Performance: A Study on Malaysian Government Linked Companies

This paper examines pay-performance framework of Malaysian Government Linked Companies (GLCs) for the financial year 2001-2006 using panel regression approach. The GLCs pay determinant is modeled upon 4 core groups, namely, accounting ratios, company size, market measurement and board structure. In short, accounting ratios are found to be significantly positive linked to pay and company size remains the dominant pay determinant. Our empirical findings suggest that corporate governance compliance is not reflected in paid. The insignificant abnormal returns imply that GLCs board adopts a prudent risk management policy. The Achilles heel of GLCs is the failure of independent directors to be effective internal monitors of the company. The insignificant relationship is indeed puzzling as GLCs fulfill the minimum 33% threshold required by the Malaysian code of corporate governance as reported in Securities Commission (2007).

KEYWORDS: Corporate governance, Government-linked Companies, Director Pay, Performance, Board structure.

Dr. Hooy Chee Wooi
Senior Lecturer
School of Management
Universiti Sains Malaysia
Penang
cwhooy@usm.my
ISSN : 2180-0146

Mr. Tee Chwee Ming
Senior Lecturer
School of Business Administration
Wawasan Open University
Penang
cmtee@wou.edu.my

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1. Introduction

According to Putrajaya Committee on GLC High Performance (2006), Government Linked Companies (GLCs) are defined as companies in which the Malaysian government has a direct controlling stake. Its *modus operandi* is commercial in nature. The controlling stake refers to the power of the government to appoint member of the board of director and be involved in major decision making like for example contract awards, restructuring, financing, acquisition and divestment. The Malaysian government's control on GLCs is achieved through Government Investment Linked Companies (GLICs), which have invested their funds in GLCs. Currently there are 6 GLICs, namely, Employees Provident Fund (EPF), Lembaga Tabung Angkatan Tentera (LTAT), Lembaga Tabung Haji (LTH), Permodalan Nasional Bhd (PNB), Ministry of Finance Ltd. (MOF) and Khazanah National.*

In 2001, KPMG Malaysia initiated a survey on directors' remuneration in Malaysian public listed companies. Since then, the figure of directors' compensation attracts widespread attention from the Malaysian public and investors. The total aggregate of directors' payout in 639 Malaysian public listed companies has grown by 23% from RM 1.3 billion to RM 1.6 billion (2005-2006) (Kaur, 2007, pp.16-17).[†] However, total aggregate of directors' payout in 21 Malaysian GLCs grew at a modest average annual rate of 8.8% from 2001 till 2006. Nevertheless, the 21 GLCs payout breached the RM 50 million mark in 2006.

In 2004, the Malaysian government spearheaded the initiative to revamp GLCs.[‡] This mission is important as GLCs are key drivers of Malaysian economy and substantial investor in the financial markets. For a long time, Malaysian GLCs had under performed in comparison to the private sector. This is due to government interference, inadequate rewards, inept management and lack of transparency (The Edge, 2004b). In July 2005, the Putrajaya Committee on High Performance GLC launched a set of Policy Thrusts, Guidelines and 10 Initiatives as part of the Government Linked Company Transformation Programme. This was followed by the publication of Green Book, Orange Book, Blue Book and Yellow Book which focus on the area of GLCs board effectiveness, leadership development, adopting best management practices at GLICs and operational efficiency in GLCs (Business Times, 2006a, 2006b).

Subsequently in 2006, GLCs CEOs unveiled a series of company's Key Performance Indicators (KPIs) to the financial markets (<http://www.pcg.gov.my/>).[§] The main objective is to implement performance oriented culture and compensation which has long eluded GLCs. By announcing these series of KPIs, GLCs management are opening themselves up for scrutiny by the public and investing community. Thus, more disclosure, transparency and good corporate governance standards are expected from all levels of management. As of 31st March 2008, significant improvement in the performance of 20 GLCs was reported (Putrajaya Committee, 2008, pp.1-10).^{**} For example, G-20 companies recorded cumulative total stock return of 92.3%. This figure outperforms Kuala Lumpur Composite Index (KLCI) by 2.2% on an annualised basis from 2004-2007. This is a stark contrast from a 2.4% under-performance per year from 1999 till 2004. Market capitalization almost doubled from RM 145 billion to RM 238 billion (2004-2008). From 2003-2007, EPS grew by an average 23% per year. Aggregate net dividend almost doubled to 5.1% within three years (2004-2007). As a summary, G-20 managed to beat 42 out of the 55 KPIs for FY 2007.

* EPF, LTAT, LTH and PNB are government managed pension funds. Khazanah National is sovereign wealth funds.

[†] RM/USD exchange rate as of September 1st. 2008 is \$1: RM 3.50.

[‡] The first effort to restructure GLCs was attempted in the mid 1990s as part of Malaysia Incorporated. However it fizzled out following the Asian Currency crisis in 1997-1998.

[§] There are all together 55 KPIs.

^{**} 20 largest GLCs based on market capitalisation.

2 reasons underline the significance of our study. Firstly, past pay-performance and board independence empirical studies in US and UK have ignored the area of GLCs. This could be due to the market structure and system. For example, GLC is unheard of in US as the government adopts a hand off approach in the *laissez faire* system. Hence, our study sought to fill up this gap by pioneering the study on GLCs pay-performance and board independence in Malaysia. Secondly, given the development scenario of Malaysian GLCs over the last decade, there is a need to understand pay-performance link in GLCs. As there is a dearth of existing GLCs pay-performance literature, the main aim of this paper is to fill up this research gap by conducting pay-performance analysis based on a sample of Malaysian GLCs for the year 2001-2006 through a panel regression approach.

In accordance to Lewellen and Huntsman (1970), Meeks and Whittington (1975), Cosh (1976), Coughlan and Schmidt (1985), Kerr and Bettis (1987) and Conyon *et al.* (2000), the performance of GLCs are segregated into three core groups, namely accounting ratios, company size and market measurement. Based on the studies by Main (1991), Jensen (1993) and Conyon and Peck (1998), we add another perspective which is board independence. In short, with the exception of market performance and board structure, all our proposed variables have played a significant role in determining GLCs' directors' remuneration.

This rest of the paper is organized as follows. Section 2 provides a brief literature review. Section 3 discusses our model for GLC director pay-performance, the panel framework of our analysis and the sample data. Section 4 presents the results and discussion on the major findings. Concluding remarks are in the final section of the paper.

2. Literature Review

From the economic perspective, the issue of pay-performance is viewed from the spectrum of principal agent theory, moral hazard, adverse selection and agency cost. Appropriate financial incentives must be created to ensure that agent (director) acts in the best interest of the principal (shareholder). Most Malaysian public listed companies still maintain the centralization organizational structure, whereby; standing on the apex of the hierarchy is the board of directors led by the Chief Executive Officer as reported by Thillainathan (1999). The board of director is expected by shareholders to implement actions that would create shareholders value in the long run. However, divergence in interest between principal (supplier of resources) and agent (in control of resources allocation) creates moral hazard, whereby the agent will not act in the best interest of the principal. This agency cost theory was thoroughly discussed by Jensen and Meckling (1976). In addition, asymmetric information between agent and principal should be reduced to eliminate the adverse selection problem as proposed in the study of lemons in second hand car market by Akerlof (1970). This can be achieved through financial disclosures, effective check and balance mechanism and increased transparency by public listed companies.

Proliferation of pay-performance empirical study since 1970 is due to the availability of data on director's remuneration. As observed by Cosh (1976) in United Kingdom, regulators and government have made statutory requirement for more disclosure on director's remuneration in public listed companies. Nevertheless, findings are mixed. Evidences from Main (1991), Main *et al.* (1996) and Conyon and Peck (1998) show a positive significant relationship between corporate performance and director's remuneration. When these results are segregated into profitability and company size, Lewellen and Huntsman (1970) persistently indicate that the former is more significant determinant than the latter. This finding contradicts Cosh (1976)

study that provides evidence that company size is more dominant. In Malaysia, Hassan *et al.* (2003) and Abdullah (2006) study failed to find significant linkage between pay and performance. In regards to the empirical studies on GLCs, Groves *et al.* (1994 and 1995) and Mengistae and Xu (2004) reported a positive relationship between pay and SOEs accounting performance at various level of management during the 1980s. However, the pay-performance sensitivities in China's State Owned Companies (SOEs) are low as concluded by Firth *et al.* (2006). Nevertheless, China SOEs place great importance on profit rather than stock returns from 1998-2000. This contradicts the findings of Huang and Zhang (1998) which suggest that performance is not a criterion to reward top managers. In fact, satisfying the non profit interests of the State sometimes is a major criterion to reward top managers as proven by Qian (1995).

According to Main (1991), board structure can influence the compensation package received by director. Jensen (1993) suggests that the board of director should play the role as the highest internal monitoring mechanism when it comes to remuneration package for directors. Emphasis is placed on the independence of directors as they are more willing to use their power vested in them to protect shareholder's interest as indicated by Weisbach (1988). However, Pearce and Zahra (1991) argue only proactive boards are able to perform the above duties because they are dominated by independent directors, possess higher level of expertise and have frequent meetings to ensure timely dissemination of information and effective decision making. Taking cue from this, the Malaysian Securities Commission made in compulsory that at least 33% of the board of director must be non executive and independent (see Securities Commission, 2007). Empirical studies suggest significant association between director's pay and board independence. Using pay performance sensitivity, Mishra and Nielsen (1999) found out that independent directors play an effective internal monitoring role within the company. Study by Abdullah (2006) on Malaysian companies suggests an increase in awareness on corporate governance issue after then 1997-1998 Asian currency crises. This explains the negative significant relationship between board independence and director's pay which is considered by Cadbury (1992) as best practices in corporate governance. However, Main (1991) produces a puzzling result when it reported that UK CEO's pay went up by 4000 pound sterling for every extra non executive independent director added into the board. This could be due to the power of CEO to select independent directors as pointed out by Mace (1986). Zajac and Westphal (1994) are of the opinion that CEO tends to select friendly parties as independent directors and their career progress within the firm is determined by the CEO. Peace and Zahra (1991) categorized these subservient directors under statutory board group.

3. Data and Research Methodology

3.1 The Model for Director Pay-Performance

We adopt the contemporaneous relationship CEO pay-performance sensitivity framework by Jensen and Murphy (1990). The direction of causality is from performance to pay. This means higher performance leads to higher remuneration payout. However, we perform slight modifications on Jensen and Murphy pay performance sensitivity model to suit our research objective. Firstly, we replaced CEO dependent variable with the aggregate board of director remuneration. Secondly, the sensitivity perspective is replaced with the relationship between pay and performance. Thirdly, shareholder's wealth consists of accounting ratios, company size and market measurement. Fourthly, we add board structure as the fourth core component to provide a comprehensive review on pay-performance and board independence relationship. Finally, the independent variables are lagged by one financial reporting year. Kerr and Bettis (1987) argue this approach will produce relatively accurate results than studies which do not lag their independent variables. By lagging the independent variables by one financial reporting year, current directors' remuneration in year t will be based on the company's performance in the previous financial reporting year. Empirical studies that do not lag their independent variables assume that directors' remuneration package is based on the expectation of corporate performance for year t . Thus, it is unlikely to capture accurate relationship between pay and

performance. However, it is not necessary to lag board independence variable because the tenure of a director is at least one year in Malaysian public listed companies.

Our regression model for director remuneration is given by the following equation:

$$\ln(DIR_{i,t}) = \beta_0 + \beta_1 ROE_{i,t-1} + \beta_2 EPS_{i,t-1} + \beta_3 DPR_{i,t-1} + \beta_4 \ln(TA_{i,t-1}) + \beta_5 BIND_{i,t} + \beta_6 ANR_{i,t-1} + \eta_i + v_t + \varepsilon_{it} \quad (1)$$

$DIR_{i,t}$ = Director's remuneration

$ROE_{i,t-1}$ = Return on equity

$EPS_{i,t-1}$ = Earning per share

$DPR_{i,t-1}$ = Dividend payout ratio

$TA_{i,t-1}$ = Total assets

$BIND_{i,t}$ = Percentage of independence director

$ANR_{i,t-1}$ = Abnormal stock returns

where \ln represent natural logarithm, and ε_i is the error term for company i over time t .

The board of director consists of executive non independent and non executive independent directors.^{††} Director's remuneration (DIR) figures are obtained from company annual report from accounting year 2001 till 2006. Following the methodology underline by O'Reilly *et al.* (1988), Main (1991), Main *et al.* (1996), Hassan *et al.* (2003), Firth *et al.* (2006) and Abdullah (2006), our study includes only cash remuneration (basic salary, bonus, allowances, fees and pension benefits) as components of total board's remuneration. Stock options are excluded due to unavailability of data in Malaysian public listed companies. Besides that study by Conyon (1997) that employs both cash and stock options component produce the same result.

The most essential variables that provide explanation to director's remuneration are accounting ratios. Here we include 3 accounting ratios. ROE (%) is the ratio of net profit after tax and interest over shareholder's equity. Putrajaya Committee on High Performance GLC (2008) lists ROE as a KPI. Empirical studies by Merhebi *et al.* (2006), Cheng and Firth (2005) and O'Reilly *et al.* (1988) reported a significant positive relationship between pay and ROE. This result is not shared by Doucouliagos *et al.* (2007) because ROE is only robust if lagged by 2 years. EPS (RM) is net profit accrued to each shareholder after deducting interest, tax and minority interests. In their landmark study on British firms, Lewellen and Huntsman (1970) reported that profitability factor dominates company size in determining director's remuneration. Meeks and Whittington (1975) conclude that profitability factor should not be underestimated in determining pay. Thus, Sloan (1993),

^{††} By definition of Securities Commission (2007), executive non independent directors are permanently employed by the company with executive powers to implement decision making at corporate level. Independent non executive directors are appointed by the board upon the CEO recommendation. They are expected to participate actively in the deliberation of key decision making during board meeting and their outputs can influence the decision making of the board. If independent non executive directors play their fiduciary role effectively, they act as an effective check and balance mechanism against expropriation of corporate wealth as pointed out by Jensen & Meckling (1976).

Conyon and Leech (1994) and Conyon *et al.* (2000) suggest earnings as a proxy for managerial effort. Thus, EPS is listed by Putrajaya Committee on High Performance GLC (2008) as a KPI for GLCs. However, study by Conyon *et al.* (2000) failed to find a significant relationship between pay and EPS. The relationship is only positively significant if EPS is lagged by two years as reported by Doucouliagos *et al.* (2007). DPR (%) is obtained by dividing gross dividend per share (DPS) with earnings per share (EPS). An increasing DPR trend indicates that the agent is creating shareholder value. Lewellen *et al.* (1987) and Healy (1985) reported results that significantly link pay to dividend payout. Gugler (2003) concluded that Austrian state owned firms are not only generous dividend paymaster but they are also reluctant to cut dividends despite unfavourable business performance. Utilising the principal agent theory, Battacharyya *et al.* (2008) develop a dividend payout model which proves that pay moves up (down) if there is an increase(decrease) in dividend payout. Thus, DPR is listed as a KPS by Putrajaya Committee on High Performance GLC (2008).

We also include company size as proxied by total assets (TA). Empirical findings by Ueng *et al.* (2000) and Cosh (1976) conclude that company size measured by total assets is a dominant pay determinant compare to other financial variables. This is consistent with managerial theory of firm which states that the expansion of a company will lead to an increase in corporate power, control and monetary benefits.

Stock return represents the annual average compounded return for each accounting year. Coughlan and Schmidt (1985), Kerr and Bettis (1987) and Main (1991) interpret shareholder value as stock return. All their studies concur that a director's pay should be benchmarked against abnormal return. Main (1991) argues that it is reasonable to tie director's compensation to abnormal return as they are only rewarded for beating market average. However, all the three studies conclude that the influence of abnormal return on compensation package is weak. Here, we defined abnormal returns (ANR) based on an equilibrium model of an individual firm that assumes stock returns have a multivariate normal distribution consistent with the well-known Capital Asset Pricing Model (CAPM).

Lastly, the independent director's effectiveness in enhancing shareholder value is measured by the percentage of independent non executive directors on total directors (BIND). Cheng and Firth (2005), Conyon and Peck (1998) and Main (1991) reported that independent directors do not reduce directors' remuneration package. On the contrary, higher number of independent directors leads to higher directors' pay package.

Based on the above information we construct the following hypotheses:

Hypothesis 1: In order to solve the principal agent problem, Kaplan (1994) and Murphy (1985) suggested the introduction of a compensation package which would align the interest of managers with shareholders. Hence, β_1 , β_2 and β_3 are expected to be positive and significant.

Hypothesis 2: In terms of company size, an increase in total assets entails bigger responsibility to the directors, which should be compensated with a higher remuneration package. According to managerial theories, a director is motivated to increase total asset because it will be followed by higher pay. Hence, the significant positive β_4 sign.

Hypothesis 3: Theoretically, β_6 should produce a significant positive sign. It is reasonable for shareholder to expect individual stock return to outperform market portfolio return to justify higher compensation package

for board of directors. According to Main (1991) directors should only be well compensated for beating the market average.

Hypothesis 4:

A higher percentage of independent non executive directors is achieved at the expense of a lower executive non independent director's ratio. Thus, this will lower down the operational cost of maintaining the board of directors (basic salary, bonus, allowances and perks). This is because an independent non executive director is only entitled to receive fees. In addition, a proactive board dominated by independent non executive directors^{**}, according to Pearce and Zahra (1991) deliver an effective corporate governance performance against self serving executive directors. Thus, in accordance to international corporate governance best practices by Cadbury (1992) and Greenbury (1995), β_5 is expected to be significantly negative.

3.2 Panel Model Estimates

Panel data estimation techniques are employed in this study. Panel regression offer great flexibility in modeling heterogeneity bounded in firm-specific performance, as well as for temporal changes in the firms' operating environment. From econometric point of view, pooling both time series and cross section data provides relatively more informative, greater variation, less collinear, more degree of freedom and more efficiency (Gujarati, 2003, pp.637). More importantly, panel model is able to detect more sophisticated behavioral models with less restrictive assumptions (Baltagi, 2002, pp.307).^{§§}

As is customary in panel data analysis, we estimate both a fixed effect and a random effect model. The general model which we refer to can be written as follows:

$$y_{it} = \mu + \beta X_{it} + \eta_i + v_t + \varepsilon_{it} \quad i = 1, \dots, N; \quad t = 1, \dots, T \quad (2)$$

where y_{it} denote our dependent variable (DIR_{it}) for firm i at period t , β is $K \times 1$ and X_{it} is the it -th observation on the k number of determinant variables ($k=8$ in our case). The term η_i is the unobservable cross-sectional unit specific residual that accounts for individual effects, the term v_t is the unobservable time specific residual that accounts for period effects and the term ε_{it} is the usual error term after taking out the individual and period effects. Basically these residual are component of the error term from model (1) as given by $e_{it} = \eta_i + v_t + \varepsilon_{it}$.

The fixed effect specification assumes that company-specific effects are fixed parameters to be estimated, whereas the random effect model assumes that companies constitute a random sample. The fixed effects model allows the unobserved firm effects to be correlated with the explanatory variables.

If there is correlation between the fixed effects and the determinants, then a random effects model is more appropriate. The random effects model assume that the firm effects, either cross-section or period, are

^{**} This prevents rent extraction executive directors (Bebchuk, 2002).

^{§§} More of the benefits and limitations of using panel data are listed in Hsiao (2003).

randomly distributed across the individual firm and time, respectively. This assumption is valid if the sample is assumed were drawn randomly from a large population.

In the random effects model, both the cross section and the period specific effects, η_i and v_t , are no longer a constant or a set of fixed parameters to be estimated. Instead, both η_i and v_t are now a random error term with a mean value of zero and variance of σ_η^2 and σ_v^2 , respectively. They are not directly observable and thus are a form of latent variables. Following (Hsiao, 2003), the usual assumptions made by the random effects models are that:

$$E\eta_i = Ev_t = E\varepsilon_{it} = 0,$$

$$E\eta_i v_t = E\eta_i \varepsilon_{it} = Ev_t \varepsilon_{it} = 0,$$

$$E\eta_i \eta_j = \begin{cases} \sigma_\eta^2 & \text{if } i = j, \\ 0 & \text{if } i \neq j, \end{cases}$$

$$Ev_t v_s = \begin{cases} \sigma_v^2 & \text{if } t = s, \\ 0 & \text{if } t \neq s, \end{cases}$$

$$E\varepsilon_{it} \varepsilon_{it} = \begin{cases} \sigma_\varepsilon^2 & \text{if } i = j, t = s, \\ 0 & \text{otherwise,} \end{cases}$$

$$E\eta_i X'_{it} = Ev_t X'_{it} = E\varepsilon_{it} X'_{it} = 0'.$$

The variance component of the dependent variable can be decomposed into:

$$\sigma_y^2 = \sigma_\eta^2 + \sigma_v^2 + \sigma_\varepsilon^2$$

Notice that if σ_η^2 and σ_v^2 are both zero, there is no distinction between model (1) with a simple pooled regression (without any individual or period effects). In the above specification, the disturbance term ε_{it} is no longer homoscedastic where ε_{it} and ε_{is} ($t \neq s$) are correlated. The correlation coefficient, $corr(\varepsilon_{it}, \varepsilon_{is})$, is given as:

$$corr(\varepsilon_{it}, \varepsilon_{is}) = \frac{\sigma_\eta^2}{\sigma_\eta^2 + \sigma_\varepsilon^2}$$

With the above assumptions, the usual OLS estimators will be inefficient. To overcome the correlation problem, Model (1) can be estimated using the method of generalized least squares (GLS).

The benefit of the random effects model is that it significantly reduces the total parameters to be estimated in the expense that we might obtain an inconsistent estimates, should the assumption turn out to be invalid. Thus, a formal test is needed to justify whether a random effects model is more appropriate over the fixed effects model on the condition the fixed effect model is found to be more superior to a simple pooled

regression. If the individual and period effects are not significant, both η_i and v_t will collapse to zero; then OLS will provide a consistent and efficient estimates of the common μ and slope vector β . If this is the case, model (1) is nothing more than a classical regression model on a pooled time-series cross-section data. However, if η_i are correlated Z_{it} , then OLS estimator become biased and inconsistent.

Our strategy is to test first whether individual effects exist and, if so, to identify which is the best model to estimate them. We use a simple Chow test to identify the existence of individual effects. If we reject the null hypothesis of homogeneous effects across firms and over time, then a model capturing individual heterogeneity is more appropriate. Under the null hypothesis that all μ_i equal zero, the Chow test is given by:

$$F_0 = \frac{(RSS_{Pooled} - RSS_{LSDV})/(N-1)}{(RSS_{LSDV})/(NT - N - K)} \sim F_{N-1, NT-N-K}$$

where the residual sums of squares (RSS) for the pooled regression and the fixed effect model is the restricted and unrestricted RSS, respectively. If F_0 is significantly rejected, the fixed effect model is treated as the maintained hypothesis. Alternatively, one can perform the Chi-square test on the likelihood function.

If the model passed the first stage (significant fixed effects), we then apply a specification test devised by Hausman (1978) to test for the orthogonality of the random effects and the loaded determinant variables. If $E(\varepsilon_{it} / Z'_{it}) \neq 0$, the GLS estimator becomes biased and inconsistent.

$$H_0 = (\hat{\beta}_{Fixed} - \hat{\beta}_{Random})' [Var(\hat{\beta}_{Fixed}) - Var(\hat{\beta}_{Random})]^{-1} (\hat{\beta}_{Fixed} - \hat{\beta}_{Random})$$

The null hypothesis under Hausman test is that both fixed effect and random effect estimators are consistent, while the alternative is that random effect estimators are not consistent (for the procedure of Hausman test, see Baltagi, 2002, Hsiao, 2003, and Greene, 2003). The Hausman test will inform us regarding which model to stress; if the test is significant we focus on the fixed effect model, whereas we report the random effect model if the Hausman test is insignificant.

3.3 Data

All our financial data is obtained from Thomson Datastream for the financial reporting year 2001-2006. The criteria to select a company into our sample of study are listed as below:

- (i) The company must not be taken private and de-listed from Bursa Malaysia.
- (ii) The company must not currently undergo any form of corporate restructuring that will have impact on its core business.
- (iii) The company must not be involved in merger and acquisition exercise. Re-branding is allowed as long as the core business remains intact.

Based on the above selection criteria, our sample of study includes 21 GLCs. This represents 54% of the total 39 GLCs listed in Bursa Malaysia in 2004 (see Appendix 1).

4. Results and Findings

The summary of the descriptive statistics for the panel data are reported in Table 1. Besides the variables used in model (1), we also report descriptive statistics for the raw value of director remuneration and total asset. Not all the panel series are normally distributed as can be seen in the rejection of the Jarque-Bera normality test. As the government maintains investment in all sectors of the economy, the values of coefficient of variation (CV) indicate that ROE, EPS and abnormal returns (ANR) are widely spread out. Plantation^{***} and oil and gas⁺⁺⁺ companies should be under the maximum group. Meanwhile companies in airlines⁺⁺⁺ and car manufacturing^{§§§} sector should fall under the minimum category due to rising fuel price, inability to face competition and inefficiency in productivity.

The other variables with wide range are the values of TA and DIR before taking logarithm. The average remunerations received by the board of directors in Malaysian GLCs is RM 1.84 millions but the standard deviation is RM 1.89 millions, indicating a huge deviation in directors remuneration across the GLCs, where the highest is RM 12.5 million (MAYBANK in 2006) and lowest is only RM 0.21 millions (MBSB in 2001). The fact that Maybank's directors are the highest paid could also be due to the fact that they are managing the biggest company in terms of total asset worth RM 223 billion in 2006. The wide total asset band RM 760 million – RM 223 billion with a standard deviation of RM 38 million can be attributed to the wide range of industry that GLCs are operating in.^{****}

A variable worth commenting is the high DPR by Malaysian GLCs. Their average payout of 37.39% out performs Kuala Lumpur Stock Exchange DPR average of 20% between 2002-2006 (The Edge Daily, 2008). Some GLCs are paying as high as 163% to its shareholders. We are of the opinion that the government has a strong incentive to ensure good returns on its investment as dividend is a source of revenue to annual government budget.⁺⁺⁺⁺ Thus, agency theory is enforced by consistent dividend payout as suggested by Gugler (2003).⁺⁺⁺⁺ In addition, Lintner (1956) is of the opinion that market will grant a hefty premium for consistent dividend payout. Hence, investment on Malaysian GLCs should only be on the long term basis.

In regards to board structure, the mean GLC's board independent ratio is 39.5%. This is above the minimum 33% ratio required under the Securities Commission (2007) and Greenbury (1995). Some GLCs reached a maximum of 77%, indicating a high awareness among these companies on the need to institute the best practices of corporate governance.

*** Crude palm oil price has increased from RM 1,200/ton to RM 4,200 from 2004 till 2008 (The Edge, 2008a).

+++ Oil price has increased from \$38 in 2004 to \$142 by June 2008 (The Edge, 2008b)

+++ Malaysian Airlines System losses peaked at a loss of \$1.21 in 2005 due to rising oil price, falling services standards and inefficiency. MAS 22,000 employees need downsizing (The Edge Daily, 2006a).

§§§ Proton's market share of car sales has fallen from a peak of 75% in the 1990s to only 38% by 2006. Correspondingly, EPS has fallen from \$2.06 in 2002 to only 8 cent in 2006 (The Edge Daily, 2006b).

**** Trading and services company (i.e. pharmaceutical) has lower assets than banking groups or capital intensive companies like airlines and automobile industry.

++++ Firth *et al.* (2006) study shares the same opinion.

++++ The management will have less free cash flow to squander on unprofitable investment projects. As such, the firm's management will be forced into capital market to raise fund. According to Easterbrook (1984), the firm's management will have the incentive to effectively monitor the project's return.

Table 1: Summary of Descriptive Statistics

Variable	Mean	Maximum	Minimum	Std. Dev.	CV	Normality
DIR	1,840,292.00	12,507,000.00	210,000.00	1896,460.00	1.0305	1,836.0500***
Ln(DIR)	14.0903	16.3418	12.2549	0.8252	0.0586	0.8745
ROE	6.3387	313.0000	-111.0000	36.7302	5.7946	8,159.2810***
EPS	0.2621	2.0760	-1.5600	0.5097	1.9444	131.8935***
DPR	37.4775	163.6364	0.0000	32.1682	0.8583	29.8008***
TA	19,268,601.00	223,000,000.00	760,777.00	38,176,927.00	1.9813	1,118.2830***
Ln(TA)	15.6888	19.2228	13.5421	1.4124	0.0900	6.3262**
BIND	39.5397	77.0000	30.0000	8.0703	0.2041	263.2576***
ANR	-0.3046	4.7500	-4.3400	1.4931	-4.9017	16.9981***

Note: Std. Dev. refers to standard deviation; CV refers to Coefficient of variation (standard deviation divided mean); Normality refers to Jarque-Bera normality test where the figure in the parenthesis is the probability values and, ** and *** implies significance at 95% and 99% confidence level, respectively.

The correlations of the cross-sectional data are reported in Table 2. Basically the degree of correlations for each pair of variables is not strong (below 0.5), except one pair, ROE and EPS, of 0.6564. Another pair that shown relatively higher correlation, 0.4646, is Ln (DIR) and Ln (TA). The correlation values for the rest of the pairs are all below 0.4. As a result, we can safely assume that there is no multicollinearity problem in estimating model (1).

Table 2: Correlation Matrix

	LOG(DIR)	ROE	EPS	DPR	LOG(TA)	BIND	ANR
LOG(DIR)	1						
ROE	0.0719	1					
EPS	0.3077	0.6564	1				
DPR	0.3703	0.0994	0.1394	1			
Ln(TA)	0.4646	0.0756	0.1949	0.0173	1		
BIND	0.0215	0.0242	-0.1369	-0.1351	0.1090	1	
ANR	-0.1102	0.2889	0.1267	-0.3768	0.1573	0.2635	1

A series of tests are conducted to decide on the appropriate specification for the panel estimation of model (1). Panel A in Table 3 provides the results of the *F* test. The null hypothesis of a pooled regression specification (without fixed effects) is rejected in favor of one-way cross-sectional fixed effects, but the same

null fail to be rejected when the alternative hypothesis is one-way period fixed effects. The next three tests, however, shows that the two-way fixed effect specification is the best, when the null hypotheses of pooled, one-way cross-sectional fixed effects and one-way period fixed effects are all rejected.

Table 3: Model Selection for Panel Regression

Panel A: F-Test for Fixed Effects		F Statistic
H ₀ : Without Fixed Effects		25.6664
H ₁ : One-Way Cross-Sectional Fixed Effects		(0.000)***
H ₀ : Without Fixed Effects		0.0939
H ₁ : One-Way Period Fixed Effects		(0.9842)
H ₀ : Without Fixed Effects		22.4861
H ₁ : Two-Way Fixed Effects		(0.0000)***
H ₀ : One-Way Cross-Sectional Fixed Effects		26.8612
H ₁ : Two-Way Fixed Effects		(0.0000)***
H ₀ : One-Way Period Fixed Effects		1.7367
H ₁ : Two-Way Fixed Effects		(0.1510)
Panel B: Hausman Test for Random Effects#		Chi-Sq. Statistic
H ₀ : One-Way Cross-section Random Effects		8.2486
H ₁ : One-Way Cross-section Fixed Effects		(0.2205)
H ₀ : One-Way Cross-section Random Period Fixed Effects		10.4686
H ₁ : Two-Way Fixed Effects		(0.1063)

Note: Figures in parentheses are p-values. *, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively. See footnote to Table 4.4a for definition of Adj R², RSS, AIC, SC and HQ. # Random effect estimation requires number of cross-section larger than number of coefficients between estimator for estimate of random effect innovation variance. Thus, specifications with Period random effect cannot be estimated

Panel B reports the findings of the Hausman tests on the null hypothesis of random effects model against the alternative hypothesis of fixed effects model. As the number of our cross section units is less than the number of coefficients for between estimators for estimate of the random effect model's innovation variance, specifications involving period random effects cannot be tested. With that, there are only two random effect specifications can be tested. Basically we do not have sufficient statistical evidence to reject the two random effect models. The selection of two-way fixed effect specification in Panel A implies we cannot ignore the period fixed effects. This leads us to conclude that one-way cross-section random period fixed effects specification is preferred for our model.

The estimates for the one-way cross-section random period fixed effect model are reported in Table 4. All the variables are significant in explaining GLCs directors' remunerations, with the exception of abnormal returns ANR. Except for ROE, the estimated coefficients signs conform to the predicted sign in our proposed hypotheses in section 3.1. The R^2 and adjusted R^2 of the panel model basically explain about half of the variation in the direction's remuneration.

Table 4: Panel Regression Estimates

Panel Model with Cross-Sectional Random Period Fixed Effects:

$$\ln(DIR_{i,t}) = \beta_0 + \beta_1 ROE_{i,t-1} + \beta_2 EPS_{i,t-1} + \beta_3 DPR_{i,t-1} + \beta_4 \ln(TA_{i,t-1}) + \beta_5 BIND_{i,t} + \beta_6 ANR_{i,t-1} + \eta_i + \nu_t + \varepsilon_{it} \quad (1)$$

	Coefficient	White Standard Error	Probability Value
β_0 [constant]	11.5824***	0.9607	0.0000
β_1 [ROE]	-0.0034***	0.0008	0.0001
β_2 [EPS]	0.3347***	0.0955	0.0007
β_3 [DPR]	0.0029***	0.0010	0.0037
β_4 [ln(TA)]	0.1432**	0.0586	0.0164
β_5 [BIND]	0.0034	0.0038	0.3805
β_6 [ANR]	-0.0268	0.0240	0.2672
		S.D.	Rho
Cross-section random		0.6070	0.8431
Idiosyncratic random		0.2619	0.1569
R2	31.00%		
F-statistic	3.6931***		0.0003
Jarque-Bera	6.5866**		0.0371

Note: White standard error is robust to observation specific heteroskedasticity in the disturbances by allowing the unconditional variance matrix to be an unrestricted diagonal matrix. * and ** and *** imply significance at 90%, 95% and 99% confidence levels, respectively. Note that with lag one explanatory variables; there are only 5 years data left for all the 21 GLCs with a total of 105 pooled observations. Estimation of the random effects is based on feasible GLS techniques.

The coefficient for ROE is -0.0034 and it is statistically significant, implying an increase of 1% in ROE leads to a decline of director's pay of 0.0034%. Taking the average director pay of RM 1,840,292 as reported in Table 1, the decline value is about RM 62, which is not a significant impact. However, this result seems to suggest that GLC's directors' are not rewarded at all for good performance. In fact, they were penalized! The GLCs directors' remuneration is also significantly attributed to improvement in EPS. The estimated coefficient

indicates that a ringgit increase in EPS leads to 0.43% increase in directors' pay. Based on an average EPS of 26 cent in Table 1, a 1% increase in EPS or 0.26 cent probably leads to about RM 207 increase in directors' remuneration. In terms of dividend, GLCs directors seem to deliver value for money services to their shareholders. Shareholders should be pleased to know that for every 1% increase in DPR, GLCs directors' pay only rise by a negligible figure of 0.0029%, which about RM53 in value. This result certainly conforms to the corporate governance best practices underlined by Cadbury (1992), Greenbury (1995) and Securities Commission (2007).

The impacts of ROE, EPS and DPR are negligible when compared to the impact of company size. This is because based on the estimated coefficient of 0.1432 for ln(TA), GLCs directors shall receive a pay raise of RM 2635 for every 1% increase in total asset. The dominance of firm size over EPS is not surprising as previous empirical results by Baumol (1959), McGuire *et al.* (1962), Cosh (1976), Conyon (1997), Bliss and Rosen (2001) Cichello (2005) and Merhebi *et al.* (2006) indicate that company size is the most important factor in determining directors' remuneration. It is reasonable for a director in a large firm to be paid more than in a small firm due to larger hierarchy^{§§§§}, the complexity of the job function, duties and decision making^{*****}, bigger firms tend to hire directors from bigger firms, external hiring of top directors tend to be done by bigger firm which carries higher premium⁺⁺⁺⁺⁺ and prestige and status attached to larger firm.

Another main focus of this paper is the internal monitoring role of independent director in Malaysian GLCs. The insignificant positive relationship implies that the independent directors have been ineffective in their fiduciary role to shareholders.^{*****} This should not have happen as GLCs board structure meets the minimum 33% ratio of independent directors as required under Securities Commission (2007). Our finding seems to imply that numbers do not necessarily translate into action. Firstly, we cannot discount the possibility of the existence of fat cat culture as espoused by Bebchuk *et al.* (2002) in Malaysian GLCs. The theory can be slightly modified to state that entrenched CEOs and executive directors use captive independent directors to award themselves a big pay raise. Secondly, there is a strong likelihood that GLCs' CEOs use their power to influence the selection and career advancement of independent directors (see Zajac and Westphal, 1994). Finally, independent directors attach great importance to title and prestige to their position. Hence, according to Mace (1986), they are willing to rubber stamp any decisions made by CEOs and executive directors.

In regards to market measurement, our result implies that director's pay in Malaysian GLCs is not tied to their stock performance. This could be due to criticism on the appropriateness of using stock returns to reward director. The main concern is market measurement will encourage short term orientation, whereby the directors will emphasize quarterly performance at the expense of sustainable long term investment projects (Rapaport, 1978 and Thurow, 1981).^{§§§§} In addition, emphasis on abnormal return will only increase the risk premium of GLCs as the board will have to invest in risky projects and increase leverage. In fact, market measurement has never been listed as one of the KPIs by Putrajaya Committee on High Performance GLC (2008). Thus, we suggest that the decision to purchase GLCs stocks should be viewed as a long term value investment strategy.^{*****}

^{§§§§} See Mahoney (1979).

^{*****} This is based on human capital theory espoused by Becker (1964) and Agarwal (1981).

⁺⁺⁺⁺⁺ Murphy and Zbojnik (2004) reported externally hired CEOs are paid 15.3% more than internal promoted CEO. The premium of external hires has increased from 6.5% in the 1970s to 21.6% in the 1990s.

^{*****} According to Cadbury (1992), a significant inverse relationship between directors' remuneration and board independence indicates the effectiveness of independent directors as internal monitor. However, this is inconsistent with the positive significant relationship findings reported by Main (1991) and Conyon and Peck (1998).

^{§§§§§} Corporate greed by the CEO and board of directors of Enron led to systematic manipulation of financial statement for many years before a whistle blower blew their cover in 2001.

^{*****} The other side of the coin is GLCs stocks are not for speculators and margin borrowers.

5. Concluding Remark

There is a dearth of pay-performance study on GLCs. Thus, this research paper sought to fill up this gap by analysing the directors' pay determinants in Malaysian GLCs. To present a comprehensive perspective on pay determinants, we divide it into 4 core groups, namely, accounting ratio, market measurement, company size and board structure.

The empirical findings of this paper are summaries as follows: first, all accounting ratios are significant determinants of directors' remuneration. In fact, the percentage increase in DPR exceeded the increase in directors' remuneration. We also reported a significant negative relationship between directors' remuneration and ROE, suggesting that GLCs directors are penalized for good performance. Second, abnormal stock returns do not determine directors' remuneration package. This should not be interpreted as underperformance as stock returns has never been listed as a KPI by Putrajaya Committee on High Performance GLC (2008). On the contrary, the insignificant relationship should also be viewed positively because the board does not think it is appropriate to encourage directors to take excessive risk to increase their pay. Hence, investment by GLCs should be viewed from a long term perspective of sustainable value creation to shareholder. Third, company size is a chief determinant of directors' remuneration. Finally, in regards to board structure, we conclude that independent directors have failed in their internal monitoring role. The failure of their fiduciary duty to shareholder is mind boggling as GLCs ratio of independent directors to total directors exceeded the threshold 33% required under Securities Commission (2007). In our opinion, GLCs independent directors fall under the statutory group as defined by Pearce and Zahra (1991).^{*****}

Our study has opened a can of worm on Malaysian GLCs pay-performance link. Based on our intriguing findings, future research can be conducted on the following issues. Firstly, firm size has been identified as the most dominant factor in determining directors' remuneration. As such, research should be undertaken to determine whether asset expansion in GLCs is due to prudent investment strategy or reckless acquisition. This is very essential as GLCs must fulfill its social obligation to the society.^{*****} The next issue deals with the failure of independent directors in GLCs to fulfill their fiduciary duty to shareholders. This is puzzling as GLCs independent director board composition meets the minimum 33% threshold required by the Malaysian code of corporate governance as reported in Securities Commission (2007). Future research should aim to investigate why those numbers are not translated into implementation. Finally, a pay performance comparison should be made between GLCs and non GLCs in 2010. We believe 5 years would be enough for the full impact to take place on GLCs performance, corporate structure and working culture.^{§§§§§§} By that time, statutory regulation will be introduced to require company to disclose stock option granted to directors. This will improve the accuracy of pay-performance study on GLCs.

^{*****} A possible explanation is political appointment and retired senior civil servants.

^{*****} GLCs substantial shareholders are government managed pension funds, insurance company, mutual fund companies and Malaysian sovereign wealth fund. Thus the collapse of GLCs will have severe systemic repercussions on economic and social stability.

^{§§§§§§} GLCs transformation was initiated in 2005.

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Appendix 1: Malaysian Government Linked Companies (GLCs), 2001-2006.

No	Company (Stock Code)	Sector
1	TM	Telecommunication
2	Maybank	Banking
3	Affin	Banking
4	MIDF	Banking
5	MBSB	Mortgage lending
6	GHOPE	Plantation
7	GROPEL	Plantation
8	TENAGA	Energy
9	CIMA	Cement
10	PETGAS	Oil and gas
11	PETDAG	Oil and gas distribution
12	TIME	Telecommunication
13	MISC	Shipping
14	MAS	Airlines
15	PROTON	Automotive
16	UMW	Automotive
17	POS	Postal services
18	MNRB	Insurance
19	SIMEPTY	Property
20	SIME	Plantation
21	MRCB	Construction