Government Ownership And Firm Performance: Evidence from Singapore and Malaysia

By

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ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: Does government ownership impact firm performance?

Research Findings/Insights: Results drawn from a longitudinal (1995-2005) matched pair sample of twenty-five Malaysian and twenty-five Singaporean firms with government ownership suggest that overall Malaysian firms performed better than Singaporean firms in terms of accounting measurement of performance,(ROA) whilst Singaporean firms are better performers in terms of market measure of performance (Tobin's Q). Interestingly, the Singaporean firms underperformed before the 1997 Asian crisis and outperformed the Malaysian firms post 1997 crisis.

Theoretical/Academic Implications:

The political embeddedness perspective is drawn in this paper to explain why the performance of Malaysian GLCs be better than Singaporean GLCs. The paper illustrates that the concept of political embeddedness works differently in different institutional context.

Practitioner/Policy Implications:

The findings reveal the importance of selecting independent external competent management teams in steering government owned companies.

Keywords: Government ownership; Government linked companies; corporate governance

JEL: G3(G320,G330, G350,380)

1. INTRODUCTION

Developed and less developed countries intensified efforts to privatise public enterprises in the last two decades. Whilst, the motives that drive governments to privatise public enterprises are varied, the main motivation is to enhance the efficiency of public enterprises. However, privatization is also motivated by political objectives (Arocena and Oliveras, 2012). In many countries, for example, Singapore and Malaysia, whilst the public enterprises are privatized, the governments still retain significant equity in these entities through their investment agencies. Such government owned companies are referred to by different names. For example, in Malaysia and Singapore companies under government control are called government- linked-companies (GLCs) and their investment companies are called government-linked -investment companies (GLICs). In China, they are known as state-owned enterprises (SOEs) and government- owned-corporations (GOCs) for Australia and New Zealand.

The phenomenon of government ownership in private sector has raised concerns. For example, the World Bank in its review of the corporate governance landscape in Malaysia expressed concern that the high equity stakes of the government in the private sector may pose a challenge to effective corporate governance implementation (World Bank, 2012). Similarly several studies have examined the performance of firms with government ownership (Ramirez and Tan, 2004). These studies draw upon the political embeddedness concept which is conceptualized as "bureaucratic, instrumental, or affective ties to the state and its actors" (Michelson, 2007, p.352, as cited in Okhmatovskiy, 2010). Two opposing perspectives emerge. The first, focuses on the benefits associated with connections with the state (government), emphasising that such connections provide opportunities to impact regulatory policies to enhance firms' legitimacy,

gain access to valuable state controlled resources, benefit from preferential treatment and receive exclusive information regarding state policies (Okhmatovskiy, 2010). In this context such connections may enhance firms' performance (Luo and Chen, 1997; Peng and Luo, 2000; Fisman, 2001; Johnson and Mitton, 2003; Siegel, 2007).

The second, however, posits that such state ties do not necessarily have positive effects on performance as such ties also entail significant costs (Portes and Sensenbrenner, 1993). Arguably, such connections are a source of inefficiencies as the state may pursue its own political or socio-economic goals and may use its control to divert such firms' resources to achieve these goals (Shleifer and Vishny, 1998). Others argue such firms lack monitoring and lack incentives for managers to perform better (Aharoni, 2000). Whilst there is consensus in the extant literature that GLCs differ from non-GLCs in terms of market and auditor perceptions of risk and performance (Faccio, 2010), there is limited empirical evidence on the performance of these two groups in different institutional context.

According to LaPorta (1999), state or government ownership in Asian countries has become more vital especially in market capitalization after the Asian financial crisis. In the case of Malaysia, GLCs and GLICs led by government agencies namely Khazanah and six other government agencies control more than 30% market capitalization. In the case of Singapore more than 50% stake in the companies is held by Temasek Holdings, Singapore Technologies and MND Holding. Hence in both countries, GLCS have assumed a significant role in the socio-economic development but their performances have been questionable despite the government involvement (Hamid, 2008). Their performance are said to have lagged compared to the more established non-GLCs.

This study, therefore, examines the performance of GLCs and non GLCs prior to the Asian financial crisis (1995-1996) as well as the post crisis period (1999-2005) in Malaysia and

Singapore. A sample of 25 Malaysian GLCs is compared and matched with 25 Singaporean GLCs to determine which one shows better performance. The analysis is conducted for the full period (1995-2005), pre-crisis period (1995-1996), and post crisis period (1999-2005). This study contributes to extant government ownership-performance nexus literature by evidencing the impact of government ownership on firm performance in two different institutional settings.

The remainder of the discussion is organized as follows. Section 2 proves a brief background and hypothesis development. Section 3 discusses the data used in the analysis as well the methodology while Section 4 and 5 provide the results and discusses the implications respectively. Lastly, Section 6 gives the conclusion of this study.

2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

The ownership-performance relationship has attracted much research. LaPorta (1999) investigates the ultimate control in companies. He separates ownership into several categories namely a family, an individual, the State, a widely held financial institution such as a bank or an insurance company, a widely held corporation or miscellaneous, such as a corporative, a voting trust, or a group with no single controlling investors. State control is a separate category because it is a form of concentrated ownership in which the State uses firms to pursue political objectives, while the public pays for losses (Shleifer and Vishny (1994)).

In a related study, Claessen, Djankov and Lang (1999) investigate the separation of ownership and control in 2980 public companies in 9 East Asian countries. It is found that corporate control is typically enhanced pyramid structure and cross holding firms in all East Asian countries. A later study, Lemmon and Lins (2005) examine the ownership structure, corporate governance

and firm value from 800 firms in eight East Asian countries. Their find that cumulative stock returns of firms in which, managers and their families separate their control and cash flow rights through pyramid ownership structures, are lower by 12 percentage points during the crisis period compared to those of other firms.

Two strands of research are discernible. The first strand posits that such state ties do not necessarily have positive effects on performance as such ties also entail significant costs (Portes and Sensenbrenner, 1993). Arguably, such connections are a source of inefficiencies as the state may pursue its own political or socio-economic goals and may use its control to divert such firms' resources to achieve these goals (Shleifer and Vishny, 1998). Others argue such firms lack monitoring and lack incentives for managers to perform better (Aharoni, 2000).

Orden and Garmendia (2005) examine the relationship between ownership type and firm performance in Spain. Ownership is analysed in terms of concentration of control and the type of investor exerting control. Performance in their research was proxies by return on assets (ROA) and return on equity (ROE). They find government-controlled companies showed negative performance compared to other ownership types. Similarly, Zeitun and Tian (2007) examine the impact of ownership structure mix on firm performance and the default risk. They too find that government ownership is significantly and negatively related to firm performance based on ROA and ROE but are positively related to market performance, Tobin's Q.

Gursoy and Aydogan (2000) examine the ownership structure of the non-financial firms listed on the Istanbul Stock Exchange (ISE) and the impact of ownership structure on performance and

risk-taking behavior of Turkish firms. They also discover that government ownership is negatively and significantly associated with firm performance measured by ROA and ROE. Majumdar (1998) compared the financial performance of state owned, private owned, and mixed state-private ownership firms in India from 1973 to 1989 and evidence that the most profitable firms were the private owned followed by mixed ownership. State owned enterprises, however, showed worst performance. Other similar studies in India (Ramaswamy, 2001; Shleifer and Vishny, 1997; Shleifer, 1998) draw similar conclusions. Meanwhile in China, Tian and Estrin (2005) and Xu, Pan, Wu and Yim (2005) find that state-owned enterprises perform worse compared to non-state-owned enterprises. Evidence from Europe, specifically, Italy and France, shows similarly that state ownership has a negative relationship with performance and corporate governance and other control variables (Kirchmaer, 2006).

The second strand, however, focuses on the benefits associated with connections with the state (government), emphasising that such connections provide opportunities to impact regulatory policies to enhance firms' legitimacy, gain access to valuable state controlled resources, benefit from preferential treatment and receive exclusive information regarding state policies (Okhmatovskiy, 2010). In this context such connections may enhance firms' performance (Luo and Chen, 1997; Peng and Luo, 2000; Fisman, 2001; Johnson and Mitton, 2003; Siegel, 2007). In argued that government-controlled firms may respond to signals from the government to enhance national welfare or profit maximization (Vernon, 1979). Ang and Ding (2005) compared the financial and market performance of GLCs with non-GLCs, in Singapore. Surprisingly, they find that GLCs on average exhibit higher valuations than non-GLCs, even after controlling for firm specific factors such as profitability, leverage, firm size, industry and foreign ownership.

Hence, it supports the second strand of research that government ownership may enhance firm value.

However, it is also suggested that in China government ownership can in fact be helpful, to enhance firm performance. Certainly some firms under the control of the Chinese government are well liked by international investors, including Warren Buffet. The positive roles that the government shareholder can play come from preferential commercial treatment as well as governance advantages when state ownership is concentrated (Blanchard and Shleifer, 2000; and Qian, 2003).

In summary, as discussed above, the two strands of research provide opposing views relating to government ownership and firm performance. According to the first strand there are many reasons why government ownership results in poor financial performance. First, the government is guided by social altruism, which may not be in line with the profit motive. Second, the government is not the ultimate owner, but the agent of the real owners – the citizens. And it is not the real owners who exercise governance, but the bureaucrats. There is no personal interest for bureaucrats to ensure that an organization is run efficiently or governed well since they do not have any benefits from good governance.

It is possible that the contradictory evidence is the result of examining government-ownership impact in a single institutional setting. It is possible that government ownership in different institutional settings have different impacts. Bureaucrats and governments respond to various interest groups (e.g. trade unions) as part of their social agenda (Lopez-de-Salines et al., 1997). Finally, even if the public can exercise control directly, it is unlikely to be effective because of the extreme dispersion of the principals. Any social or non-social benefit is likely to be so

diffused among the electorate that it is unlikely that there will be much of an incentive to exercise any governance over the organization to ensure it performs effectively (Andrews and Dowling, 1998).

Whilst there is consensus in the extant literature that GLCs differ from non-GLCs in terms of market and auditor perceptions of risk and performance (Faccio, 2010), there is limited empirical evidence on the performance of these two groups in different institutional context.

Hypothesis development

Government ownership and firm performance in Malaysia and Singapore

This study therefore examines whether GLCS in Malaysia and Singapore perform differently based on accounting-based performance measure, ROA and market-based performance measure, Tobin's Q and ROA.

The Malaysian government with its New Economic Policy (NEP) has created a different structure of ownership in which their main objective is to make sure Bumiputra community holds at least 30% of equity stakes and also involves in structure of ownership in public listed firms. One way to achieve this policy is to have the government directly involves in Malaysian listed firms through its investment arm, Khazanah Holdings and six other government investment companies (GLICs), and also the issuance of "golden share". A golden share means that government still controls the company even though it owns a minimum control or shares in that company. This is very obvious in electricity, telecommunication and airlines industries.

Khazanah and other six bodies led by politicians and bureaucrates try to provide maximum profit from their companies to their stakeholders, specifically, the government.

Meanwhile, the Singaporean government has lax control in their companies because they have appointed outsiders or foreigners to run their companies even though they are majority shareholders. It may have diluted the national identity of their companies. In line with the second strand of research, we posit that government-controlled companies perform better. Subsequently, we postulate that between Malaysian GLCs and Singaporean GLCs, the former outperforms the latter given that the Malaysian government directly controls its GLCs while Singapore's government does not. Our hypothesis statement is as follows:

Hypothesis: Malaysian GLCs perform better than Singaporean GLCs

3. DATA AND METHODS

Data selection

The sample comprises most of the companies listed in Bursa Malaysia (BM) and Singapore Exchange Limited (SGX) (those with available data) over the period of 1995 until 2005. A longitudinal study is conducted to allow sufficient analysis of the relationship between firm performance and firm specific characteristics including corporate governance, agency cost, growth, and leverage under varying economic condition. The period of 11 years been chosen because it covers period before the economic crisis (1995 – 1996) and after the economic crisis (i.e 1999-2005) while 1997 to 1998 represent period of the Asian financial crisis. The time frame allows this study to identify and determine whether government-linked firms had improved their performance, or otherwise.

A sample of 25 Malaysian GLCs are selected for the period through 1995 to 2005 while a control sample of 25 Singaporean GLCs were also included. This sample was selected based on several criteria below:

1. A complete set of data is available in databases (Data-stream, Worldscope, and Perfect Analysis).
2. Financial institutions are excluded as they are governed by different sets of rules and acts.
3. A matched samples based on size and industry.

Research Design

This study employs first, a simple parametric test of mean difference of the sample companies (GLCs) and control companies (non-GLCs). Second, we employ the panel based regression model to examine the impact of government control on firm performance using two important measures, an accounting based measure (ROA) and a market –based measure (Tobin Q). A fixed cross-sectional time series panel model is used to capture the equivalence of the parameter estimates between GLCs and non-GLCs.

Simple Parametric Test and Panel Regression

$$\text{t-test} = [\mu_{mGLCs} - \mu_{sGLCs}] / [(\sigma_{mGLCs}/n_{mGLCs}) + (\sigma_{sGLCs} + n_{sGLCs})]$$

where μ_{GLCs} : mean value of the characteristics of MalaysianGLCs

μ_{nGLCs} : mean value of the characteristics of control companies or nonGLCs

σ_{mGLCs} :the standard deviation of Malaysian GLCs

σ_{sGLCs} :the standard deviation of Singaporean GLCs

n_{mGLCs} : number of Malaysian GLCs

n_{sGLCs} : number of Singaporean GLCS

The functional form of the model is given as follow:

Performance = f {Corporate Governance, Growth, Leverage and Profitability}

There are two models used in this study. The first model adopted is the model developed by Ang and Ding (2002) with some modifications to reflect the Malaysian case to examine whether government involvement has any significant impact on firm performance after controlling for firm specific characteristics. The second model is developed to examine whether GLCs perform better than non-GLCs in term of comparing specific characteristics.

Under panel data regression, the two most common features of the regression are the fixed (FE) and random effects (RE). A panel based regression is chosen to analyze the data because it is more informative, less variability and less collinearity among the variables with more degree of freedoms and more efficiency (Gujarati, 2002). Secondly, a panel data can minimize the bias that might results if individuals or companies level data are divided into broad aggregates. Lastly, panel data can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data.

The operational forms of two models are given below:

$$\textbf{Performance} = \beta_0 + \beta_1\textbf{Mgowned} + \beta_2\textbf{Size} + \beta_3\textbf{nDual} + \beta_4\textbf{Debt} + \beta_5\textbf{AC} + \beta_6\textbf{Growth} + \beta_7\textbf{PM} + \varepsilon_i \quad \textbf{(Equation 1)}$$

$$\textbf{Performance} = \beta_0 + \beta_1\textbf{Size} + \beta_2\textbf{nDual} + \beta_3\textbf{Debt} + \beta_4\textbf{AC} + \beta_5\textbf{Growth} + \beta_6\textbf{PM} + \varepsilon_i$$

(Equation 2)

Where:

β_0	- Intercept
Performance	- Tobin's Q (proxy for market measure of performance) and Return on Assets (ROA) (proxy for accounting measure of performance).
Mgowned	- A dummy variables that takes on a value of one when Malaysian GLCs, and zero explains Singaporean GLCs.
Size	- The natural logarithm of the company's total assets
nDual	- CEO and Chairman is a different person
Debt	- Ratio of Total Liabilities over Total Assets
AC	- Agency cost where Total Expenses to Total Sales
Growth	- Ratio of Total Cash over Total Assets.
PM	- Profit Margin where Net Income over Sales.
ε_i	- error term

4. ANALYSIS AND RESULTS

Descriptive statistics

Table 1 presents the descriptive statistics and result of the test of normality assumption. Results suggests that observations are not normally distributed based on Jargue-Bera. Therefore, the generalised least square (GLS) method is deemed appropriate and can be expected to yield a much better result (Gujarati, 2002).

Table 1: Normality Test Statistics of 50 Malaysian GLCs and Singaporean GLCs

	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
Mgowned	0.5000	0.5000	0.5005	0.0000	1.0000	91.6667	0.0000
Tobin's Q	1.1177	0.9566	0.7377	3.0301	17.7520	5828.8390	0.0000
ROA	0.0779	0.0239	0.1930	3.5104	20.8515	8432.6120	0.0000
Size	14.3929	14.2939	2.2921	-2.4079	18.0712	5736.8120	0.0000
Debt	-1.6010	0.4439	57.7661	-23.3117	545.6259	6797463.0000	0.0000
nDual	0.9331	1.0000	0.6390	3.7618	27.8508	15449.6800	0.0000
Agency Cost	0.5029	0.4496	0.4267	0.6503	4.2650	75.4379	0.0000
Growth	0.0865	0.0428	0.1063	2.4041	10.3925	1782.1440	0.0000
PM	0.0979	0.0749	0.4635	-5.5429	82.8474	148923.8000	0.0000

Correlation Matrix

Results of the correlation matrix are listed in Table 2. The results show that there is a positive significant relationship between ROA and Tobin's Q for Malaysian GLCs at 1% level. This implies that Malaysian GLCs perform better than Singaporean GLCs. This result is supported when growth and profit also show positive significant relationship with Malaysian GLCs at 1% level. The positive result on Malaysian GLCs and growth indicates that the government in Malaysia through Khazanah Holdings will always monitor and control their inflow and outflow

of cash; at the same time, it handles the sales effectively to reduce cost of expenses. Therefore, results indicate positive results on profit margin and negative results on agency cost, which is directly related to expenses especially selling and administrative expenses.

Another corporate governance variable that is non-Duality shows a positive significant relationship at 1% with Malaysian GLCs, which explains that Malaysian GLCs have more duality roles (meaning chairman and CEO are same person) compared to Singaporean GLCs. Meanwhile, there is a negative relationship between Malaysian government ownership with debt. This indicates that Singaporean GLCs have more debt than Malaysian GLCs because most of their business activities are done in overseas. Because of this, their debts especially the long-term debts are more and those debts require a longer time to be reduced. Finally yet importantly, the result shows a negative but not significant relationship.

Table 2 also indicates that GLCs with higher debts in both countries show poorer performance as there is a negative relationship between Debt and Tobin's Q and ROA at the 1% significance level. This result is supported by the positive results between growth and profit margin in both countries; GLC performance. These results can be seen in those GLCs with lower debts that have better control of their cash flows and expenses.

This study also identifies that large sized GLCs seem to have large debts due to their borrowing loans or producing long-term debts. This explains the negative result on correlation between size of GLCs and debt at the 1% significant level. This result is followed by a negative relationship amongst size, growth and agency cost but a positive relation with profit margin. Even though large GLCs have larger debts and lower cash (significant at 1% level), they still manage to

perform after gaining profit margin and lowering expenses to reduce agency cost problems. It can be seen from the positive relation between size and profit margin at the 1% significant level and a negative relationship between size and agency cost.

Table 2: Correlation Matrix for 25 Malaysian GLCs vs. 25 Singaporean GLCs

	Mgowned	TobinQ	ROA	Size	Debt	nDual	Agency Cost	Growth	PM
Mgowned	1.0000	**0.1426(***)** **0.0000**	**0.2568(***)** **0.0000**	-0.0286 0.4118	**-0.3887(***)** **0.0000**	**0.3905(***)** **0.0000**	**-0.6014(***)** **0.0000**	**0.3595(***)** **0.0000**	**0.1968(***)** **0.0000**
TobinQ		1.0000	**0.1818(***)** **0.0000**	0.0194 0.4963	**-0.1242(***)** **0.0000**	**0.4232(***)** **0.0000**	-0.0295 0.3005	**0.1387(***)** **0.0000**	**0.2072(***)** **0.0000**
ROA			1.0000	0.0031 0.9164	**-0.1280(***)** **0.0000**	0.0266 0.4044	**-0.0955(***)** **0.0012**	**0.2652(***)** **0.0000**	**0.2820(***)** **0.0000**
Size				1.0000	**0.0860** **0.0026**	**-0.1338(***)** **0.0000**	**-0.1014(***)** **0.0004**	**-0.0930(***)** **0.0011**	**0.0776(***)** **0.0065**
Debt					1.0000	**-0.3759(***)** **0.0000**	**0.4287(***)** **0.0000**	**-0.0756(***)** **0.0081**	**-0.3795(***)** **0.0000**
nDual						1.0000	**-0.2019(***)** **0.0000**	**0.1644(***)** **0.0000**	**0.2734(***)** **0.0000**
Agency Cost							1.0000	**-0.0498(**)** **0.0812**	**-0.2799(***)** **0.0000**
Growth								1.0000	**0.0664(**)** **0.0199**
PM									1.0000

***/**/* Correlation is a significant at 0.01/0.05/0.1 level

Accounting-based and Market-based Performance of Malaysian and Singaporean GLCs

This analysis investigates the source of superior GLC performance by comparing two measures of performance of Malaysian GLCs and Singaporean GLCs, that is accounting-based and market -based. Performance analysis was further divided based on all period, pre, and post-crisis to isolate effect of crisis on performance. These are presented in Tables 3, 4 and 5 respectively. Table 3 results identify that Singaporean GLCs outperform Malaysian GLCs in both accounting and market performance. GLCs in Singapore have better performance in accounting measurements, ROA and ROE, and Stock Return and Sales to Assets. Meanwhile only Equity to Asset shows Malaysian GLCs are better. Even though amongst other performance indicators such as Tobin's Q, Profit Margin, and Asset to Equity show Malaysian GLCs outperform Singaporean, none is significant.

After having an in depth view of the pre-crisis period, it is understood from the results that Malaysian GLCs are better in both market and financial performances than their Singaporean counterparts. In Table 4, only Stock Return indicates that Malaysian GLCs underperform, while other results show that Malaysian GLCs outperform Singaporean (but Sales to Assets and Assets to Equity are not significant). Unfortunately, when the crisis hit Asia in 1997 onwards, the results show that accounting and market performance of both countries' GLCs are affected but more so in the Malaysian GLCs. It can be seen that there was a dramatic fall in Malaysian GLCs' performance based on market measure, Tobin's Q, ROE, and Profit Margin results. This fall continued until the Malaysian government took action to overcome it. In 2000, the government with Khazanah and other GLICs set up a committee to take immediate action to identify and find some solutions to ensure those GLCs are

back on track in the market. A committee called Putrajaya High Performance on GLCs outlined some actions to regain confidence from stakeholders, who are the citizens. One of the actions taken by the government was the appointment of new directors from private sectors to manage and control GLCs like MAS and Proton Holdings. The new directors took several major actions, one of which was reducing the companies' unnecessary expenses and bureaucracy in decision-making. These actions seemed to have increased the value of the company even though the outcome was slow and time taking.

When the economic crisis hit Asian countries in 1997, the majority of the companies suffered huge losses including Singaporean GLCs. The results show that most accounting-based and market-based performance measurements in Singaporean GLCs experienced a drop, compared to the prior crisis period. Since GLCs control 50% of market capitalization in the Singaporean Stock Exchange, the government took immediate action to make sure the country's economy was not badly affected by hiring new management teams led by foreigners and those who had great experience in multinational companies. Upon being appointed as the CEO of a GLC, the new CEO can use his or her experience and knowledge in handling large companies with different economic situations of economic. The new management team is expected to bring the GLCs back onto the right track to make these companies perform well not only in market performance, Tobin's Q and Stock Return but also in accounting measurements, ROA and ROE. By appointing these new managers, the companies need to pay extra expenses such as huge salaries, remuneration, and other benefits to attract them to join GLCs. As a result, this study reveals that their agency cost proxy and expenses to sales increased during crisis opposed to the pre-crisis period, but after the crisis, they gradually decreased.

Other accounting-based performance measures are sales turnover and cash to asset, which are significant when compared between these two GLCs. For sales turnover, we find that Singaporean GLCs outperform Malaysian GLCs. The better performance by the Singaporean GLCs began during the crisis period and continued until post-crisis. Meanwhile, for growth of companies, the findings identify that Malaysian GLCs look better than Singaporean; this can be seen from the results which show that from pre-crisis until post crisis (and also for all 11 periods), GLCs in Malaysia have better handling of cash flow compared to Singaporean GLCs. This is shown in comparing t-test mean for these two GLCs on agency cost. In the agency cost, Singaporean GLCs have higher expense costs compared to Malaysian for all 11-year periods (also for pre-crisis and post-crisis). As mentioned earlier, the higher agency cost in Singapore could probably be due to the higher salaries and remuneration of foreigners that were hired to manage most GLCs in Singapore.

Table 3: Market-based and Accounting-based Performance throughout the whole period (1995 to 2005)

		Market-based Performance		Accounting-based Performance	
Variable	**No. of Observations**	**Tobin Q**	**Stock**	**ROA**	**ROE**
MGLCs	25	1.1686	-0.0014	0.0562	0.0184
SGLCs	25	1.0667	-0.0088	0.0996	0.1259
t-test		1.6225	0.0560	**-2.6545**	**-2.0853**

Table 4: Market-based and Accounting-based Performance during PRE-CRISIS period(1995 to 1996)

		Market-based Performance		Accounting-based Performance	
Variable	No. of Observations	Tobin Q	Stock	ROA	ROE
MGLCs	25	1.7480	-0.145	0.0847	0.1313
SGLCs	25	1.2965	0.0396	0.0000	0.0451
t-test		**2.1521**	**-2.3076**	**08.2019**	**7.2212**

Table 5: Market-based and Accounting-based Performance during POST-CRISIS period (1999 to 2005)

		Market-based Performance		Accounting-based Performance	
Variable	No. of Observations	Tobin Q	Stock	ROA	ROE
MGLCs	25	1.0241	0.0077	0.0522	0.0049
SGLCs	25	1.0140	0.1840	0.1566	0.1761
t-test		0.1716	-5.6283	**-4.3326**	-3.8156

Panel and Pooled Regression Analysis

Tables 6 and 7 summarize panel fixed regression for the relationship between performances and company specific characteristics for 50 GLCs (25 Malaysian GLCs and 25 Singaporean GLCs). Similar to previous research, we use Tobin's Q for market performance and ROA for accounting performance. This study finds that the selected model is fit and significant for both measurements. For Tobin's Q, F-statistics of 49.8678 and adjusted R^2 of 60.21%, while for ROA, F-statistics of 21.0768 and adjusted R^2 of 38.34% indicate that there may be other factors equally important to explain values of both measurements for all 11-year periods of study.

For pre-crisis and post-crisis, the analysis reveals that these models are significant and fit,

In Table 6, the analysis finds a different relationship between performance measurements and government ownership in the whole period (1995-2005), pre-crisis, and post-crisis period. In 1995-2005 period, the results reveal that overall Singaporean GLCs perform better on Tobin's Q (significant at 10%) compared to Malaysian GLCs. However, when we segregate the pre-crisis and post crisis periods, we find, that during pre-crisis Singaporean GLCs outperform the Malaysian GLCs at the 5% significance level. Size has a positive relationship with Tobin's Q at 1% significant level in which t-statistics is 5.9075 for all periods and 5.8040 post-period, while not significant pre-crisis. This signals that GLCs of both countries increased their assets after the pre-crisis period to ensure their GLCs perform better with more assets. Similarly, debt has a positive significant relationship with Tobin's Q for the whole period including pre- and post-crisis period. The t-statistics of 25.8710 for the whole period, 16.1857 pre-crisis, and 16.8990 post-crisis indicate that GLCs with higher debts have better performance than those with lower debts.

Other than incurring higher debts, GLCs through Khazanah and Temasek attempt to ensure their companies gradually grow year by year. This can be seen from the results of the relationship between growth and Tobin's Q, which is significant from pre-crisis until post-crisis at the 1% level. Agency cost is only significant (t-statistics = 2.4302) with performance at 1% during the post-crisis period, while non-Duality and profit margin are not significant at all for the whole period including the pre-crisis and post crisis period.

In Table 7, the relationship between company performance, ROA and government ownership (MGowned) is positive. A positive correlation between ROA and government ownership indicates that Malaysian GLCs perform better than Singaporean GLCs do for the whole period (t-stat=3.0335) and pre-crisis period (t-stat=6.1930), while post-crisis period is not significant. In addition, when we look at debt and ROA, a different result is obtained that shows a negative correlation at 1% significant level for the whole period (t-stat=-2.5781) and at 5% for the post- crisis period (t-stat=-2.1021).

Growth and profit margin, both show positive relationships with 1% significant level with ROA for all periods (t=4.0941) and pre-crisis (t=2.6483), while for post-crisis t-statistics of 1.9018 significant at 10% level. Size and non-Duality show significant only at post-crisis with t-statistics of 1.7594 and 2.5798 respectively.

Table 6:Fixed Panel Regression Results for Tobin's Q as Performance Measure for 50 GLCs

	WHOLE PERIOD (1995-2005)		PRE-CRISIS (1995-1996)		POST-CRISIS (1999-2005)	
Variable	**Co-efficient**	**t-statistics**	**Co-efficient**	**t-statistics**	**Co-efficient**	**t-statistics**
C	-0.2759	-1.9805(**)	0.0782	0.3757	-0.5640	-3.1835(***)
MGowned	-0.1220	-1.8516(*)	0.3416	2.3483(**)	-0.0617	-1.2553
Size	0.0482	5.9075(***)	-0.0037	-0.2317	0.0599	5.8040(***)
Non-Duality	0.0002	0.5288	0.4568	3.0912(***)	0.0016	0.3033
Debt	0.7773	25.8170(***)	1.0496	16.1857(***)	0.7152	16.8990(***)
Agency Cost	-0.0374	-0.5017	-0.6666	-2.8623(***)	0.1267	2.4302(**)
Growth	0.6839	3.6797(***)	2.4835	3.0030(***)	0.5146	1.8740(***)
Profit Margin	0.0007	0.0204	0.1160	0.5554	0.0161	0.4442
R-squared	0.6144		0.8073		0.5006	
Adj R-squared	0.6021		0.7903		0.4813	
F-statistics	49.8678		47.6455		25.9101	
Probability	0.0000(***)		0.0000(***)		0.0000(***)	

Notes 1: Value = $\beta_0 + \beta_1 MGowned + \beta_2 Size + \beta_3 nDual + \beta_4 Debt + \beta_5 AC + \beta_6 Growth + \beta_7 PM$..... (Eq.1)

*Notes 2: ***/**/* Correlation is significant at 0.01/0.05/0.1*

Table 7: Fixed Panel Regression Results for ROA as Performance Measure for 50 GLCs

	WHOLE PERIOD (1995-2005)		PRE CRISIS (1997-1998)		POST CRISIS (1999-2005)	
Variable	**Co-efficient**	**t-statistics**	**Co-efficient**	**t-statistics**	**Co-efficient**	**t-statistics**
C	0.0365	1.6189	0.0022	0.1349	-0.0018	-0.0327
MGowned	0.0389	3.0335(***)	0.068	6.1930(***)	0.0102	0.612
Size	-0.0001	-0.0978	-0.0005	-0.4015	0.0058	1.7594(*)
Non-Duality	0	0.5643	-0.0117	-1.1326	0.005	2.5798(***)
Debt	-0.012	-2.5781(***)	-0.0053	-1.0992	-0.0262	-2.1021(**)
Agency Cost	0.0274	1.8788(*)	0.0265	1.6278	0.046	2.5223(**)
Growth	0.1518	4.0941(***)	0.1598	2.6483(***)	0.1183	1.9018(*)
Profit Margin	0.0843	14.0906(***)	0.0393	1.8219(*)	0.0712	6.7642(***)
R-squared	0.4025		0.5846		0.3152	
Adj R-squared	0.3834		0.548		0.2887	
F-statistics	21.0768		16.0057		11.8953	
Probability	0.0000(***)		0.0000(***)		0.0000(***)	

Notes 1: Value = $\beta_0 + \beta_1 MGowned + \beta_2 Size + \beta_3 nDual + \beta_4 Debt + \beta_5 AC + \beta_6 Growth + \beta_7 PM$..... (Eq.1)

*Notes 2: ***/**/* Correlation is significant at 0.01/0.05/0.1*

Regression Analysis of Malaysian and Singaporean GLCs for Separate Analysis

In this part, this study separates the data between Malaysian GLCs and non-GLCs to find the determinant factors of company performance. In Table 8 the results of the panel based fixed regression of Malaysian GLCs indicate that both performance measurements are fit since F-statistics of 6.7038 for Tobin's Q and 23.5205 for ROA are significant at 1% level.[1] Firstly, findings from both measurements show that the growth ratio has the same results that are positive with significant correlation at 1 % level. Secondly, Debt is significant at all levels but with different relationships. The results of t-statistic of 3.6637 significant at 1% level indicate that higher debts increase market performance of Malaysian GLCs but this contradicts with ROA which is negatively correlated at the 1% significant level (t-stat=-3.7659). Thirdly, there is a negative relationship between agency cost and Tobin's Q at 1% significant level, which indicates that with lower expenses, GLCs perform better. The relationship for ROA is also the same but it is not significant. Fourth, companies with larger assets increase market performance, Tobin's Q. This is because t-statistics of Size of Malaysian GLCs is 1.9710 significant at 5% level. Next, the performance of GLCs, ROA increases when profit margin increases (t=13.3589). Finally yet importantly, non-Duality shows not significant at all for both measurements of performance.

Meanwhile, Table 9 summarizes the panel based fixed regression for Singaporean GLCs in estimating the relation between performance and specific company characteristics.[2] Again, both measurements show fit since F-statistics is 3.6626 and adjusted R-squared is 13.46% for Tobin's Q while for ROA, F-statistics is 13.7701

[1] This analysis selects FE as regression analysis after comparing with other estimation methods such RE and GLS and identify that FE is the best model

[2] For Singaporean also, FE is the best estimation model after test robustness check with other methods.

and adjusted R-squared 42.72%. Results from Table 5.40 find that only non-Duality, debt, agency cost, and profit margin are significant with different relationships for Tobin's Q, while only two factors influence the accounting performance of Singaporean GLCs (ROA) which are debt and profit margin with different correlation. First, the result for profit margin is positively significant at all levels for both measurements whereby the t-statistics is 3.0321 for Tobin's Q and 4.7082 for ROA. Secondly, debt shows negative relationships for both measurements at different significant levels. The t-statistics of -2.2976 for Tobin's Q is significant at 5% level, while t-stat of -3.6126 is significant at 1%. Thirdly, non-Duality and Agency cost are positive and significant for Tobin's Q. Other factors are found to be non-significant for each of the measurements.

Table 8: **Fixed Panel Regression Results for Tobin's Q and ROA as Performance Measure for ALL PERIODS (1995-2005) – 25 Malaysian GLCs**

	TOBIN'S Q			RETURN ON ASSETS (ROA)		
Variable	**Co-efficient**	**t-statistics**	**Probability**	**Co-efficient**	**t-statistics**	**Probability**
C	0.2712	0.3993	0.6900	0.0233	0.2739	0.7844
Size	0.0410	1.9710	0.0498(**)	-0.0030	-1.0020	0.3173
Non-Duality	0.0815	0.1334	0.8940	0.0596	0.8049	0.4216
Debt	0.3720	3.6637	0.0003(***)	-0.590	-3.7659	0.0002(***)
Agency Cost	-0.2303	-1.7174	0.0871(*)	-0.0069	-0.4348	0.6641
Growth	0.9698	4.8981	0.0000(***)	0.2148	6.9552	0.0000(***)
Profit Margin	0.0515	1.3736	0.1708	0.0077	13.3589	0.0000(***)
R-squared	0.2937			0.5933		
Adj R-squared	0.2499			0.5680		
F-statistics	6.7038			23.5205		
Probability	0.0000(***)			0.0000(***)		

Notes 1: Value $= \beta_0 + \beta_1 Size + \beta_2 nDual + \beta_3 Debt + \beta_4 AC + \beta_5 Growth + \beta_6 PM$ ..... *(Eq.2)*

*Notes 2: ***/**/* Correlation is significant at 0.01/0.05/0.1*

Table 9: Fixed Panel Regression Results for Tobin's Q and ROA as Performance Measure for ALL PERIODS (1995-2005) – 25 Singaporean GLCs

	TOBIN'S Q			RETURN ON ASSETS (ROA)		
Variable	**Co-efficient**	**t-statistics**	**Probability**	**Co-efficient**	**t-statistics**	**Probability**
C	0.0996	0.3170	0.7515	0.0816	3.5614	0.0004(***)
Size	0.0162	0.8394	0.4020	0.0015	0.7524	0.4525
Non-Duality	0.2120	2.4135	0.0165(**)	-0.0117	-1.3069	0.1924
Debt	-0.5113	-2.2976	0.0224(**)	-0.0897	-3.6126	0.0004(***)
Agency Cost	0.7253	1.9578	0.0513(*)	0.0371	1.0162	0.3105
Growth	-0.0403	-0.0727	0.9421	0.0424	0.5256	0.5996
Profit Margin	1.1195	3.0321	0.0027(***)	0.2053	4.7082	0.0000(***)
R-squared	0.1851			0.4606		
Adj R-squared	0.1346			0.4272		
F-statistics	3.6626			13.7701		
Probability	0.0000(***)			0.0000(***)		

Notes 1: Value $= \beta_0 + \beta_1 Size + \beta_2 nDual + \beta_3 Debt + \beta_4 AC + \beta_5 Growth + \beta_6 PM$ ..... *(Eq.2)*

*Notes 2: ***/**/* Correlation is significant at 0.01/0.05/0.1*

5. DISCUSSION

Based on the above analysis, it is seen that the Malaysian GLCs outperform Singaporean GLCs only before the crisis hit Asia in 1997. However, based on the analysis of the post-crisis period and the whole period, we find that Singaporean GLCs perform better. Using the simple parametric test mean on the accounting-based and market-based performance, it is shown that Malaysian GLCs outperform Singaporean GLCs based on market performance. However, based on accounting-based measure ROA, ROE, and Sales to Assets as well as Stock Returns (market measurement), Singaporean GLCs are found to perform better than Malaysian GLCs.

However, after controlling company specific characteristics, we find that Malaysian GLCs perform better than Singaporean GLCs in terms of accounting-based measurement, ROA while from a market-based performance measure, Tobin's Q, Singaporean GLCs are better than Malaysian GLCs. Furthermore, when the study period is separated into different periods, the analyses show that Singaporean GLCs underperformed before the crisis and recovered after the period of crisis. It seems that the Singaporean government through Temasek Holdings made some immediate changes to make sure its companies under Temasek recover from the crisis and to sustain their performance.

Considering the impact of agency cost (non-duality role and total agency cost (total expenses to sales), it is found that the lower agency cost leads to better performance in the Malaysian situation but not the Singaporean. In conducting the analysis separately, we find that in the sample of 25 Malaysian GLCs, their performance is better when the agency cost is lower, but is not significant at non-Duality. Meanwhile, the Singaporean matched sample results are on the contrary. We find that a higher agency cost in Singaporean GLCs leads to better performance in market

measurement, while the accounting measurements are not significant at all. When comparing Malaysian GLCs with Singaporean GLCs, results show that a lower agency cost in Malaysian GLCs leads to better performance but in Singapore, this leads to a lower performance, i.e. Singaporean GLCs perform better when their agency cost is higher.

The agency cost in Singaporean GLCs is due to appointments of outsiders from private sectors and/or foreigners as directors/CEO. This leads to higher expenses because of managerial remunerations and salaries. Outsiders and foreigners as directors of company seem to work as independent persons with accountability and transparency; however, this situation can reduce the national identity within government owned companies.

6. CONCLUSION

This study provides empirical support that the government ownership does enhance firm performance in line with the second strand of research discussed earlier. However, we find the institutional setting is important in distinguishing the efficacy of the government ownership-firm performance link. It is interesting that in the Malaysian setting, the political embebbedness perspective explains higher performance of GLCs from accounting –based measure of performance. However, in the Singaporean context, market-based measure of performance indicates the GLCs perform better. These findings can contribute to the literature on corporate governance by evidencing the importance of institutional settings in understanding the impact of government ownership on firm performance. For Malaysia, the government can learn from the Singaporean situation, develop further strategies, and take action to make

sure that Malaysian GLCs not only perform as well as the Singaporean GLCs, but also perform better.

Appendix A: TEST MEANS FOR FINANCIAL AND MARKET PERFORMANCE FOR 25 MALAYSIAN GLCS AND 25 SINGAPOREAN GLCS

Variable	Company	Pre-crisis	During	Post	All
Tobin Q	MGLCs	1.7480	1.0953	1.0241	1.1686
	SGLCs	1.2965	1.0215	1.0140	1.0667
	t-test	**2.1521**	0.4715	0.1716	1.6225
Stock	MGLCs	-0.0145	-0.0198	0.0077	-0.0014
	SGLCs	0.0396	-0.7319	0.1840	-0.0088
	t-test	**-2.3076**	0.9704	**-5.6283**	0.0560
ROE	MGLCs	0.1313	-0.0476	0.0049	0.0184
	SGLCs	0.0451	0.0311	0.1761	0.1259
	t-test	**7.2212**	-0.5679	**-3.8156**	**-2.0853**
ROA	MGLCs	0.0847	0.0416	0.0522	0.0562
	SGLCs	0.0000	0.0000	0.1566	0.0996
	t-test	**8.2019**	**2.5591**	**-4.3326**	**-2.6545**

Variable	Company	Pre-crisis	During	Post	All
Equity to Asset	MGLCs	0.6006	0.8015	0.5871	0.6286
	SGLCs	0.1861	0.2147	0.1949	0.1969
	t-test	**11.8741**	**2.1375**	**7.9923**	**7.3092**
Exp to Sales	MGLCs	0.1402	0.1233	0.1355	0.1341
	SGLCs	0.8153	0.9474	0.8662	0.8717
	t-test	**-14.9472**	**-24.7517**	**-30.9425**	**-40.3690**
Sales to Asset	MGLCs	0.6781	0.5844	0.5302	0.5669
	SGLCs	0.6671	0.6540	0.7910	0.7435
	t-test	0.1001	-0.7296	**-4.5671**	**-3.9175**
Cash to Asset	MGLCs	0.0916	0.1123	0.1414	0.1270
	SGLCs	0.0270	0.0312	0.0556	0.0459
	t-test	**5.1641**	**5.0622**	**7.3653**	**9.6677**

MB	MGLCs	1.3951	1.0605	0.7162	0.9023
	SGLCs	0.0000	0.0000	0.1652	0.1051
	t-test	**16.5397**	**13.7052**	**13.9999**	**21.8307**
PE	MGLCs	16.1850	13.6611	18.2952	17.0692
	SGLCs	0.0000	0.0000	-0.5068	-0.3225
	t-test	**5.3503**	**4.8624**	**5.1411**	**7.1173**
Debt	MGLCs	0.2921	0.3629	0.3561	0.3457
	SGLCs	0.8253	-25.1567	1.3768	-3.5478
	t-test	**-4.2905**	0.9420	**-3.0873**	0.7901
Debt to equity	MGLCs	0.6056	1.1474	1.4627	1.2496
	SGLCs	0.6000	0.6000	0.6000	0.6000
	t-test	0.0539	1.6992	**1.9769**	**2.2813**
Asset to equity	MGLCs	1.8125	2.5038	2.8370	2.5902
	SGLCs	1.5343	-50.5286	1.9555	-7.6637
	t-test	0.8645	0.9856	1.4373	1.0477
Profit margin	MGLCs	0.2395	0.0422	0.1282	0.1328
	SGLCs	0.0845	0.0521	0.0601	0.0631
	t-test	**3.0855**	-0.9070	1.3226	1.7672
Size	MGLCs	14.0360	14.2834	14.4517	14.3455
	SGLCs	13.0447	14.7434	14.7523	14.4402
	t-test	**1.4119**	-1.3122	-1.4848	-0.4841

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