

The State as Shareholder: The Case of Singapore

Isabel Sim

Steen Thomson

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Singapore

3	9.65%	248.36	4.58	85.36	74.38	88.2	10.22%
9	2.36%	889.24	6.38	85.36	85.36	245.3	8.33%
		545.32	5.38	44.55	89.33	61.4	4.25%
	1.20%	282.80	2.17	83.88	80.25	132.10	1.20%
	9.33%	256.36	2.78	58.39	74.36	245.3	9.33%
	6.35%	375.69	9.56	24.35	45.23	82.5	6.35%
	4.25%	248.36	4.58	85.36	95.36	61.4	4.25%
	5.38%	896.33	3.54	32.23	5.33	3.35	5.38%
	8.35%	896.33	7.63	44.45	2.55	6.35	8.35%
	2.56%	323.24	2.33	42.36	56.35	234.5	2.56%
	1.23%	236.58	6.35	78.96	24.36	96	1.23%
	6.35%	596.33	7.98	33.33	72.65	25	6.35%

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Foreword by CGIO



“The State as Shareholder: The Case of Singapore” is a timely addition to understanding how state-owned enterprises (SOEs) are shaping economies. This report is the first of three research studies on SOEs in Asia conducted by the Centre for Governance, Institutions and Organisations (CGIO) at NUS Business School.

We start off the series focusing on Singapore’s Temasek Holdings (Temasek) and its contribution in transforming Singapore from a developing to a developed country. This study seeks to provide an update on Temasek’s role as a state holding company and its ownership and corporate governance of government-linked companies (GLCs) and government-linked real estate investment trusts (GLREITs).

This report is made possible by the sponsorship and support of Chartered Institute of Management Accountants (CIMA). I would also like to extend my appreciation to all members of the research team, whose efforts made it possible to develop this study; and to the principal investigators, Professor Steen Thomsen and Dr Isabel Sim, whose dedication and leadership helped to bring this work to a successful completion.

Professor Chang Sea Jin

Executive Director

Centre for Governance, Institutions and Organisations (CGIO)

NUS Business School

About CGIO

CGIO was established by the National University of Singapore (NUS) Business School in 2010. It aims to promote relevant and impactful research on governance issues that are pertinent to Asia, including corporate governance, governance of family firms, state-linked companies, business groups, and institutions. CGIO organises events such as public lectures, industry roundtables, and academic conferences on topics related to governance.

NUS Business School is known for providing management thought leadership from a uniquely Asian perspective, enabling its students and corporate partners to leverage the best of global knowledge and deep Asian insights. Consistently ranked among the top business schools in Asia, NUS Business School is the first in the ASEAN region to be accredited by AACSB International. This comes as a result of the school attaining the highest standard of achievement in education and research for business schools worldwide.

For more information, visit <http://bschool.nus.edu.sg/> and <http://bschool.nus.edu/CGIO>

Foreword by CIMA

Chartered Institute of Management Accountants (CIMA) is pleased to support the CGIO research on corporate governance practices of GLCs and GLREITs in Singapore. Good governance helps ensure sustainable organisational success and stakeholder value. It is more than just a compliance exercise to satisfy regulatory requirements. Good governance is part of the entire cycle of strategic planning, resource use, value creation, accountability, and assurance.

We are proud to acknowledge the research results that show the good corporate governance practices of GLCs and GLREITs in Singapore. Indeed, the GLCs and GLREITs will set the tone in enhancing good governance by all companies in Singapore.

CIMA has been an active contributor to the global corporate governance debate for many years. In fact, the need for good governance is an integral part of the CIMA professional qualification syllabus. CIMA is also a member of Tomorrow's Corporate Governance Forum, which explores what good governance means and makes recommendations to boards and policy makers. In CIMA's view, boards should be focused on the long-term sustainability of their business. They should be confident that their business models will deliver this – with appropriate risk mitigations as necessary - and that performance indicators and incentives reinforce the desired behaviours.

We are confident that the findings in this report will further promote good corporate governance practices in Singapore.

Irene Teng

Regional Director, South East Asia and Australasia
Chartered Institute of Management Accountants



About CIMA

CIMA is the employers' choice when recruiting financially qualified business leaders.

The Chartered Institute of Management Accountants, founded in 1919, is the world's leading and largest professional body of Management Accountants, with over 218,000 members and students operating in 177 countries, working at the heart of business. CIMA members and students work in industry, commerce, the public sector and not-for-profit organisations. CIMA works closely with employers and sponsors leading-edge research, constantly updating its qualification, professional experience requirements and continuing professional development to ensure it remains the employers' choice when recruiting financially-trained business leaders.

Temasek Holdings:

Accountability, Investments and Corporate Governance Practices

Temasek Holdings is a commercial investment company owned by the Singapore government. Incorporated in 1974 under the Singapore Companies Act, it holds assets and manages investments previously held by the Singapore government. Under the Singapore's Constitution, neither the President of Singapore nor the Singapore Government is involved in Temasek's business decisions, except in relation to the protection of Temasek's past reserves.

Temasek is an active shareholder and investor, with its portfolio covering a broad spectrum of sectors. As of 31 March 2013, it owns and manages a net portfolio of S\$215 billion, mainly in Singapore and Asia.

Source: Temasek Review 2013.

Accountability to its Shareholder

Temasek



Minister for Finance

Temasek is wholly owned by the Minister for Finance. It declares dividends annually and contributes to the Singapore Government budget via the dividends it pays to its shareholder and the tax on its profits.

As an exempt private company, it is exempted from financial information public disclosure. However, since 2004, Temasek chooses to publish its Group Financial Summary and portfolio performance in its annual report, the Temasek Review.

Overall, Temasek has performed well in the disclosure and transparency on governance structure, operations and returns. As of August 2013, it achieved a rating of 10/10 in the Linaburg-Maduell Transparency Index, ranking Temasek among the most transparent of all Sovereign Wealth Funds worldwide.

Responsibility to the State

Minister for Finance



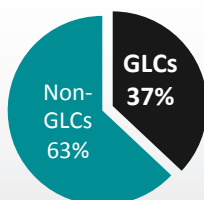
President of Singapore

The President of the Republic of Singapore has an independent custodial role to safeguard Singapore's critical assets and past reserves; President's approval is needed before a draw on past reserves can occur.

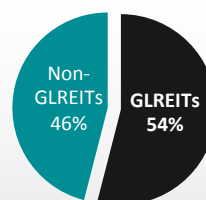
The shareholder's (Minister for Finance, the Republic of Singapore) right to appoint, reappoint, or remove Temasek's Board members are subject to approval of the President. The appointment or removal of the CEO by the Board is also subject to the concurrence of the President.

Source: Temasek Review 2004-2013.

Ownership of SGX-listed GLCs and GLREITS



Based on 2008 to 2013 market capitalisation data, GLCs accounted for **37%** of the stock market value.



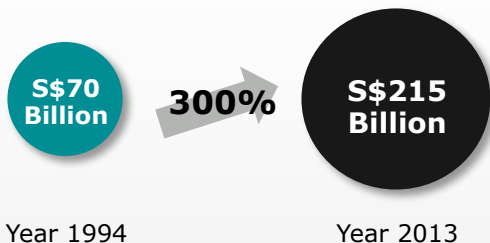
Based on 2008 to 2012 market capitalisation data, GLREITs made up **54%** of REIT market.

Note: 2008 - 2013 Singapore's Market Capitalisation data downloaded from Bloomberg Professional Services.

Investment Performance

Growth

Temasek's portfolio market value increased **300%** over the past 20 years.



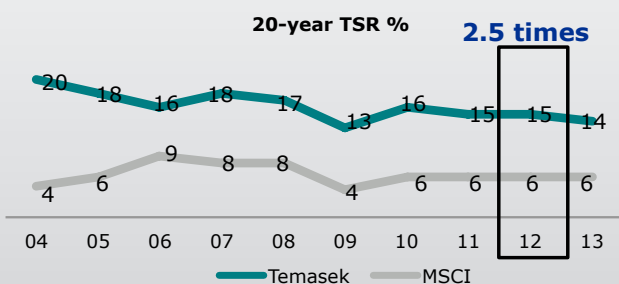
Active Investor

Temasek invested **S\$159 billion** and divested **S\$100 billion** over the last decade.



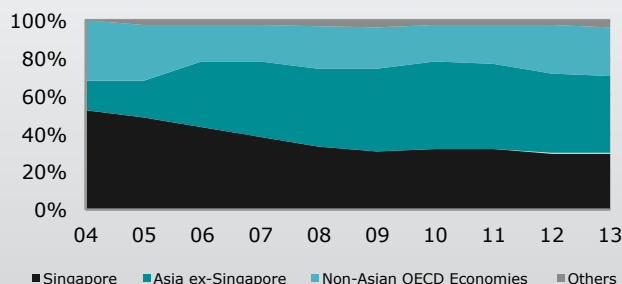
Shareholder Return

Temasek's 20-year Total Shareholder Return (TSR) was **2.5 times** MSCI Singapore in 2012.



International Portfolio

Non-Domestic Ownership of Assets increased **22%** over the last decade.

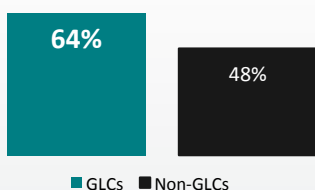


Source: Temasek Review 2004- 2013.

Comparison of Governance Practices: GLCs vs NON-GLCS

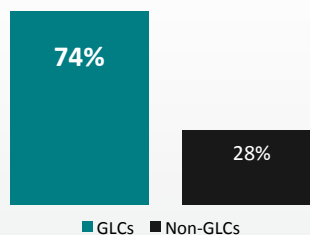
Board Independence

GLCs have **higher** percentage of independent directors on their boards.



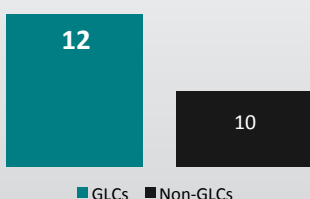
Chairman Independence

GLCs have **higher** percentage of Boards led by an independent/non-executive chairman.



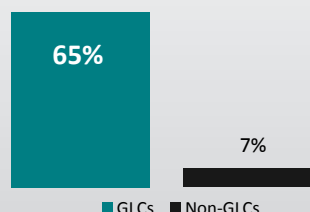
External Board Appraisal

GLCs hire **more** external consultants to conduct board appraisals.



Risk Governance

GLCs are **more likely** to have a Board Level Risk Committee.



Note: Analysis based on data from CGIO 's GTI 2009 -2013.

Executive Summary

Using data from a combination of primary and secondary sources, this report provides an update on Temasek Holdings' role as a state holding company, and how it owns and governs Singapore-listed Government-linked Companies (GLCs) and Government-linked Real Estate Investment Trusts (GLREITs).

GLCs and GLREITs are managed on a commercial basis. Temasek acts as an active investor with long-term returns maximisation as its key motive in its investment decision-making. Monitoring and accountability measures are in place to ensure that Temasek fulfils its role as a state holding company.

As Temasek internationalises its investment portfolio, its holding on SGX-listed GLCs has reduced while SGX-listed GLREITs increases. Despite these changes in its investment portfolio, Temasek continues to hold a high percentage of ownership, especially in companies from strategic sectors such as transportation and communications. The GLCs and GLREITs are held by Temasek in a multi-tier corporate structure.

Analysis on data from 2009-2013 Governance and Transparency Index (GTI) showed that GLCs have better corporate governance practices compared to non-GLCs in board matters, remuneration matters, audit and accountability and communication with shareholders.

To understand GLREITs' corporate governance practices, we analysed the data on the board of directors of the GLREITs and their parent GLCs. Our results showed that there is an internal network formed by directors from the parent GLC and its subsidiaries, GLREITs. These practices promote information exchange within the network and encourage alignment of the corporate strategy.

The findings bring into question the unfavourable literature on government ownership. SGX-listed GLCs and GLREITs are well managed, efficient, and profitable. They play a vital economic role in transforming Singapore from a developing third world country to its current status as a globalised city-state. It can be argued that GLCs and GLREITs in Singapore are an exception to how SOEs around the world are owned, managed and governed.

1. Introduction

This report is about Temasek Holdings (Temasek), its ownership and corporate governance of Singapore-listed Government-linked Companies (GLCs) and Government-linked Real Estate Investment Trusts (GLREITs). Temasek which is wholly owned by the Minister for Finance, Singapore, was formed in 1974 as a limited holding company to commercially manage the state's investments in GLCs and GLREITs (Temasek Holdings Ltd, 2013). Singapore GLCs and GLREITs are owned and managed differently from other SOEs around the world. Temasek acts as a commercial investment company, promoting sound corporate governance in its portfolio companies.

Only Singapore-listed GLCs and GLREITs will be covered in this report. GLCs include companies that are wholly owned by the Singapore government, those in which the government has a majority or minority share, and their subsidiaries (Ang & Ding, 2006). GLREITs are Real Estate Investment Trusts¹ wholly owned by the Singapore government, those in which the government has a majority or minority share, and their subsidiaries.

In this report, we aim to provide an update on Temasek's role as a state holding company, and how it owns and governs GLCs and GLREITs. In Section One, a literature review of the differences in corporate governance framework between Private Sector Firms and State-owned Enterprises (SOEs) will be provided. This is followed by a discussion on the role of government ownership in Singapore's economic development. The research objectives, data sources, and research methodology will also be covered.

1.1 Literature Review

In developed and emerging countries alike, SOEs contribute to a substantial part of the economy's Gross Domestic Product (GDP) and employment (OECD, 2006). SOEs are often dominant in important industries such as energy, transport, and telecommunication, which affect broad segments of the population and other parts of the business sector (Kowalski, Büge, Sztajerowska, & Egelan, 2013). It is critical for SOEs to have good corporate governance to ensure their positive contribution to a country's economy.

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¹ For more information on REITs, please see <http://www.sgx.com/wps/portal/sgxweb/home/products/securities/reits>.

SOEs – Some Agency Issues

SOEs, like other companies, face corporate governance challenges. However, the challenges become more complicated when the state is the controlling owner (Claessens & Fan, 2002). This can be explained using the theoretical framework by Wong (2004) on agency theory faced by SOEs, summarized in Table 1.

Table 1: Differences in Governance Framework between Private Sector Firms and State-owned Enterprises

	Private Sector Firms	SOEs
Objectives	Clear focus on value maximisation	Pursue commercial and non-commercial objectives
Agency Issues	Single agency – concerned about self-interested behaviour by managers	Double agency – concerned about self-interested behaviour by managers and politicians / bureaucrats
Transparency	High level of disclosure (for listed firms)	Low level of disclosure

Source: Wong, S. C. Y. 2004, 'Improving Corporate Governance in SOEs: An Integrated Approach', *Corporate Governance International*, vol. 7, no. 2, pp. 5-15.

Firstly, private owners, in general, who are oriented towards value maximisation, can focus on innovating and reducing cost, while the state as owner faces many conflicts of interest. It regulates businesses, enforces law, controls the banking system, and is generally more concerned about social welfare issues such as employment and education. The often conflicting objectives reduce accountability and clarity of purpose for managers and board members (OECD, 2006). As expressed by Jensen (2001, pp. 11), telling a manager to maximise multiple objectives "leaves the manager with no objective."

Secondly, owners of both private sector firms and SOEs have to be concerned about managers' self-interested behaviour. However, SOE owners have to deal with politicians' and bureaucrats' behaviour motivated by political considerations, which adds an additional layer of agency issues. Citizens are the ultimate owners of SOEs. They rely on politicians and bureaucrats to be their agents and to look after their interests. Politicians and bureaucrats are often poor agents because they may not receive direct financial benefits if the SOEs do well. As such, politicians and bureaucrats will rationally seek to avoid anything controversial within their portfolios and are not necessarily interested in improving the performance of SOEs (Wong, 2004).

Thirdly, the level of information disclosure for SOEs is lower than for private sector firms. Being funded by the capital markets, private firms are subject to the discipline

of the financial markets and have to meet certain standards of disclosure. SOEs, on the other hand, often have no such obligations. They disclose less information because their owners do not have an incentive to monitor the SOE closely.

Alchian's seminal work (1965) argued that the private sector and SOEs monitor and reward their managers differently. The owners of private sector firms have an incentive to monitor the performance of their managers and to align the managers' interests with their own. In contrast, for SOEs, ownership is highly diffused and shares of ownership have no value and may not be sold. Thus, their owners have little incentive to monitor their managers and demand better information disclosure (Shirley & Walsh, 2000).

Empirical Evidence on SOEs

SOEs' complicated corporate governance issues affect their performance. This is supported by numerous empirical studies². Many of these studies go further to examine the impact on firm performance. Fan, Wong, and Zhang (2007) reported that performance measures such as market-to-book value and return on assets of state-controlled firms are negatively related to the level of state ownership among Chinese firms. La Porta, Lopez-de-Silanes, and Shleifer (2002), using data from 92 countries, found that government ownership of banks slow down financial system development and restrict growth rates due to the impact on productivity. In India, partial privatisation of SOEs had a positive and highly significant impact on firms' profitability (Gupta, 2005).

On the other hand, there are a handful of studies that show that government ownership is beneficial to corporate governance. Borisova, Salas, and Zagorchev (2012) argued that not all government ownerships are the same and disaggregated the different types. They found that in the European Union (EU), ownership by sovereign wealth funds positively affects corporate governance quality as measured by RiskMetric's Corporate Governance Quotient. Ang, Ding, and Thong (2013) found that politically-connected firms in Singapore have more non-duality in their Chairman and Chief Executive Officer positions, and fewer Executive Directors. In another related study, Chen, Firth, and Xu (2009) found that SOEs in China affiliated to the central government rather than state asset management bureaus perform better than private firms.

² For literature review on SOEs and poor corporate governance, refer to Shleifer & Vishny (1997), Megginson & Netter (2001), and Estrin, Hanousek, Kocenda, & Svejnar (2009).

The weight of the international evidence is that government ownership is generally inefficient compared to private ownership in terms of corporate economic performance (Megginson & Netter, 2001).

Nevertheless, the weight of the international evidence is that government ownership is generally inefficient compared to private ownership in terms of corporate economic performance (Megginson & Netter, 2001). The most plausible explanation for the relative underperformance of SOEs may be weak governance practices arising from opposing objectives, political interference and lack of public scrutiny.

Given the current literature, we would like to study government ownership in Singapore, and examine how Singapore GLCs and GLREITs are owned and managed differently from other SOEs around the world.

1.2 Why Singapore?

Singapore's historical and economic background provides an appropriate context for the study of government ownership of companies. Having had a weak private sector in its post-independence days, Singapore formed GLCs and statutory boards to provide the infrastructure necessary both to improve living conditions and to make the country attractive for foreign investment (Vietor & Thompson, 2008).

For historical reasons, Singapore's government participates in business through its interests in GLCs, many of which have played critical roles in Singapore's economic development (Ministry of Finance, 2002). Although Singapore is not a socialist country, the government adopted a "state capitalism³" approach to the country's economic development when it gained independence in 1965. Under this policy, GLCs were established to provide jobs and contribute to nation building.

Singapore has achieved impressive economic performance, which is regarded as an "economic miracle" (Huff, 1999). Within a short span, from the 1960s to 1990s, Singapore achieved an average GDP growth of 7.5% per annum (Huff, 1999), from S\$500 GDP per capita in the year 1965 to S\$10,000 in 1989. By 2008, GDP per capita had reached S\$37,597⁴ (Porter, Neo, & Ketels, 2013). Hence, it can be argued that GLCs play an important role in Singapore's nation building.

1.3 Research Objectives

In essence, the report focuses on Temasek's accountability to its shareholder, its ownership of SGX-listed GLCs and GLREITs, and its corporate governance of GLCs and GLREITs. We believe Singapore GLCs and GLREITs are an exception to the rule.

³ State capitalism is an economic system in which private capitalism is modified by a varying degree of government ownership and control. Retrieved from: <http://www.merriam-webster.com/dictionary/state%20capitalism>.

⁴ Source: Economist Intelligence Unit, EIU Country Data, February 2010.

Our objective is to find out how Singapore GLCs and GLREITs are different from other SOEs around the world in terms of ownership and its corporate governance.

Claessens and Fan (2002) found that a significant number of Singaporean-listed companies are state-controlled. In this report, we aim to provide an update on the size of Temasek's ownership as well as its holding structure of SGX listed entities, by including both GLCs and GLREITS.

Singapore GLCs have a reputation for being well-run and well-governed (Ang & Ding, 2006)⁵. Some of them have even won corporate governance awards (Anwar & Sam, 2006). This is a big contrast to the existing theoretical and empirical research on SOE corporate governance around the world. Existing studies on Singapore GLCs (Feng, Sun, & Tong, 2004; Ramirez & Tan, 2004; Ang & Ding, 2006) focus on the relation between ownership and performance. We propose to extend the existing literature by investigating how both GLCs and GLREITs are governed. Using data from the Government and Transparency Index⁶ (GTI), we examine the corporate governance practices of GLCs vis-à-vis non-GLCs. As the GTI does not cover REITs, we base our GLREIT analysis on information on the board of directors, obtained from the GLREITs' FY 2012 annual reports.

Singapore GLCs have a reputation for being well-run and well-governed (Ang & Ding, 2006).

We hope that the findings can provide valuable lessons on the ownership, management and governance of Singapore's GLCs, which may benefit professionals and policy makers around the world.

1.4 Data and Research Methods

The population for this research comprised GLCs and GLREITs listed on the Singapore Stock Exchange (SGX). Only publicly listed companies were used for this study given their reliable and publicly available information on shareholding and board of directors.

In this report, we defined a company as a GLC (GLREIT) if Temasek has a substantial shareholding (unit holding) of 20% or more in the firm (REIT) as of FY2012. The use of 20% as a threshold is consistent with past studies (La Porta, Lopez-de-Silanes, & Shleifer, 1999; Singapore Department of Statistics, 2001; Claessens, Djankov, Fan, & Lang, 2002; Feng, Sun, & Tong, 2004; Ang & Ding, 2006).

⁵ Lambe, Patrick, "Innovation—The Public Service Way," Business Times, February 19, 2002, pp. 20, as quoted in Ang & Ding (2006).

⁶ For more details, please refer to <http://bschool.nus.edu/CGIO/OurResearch/GovernanceTransparencyIndex.aspx>.

The following exceptions apply: 1) firms (REITs) in which Temasek had an effective shareholding (unit holding) of 20% or more at some point in time after FY2012 were not considered GLCs (GLREITs) in this report, and 2) we only considered the equity as a GLC (GLREIT) if the substantial government shareholder was Temasek. For example, M1 was not considered a GLC because Temasek's substantial shareholding as of 2012 was only 19.61%⁷.

A combination of primary and secondary research was carried out for this study. We relied on annual reports for information on shareholding and directorship data. Market data was obtained from Bloomberg. The corporate governance ratings used for the empirical analysis were from the Governance and Transparency Index (GTI) database maintained by CGIO.

1.5 Management Implications

The case study on Singapore's GLCs and GLREITS has important management implications. The rest of the world can learn from Singapore's experience on how to manage state-owned enterprises. The emerging term "GLC" as opposed to "SOE" sends an important signal about the nature of the changes required. It must be recognised that not all countries have the cultural and political background necessary to follow Singapore's example.

Our study links the success of GLCs to good corporate governance. The key drivers are:

- the creation of Temasek as a holding company accountable to the government
- Temasek operating with a clear business mandate and at arm's length from the government
- listing of GLCs on the stock exchange and internationalisation of the GLCs' businesses
- maintaining leadership continuity in GLCs and its subsidiaries
- GLCs' adoption of good governance practices including director independence, audit committee independence, and transparency.

The report is structured as follows: Section 2 elaborates and explains how Temasek acts as a shareholder, Section 3 describes Temasek's investments in Singapore's listed GLCs and GLREITs, while Sections 4 and 5 provide the analyses of the governance practices in GLCs and GLREITs. Finally, we discuss the research limitations in Section 6, future research in Section 7, and conclude the study in Section 8.

⁷ Please see M1's annual report (2012) pp. 130 for more details.

2. Temasek Holdings as a State Holding Company

In this section, we will cover Temasek's background, accountability to its shareholder, Temasek's portfolio and performance of its investments, and, finally, Temasek's challenges as an international investor.

2.1 Background

Temasek was formed in 1974 as a limited holding company to commercially manage the state's investments in GLCs (Temasek Holdings Ltd, 2013).

To jumpstart industrialisation in the late 1960s, the Singapore government took an active entrepreneurial role by investing in a wide range of companies in various sectors of the economy (Ang & Ding, 2006). The government's involvement was deemed necessary because of the lack of private sector funds and expertise (Ramirez & Tan, 2004). However, it was also clear that these enterprises had to be run on a commercial basis, as expressed by then Deputy Prime Minister, Dr Goh Keng Swee:

"One of the tragic illusions that many countries of the Third World entertain is the notion that politicians and civil servants can successfully perform entrepreneurial functions. It is curious that, in the face of overwhelming evidence to the contrary, the belief persists." (Goh, 1972, pp. xii).

This principle led to the establishment of Temasek to own and manage the GLCs on a commercial basis, effectively separating the government's shareholder role from its regulatory and policy-making function (Israel, 2008).

2.2 Temasek's Accountability to its Shareholder

We examine Temasek's disclosure practices to understand its accountability to shareholder. According to Wong (2004), SOEs face additional corporate governance challenges compared to their private sector counterparts. SOEs tend to pursue both commercial and non-commercial objectives, which reduces accountability and clarity of purpose. They have to deal with the self-interested behaviour of not only the managers, but also the politicians and bureaucrats linked to the SOE. Additionally, they tend to also have a lower level of information disclosure than that of private sector firms due to the lack of monitoring and financial market discipline.

How does Temasek organise itself to overcome such challenges? Temasek Review 2013 provides an explanation of Temasek's accountability to its shareholder. It states that Temasek is an exempt private company governed by the Singapore Companies

Act. The Singapore government's Minister for Finance wholly owns Temasek, who, in turn, is accountable to its shareholder and to the President of Singapore. Under the Singapore Constitution, Temasek has safeguards to protect past reserves accumulated before the current term of government. The President's approval is needed before a draw on past reserves can occur. This is meant to prevent a financially imprudent government from squandering past reserves⁸. Temasek's Chairman and CEO facilitate this by certifying statements of reserves and past reserves to the President at prescribed intervals. Temasek's board is also accountable to the President to ensure that every disposal of investment is transacted at a fair market value, defined as the price agreed between a willing buyer and a willing seller on an arm's length basis.

The Minister for Finance has the right to appoint, reappoint, or remove board members in Temasek. However, this is subject to the President's concurrence, which provides an additional layer of insulation from any undue government influence. According to Temasek Review 2013, we found that the 10-member Temasek board comprises mostly independent members, with independent, Non-Executive Directors chairing the three key board committees. The roles of Chairman and CEO are separate, fulfilled by two different persons. Four of the board members are current or former civil servants, and the majority of them come from business backgrounds⁹.

For monitoring purposes, Temasek provides annual statutory financial statements audited by an international audit firm as well as periodic updates to its shareholder. Temasek's annual dividends are deliberated on and recommended by its board for its shareholder's consideration at the annual general meeting. These dividends, together with taxes on Temasek's profits, contribute to the government's budget.

As a private company, Temasek is exempted from filing its audited financials with the public registry. However, it has chosen to publish its Group Financial Summary and portfolio performance in its annual Temasek Review since 2004. This shows responsibility as the losses and returns generated by Temasek affect the country's national reserves.

⁸ The President of Singapore, elected directly by the population every six years, sits apart from the government and cannot be a member of any political party or engages in commercial enterprise. The President is thus independent of the government. (Israel, 2008).

⁹ As stated in Temasek Review 2013, Chairman S Dhanabalan and Directors Lim Boon Heng, Teo Ming Kian, and Lucien Wong are current or former civil servants. See Temasek Review (2013) pp.58-59 for more details.

Temasek's disclosure and transparency on governance structure, operations, and returns are important as they provide the required accountability to Singapore citizens, and in this respect, Temasek has done well. As of August 2013, Temasek has a rating of 10/10 in the Linaburg-Maduell Transparency Index (LMTI)¹⁰. This ranks Temasek among the most transparent of all Sovereign Wealth Funds (SWF) around the world.

According to Temasek Review 2013, Temasek contends that neither the President nor its shareholder, the Singapore government, is involved in its investment, divestment, or other business decisions, except in relation to the protection of Temasek's past reserves. Thus, Temasek acts more like a commercial portfolio manager than an SOE, which may encounter conflicting social and commercial objectives.

Temasek fulfils its role as a government holding company and mitigates the governance challenges other SOEs face by having the necessary monitoring and accountability measures in place. Temasek monitors the GLCs' and GLREITs' performances and it is accountable to the Minister for Finance and the President of Singapore.

2.3 Temasek's Investments – Portfolio and Performance

In this section, we examine Temasek's investment strategy by looking at its portfolio size, activity, diversification, and performance since its inception in 1974.

Size of Portfolio

Starting with an initial portfolio worth S\$354 million in 1974, Temasek's portfolio has grown to S\$215 billion as of 31 March 2013. Large increases in Temasek's portfolio were noted during the listing of SingTel, Singapore's telecommunication monopoly in 1993 and the dotcom boom in year 2000. However, from 2000 to 2001, Temasek's portfolio value dipped due to the bursting of the dotcom bubble and the 9/11 terror event. Other steep dips in the portfolio were registered during the 2003 SARS epidemic and 2009 global financial crisis. Portfolio value fully recovered by 2010 and continued to grow through 2013.

As of August 2013, Temasek has a rating of 10/10 in the Linaburg-Maduell Transparency Index (LMTI) . This ranks Temasek among the most transparent of all Sovereign Wealth Funds (SWF) around the world.

¹⁰ The Linaburg-Maduell transparency index was developed at the Sovereign Wealth Fund Institute by Carl Linaburg and Michael Maduell. The index values range from one to 10, with 10 indicating the highest level of transparency. Details of the index are available at: www.swfinstitute.org/statistics-research/linaburg-maduell-transparency-index/.

Active Portfolio Manager

According to the Temasek Charter¹¹, it is explicitly stated that Temasek acts like an active investor with long-term returns maximisation as an important motive in its investment decisions (Temasek Holdings Ltd, 2012). This corroborates with its statement that the government does not interfere in its business decisions, but instead allows it to focus on increasing its portfolio returns (Temasek Holdings Ltd, 2013).

Like other institutional investors, Temasek's investments have also been accompanied by divestments. In 2013, it invested a total of S\$20 billion and divested S\$13 billion for a total net investment of S\$7 billion¹². Of the 35 Singapore companies that Temasek has held since its inception in 1974, 23 companies have been divested. The companies that are still within its portfolio currently include DBS Bank, Keppel Corporation, Neptune Orient Lines (NOL), Sembawang, and Singapore Airlines (SIA), with the rest being non-listed ones. Of those divested are listed companies such as Insurance Corporation of Singapore Limited and Intraco Limited.

In the last decade, Temasek has been an active portfolio manager, as shown by its investments and divestments.

In the last decade, Temasek has been an active portfolio manager, as shown by its investments and divestments. This is further supported empirically by Dewenter, Han, and Malatesta (2010). When examining international SWF share acquisitions over the period January 1987-April 2008 and SWF share divestments over January 1996-December 2008, they found that 50% of acquisitions were by Temasek and 45% of divestments were made by a Singapore sovereign wealth fund.

Internationalisation of Investment Strategy

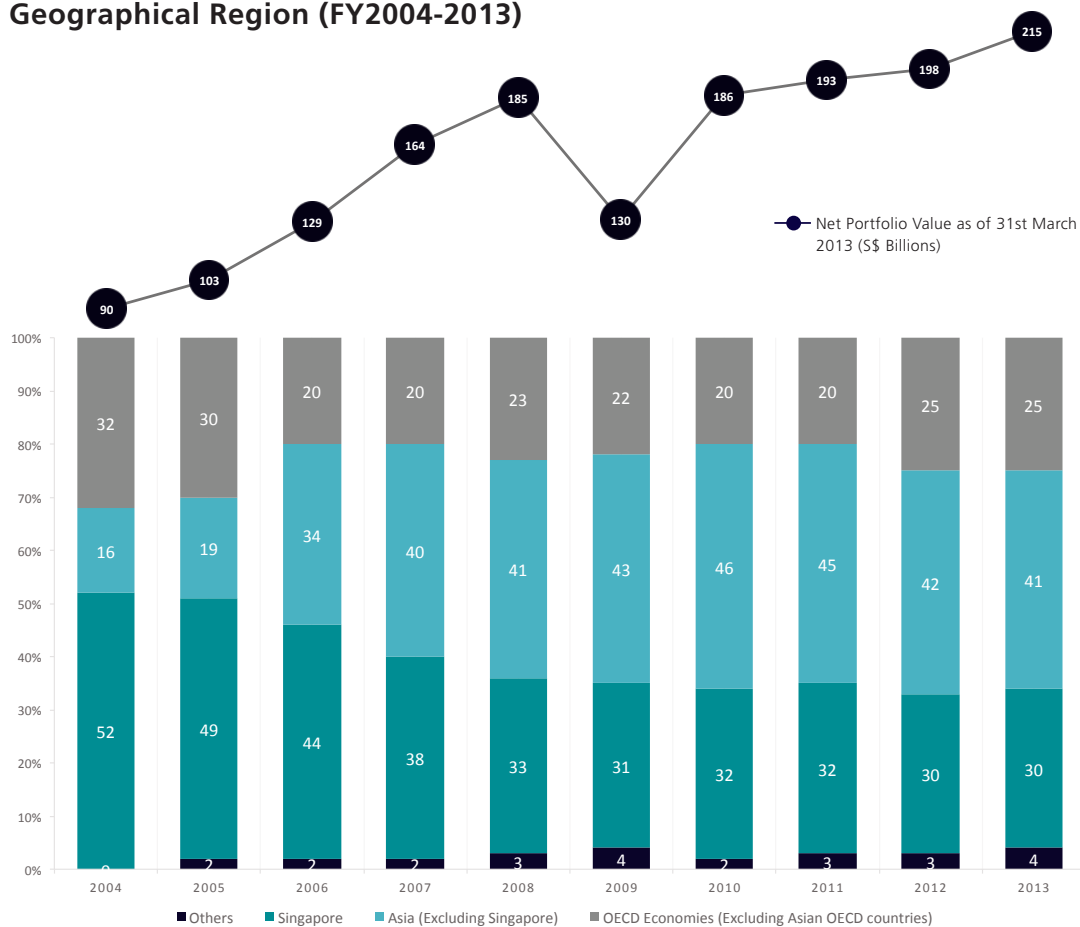
Temasek started out in 1974, with only a small portfolio of local start-ups and joint ventures previously held by the Singapore Government. Since then, Temasek's investment portfolio has grown and it has taken on an active role in investing both locally and overseas. By investing overseas, Temasek is able to diversify its portfolio for better risk management.

As shown in Figure 1, Temasek divested its portfolio into three main geographical locations of investment holdings – Singapore, Asia (excluding Singapore), and OECD countries.

¹¹ Please see Temasek Review (2012) pp. 5 for the Temasek Charter.

¹² Please see Temasek Review (2013) pp. 6 for more details.

Figure 1: Temasek’s Percentage Shareholding at Year End by Geographical Region (FY2004-2013)



Source: Temasek Review 2013.

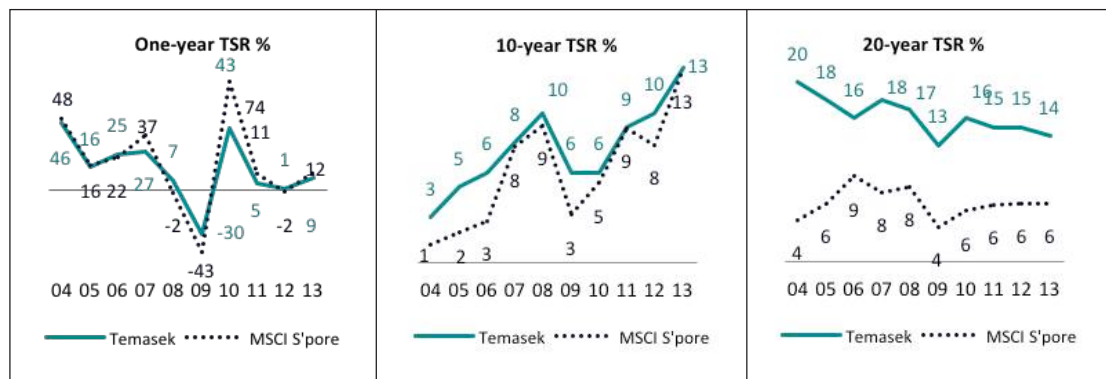
Temasek’s investments were restricted to Singapore at its inception. It was only from the early 2000s onwards that Temasek expanded its investment horizons, diversifying its holdings from just the local Singapore market to other surrounding countries (Ng, 2010). This is illustrated in Figure 1 where the downward trend of Temasek’s portfolio weight in Singapore from 2004 onwards is seen alongside the increasing weight of portfolio holdings in Asia, excluding Singapore. Temasek’s portfolio investment in Singapore fell from 52% in 2004 to 30% in 2013, whereas investments in the rest of Asia (excluding Singapore) jumped from 16% to 41% in the same period.

Overseas investments may be beneficial for Temasek’s corporate governance, as it puts greater managerial distance between Temasek and its new investments overseas. Physical separation facilitates corporate governance and company performance by allowing owners to be more detached from direct involvement in the operations of the company and to be more objective regarding performance (Hansmann & Thomsen, 2013). Temasek would have faced less interference from local interests groups in governing a foreign firm compared to a Singapore firm as a foreign firm’s distance reduces its visibility to the local populace.

Performance Over Time

Temasek has proven to have grown successfully in terms of its overall portfolio and performance as can be seen from its investment performance in the last decade, compared to that of the MSCI Singapore Index (shown in *Figure 2*). The MSCI Singapore Index reflects the performance of the large and mid-sized capitalisation segments of the Singapore market.

Figure 2: Total Shareholder Return (TSR) in Percentage (FY2004-2013)



Source: Bloomberg, Temasek Holdings 2004-2013 and Temasek Review 2004-2013.

Total Shareholder Return (TSR), which is Temasek's key measure of performance, was 9% for 2013, lower than the MSCI Singapore index return of 12%, as shown in the One-year TSR % in Figure 2. However, looking at the returns of the past decade, Temasek's one-year TSR appears to be more stable than MSCI returns, evidence that Temasek's focus is on long-run returns. Longer-term TSRs for 10 and 20 years were 13% and 14% respectively in 2013 (Figure 2). Long-term TSRs (20 years) are far above MSCI returns, giving further evidence of Temasek's long-run focus.

2.4 Challenges in International Investment

Despite commendable efforts at transforming itself, Temasek still faces challenges in managing its international portfolio of investments as it continues to grow in size.

Temasek's reputation of adhering to efficiency and profitability is such that it "is widely considered to be an exemplar among SWFs" (Dewenter, Han, & Malatesta, 2010, pp. 25). However, it also has its fair share of "hits and misses" in its investments.

Temasek revealed in the Singapore Parliament that its net portfolio value dropped 31% between March 31 and Nov 30 in 2008 from S\$185 billion to S\$127 billion (Foo, 2009). However, Temasek was not the only sovereign investor which suffered losses during the global financial crisis. Other SWFs also saw shrinking portfolios in the fallout from the worst financial storm since the 1930s. The world's largest SWF, the Abu Dhabi Investment Authority, lost US\$125 billion in 2008. Norway's Government

Pension Fund, the third biggest SWF in the world, had the worst quarter in its 18-year history, losing 14.5% of its assets value of about US\$300 billion in the three months leading up to 30 September 2008.

In the past few years, some of Temasek's investments have soured. For example, since December 2007, it had invested US\$5-6 billion in Merrill Lynch, which suffered massive losses from the sub-prime mortgages and was acquired by Bank of America in January 2009. Temasek had a 14.7% stake in Australian ABC Learning centres which was once the world's largest childcare company. The company went into receivership in November 2008.

Risk Management

As an international investor, Temasek manages its risk by engaging and sharing with stakeholders worldwide (Temasek Holdings Ltd, 2011). Within Asia, Temasek maintains a close working relationship with China's State-owned Assets Supervision and Administration Commission (SASAC) and Vietnam's State Capital Investment Corporation, and makes it a point to exchange knowledge and share experiences (Temasek Holdings Ltd, 2011). In 2011, Temasek collaborated with SASAC Central to organise a SASAC-Temasek Directors Forum in Beijing to discuss corporate governance trends in China, Asia, and across the world (Temasek Holdings Ltd, 2011).

3. Temasek's Investments in Singapore-listed GLCs and GLREITs

In Section 3, we examine Temasek's ownership of SGX listed GLCs and GLREITs in Singapore over the years. The ownership structure of GLCs and GLREITs will also be covered in this section.

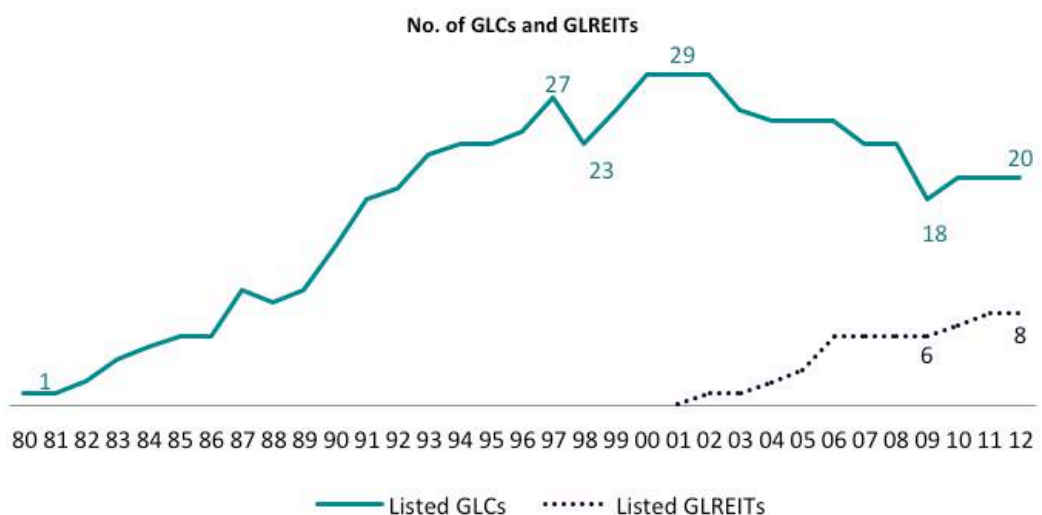
3.1 Prominence of the State Among Singapore Equities

As reported in Figure 1, 30% of Temasek's 2012 investment portfolio is located in Singapore. We are interested to find out the size of Temasek's ownership of locally listed entities in the Singapore Exchange, to have a better understanding on the significance of state ownership in Singapore. To do so, we tabulated the market capitalisation of SGX-listed GLCs and GLREITs in which Temasek had a substantial shareholding (unit holding) of 20% or more.

Using 2008 to 2013 market capitalisation data from Bloomberg, we found that GLCs accounted for an average of 37% of the stock market value of S\$500 billion. On the other hand, GLREITs made up 54% of REIT market value of S\$35 million based on 2008 to 2012 market capitalisation data from Bloomberg.

Figure 3 tracks Temasek's ownership, in terms of number of SGX-listed GLCs and GLREITs over the years. It can be observed that there has been a decreasing trend of listed GLCs since the early 2000s. This corroborates with the decreasing weight of Temasek's portfolio investment in Singapore in Figure 1. Interestingly, there seems to be an inverse relation between the number of GLCs and GLREITs. There is clearly a decreasing trend of GLCs starting slightly before 2002, the year REITs were introduced, and an increasing trend of GLREITs over the same period.

Figure 3: Number of SGX-listed GLCs and GLREITs (FY1980-2012)



3.2 Temasek's Ownership Structure of SGX-listed GLCs and GLREITs

In this section, we examine Temasek's ownership structure of SGX-listed GLCs and GLREITs reflected in Figure 4. It is an update of Temasek's group structure (effective interest as at FY2000) provided by Ang and Ding (2006). Figure 4 provides Temasek's group structure, using effective interest as at FY2012, which yields 23 GLCs and eight GLREITs.

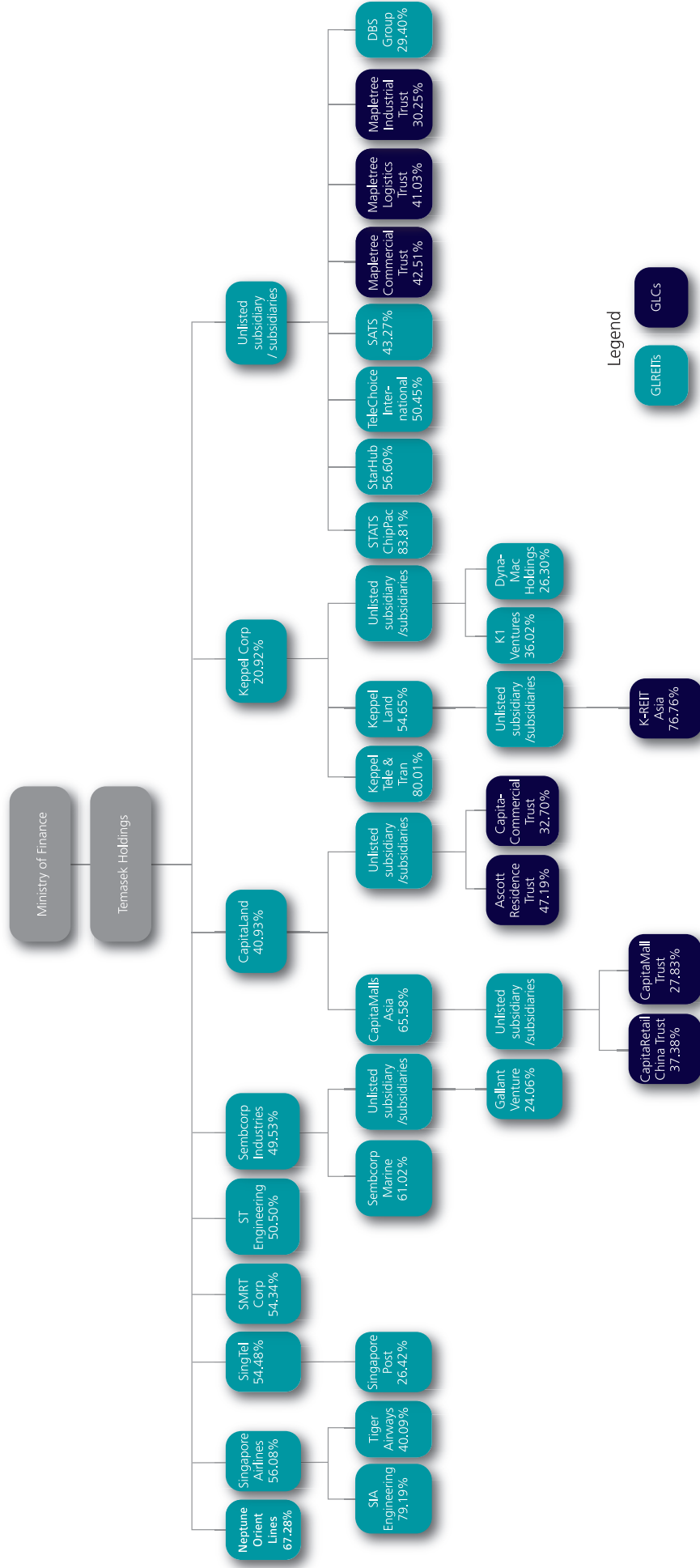
Using data from GLCs' and GLREITs' annual reports (FY2011/2012), we compiled Temasek's substantial shareholding of SGX-listed GLCs and GLREITs to produce the ownership structure as shown in Figure 4. This figure only shows GLCs and GLREITs in which Temasek has an effective interest of 20% or more. Unlisted subsidiaries and links through cross-holdings are excluded. Effective interest is defined as the sum of direct and deemed interest. Singapore Company Law (Section 7 Chapter 50 of the Company Act) requires disclosure obligations of direct and deemed shareholdings on parties when they become substantial shareholders of a Singapore public-listed company (i.e., upon acquiring 5% or more of the voting rights of the company) and any subsequent percentage level changes in these parties' shareholdings.

The Minister for Finance, Singapore, is the sole shareholder of Temasek. Temasek has direct shareholdings of pioneer GLCs such as Singapore Airlines and Keppel Corporation. These pioneer GLCs are also known as first-tier GLCs and they hold shares in second-tier GLCs. In turn, the second-tier GLCs hold shares in third-tier GLCs (Public Sector Divestment Committee, 1987).

Temasek's ownership of the GLCs and GLREITs can be described as a network of corporate conglomerates. Once a pioneer GLC is listed on an exchange, it proceeds to list its subsidiaries and create a corporate group. For example, Singapore Airlines Limited was listed on the Singapore Stock Exchange in 1985. In 2000, Singapore Airlines listed its subsidiary SIA Engineering. Later in 2010, Tiger Airways, another subsidiary of Singapore Airlines, was also listed. The three GLCs form the aviation group under Temasek.

Temasek's ownership of the GLCs and GLREITs can be described as a network of corporate conglomerates.

Figure 4: Temasek's Ownership Structure of SGX-Listed GLCs and GLREITs (FY2012)



Sources: 2012 Annual reports of GLCs and GLREITs.

This figure shows Temasek's effective interest in the various GLCs and GLREITs as of FY2012. Effective interest is defined as the sum of direct and deemed interest. Singapore Company Law (Section 7 Chapter 50 of the Company Act) requires disclosure obligations of direct and deemed shareholdings on parties who become substantial shareholders of a Singapore public-listed company (i.e., upon acquiring 5% or more of the voting rights of the company) and any subsequent percentage level changes in their substantial shareholding.

This figure only shows GLCs and GLREITs in which Temasek has an effective interest of 20% or more, unlisted subsidiaries and links through cross-holdings are excluded. This yields 23 GLCs and eight GLREITs, which make up 37% of the stock market and 54% of REIT market value respectively. For more information on unlisted subsidiaries, please refer to the respective GLC/GLREIT annual reports.

3.3 Ownership of GLCs

The companies in Figure 4 were arranged from left to right in descending levels of Temasek's effective interest. From the first row of firms on the left side of Figure 4, we can see that Temasek's effective interest is more than 50% in Neptune Orient Lines (NOL), Singapore Airlines (SIA), SingTel, SMRT Corporation, and ST Engineering. This shows that Temasek retains majority control in firms of strategic importance to Singapore, especially those in communications and transportation, despite Temasek's decision to internationalise and reduce its investments in Singapore to only a third of its portfolio.

Temasek retains majority control in firms of strategic importance to Singapore, especially those in communications and transportation.

According to Lim (2014), "Singapore has always adopted an open economy, encouraging foreign investments and at the same time developing the domestic market, with the state continuing to be involved in strategic businesses", which are defined as "critical resources" in Temasek's first Charter. As discussed earlier, GLCs are established to provide jobs and contribute to nation building and they continue to play a central role in Singapore's national economic policies.

By having all government-owned companies under a single portfolio, Temasek has followed the best practices recommended by OECD (2006), which helps to clarify the ownership policy and ensure consistent implementation of policies across companies. Another benefit is that inter-agency conflicts that arise from ownership held by different ministries and government bureaus are avoided (Ang & Ding, 2006). Finally, with holdings in multiple companies, Temasek is able to compare these companies' performance, thus, making each a "yardstick" for the others (Hansmann & Thomsen, 2013).

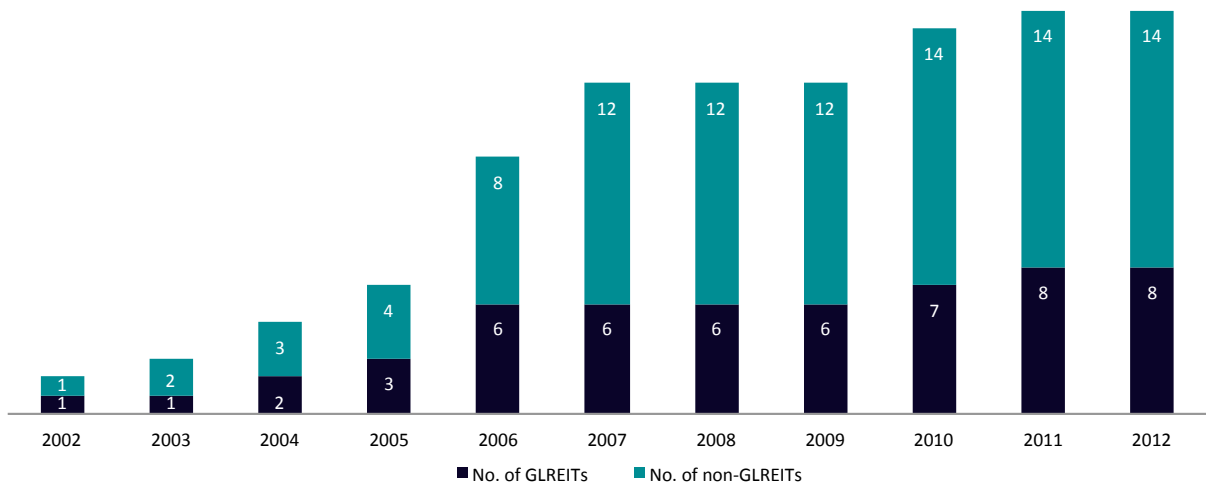
3.4 Ownership of GLREITs

Real Estate Investment Trusts (REITs) are relatively new in Singapore, having been introduced in the Singapore stock market only in 2002. They are financial instruments which invest in various types of property assets. The majority of REITs listed on the SGX invest in property assets pertaining to hotels & lodging, industrial & office, residential, retail and healthcare. In Singapore, REITs have to distribute 90% of taxable income in order to enjoy tax concessions (Inland Revenue Authority of Singapore, 2012).

From 2002 to 2012, GLREITs make up approximately 50% of the REITs listed on SGX.

Figure 5 shows the cumulative number of REITs listed on the Singapore Exchange, differentiating between GLREITs and non-GLREITs. From 2002 to 2012, GLREITs make up approximately 50% of the REITs listed on SGX. It can be argued that the significant investment in the REIT market indicates that the Singapore government is following its philosophy of nurturing “infant industries”, providing vital capital and expertise until the REIT market matures (Ramirez & Tan, 2004).

Figure 5: Distribution of SGX-listed GLREITs and Non-GLREITs (FY2002-2012)



Source: Singapore REITs annual reports 2002-2012.

After inspecting GLREITs’ annual reports, we observed that Temasek does not exercise direct ownership over any of the GLREITs. Instead, it exerts ownership through its various ownership tiers. For example, CapitaMalls Asia has indirect ownership of CapitaRetail China Trust and CapitaMall Trust, which is held by two wholly-owned unlisted subsidiaries of CapitaLand. CapitaLand is directly owned by Temasek.

4. Corporate Governance of GLCs

This section examines GLCs's corporate governance practices. We do so by studying the GLCs' operations and the profile of GLCs' board members, as well as comparing corporate governance practices between GLCs and non-GLCs.

4.1 Operations and Governance of GLCs

In the 2002 Budget Speech¹³, the Singapore government explained its relationship with GLCs. It stated that the government would “not favour GLCs with special privileges or hidden subsidies” or “burden them with uneconomic ‘national service’ responsibilities”. On the other hand, GLCs were “expected to compete on a level playing field” with other firms of the private sector (Ministry of Finance, 2002, pp. 5).

The 2002 Budget Speech also stated that the government does not “interfere with the operations of the GLCs” and GLCs “operate as commercial entities” (Ministry of Finance, 2002). The government has a preference for the GLCs to be publicly-listed. This is to subject GLCs to the rigours of market competition such that the drive to improve efficiency and profitability is integrated into their operations (Ministry of Finance, 2002). In 2012, only 27% of Temasek's assets were unlisted (Temasek Holdings Ltd, 2013).

The government does not “interfere with the operations of the GLCs” and GLCs “operate as commercial entities” (Ministry of Finance, 2002).

Temasek promotes sound corporate governance in GLCs through various means. These include the formation of capable boards to complement management leadership, advocating board independence from management by having mostly Non-Executive board directors, and separating the Chairman and CEO roles (Temasek Holdings Ltd, 2013).

Who sits on the board of the GLCs? According to Low (2000), the directors and top managers of GLCs are heavily drawn from “retired politicians and civil servants including brigadier-generals from the Defence Ministry in Singapore”, which gives rise to “complex interlocking directorships within the government itself”.

Using data from Government and Transparency Index¹⁴ (GTI) 2012, we examined the profiles of directors on SGX-listed companies to determine if the GLCs' board of directors are still dominated by politicians and civil servants (also known as politically connected directors). We found that current and former civil servants as well as

¹³ Please see http://app.mof.gov.sg/singapore_budget_archives.aspx for more information on Singapore Budget Speech 2002. Accessed on March 2014.

¹⁴ For more details, please refer to <http://bschool.nus.edu/CGIO/OurResearch/GovernanceTransparencyIndex.aspx>.

Members of Parliament sit on both GLCs and non-GLCs companies' boards. However, the average proportion of politically-connected directors is higher on GLCs' boards (42.26%) compared to non-GLCs' boards (19.54%)¹⁵.

How do politically-connected directors contribute to companies' board? The politically-connected directors, who are non-executive directors do not interfere company's day-to-day operations. They serve as influential monitors, much like venture capitalists and investment companies do in more developed capital markets (Ang & Ding, 2006).

In summary, SGX-listed GLCs are managed professionally, operate under the rigours of market competition, adopt corporate governance best practices, and have politically-connected directors sitting on their boards. In the next section, we will examine the corporate governance practices of GLCs versus non-GLCs through in-depth empirical analysis using data from GTI.

4.2 Corporate Governance of GLCs Compared to Non-GLCs

GTI Data and Methodology

GTI assesses SGX-listed companies on their corporate governance practices as disclosed in the companies' annual reports, websites, and announcements.

The corporate governance ratings used for the empirical analysis are from the GTI database maintained by CGIO. According to Loh and Sim (2012), GTI is "a comprehensive assessment of the companies on how they have fulfilled the standards of governance as outlined by Singapore's Code of Corporate Governance". GTI assesses SGX-listed companies on their corporate governance practices as disclosed in the companies' annual reports, websites, and announcements.

Each company receives an overall score made up of a base score, and an adjustment for bonuses and penalties in the GTI. The base score can be further broken down into four components, namely 1) board matters, 2) remuneration matters, 3) accountability and audit, and 4) communication with shareholders. Every component comprises a number of questions on which companies receive a score depending on their performance in that aspect. These are then aggregated to arrive at the base score¹⁶. The data from annual reports for a particular year are used for the following year's GTI release.

¹⁵ This data was provided by CGIO's Director Database, which is based on publicly available information. We first determined for each firm the proportion of directorships occupied by politically connected persons, and then averaged the proportions for all GLCs and all non-GLCs respectively.

¹⁶ More details on the questions and scoring methodology can be found on the CGIO website (bschool.nus.edu/Portals/0/images/CGFRC/docs/GTIMethodology_11July2011.pdf).

We used the Singapore Standard Industry Classification to obtain sector information and market capitalisation as proxy for firm size. These two fields were extracted from the Singapore Exchange website (www.sgx.com) and Bloomberg respectively. Due to changes in company names within the sample period, the company ISIN code was used to extract the data instead. For ownership data, we used company annual reports to obtain the breakdown of substantial shareholdings. As explained in Section 3, we consider a firm to be a GLC if Temasek is a substantial shareholder with 20% or more total interest as of 2012.

As shown in Table 2 below, the GTI data runs from 2009 till 2013. The dataset is, therefore, an unbalanced panel made up of a total of 2,984 firm-year observations. The number of firms covered by GTI has increased steadily since 2009, with the proportion of GLCs and non-GLCs staying roughly constant at about 3% and 97% respectively.

We examined the breakdown of firms by sector and firm size after pooling the data for each year. It was clear that the distribution of GLCs and non-GLCs was very different in terms of both sector and size. GLCs were absent from the primary industries of agriculture and mining; and the hospitality industries of food, hotels, and restaurants. They also had a higher industry concentration in transport, storage, communications, and multi-industry sectors compared to the manufacturing and commerce sectors.

To compare GLCs' and non-GLCs' GTI scores, we conducted t-tests of differences in means with standard errors clustered at the target-firm level for the continuous variables and binomial tests for differences in proportions for the binary variables¹⁷. We adapted an algorithm by Bergstralh and Kosanke (1995) to match companies based on size and sector classification.

¹⁷ Continuous variables are variables that can take on a continuum of values, for example the "Proportion of independent Directors on the board", while binary variables can only take on either "yes" or "no", for example "Is the Chairman of the board independent or a Non-Executive?"

Table 2: Company Profile in GTI Sample (GTI 2009 – 2013)

	Total	GLC		non-GLC	
No. of firms (% of total)					
By year					
2008	546	19	(3.5%)	527	(96.5%)
2009	578	19	(3.3%)	559	(96.7%)
2010	587	19	(3.2%)	568	(96.8%)
2011	632	23	(3.6%)	609	(96.4%)
2012	641	23	(3.6%)	618	(96.4%)
Total firm-year observations	2,984	103	(3.5%)	2,881	(96.5%)
Breakdown of firm-years obs (% of total)					
By sector					
AGRICULTURE	23	-	-	23	(100.0%)
COMMERCE	411	5	(1.2%)	406	(98.8%)
CONSTRUCTION	145	2	(1.4%)	143	(98.6%)
ELECT/GAS/WATER	17	-	-	17	(100.0%)
FINANCE	112	10	(8.9%)	102	(91.1%)
FOOD & BEVERAGES	27	-	-	27	(100.0%)
HOTELS/RST	71	-	-	71	(100.0%)
MFG	1,174	7	(0.6%)	1,167	(99.4%)
MINING/QUARRYING	15	-	-	15	(100.0%)
MULTI-IND	78	20	(25.6%)	58	(74.4%)
PROPERTIES	166	12	(7.2%)	154	(92.8%)
SERVICES	587	15	(2.6%)	572	(97.4%)
TPT/STOR/COM	158	32	(20.3%)	126	(79.7%)
By firm size quartiles					
Below 25th	746	-	-	746	(100.0%)
Between 25th & 50th	746	-	-	746	(100.0%)
Between 50th & 75th	746	5	(0.7%)	741	(99.3%)
Above 75th	746	98	(13.1%)	648	(86.9%)

Four GLCs were added to the sample from 2011, CapitaMalls Asia, Dyna-Mac Holdings, STATS ChipPAC Ltd, and Tiger Airways. Percentages in parentheses are the proportion of GLC/non-GLC firms out of all firms for a particular year, sector, or firm size quartile.

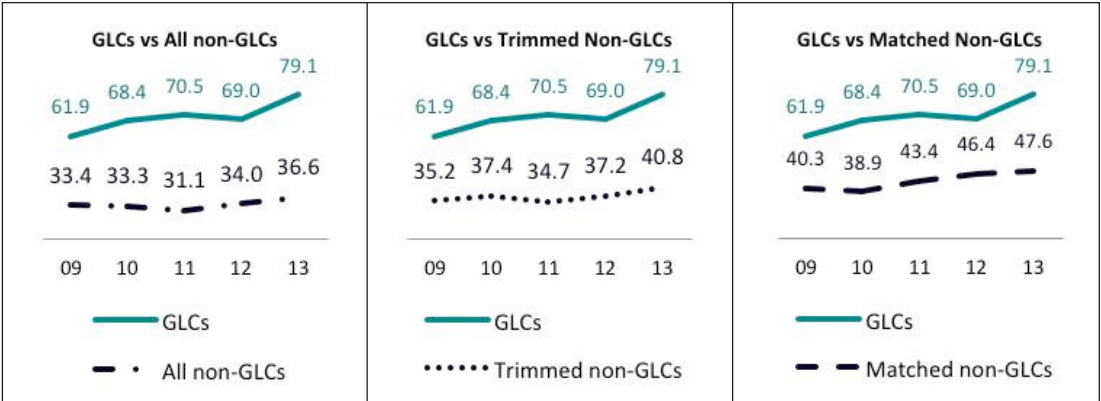
Sources: Bloomberg, CGIO's GTI (2009 to 2013) and companies' annual reports.

It is important to take the above differences into account because corporate governance practices and needs differ more between sectors than within. This will affect our analysis in the next section when we compare GLC and non-GLC GTI performance. The other factor to consider is firm size. Table 2 shows that most GLCs are among the largest 25% of companies. It can be argued that large firms have a greater need for strict governance standards because they are harder to monitor or have larger “free cash flows”, and, consequently, greater agency problems (Jensen M. , 1986). Firm size is, thus, another variable which we have to control when we run our analyses.

Analyses of GTI Data

From Figure 6, it can be seen that GLCs have higher GTI scores compared to non-GLCs. The difference in scores was more than two times from 2010 onwards. GLCs improved steadily in their overall corporate governance practices from 2009 to 2013, whereas non-GLCs remained stagnant and only started scoring slightly better after 2011. Thus, the gap between GLC and non-GLC corporate governance scores has been slowly increasing throughout the sample period. This first view of the data indicates that GLCs tend to outperform non-GLCs in governance practices and disclosure.

Figure 6: Comparison Between GLC and Non-GLC Scores (GTI 2009 – 2013)



Trimmed non-GLCs refer to non-GLC observations which were only included in the analysis if they were within the range of GLC market capitalisation (minimum of S\$81.5696 million and S\$62,249.7852 million). The trim reduced non-GLC observations from 2,881 to 1,337.

Matched non-GLCs refer to unique non-GLC observations which were matched with GLC observations in the same year and sector by minimising the absolute difference in market capitalisation. The matching exercise reduced non-GLC observations from 2,881 to 103.

Sources: Bloomberg, CGIO’s GTI and companies’ annual reports.

Firm size for GLCs and non-GLCs is quite different, as observed in Table 2. To check the robustness of our observation that GLCs have better corporate governance scores than non-GLCs, we ran a correlation analysis on our sample examining the relationship between firm market capitalisation and GTI overall score. From this analysis, we found a Pearson Correlation Coefficient of 0.51 (significant at 1% level), providing considerable evidence of a positive association between firm size and corporate governance performance.

To create a control for these size effects, we consequently adjusted the non-GLC sample by two methods. First, we excluded any non-GLCs which were outside the range of GLC market capitalisation (which was a minimum of S\$81.5696 million and a maximum of S\$62,249.7852 million). This reduced the number of non-GLC observations down to 1,337. Second, within each sector for a particular year, we matched every GLC observation with a unique non-GLC by minimising the absolute difference in the companies' market capitalisation¹⁸. Doing this for all sectors and years, we ended up with 103 non-GLC matches. These two adjustments were targeted at increasing the comparability between GLCs and non-GLCs.

We included the plots of overall scores for the two adjusted samples, trimmed, and matched non-GLCs (Figure 6) and found that our earlier result of GLCs performing better than non-GLCs still hold. However, as we increased the strictness of the criteria for controlling the non-GLC sample, non-GLC scores tended to improve, narrowing the gap between GLC and non-GLC. This was indicative of the size effect on corporate governance and confirmed that large firms tend to have better corporate governance mechanisms in place.

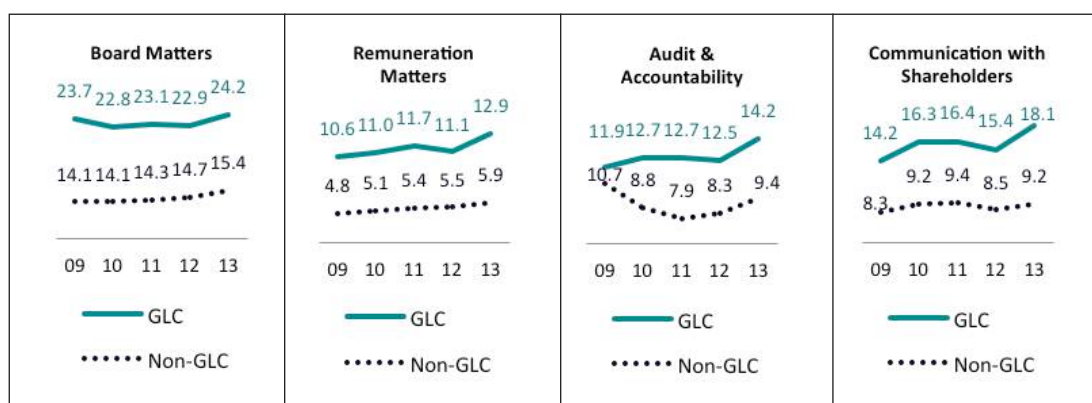
GLCs outperformed non-GLCs in all four components of the GTI.

To examine further what constituent components of the GTI overall score were driving the results that we had seen thus far, we plotted the individual components of the overall score comparing the performance of GLCs and non-GLCs (Figure 7). Again, we saw that GLCs outperformed non-GLCs in all four components of the

GTI. GLCs made the most improvement in their communication with shareholders in the sample period, with their score for this component jumping from 14.2 in 2009 to 18.1 in 2013. In fact, GLCs mostly made year-on-year improvements across all components with few exceptions. In contrast, non-GLCs, on the whole, barely improved; and suffered a large dip in their overall score for audit and accountability in 2009 to 2011.

¹⁸ A particular GLC may not be matched with the same non-GLC throughout the sample period. For example, DBS Group is matched with United Overseas Bank for GTI2009 and with Oversea-Chinese Banking Corporation for GTI 2013. This was because United Overseas Bank was closer in size to DBS Group in the earlier period but was overtaken by Oversea-Chinese Banking Corporation in the later period. The algorithm used for the matching is attributed to Bergstralh and Kosanke (1995).

Figure 7: Comparison Between GLC and Non-GLC Scores by Component (GTI 2009 – 2013)



Sources: Bloomberg, CGIO's GTI and companies' annual reports.

4.3 Management Implications

In many aspects, the governance issues faced by SOEs are no different from other publicly listed companies held by pension funds and other investors. Boards and Directors need to monitor the companies' financial performance, ensure that it is moving in the right direction, and replace top executives when necessary.

SOEs face special challenges. In many countries around the world, state ownership is known to detract from company performance. It may be unclear what mission and mandate the SOEs should serve. Such uncertainty makes it more difficult to set and enforce high standards for SOEs and their managers. SOEs may be subject to political interference and rent seeking by bureaucrats or politicians for their own selfish goals. SOEs may also benefit from privileges or political protection and, thereby, gain unfair advantages. Finally, even when guided by idealistic owners, politicians, and bureaucrats, SOEs may lack the competencies necessary to optimise financial returns.

Hence, it is particularly important for SOEs, as we find in Singapore's case, to have a clear business mandate and to be able to operate at arm's length from the political process. As such, it may be argued that SOEs are expected to have especially high standards of good governance – transparency, board independence, and committees – given their ownership links to the state.

To summarise, corporate governance is good for business in general, but it is essential for SOEs.

GTI Sub-component Analysis

We examined the mean scores for a number of sub-components to understand where GLCs outperformed non-GLCs. We re-grouped the sub-components to several categories and divided them into a measurable range of values for better analyses.

Director independence: We found a strong focus on independent boards at GLCs compared to non-GLCs. GLCs had a higher proportion of independent Directors at the board and an independent Chairman compared to non-GLCs. Notably, 89% of GLCs had a Chairman who is independent or a Non-Executive Director who is not related to the CEO versus 32% for non-GLCs. Moreover, GLCs appeared to emphasise independence from the major shareholder and disclosed how they assess director independence. In contrast, non-GLCs frequently had the same independent Directors sitting on multiple board committees and did not disclose director information.

Nomination of Directors: A majority of GLCs had at least one independent Director with industry experience compared to less than half of non-GLCs because the nomination process, and the skills and experience sought were disclosed more frequently by GLCs.

Board appraisal: GLCs appeared to have more effective boards because they met more regularly and were more careful in their selection of Directors with more external appraisals. However, we noticed that GLCs could improve their disclosure of individual Director appraisal criteria. In this aspect, non-GLCs performed better than GLCs by 12 percentage points.

Remuneration of Directors: There was more accountability of CEOs and Executive Directors at GLCs because exact remuneration disclosure was more frequent – only 5% of non-GLCs disclosed exact Executive Director remunerations versus 51% for GLCs. In addition, long-term incentives were used and performance measures were disclosed more often in GLCs. The same can be said of remuneration of Non-Executive Directors as 67% of GLCs disclosed the exact fees of Non-Executive Directors versus 6% for non-GLCs.

Audit and accountability: GLCs had very good risk management processes, frameworks, and stronger internal controls than non-GLCs. This may be partly because they have a separate board-level risk committee (66% of GLCs and 4% of non-GLCs). Besides, 55% of non-GLCs had the same independent Directors sitting on the nominating, remuneration, and audit committee; while only 10% of GLCs operated likewise.

Communication with shareholders: GLCs' communication with shareholders outperformed that of non-GLCs because they frequently provided the latest financial results more than two weeks before non-GLCs. Furthermore, they updated through dedicated Investor Relations (IR) contacts and by uploading briefing material onto their corporate website. GLCs also gave ample notice of annual general meetings, with an average notice period of 25 days, which is above the minimum 14 days required by law.

Table 3: GLCs versus Non-GLCs Comparison - Selected GTI Sub-components

Question	GLC	N	Non-GLC	N	Difference	
Director independence						
1 Proportion of independent directors on board	0.64	103	0.46	2881	0.18	***
2 Disclosure of all directorships and chairmanships held by its directors at present and over past three years	0.58	103	0.22	2881	0.37	***
3 Chairman is independent director	0.47	103	0.13	2859	0.33	***
4 Chairman is independent or non-executive director and not related to CEO	0.89	102	0.32	2783	0.57	***
5 Definition of independence to include independence from major shareholders	0.36	84	0.06	2354	0.29	***
6 Comprehensive description of how the company assesses the independence of its directors	0.55	103	0.26	2854	0.29	***
7 Same independent directors sitting on the nominating, remuneration, and audit committees	0.10	103	0.55	2881	-0.46	***
8 Non-disclosure of director information	0.12	65	0.38	1795	-0.26	***
Nomination of directors						
9 At least one independent director has experience in industry company is in	0.79	103	0.41	2880	0.37	***
10 Director skills/experience sought disclosed	0.46	103	0.14	2880	0.31	***
11 Process followed for nominating director disclosed	0.54	103	0.23	2880	0.32	***
Board appraisal						
12 Number of times board met during year	6.63	103	4.35	2857	2.29	***
13 Board appraisal process disclosed in detail	0.64	103	0.29	2879	0.35	***
14 Individual director appraisal process disclosed in detail	0.39	103	0.12	2879	0.27	***
15 Individual director appraisal criteria disclosed	0.23	103	0.35	2879	-0.12	***
16 External party used at least periodically to conduct board and/or individual director appraisal	0.40	103	0.01	2880	0.38	***
17 Exact remuneration of executive directors are disclosed	0.51	97	0.05	2432	0.46	***
18 Long-term incentives are used for executive director remuneration	0.85	103	0.34	2872	0.52	***
19 Performance measures of executive directors are disclosed	0.60	102	0.10	2871	0.49	***
Remuneration of non-executive directors						
20 Exact fees of non-executive directors are disclosed	0.67	103	0.06	2868	0.61	***
21 Non-executive director fee structure is disclosed	0.65	103	0.06	2869	0.59	***
Audit and Accountability						
22 How risks are assessed and managed are disclosed	0.57	103	0.34	2880	0.23	***
23 Process and framework used to assess adequacy of internal control systems and risk management are disclosed	0.63	103	0.14	2879	0.49	***
24 Whether internal auditor meets or exceeds IIA standards is disclosed	0.57	101	0.19	2852	0.39	***
25 Has a separate board-level risk committee	0.66	103	0.04	2881	0.62	***
Communication with Shareholders						
26 Latest financial results are available on website	0.97	103	0.62	2784	0.35	***
27 Number of days taken to announce results	40.94	103	55.75	2840	-14.81	***
28 IR contact is given on website/annual report	0.88	103	0.46	2853	0.42	***
29 Website has clearly dedicated IR link instead of providing financial information under links such as "News" or "Announcements"	1.00	103	0.74	2785	0.26	***
30 Powerpoint slides/webcast from briefing are available on SGX or corporate website	0.69	103	0.18	2829	0.51	***
31 Number of days between notice sent and date of AGM	25.00	102	17.89	2872	7.11	***

The last column shows continuous variables results from a t-test for differences in means, with standard errors clustered at the firm level; and for binary variables results from a binomial test for differences in proportions.

Note: ***, **, * denote the difference is statistically significant from zero at a 0.01, 0.05, and 0.10 level.

Sources: Bloomberg, CGIO's GTI (2009 to 2012) and companies' annual reports.

5. Corporate Governance of GLREITs

In this section, we will explore the corporate governance practices of GLREITs. We base our GLREIT analysis on Directors' profiles as obtained from GREITs FY2012 annual reports. Our focus is on the boards' relations between the GLC parent and GLREITs as subsidiaries.

Figures 8 and 9 show the Director network structure between GLREITs and their parent GLCs. Figure 8 shows the Directors' network in CapitaLand and its subsidiaries – CapitaMalls Asia, CapitaMall Trust, CapitaCommercial Trust, CapitaRetail China Trust, and Ascott Residence Trust. Figure 9 shows the Directors' network in Mapletree Investments and its subsidiary GLREITs – Mapletree Commercial Trust, Mapletree Industrial Trust, and Mapletree Logistics Trust. The figures provide a list of Directors who had two or more directorships within each network and highlight the core Directors who sat on multiple boards within the networks. Ownership details and explanation of our analysis are provided in Figures 8 and 9 respectively.

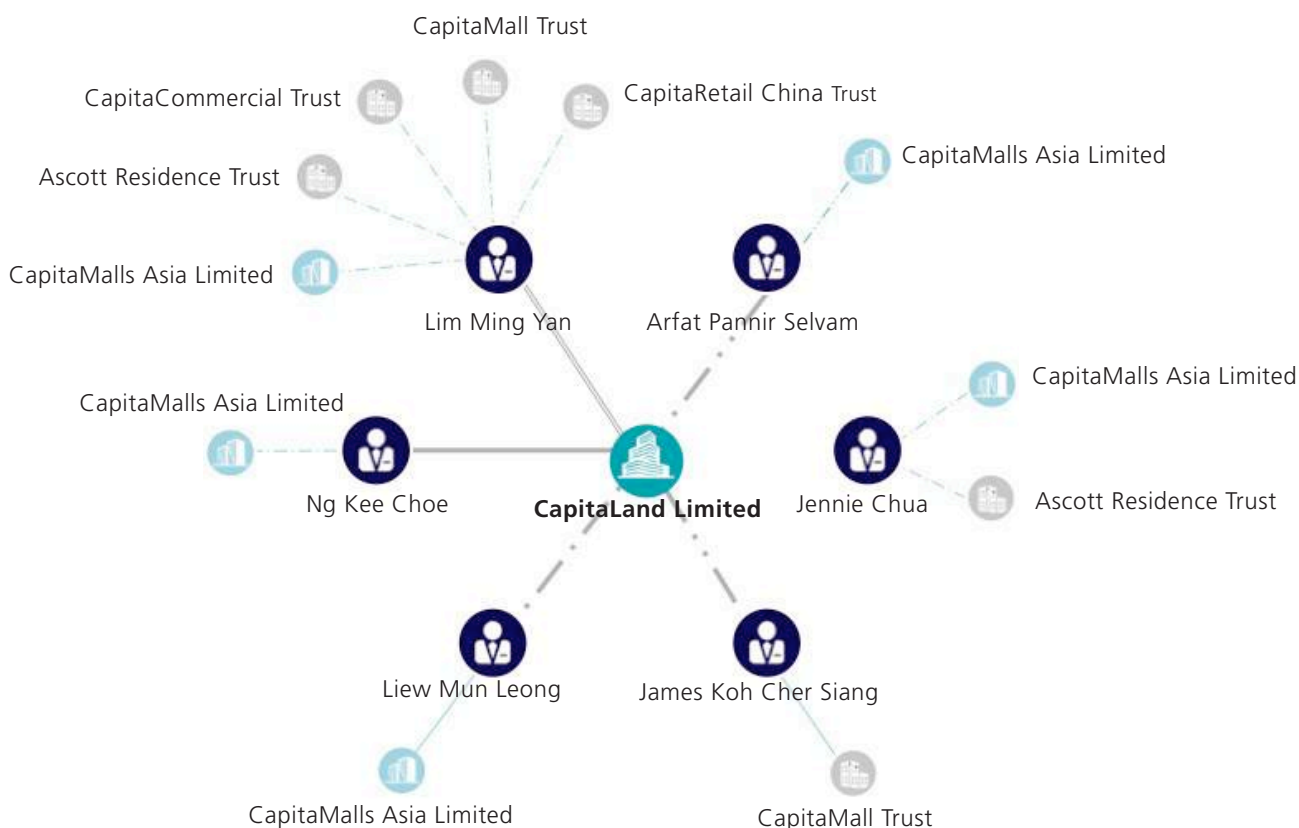
CapitaLand is a listed GLC on the Singapore Stock Exchange which Temasek has an effective interest of 40.93%. Under the CapitaLand corporate structure, CapitaLand owns SGX-listed CapitaMall Asia (GLC) and four SGX-listed GLREITs (CapitaMall Trust, CapitaCommercial Trust, CapitaRetail China Trust, and Ascott Residence Trust). Details of CapitaLand's shareholdings are listed on the summary of substantial shareholders table displayed in Figure 8. We observed that a number of CapitaLand (parent company) board members also sit on the boards on the company's listed subsidiaries. From Figure 8, a total of six Directors from CapitaLand (Lim Ming Yan, Ng Kee Choe, Liew Mun Leong, James Kor Cher Siang, Jennie Chua, and Arfat Pannir Selvam) sit on the boards of the subsidiaries.

Mapletree Investments Pte Ltd is a wholly-owned subsidiary of Fullerton Management Pte Ltd. Fullerton Management Pte Ltd is a subsidiary of Temasek¹⁹. Under Mapletree Investments' corporate structure, it owns three SGX-listed GLREITs - Mapletree Commercial Trust, Mapletree Industrial Trust, and Mapletree Logistics Trust. Details of Mapletree Investments' shareholdings are listed on the summary of substantial shareholders table displayed in Figure 9.

¹⁹ Please see Mapletree Commercial Trust Annual Report (2012) pp. 125 for more details.

In both CapitalLand and Mapletree Investments, we observed that the CEO of the parent company sits on the boards of the entire subsidiary REITs as Non-Executive Directors (Lim Ming Yan from CapitalLand and Hiew Yoon Khong from Mapletree Investments). This could be a corporate governance measure to facilitate information flow between the parent company and subsidiary, and to ensure that decisions made for the REIT are beneficial to its parent company. The interlocks also encourage diffusion of corporate practices because prior adopters reduce the uncertainty about the costs and benefits of implementing a practice (Shipilov, Greve, & Rowley, 2010).

Figure 8: Directorships at CapitaLand and Associated REITs (FY2012)



Directorship

- **Lim Ming Yan** holds six directorships. He is the President and Group Chief Executive Officer of CapitaLand Limited. He is a Non-Executive Director on the Boards of CapitaMalls Asia. He is also the Deputy Chairman of CapitaMall Trust, CapitaCommercial Trust, CapitaRetail China Trust, and Ascott Residence Trust.
- **Ng Kee Choe** holds two directorships. He is the Chairman of CapitaLand and a Non-Executive Director on the board of CapitaMalls Asia.
- **Liew Mun Leong** holds two directorships. He is an Executive Director of CapitaLand and the Chairman of CapitaMalls Asia.
- **James Koh Cher Siang** holds two directorships. He is an independent Director on the board of CapitaLand and the Chairman of CapitaMall Trust.
- **Arfat Pannir Selvam** holds two directorships. He is an independent Director on the board of CapitaLand and CapitaMall Asia.
- **Jennie Chua** holds two directorships. She is a Non-Executive Director on the board of CapitaMalls Asia and Ascott Residence Trust.

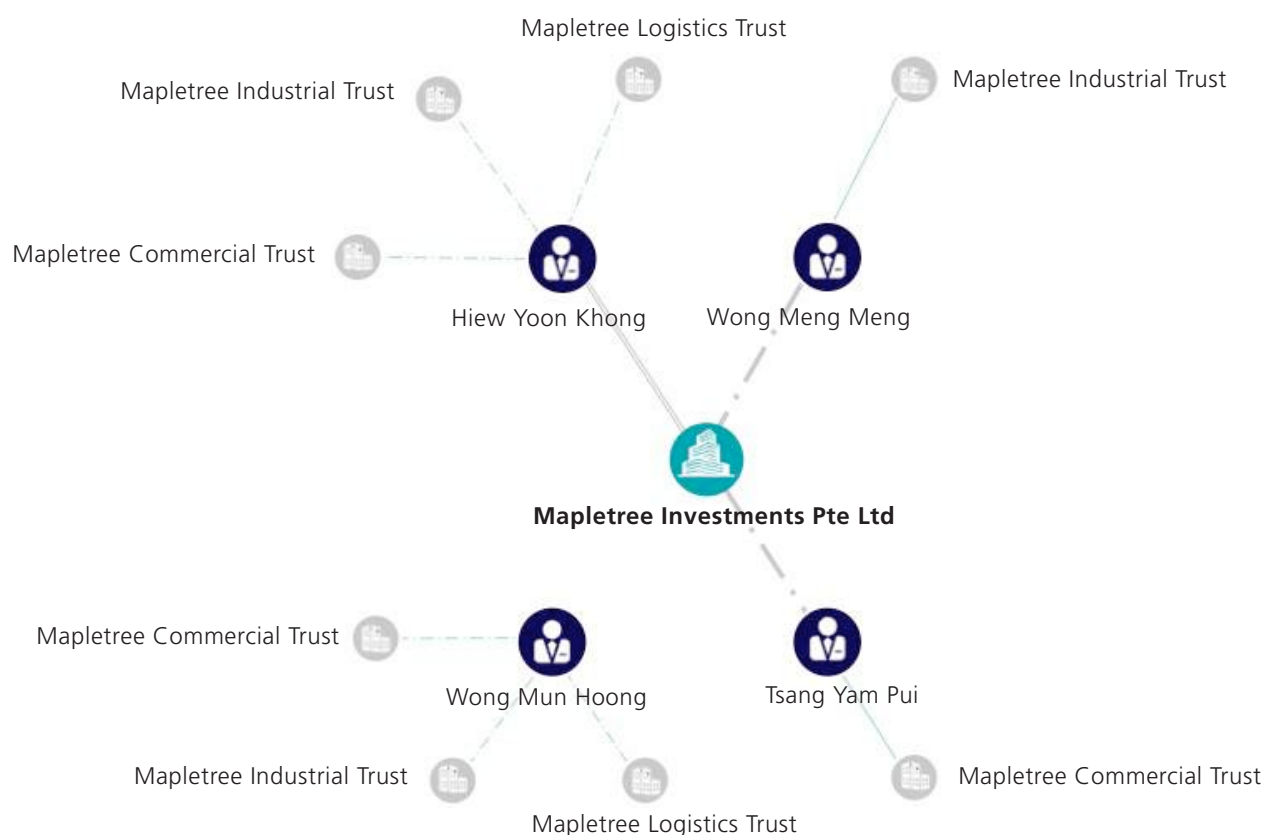
Node	Individual or entity in network
	Director
	Parent Company
	Subsidiary
	Associated REITs

Line	Connection between 2 nodes; represents directorship of the individual at the entity
Line Weight	Thicker line indicates directorship at the parent company; thinner line indicates directorship at the subsidiary or associated REIT
	CEO
	Chairman
	Executive Director
	Non-Executive Director
	Independent Director

Summary of Substantial Shareholders (FY2011/2012)		
GLCs and GLREITs	CapitaLand Ownership	Temasek Ownership
CapitaLand	-	40.93% (effective)
CapitaMalls Asia	65.44% (direct)	65.58% (deemed)
CapitaMall Trust	27.58% (deemed)	27.83% (deemed)
CapitaRetail China Trust	36.95% (deemed)	37.38% (deemed)
CapitaCommercial Trust	32.30% (deemed)	32.70% (deemed)
Ascott Residence Trust	44.94% (deemed)	47.19% (deemed)

Source: CapitaLand Limited annual report (FY2011/2012), CapitaMalls Asia annual report (FY2011/2012), CapitaMall Trust annual report (FY2011/2012), CapitaRetail China Trust annual report (FY2011/2012), CapitaCommercial Trust annual report (FY2011/2012), Ascott Residence Trust annual report (FY2011/2012).

Figure 9: Directorships at Mapletree Investments and Associated REITs (FY2012)



Directorship

- **Hiew Yong Khong** holds four directorships. He is the Group CEO of Mapletree Investments. And he is also a Non-Executive Director at Mapletree Logistics Trust, Mapletree Industrial Trust, and Mapletree Commercial Trust.
- **Wong Mun Hoong** holds three directorships. He is a Non-Executive Director at Mapletree Commercial Trust, Mapletree Industrial Trust, and Mapletree Logistics Trust.
- **Tsang Yam Pui** holds two directorships. He is a Non-Executive Director at Mapletree Investments and the Chairman of Mapletree Commercial Trust.
- **Wong Meng Meng** holds two directorships. He is a Non-Executive Director of the Mapletree Investments and the Chairman of Mapletree Industrial Trust.

Node	Individual or entity in network
	Director
	Parent Company
	Associated REITs

Line	Connection between 2 nodes; represents directorship of the individual at the entity
Line Weight	Thicker line indicates directorship at the parent company; thinner line indicates directorship at the subsidiary or associated REIT
	CEO
	Chairman
	Executive Director
	Non-Executive Director
	Independent Director

Summary of Substantial Shareholders		
GLREITs	Mapletree Investments Ownership	Temasek Ownership
Mapletree Commercial Trust	42.23% (deemed)	42.51% (deemed)
Mapletree Industrial Trust	30.12% (deemed)	30.25% (deemed)
Mapletree Logistics Trust	40.53% (deemed)	41.03% (deemed)

Source: Mapletree Investments annual report (FY2011/2012), Mapletree Commercial Trust annual report (FY2011/2012), Mapletree Industrial Trust annual report (FY2011/2012), Mapletree Logistics Trust annual report (FY2011/2012).

6. Limitations

As with other SOE studies, the sample size is limited. In the comparative study of GLCs and non-GLCs corporate governance practice, we only use the test for differences in mean and proportion, not regression analysis and calculate standard errors clustered at the firm level.

As Temasek does not publish publicly its entire portfolio holdings, this may result in the inadvertent exclusion of certain GLCs and GLREITs. Every effort has been made to ensure that all GLCs and GLREITs that met our 20% total interest requirement are included.

The final limitation is selection bias. Singapore GLCs and GLREITs are floated through public offers. It is to be cautioned that the selection of publicly listed GLCs and GLREITs may, in itself, be a biased sample. Just like any other SOEs that have been floated, these GLCs and GLREITs are likely to have gone through restructuring procedures or treatment before public listing.

7. Future Research

A possible avenue for further research would be to see if GLCs and/or GLREITs perform better than non-GLCs and/or non-GLREITs in terms of accounting and market measures, and to determine the extent to which this is driven by government ownership and corporate governance standards. One may be able to differentiate between the effects of being government-linked and being well governed.

As mentioned earlier, in this study we only covered GLCs and GLREITs in which Temasek had a total interest of 20% or more, as this criterion has been used in prior studies. Unfortunately, this is applicable to only a portion of Temasek's portfolio value. It would be interesting to see how relaxing the 20% requirement may transform the results of a similar analysis in future studies.

A natural question that arises is whether the success of Temasek, its ownership, and governance of GLCs and GLREITs can be transplanted to other countries.

A natural question that arises is whether the success of Temasek, its ownership, and governance of GLCs and GLREITs can be transplanted to other countries. Chen (2013) dealt with this question rather extensively. He explained that there are three criteria to be met. Firstly, it has to be a small city-state. Secondly, there should be little or no interference by the government in its investment and management decisions. Finally, there should be the presence of foreign holdings to provide pressure to keep to global corporate governance standards for the success to be transplanted. Perhaps, a theoretical framework

on why state ownership can be developed so that other countries can learn from Singapore's experience on managing SOEs' performance and governance.

8. Conclusion

This report provides an update on Temasek's role as a state holding company, and its ownership and corporate governance of GLCs and GLREITs.

The research findings show that Temasek is an active investor with long-term returns maximisation as the key motive in its investment decision-making. It is able to fulfil its role with limited political interference. Monitoring and accountability measures are in place in Temasek, as disclosed by its Group Financial Summary and Portfolio Performance.

Temasek owns GLCs and GLREITs in a multi-tier corporate structure. Since 2003, Temasek has reduced its holding on the number of SGX-listed GLCs while its holding on SGX-listed GLREITs increased. Despite these changes in its investment portfolio, Temasek maintains a high percentage of ownership in transportation and communications companies.

In conclusion, our findings show that SGX-listed GLCs generally have better corporate governance practices in comparison with non-GLCs. As articulated by one observer, "Singapore ... has been a major exception to the central tenet of Economics 101 that government participation is bad for the economy" (Magnier, 1993). Can its model be exported to other countries? This remains an open question that future researchers will have to address.

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The research team gratefully recognises the contributions by Research Assistant, Ms Eileen CHOW Yi Ling.

About this Report

This report is a three-year joint collaboration between the Centre for Governance, Institutions and Organisations (CGIO) at NUS Business School and the Chartered Institute of Management Accountants (CIMA). The focus of the research initiative is to conduct studies on State-owned Enterprises (SOEs) in Asia.

The first of three editions, this report is about Temasek Holdings, its ownership and governance of Singapore-listed Government-linked Companies (GLCs) and Government-linked Real Estate Investment Trusts (GLREITs). Singapore GLCs and GLREITs are owned and managed differently from SOEs around the world. Temasek, which manages the state's investments in GLCs and GLREITs, acts as a commercial investment company, promoting sound corporate governance in its portfolio companies.

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