Economic Analysis Co-Relating the Performance of Listed Companies with their Shareholders' Profile

Consultancy Report (Draft IV)

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April 14, 2003

Executive Summary

This report sets out the results of the economic analysis co-relating the performance of listed companies with their shareholders' profiles. It documents the evidence as derived from a thorough and rigorous analysis of the ownership structure and economic performance of 754 companies that were listed on the Stock Exchange of Hong Kong as at 31 August 2001. Data to compute the foregoing is derived primarily from the interim and annual reports of listed companies, and supplemented by the Asian Company Handbooks as well as from the *Worldscope* database.

To facilitate the ease of comprehension and comparison, ownership of companies were categorized into four major groups namely:

i. family-controlled companies where members of a family own more than 10 percent of the issued share capital of the company;
ii. widely-held companies where no shareholder owns more than 10 percent of the issued share capital of the company;
iii. state-owned enterprises where the control vests with the central, provincial or city governments as the case may be; and
iv. "miscellaneous" which is the "catch-all" category into which a company will fall if it is not defined as any of the above.

Two widely-used measures are used to compute the economic performance of these companies namely return of assets and return on equity. We also provide the market assessment of company valuation through the ratio of market value of assets to book value of assets.

The key findings may be summarized as follows.

1. Some 94.7 percent of the companies surveyed (754 companies in total, as explained above) were either family-controlled or state-owned, with the former comprising 81.17 percent or 612 companies. This is well in excess of the average of 48.85 percent for economies in East Asia;

2. By and of itself, family controlled companies have the best economic performance. The presence of families in the ownership of companies does not adversely affect the economic performance of the same *vis-à-vis* widely-held or state-owned enterprises;
3. Almost all companies (94.83 percent of the listed Hong Kong companies surveyed or 715 companies) adopted pyramid structures to exert corporate control, with the majority locating the listed entity at the first layer of the control pyramid;
4. Evidence also appears that the economic performance of companies is negatively correlated with the location of the listed entity within the pyramid structure. In short, those companies with corporate structures that place the listed entity top in the control pyramid generally exhibit better economic performance and vice-versa. The average returns on assets for the top layer and bottom layer are 0.058 and –0.014 respectively, and the difference is statistically significant. The average return on equity for the top layer and the bottom layer are 0.094 and -0.000 respectively, and the difference is statistically significant; and
5. Economic performance also appears to be not affected adversely with the degree of participation in management by the members of the family in family-controlled companies. Using the same measures of economic performance, high family control exhibit the best economic performance, as the lowest 1/3 has the medium return on asset (0.033), return on equity (0.056) but the highest 1/3 has the highest return on asset (0.071), return on equity (0.115). Companies with a higher representation of family members, whether as directors on the board or as senior managers involved in the day-to-day operations of the company, do not seem to perform worse than those with a lower rate of representation.

This report is subject to two important caveats. First, it merely sets out the findings as supported by a comprehensive and scientific analysis of the available data on ownership structure and economic performance of listed companies in Hong Kong. Secondly, it does not profess to provide any conclusion as to which corporate structure should be preferred, be this to maximize the rate of return and / or to enhance the protection of investors.

Chapter 1
Introduction

Background

1.1 In the economics literature it is a well documented effect that managers may not always work according to shareholders' benefit. It is natural to believe that managers may pursue goals for their own benefits rather than maximizing the wealth of shareholders. This source of principal agent conflict is known as agency costs. To minimize the impacts of agency costs, measures such as capital market monitoring and organizational changes are suggested to work as checks and balance.

1.2 Capital market monitoring refers to forces from capital markets that help to "punish" poorly managed companies by lowering market values of their stocks and higher costs for debt financing.

1.3 The topic of this consultancy has been identified by the Shareholders Sub-Committee (SSC) of the Standing Committee on Company Law Reform (SCCLR). The SSC would like to ascertain, in the context of existence of dominant family shareholding in a significant percentage of listed companies in Hong Kong, whether or not any trends emerge regarding the financial performance of such companies, with particular reference to their ability to attract international institutional investors.

1.4 A consultancy team from The Chinese University of Hong Kong is employed to study this issue. Details of the consultancy team and particulars of their members' strengths are given in Appendix 1. The consultancy team is pleased to produce this report to the Steering Group of this project.

1.5 The role of the consultancy team is to document the evidence on the relationship between economic performance and ownership structure, but not to make any speculative conclusions.

Highlight of Findings

1.6 Major findings in this report indicate that virtually all listed companies in Hong Kong are controlled by families. In the appendices, we list the control charts of the listed companies and how families control these companies through private companies and family trusts. There is a common belief that Hong Kong companies are family controlled; though this report is the first scientific study to provide empirical evidence to verify this common belief.

1.7 In this report, we adopt return on asset and return on equity as measures of the economic performance. We document in this report that the presence of families improves economic performance in comparison with widely-held and stated-owned companies.

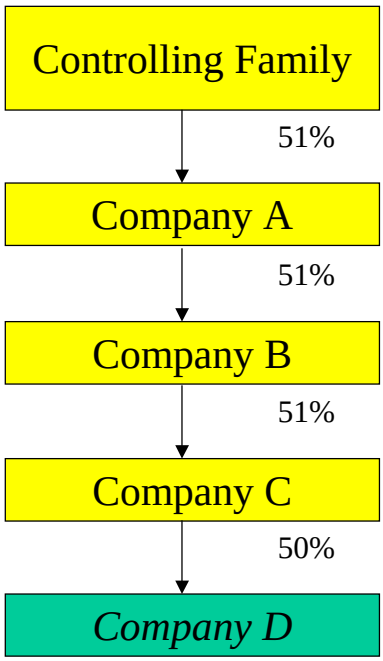
1.8 We also document that majority of the companies have at least one member of the senior management team (senior officer or director) come from the controlling family. The degree of management concentration, as measured by the percentage of directors from the same family in the company's board of directors and percentage of senior managers from the same family, is not at a high level.

1.9 We document that the percentage of senior management and directors from the controlling families by and large improves the economic performance. Companies having high levels of involvement of senior management and directors from the controlling families have the best economic performance. The second generations of these families start to occupy senior managerial positions, like board directors and senior operating officers, in their family-companies. However, the participation of the second generation does not have material impacts on the economic performance of the listed companies.

1.10 Another important finding is that the majority of Hong Kong listed companies are controlled via pyramid structures. Pyramiding helps magnify the control which makes it possible to maintain low ownership. Figure 1.1 shows how this works. Without loss of generality, suppose Family X owns 51 per cent of company A, which owns 51 per cent of company B, which owns 51 per cent of company C, which owns 50 per cent of

company D. The family therefore controls 50 per cent of the shares of D (the smallest holdings in the control chain). However, its ownership stake is only 6.7 per cent (multiplication of all ownerships, i.e. 51% x 51% x 51% x 50% = 6.7%) because of the pyramiding.

Figure 1.1 A Pyramid Structure



1.11 We show in this report that most listed companies are often in the first layer of the control pyramid. This could be due to normal business expansions and is a natural pathway of corporate development. However, the exact reason for the dominance of pyramid structure is outside the scope of this report.

1.12 Empirical results indicate that economic performance of companies higher in the control pyramid exhibit better economic performance; while companies lower in the control pyramid have worse economic performance.

1.13 This report also provides results of market valuation on economic performance. The market valuation is not in line with economic performance in Hong Kong. Family controlled firms have the lowest market valuation relative to other types of firms. Market also gives a lower valuation to the participation of second generation and the concentration of directors and senior officers.

1.14 This report is organized as follows. Chapter 2 discusses the methodology of this study. Descriptive statistics are contained in Chapter 3. Empirical analyses on economic performance are conducted in Chapter 4. Chapter 5 provides a discussion on the market valuation of the companies' economic performance. The final chapter gives the concluding remarks.

Chapter 2
Methodology

Sampling Procedures

2.1 This study examines the ownership structure system and economic performance of all listed companies in Hong Kong. We obtain a list of companies from the Stock Exchange of Hong Kong. The initial list covers a total of 756 companies listed on the main board and 84 companies listed on the Growth Enterprises Market (GEM) as of August 31, 2001. As we shall explain below, we employ corporate data of the year 2000. The choice of this sample period is due to two main reasons. First, the year 2000 represents three years after the 1997 Asian Financial Crisis. Results on a detail study of ownership structure and economic performance of listed firms will not be biased by the drastic events of the Asian Financial Crisis. Second, the year 2000 witnessed the solid establishment of the GEM market in Hong Kong so that companies of the new economy can also be included.

2.2 As the subject of study is listed company in Hong Kong, the sample represents all public companies in Hong Kong. Chinese state owned enterprises, the H-shares, are included though their ownership structures are very different from that of a typical Hong Kong company. Companies like Dairy Farm, Hongkong Land and Jardine are not included, because they are not listed in Hong Kong despite of their substantial business involvements in Hong Kong.

2.3 Among the listed companies, some are not included for various reasons. For example, Yaohan International (0700) is in the process of liquidation and is not included. Akai Holdings (0448) is not included because the company is suspended from trading. Listed closed ended fund, like the HSBC China Fund (0504), Thai Asia Fund Ltd (0540) and ING Beijing Investment Company (1062) and not included in the final sample because they are investment funds and the relationship between their economic performances and shareholders' profiles should not have practical implications to the investing public.

2.4 Table 2.1 contains the companies excluded from the analysis, together with the reasons for exclusions.

Table 2.1: Companies Excluded from This Study

Stock Code	Company Name	Reason for Exclusion from Study
87	Swire Pacific B	Class B Shares
90	Gold Wo Int'l	Newly Listed
159	Wah Nam Group	Suspended from Trading
162	I-Wood Int'l	Newly Listed
164	Premium Land	Newly Listed
192	Saint Honore	Newly Listed
196	Grand Hotel B	Class B Shares
204	Everest Int'l	Closed End Fund
206	ITC Corp Pref	Preferred Share
223	Dao Heng Bank	Privatized Subsequently
261	Win	Suspended from Trading
290	Yew Sang Hong	Newly Listed
310	GR Inv Hold	Closed End Fund
329	Golden Dragon	Newly Listed
335	Upbest Group	Newly Listed
339	Earnest Inv	Closed End Fund
346	Luen Tai Group	Newly Listed
353	Jackley Holding	Newly Listed
361	Sino Golf Hold	Newly Listed
362	Sunlord Chem Gp	Newly Listed
365	Sun East Tech	Newly Listed
395	Siu-Fung Hold	In Liquidation
421	TF Hingfung Pre	Preferred Share
428	Harmony Asset	Closed End Fund
448	Akai Holdings	Suspended from Trading
504	HSBC China Fund	Closed End Fund
505	Gilbert Hold	Newly Listed
540	Thai-Asia F Ltd	Closed End Fund
543	Thai Asset F Pre	Preferred Share
597	Star E. Pref 0203	Preferred Share
605	Kpi Company	Newly Listed
627	U-Right Int'l	New Listed
647	Joyce Boutique	Report not yet Published
682	Chaoda Modern	Newly Listed
700	Yaohan Int'l	In Liquidation
702	Geomaxima (Hk)	Newly Listed
721	Prime Invest	Closed End Fund
768	UBA Investments	Closed End Fund

770	Shanghai Growth	Closed End Fund
861	Digital China	Newly Listed
878	Soundwill Hold	Report not yet Published
881	JF Japan OTC Fund	Closed End Fund
885	Forefront Int'l	Newly Listed
888	Roadshow	Newly Listed
889	Datronix Hold	Newly Listed
913	Unity Inv Hold	Closed End Fund
932	Euro-Asia Agric	Newly Listed
987	Albatronics(Fe)	Suspended from Trading
1062	ING Beijing	Closed End Fund
1128	Zhenhai Refin	Newly Listed
1180	Lifetec Group	Report not yet Published
1210	Amoy Property Pref	Preferred Share
1213	Mobicon Group	Newly Listed
1215	Wah Lee Res	Newly Listed
8019	Everpride Biopharmaceutical Co. Ltd.	Newly Listed
8022	Argos Enterprise (Holdings) Limited	Newly Listed
8032	GreaterChina Technology Group Limited	Newly Listed
8043	Era Information & Entertainment Limited	Newly Listed
8045	Jiangsu Nandasoft Company Limited	Newly Listed
8047	IA International Holdings Limited	Newly Listed
8049	Jilin P. Huinan Changlong Bio-ph. Co Ltd	Newly Listed
8051	TeleEye Holdings Limited	Newly Listed
8059	Goldigit Atom-tech Holdings Limited	Newly Listed
8070	MRC Holdings Limited	Newly Listed
8076	Sing Lee Software (Group) Limited	Newly Listed
8079	Rainbow International Holdings Ltd.	Newly Listed
8082	Info Communication Holdings Limited	Newly Listed
8089	Proactive Technology Holdings Limited	Newly Listed
8090	EVI Education Asia Limited	Newly Listed
8091	Universal Technologies Holdings Limited	Newly Listed
8098	Techwayson Holdings Limited	Newly Listed
8101	iAsia Technology Limited	Newly Listed
8103	Systek Information Technology Hold. Ltd.	Newly Listed
8112	Angels Transportation Technology Co Ltd	Newly Listed
8115	Sinotronics Holdings Limited	Newly Listed
8118	hkcyber.com (Holdings) Limited	Newly Listed
8119	Thiz Technology Group Limited	Newly Listed
8120	China Medical Science Limited	Newly Listed
8127	Riverhill Holdings Limited	Newly Listed
8128	IIN International Limited	Newly Listed
8129	Q9 Technology Holdings Limited	Newly Listed
8132	Panva Gas Holdings Limited	Newly Listed
8135	Chengdu Top Sci-Tech Company Limited	Newly Listed

8139	Prosperity Intl Holdings (H.K.) Limited	Newly Listed
8149	Xinao Gas Holdings Limited	Newly Listed
8150	Fast Systems Technology (Holdings) Ltd.	Newly Listed
8151	Essex Bio-Technology Limited	Newly Listed
8152	GP NanoTechnology Group Limited	Newly Listed
8158	B M Intelligence International Limited	Newly Listed
8161	WorldMetal Holdings Limited	Newly Listed
8179	AKuP International Holding Limited	Newly Listed

Data Collection

2.5 After obtaining the final list of sample companies, we construct detailed analyses on the ownership structure of the companies. The primary sources of data are the interim and annual reports of listed companies. According to Hong Kong's reporting requirements, Hong Kong listed companies have to report substantial shareholders (defined as those with interest of 10% of higher in the company) and interests of directors in their annual reports. The 10% holding is used because according to the Securities (Disclosure of Interests) (SDI) Ordinance, 10% holding is classified as substantial and has to be reported.

2.6 Apart from the listed companies' financial reports, we also obtain ownership data from the *World Scope database* and the *Asian Company Handbook*. These two data sources aim to supplement the interim and annual reports to identify owners of the listed companies.

2.7 Since companies have different financial year-end, instead of using a common cutoff date, we obtained their latest corporate reports. To control for substantial changes in ownership structure after the financial year-end, we also search for subsequent corporate information and examine if there is any significant changes in the ownership structure. For example, Dao Heng Bank was delisted after the sample cutoff date, hence it is excluded from our sample.

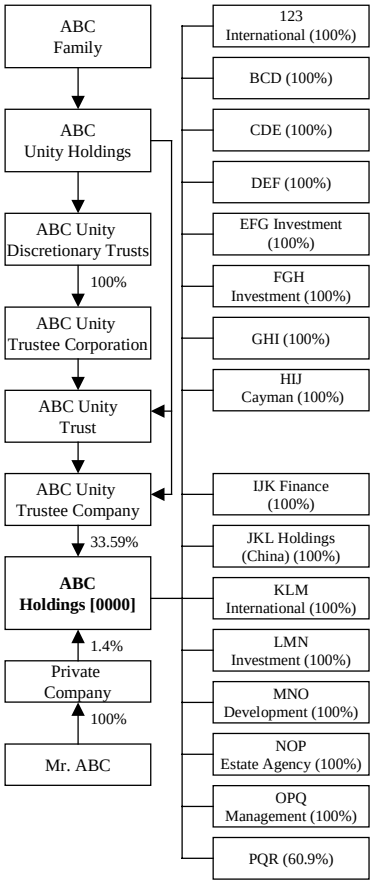
2.8 Based on the collected information, we draw the ownership chart for each listed company. Below is an example of these charts. Without loss of generality, we use ABC Holdings, a hypothetical company as an example. Suppose ABC Holdings is a well- known blue chip

company and it is owned by the ABC Family. Using hypothetical names, the detailed ownership structure of the ABC Holdings, is provided in Figure 2.1.[1] All owners' ownership percentages are reported. It is very typical that Hong Kong listed companies are controlled via pyramid. It is meaningless to only look at the immediate ownership under the pyramid structure. For example, the immediate owner of ABC Holdings is ABC Unity Trustee Company, however it is a common knowledge that Mr. ABC is the true owner. To rectify this problem, we trace the ownership chains all the way up to the ultimate owner. As expected, the ultimate owner of ABC Holdings is the ABC Family, who controls the company via private companies and family trusts. We have traced the control chains to the ultimate owners for all Hong Kong listed companies. The ownership charts of all Hong Kong listed companies surveyed in this report are included in the Appendix 4 of this report.

[1] Throughout this report, we use ABC Holdings [0000] as the example so that consistent illustrations can be made. The use of ABC Holdings does not have any implications. This choice is due to that fact that ABC are the first three English alphabets.

Figure 2.1

The Ownership Control Chart of ABC (Holdings) [0000]



2.9 We classify companies into four major categories: family control, widely held, state owned and miscellaneous.

2.10 Family control refers to the existence of a controlling family who owns more than 10 per cent of shares. Using Figure 2.1 as an example, the ABC Family is the controlling family of ABC (Holdings) (0000), and the company is controlled by the ABC Family via a pyramid structure. Majority of Hong Kong listed companies are controlled by families. To provide a formal definition, we classify a company to be family controlled, if the largest controlling blockholder controls 10% or higher of the control right of the

company and the control blockholder is a family. The 10% ownership rule is adopted by virtue of the definition of substantial shareholder of the SDI Ordinance.

2.11 Widely held companies refer to those have no controlling owner with holdings of 10% or higher. The 10% holding is used because according to the Securities (Disclosure of Interests) (SDI) Ordinance, 10% holding is classified as substantial and has to be reported. For example, HSBC (0005) and Giordano International (0749) are classified as widely held.

2.12 State owned companies refer to the State Owned Enterprises (SOEs) in the People's Republic of China. These include SOEs owned by the Central Government, provincial governments and city governments.

2.13 If a company does not fit into the above three categories, then the company is classified as miscellaneous. Some widely held companies listed in Hong Kong still have a substantial holding (more than 10%) and owned by financial institutions (also includes nominee accounts, venture capital, mutual funds etc) or governments (mostly China). These companies are classified as miscellaneous because the above three categories do not describe their characteristics entirely. In addition, companies classified as "miscellaneous" only represent 2.52% of the sample and do not constitute a big share of listed companies in Hong Kong (see Chapter 3). Separate categories for the sample companies will make the classification too narrow with too few companies fall into each category.[2]

2.14 To measure the economic performance of listed companies, we provide two measures: (1) Return on Assets (ROA), defined as Net Income / Total Assets; and (2) Return on Equity (ROE), defined as Net Income / Total Equity. ROA and ROE are common accounting measures and they are popular among the accounting and finance community in evaluating a company' economic performance. In addition, we also provide the market assessment of company valuation using the ratio of market value of assets to book value

[2] It could be argued that it is rough to adopt such definitions. However, one must admit that every company is different. A precise classification will result in one company for each category, making analysis impossible.

of assets. This market valuation assessment, market value per dollar of assets, reflects market assessment of the valuation of the company. The discussion of economic performance is given in Chapter 4 and the examination of market valuation is given in Chapter 5.

2.15 The calculations of Return on Assets and Return on Equity are straightforward. Without loss of generality, we use ABC Holdings (0000) as an example. For the financial year ended December 31, 2000, the reported net income is HK$19,308 million; and on December 31, 2000, total assets are HK$188,755 million and total equity is HK$159,318 million. The Return on Assets is 19,308 / 188,755 = 0.102 or 10.2%, and the Return on Equity is 19,308/159,318 = 0.121 or 12.1%. Similar calculations are performed for all companies in the sample. However, companies with negative equities are not included in the study. It is because the ROE for these negative companies will introduce bias in the analysis. For example, if a company has a net income of -$10 million and equity of -$5 million. The ROE calculation will show a figure of 2 (-$10 million / -$5 million), which greatly distort the real picture. In order to circumvent this potential bias, companies with negative equities are not included in the analysis.

2.16 Table 2.2 below shows the companies that are excluded because they have negative equities.

Table 2.2 Companies Excluded Because of Negative Equities			
Stock Code	**Company Name**	**Total Equity**	**Structure**
8	PCCW	-14,856,000	Family Controlled
56	ALLIED PPT (HK)	-392,745	Family Controlled
128	E-NEW MEDIA	-213,769	Family Controlled
181	FUJIAN GROUP	-133,119	State Ownership
182	HK PHARMA	-90,741	Family Controlled
202	INTERCHINA HOLD	-437,316	Family Controlled
208	KIN DON HOLD	-153,189	Family Controlled
286	G-PROP (HOLD)	-230,507	Family Controlled
333	TOP FORM INT'L	-90,925	Family Controlled
396	GOLD-FACE HOLD	-3,930	Family Controlled
412	B-TECH (HOLD)	-456,214	Family Controlled
439	CLIMAX INT'L	-397,909	Family Controlled
456	NEW RANK CITY	-28,643	Family Controlled
464	BEST WIDE GROUP	-28,146	Family Controlled
479	CIL HOLDINGS	-291,237	Family Controlled
593	QUALITY HEALTH	-137,945	Family Controlled
639	FU HUI HOLDINGS	-106,008	State Ownership
657	G-VISION INT'L	-17,867	Family Controlled
663	SWANK INT'L MFG	-322,928	Widely Held
673	TECHCAP HOLDING	-227,747	Family Controlled
681	KEL HOLDINGS	-590,861	Family Controlled
729	INNOVATIVE INTL	-72,852	Family Controlled
818	HI SUN HOLDINGS	-341,516	State Ownership
898	MULTIFIELD INTL	-18,201	Family Controlled
952	WAH FU INT'L	-55,679	Family Controlled
990	THEME INT'L	-220,502	State Ownership
1013	TELECOM PLUS	-500,915	Family Controlled
1041	FULBOND HOLDING	-15,373	Family Controlled
1060	INTERFORM CERAM	-786,649	Family Controlled
1063	SUNCORP TECH	-65,462	Family Controlled
1095	SINOCAN HOLD	-146,015	Family Controlled
1203	GUANGNAN (HOLD)	-523,629	State Ownership
8071	E-silkroad Holdings	-3,467	Family Controlled

2.17 As evinced from Table 2.2, majority of the companies with negative equities are family controlled.

2.18 To construct the market-to-book asset ratio, we calculate both the market value of assets and book value of assets of the companies. Market value is defined here as the sum of the market value of common stock and the book value of long term liabilities, and market

value of preferred stock outstanding. We include long term liabilities in the numerator of the calculation of market-to-book asset ratio because this calculation will measure the market value of claims of both equity and debt holders. In the economics and finance literature, this calculation is also commonly accepted as a measure for market assessment of company valuation. In addition, the correlation between this calculation and one without long term liabilities is 0.94[3], meaning that the two ways of calculating the market-to-book asset ratios are not materially different from each other. Thus, to be consistent with the usual practice in the economics and finance literature, we calculate the market-to-book asset ratio as defined above.

2.19 To calculate the value of equity, for each company, we use the financial year-end shares of common stock multiplied by the financial year-end stock price. We use the book value of assets as reported in companies' balance sheets. We use the book value of long term liabilities reported in the companies' balance sheets. Value of preferred stock is calculated by using the financial year-end shares of preferred stock multiplied by the financial year-end price of preferred stock. Market data are collected from the Thompson Financial's *Datastream* database. Accounting data are collected from the companies' published financial reports.

2.20 To illustrate, we again use ABC Holdings as the example. The financial year of ABC ends on December 31. At December 31, 2000, ABC has 2316 million shares outstanding, with a closing price of HK$99.75. Thus, the market value of ABC's equity is HK$99.75 X 2316million = HK$231,037 million. From the financial statements of ABC, the book value of long term debt amounts to HK$13,806 million and total assets are HK$188,755 million. There is no preferred stock outstanding. Thus, the market to book value of assets of ABC is calculated as (market value of equity + book value of long term debt) / book value of total assets: (231,037 + 13,806) / 188,755 = 1.297.

[3] Correlation measures the relationship between two variables. If two variables are 100% positively correlated, the correlation coefficient is +1. If the two variables are 100% negatively correlated, the correlation coefficient is –1. A value of 0.94 indicates 94% of positive correlation.

2.21 The market to book measure is different from accounting numbers since market valuation is employed. Using ABC Holding as the example, ABC Holdings has a market to book asset ratio of 1.297, meaning that investors are willing to pay 29.7% more for the asset values of the company. A company with high earnings and good economic performance does not necessarily imply high share values. If a company is perceived to be bad by investors, the market will reflect this negative view via lower share prices even though the economic performance is high. Hence, the ratio of market value of assets to the book value of assets will be low. Conversely, a high ratio will indicate that investors are willing to pay more than the book value for the assets, implying that the company is doing good or investors consider the company having great prospect even though it does not have good ROA and ROE figures. Thus, the company can command high share values. To provide a picture of market assessment of company valuation, we report the ratio of market to book value of assets, in addition to the two economic performance measures, namely, ROA and ROE.

2.22 First, we examine if different types of control structures have significant impacts on the economic performances of listed companies. For example, we would like to test if the existence of families or pyramid affects the economic performance of the companies.

2.23 We also examine the impact of the second generation of the controlling family on economic performances of the companies. We define management team to be either a member of the board of directors or senior operating officers. The source of data is from corporate published reports and the *World Scope* database.

2.24 The final data set is reported in Appendix 3.

Empirical Methodology

2.25 To test for various hypotheses, we use descriptive statistics like average, standard deviation and percentages; t-test; and Analysis of Variances (ANOVA). The above-mentioned testing techniques aim to examine if we have scientific evidence (known as statistically significance, and is explained in Appendix 2) to make conclusions. In the main body of this report, we do not explain the technical details of these methods. We only provide an intuitive explanation. Technical details are contained in Appendix 2.

Chapter 3

Data Description

3.1 The data set used in this study is contained in the Appendix 3 for reference. A total of 754 companies are included in the study, with 695 companies on the main board and 59 companies on the Growth Enterprises Market (GEM). This sample includes all listed companies in Hong Kong as of August 31, 2001. Please refer to paragraphs 2.5 to 2.21 for details of the data collection procedures.

3.2 In this section, we present summary statistics for all listed companies contained in the sample. Detail analyses on the economic performance and ownership structure are given in the next chapter.

Ownership Distribution

3.3 The first description is the distribution of ownership structure of the companies in the sample. Table 3.1 reports this distribution:

Table 3.1 Distribution of Ownership Structure		
Panel A: All Companies Included		
Ownership Structure	Percentage	Cumulative Percentage
Family Controlled	81.17	81.17
Widely Held	3.32	84.48
State Owned	13.53	98.01
Miscellaneous	2.52	100.00
Panel B: H-Shares and State Owned Enterprises Excluded		
Ownership Structure	Percentage	Cumulative Percentage
Family Controlled	93.58	93.58
Widely Held	3.67	97.25
State Owned	0.00	97.25
Miscellaneous	2.75	100.00
Panel C: Main Board Companies Only		
Ownership Structure	Percentage	Cumulative Percentage
Family Controlled	80.14	80.14

Widely Held	3.60	83.74
State Owned	14.10	97.84
Miscellaneous	2.16	100.00
Panel D: Growth Enterprise Market Companies Only		
Ownership Structure	Percentage	Cumulative Percentage
Family Controlled	93.22	93.22
Widely Held	0.00	93.22
State Owned	0.00	93.22
Miscellaneous	6.78	100.00

3.4 We classified companies into family control, widely held, state owned and miscellaneous. The definitions of each category are given in Chapter 2.

3.5 Panel A of Table 3.1 reports that the majority of Hong Kong listed companies surveyed in this report are controlled by families. The percentage of family controlled companies is 81.17%, and other forms of ownership structure constitute the remaining portion. Note that state owned enterprises constitute 13.53% of the sample. However, these state owned enterprises are indeed incorporated in China and their ownership structures are very different from typical Hong Kong based enterprises.

3.6 To determine if the presence of these Chinese state owned enterprises affect the results, Panel B shows the distribution of ownership structure excluding state owned enterprises. The percentage of family controlled companies rises to 93.58%. Though there is a common belief that Hong Kong companies are predominantly controlled by families, evidence here shows that family controlled business is indeed the rule, rather than the norm or the majority. Non-family controlled companies can be treated as exceptions.

3.7 To have a better understanding of the distribution of family business, the sample companies are further divided into main board companies and GEM companies. Similar conclusions are reached, except that we observe more family controlled companies in the GEM stocks. This finding is consistent with the fact that many of the GEM stocks are internet start ups and the founders still exercise the major share of the control of the companies.

3.8 Findings in Table 3.1 are shown in Figures 3.1 to 3.4.

Figure 3.1 Percentages of Ownership Structure: All Companies Included

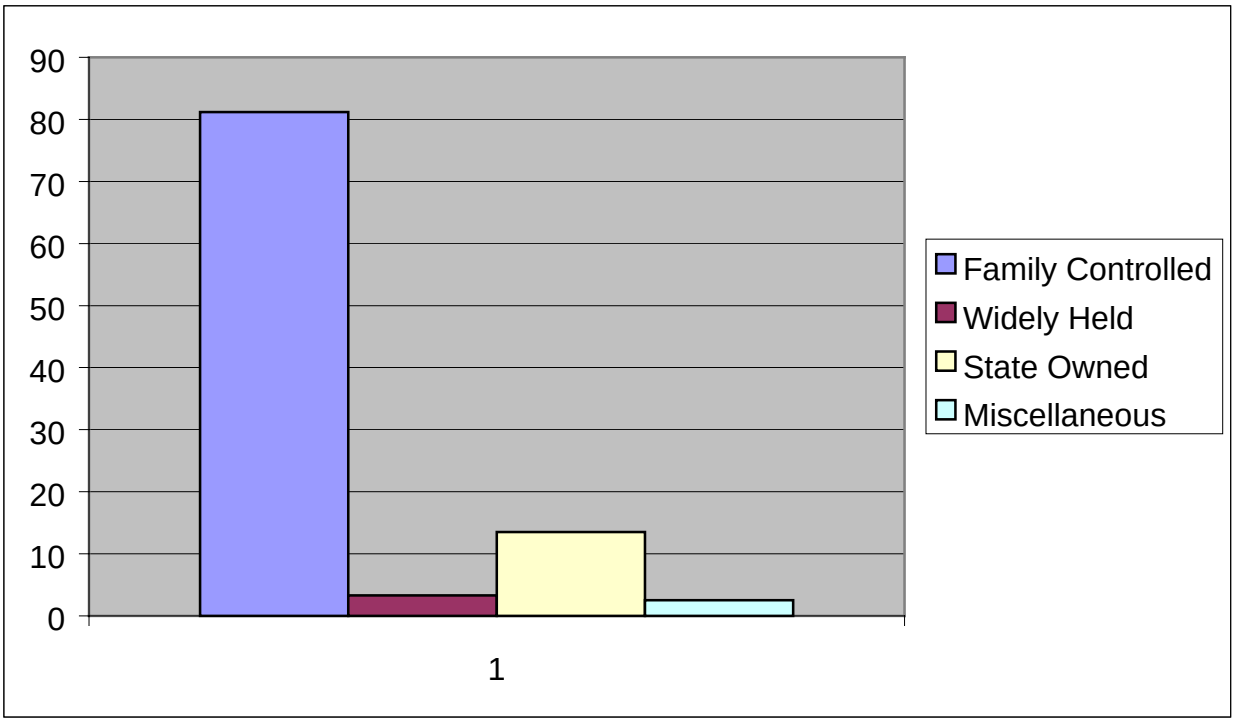


Figure 3.2 Percentages of Ownership Structure: H-Shares and State Owned Enterprises Excluded

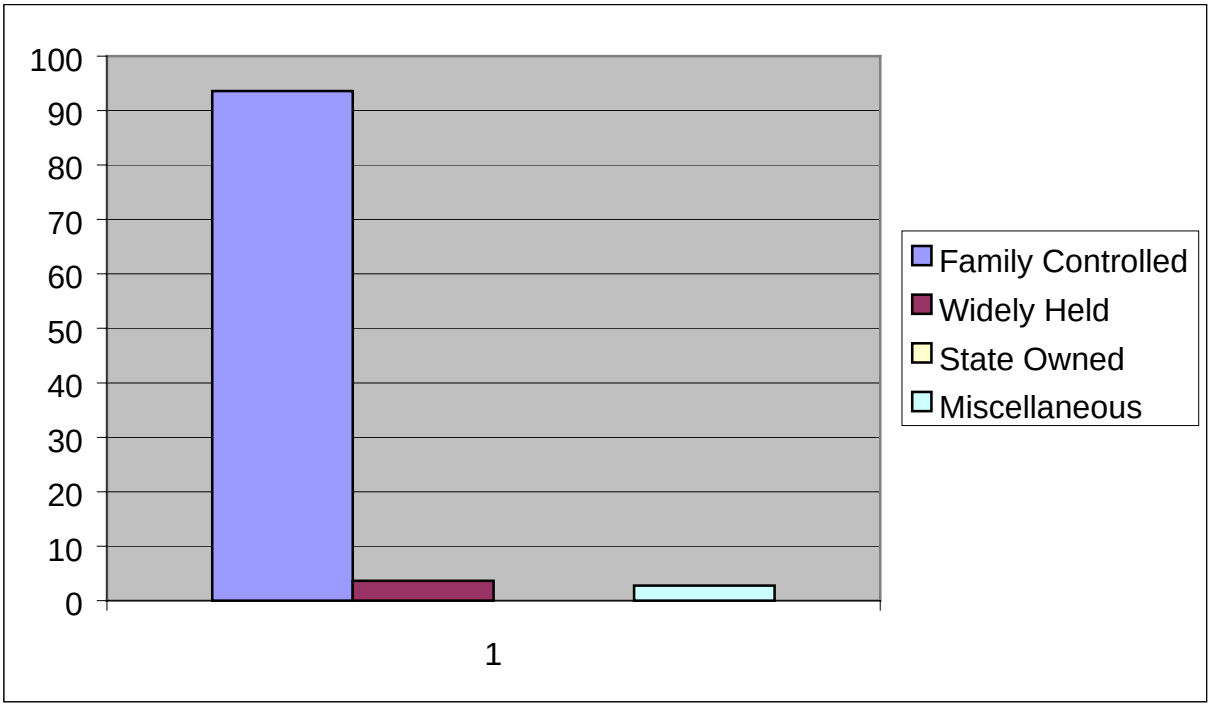


Figure 3.3 Percentages of Ownership Structure: Mainboard Only

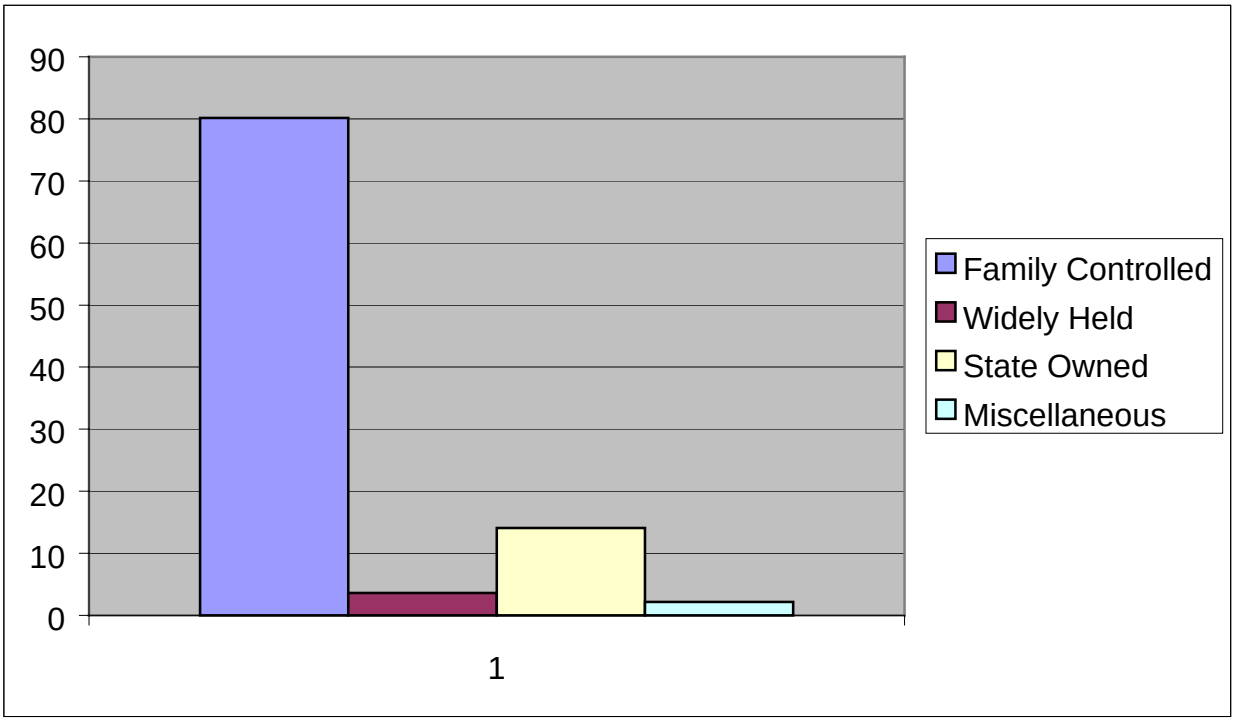
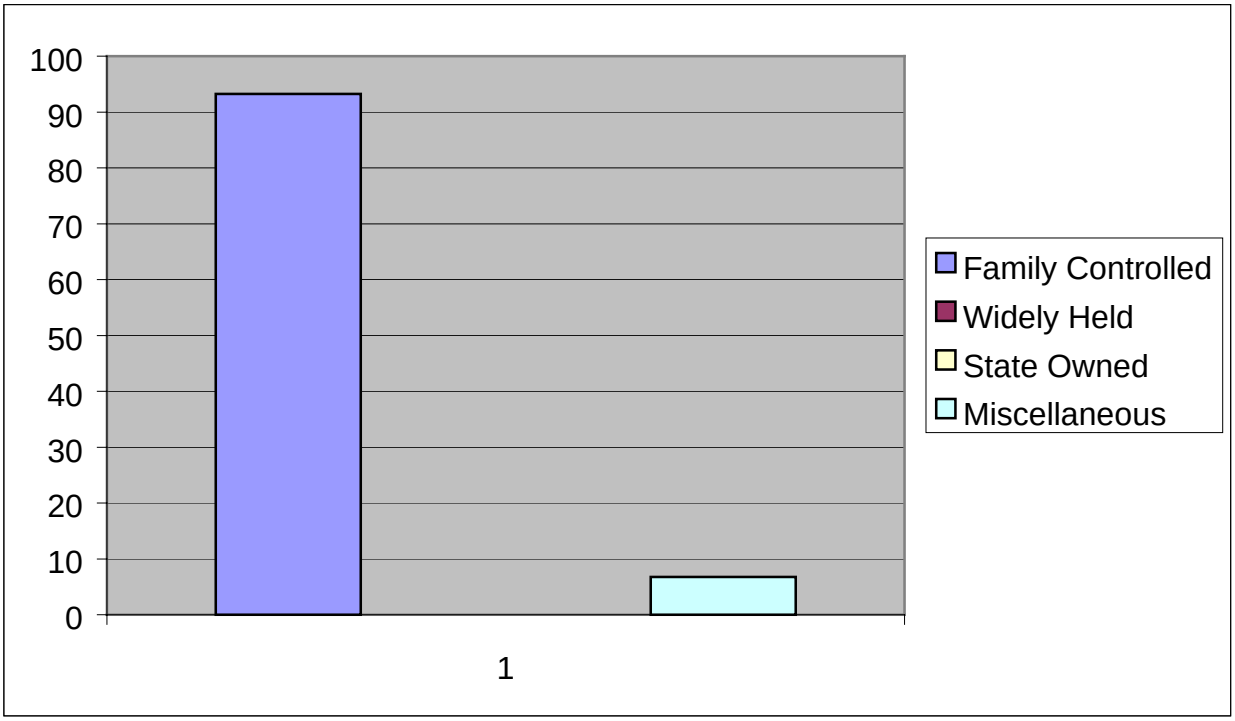


Figure 3.4 Percentages of Ownership Structure: GEM Only



3.9 It would be useful to examine the ownership structure of Hong Kong in comparison with other economies in Europe and East Asia. The East Asian companies are all listed firms in their respective economies. The East Asian data are collected from the *Worldscope* databases and company handbooks of respective stock exchanges. Since our focus is the economic performance and ownership structure of Hong Kong listed companies, we adopt data collected from previous works of the authors (see, Claessens, Djankov and Lang, 2000; Claessens, Djankov, Fan and Lang, 2002; and Faccio and Lang, 2002) and supplement with our own calculations.

3.10 We classified companies into "family controlled," "state owned," "widely held," "controlled by widely held corporation" and "controlled by widely financial institutions." Definitions of family controlled and state owned companies are straight-forward. In determining if there is a controlling owner, we use a threshold of 10% ownership. To be consistent with the analyses, this 10% threshold of ownership is used for all the East Asian economies. This threshold is also consistent with the practice of the SDI

(Disclosure) Ordinance. Widely held companies are companies without a controlling owner. For example, HSBC Holdings [0005] and Giordano International [0709] are classified as widely held companies. We treat HSBC as a widely held company, despite of the fact that the Hong Kong Government is the biggest owner of the company. Companies which are considered as "controlled by widely held corporations" and "controlled by widely held financial institutions" are those with controlling owner (defined by the 10% threshold of ownership) is a widely held company or financial institution. For example, Hang Seng Bank [0011] is controlled by the HSBC Holdings [0005], a widely held financial institution.

3.11 Table 3.2 shows that Hong Kong has the highest percentage of family controlled companies. Hong Kong also has low percentage of widely-held companies, however, the ratio is higher than Indonesia, Malaysia, Singapore and Thailand. Unlike other East Asian economies, Hong Kong has the lowest percentage of companies controlled by widely held corporation or financial institution. A note of caution on Table 3.2 is that data for other economies are extracted from other research and the survey is not comprehensive. Therefore, the number of companies in a particular market is a sample and is not the total number of listed companies, while the Hong Kong data includes all listed companies in Hong Kong, after excluding certain companies as documented in Chapter 2.

Table 3.2 Ownership Structure in Major Economies

Economy	Number of companies in sample	Percentage of companies with dispersed control	Percentage of companies with ultimate control		
			Family-owned	State-owned	Owned by a widely held corporation or financial institution
Hong Kong	**754**	**3.32**	**81.17**	**15.33**	**1.99**
East Asian Economies					
Indonesia	132	1	73	9	17
Korea, Rep. Of	281	13	73	2	12
Japan	1240	5.73	12.66	1.21	80.4[4]

[4] Japan represents a special case in which majority of the listed companies are controlled by financial institutions, e.g., banks, finance companies and insurance companies.

Malaysia	171	1	75	12	12
Philippines	77	4	51	3	43
Singapore	176	1	55	29	15
Taiwan	129	5	59	2	35
Thailand	110	1	72	5	21
European Economies					
Austria	99	11.11	52.86	15.32	8.59
Belgium	130	20.00	51.54	2.31	13.46
Finland	129	28.68	48.84	15.76	2.20
France	607	14.00	64.82	5.11	12.28
Germany	704	10.37	64.62	6.30	12.44
Ireland	69	62.32	24.63	1.45	9.42
Italy	208	12.98	59.61	10.34	13.46
Norway	155	36.77	38.55	13.09	9.00
Portugal	87	21.84	60.34	5.75	11.50
Spain	632	26.42	55.79	4.11	11.98
Sweden	245	39.18	46.94	4.90	8.57
Switzerland	214	27.57	48.13	7.32	15.66
United Kingdom	1953	63.08	23.68	0.08	12.40

Source: Claessens, S., S. Djankov and L.H.P. Lang (2000), Separation of Ownership from Control of East Asian Companies, *Journal of Financial Economics* 58, 81-112; Claessens, S., S. Djankov, J. Fan and L.H.P. Lang (2002), The Pattern and Valuation Effects of Corporate Diversification: A Comparison of the United States, Japan, and Other East Asian Economies, forthcoming in *Journal of Finance*; Faccio, M. and L.H.P. Lang (2002), The Ultimate Ownership of Western European Corporations, forthcoming in *Journal of Financial Economics* and authors' calculations.

3.12 In contrast with Europe, Hong Kong has a lowest percentage of widely-held companies, but highest percentage of family controlled companies. This contrast can be better evinced in Figure 3.5 and Figure 3.6.

Figure 3.5 Percentage of Family Controlled Companies: Hong Kong and Other Asian Economies

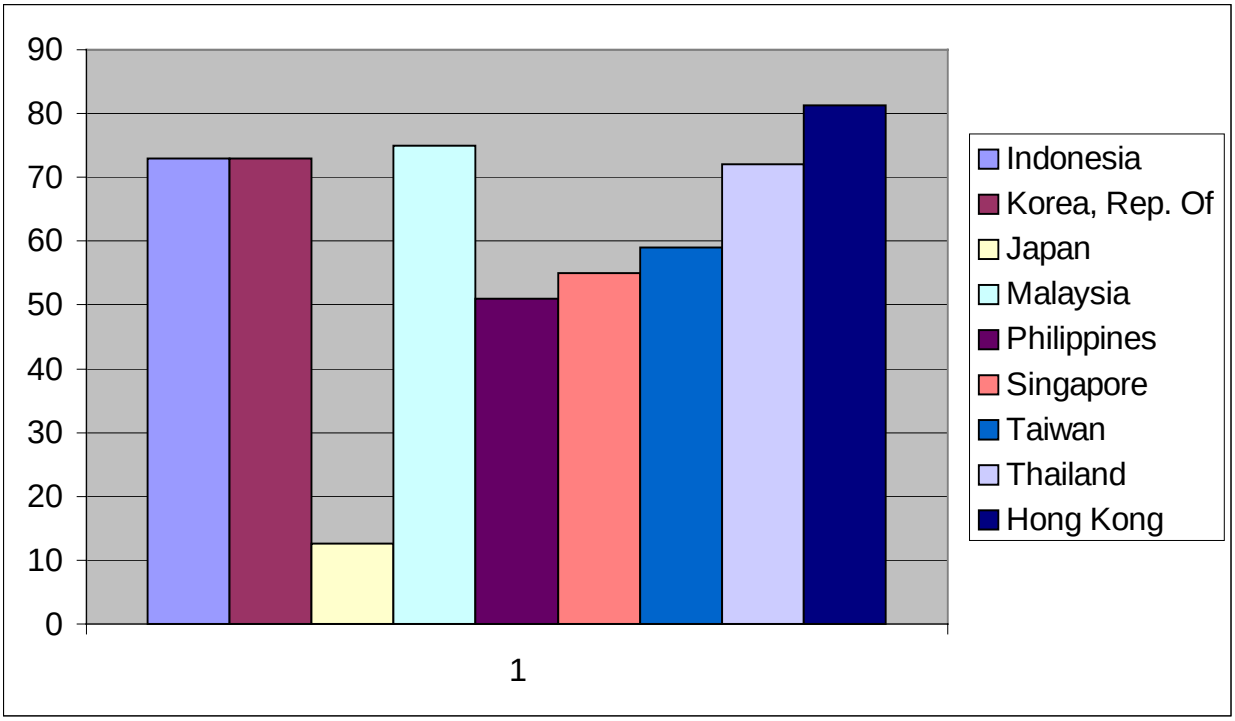
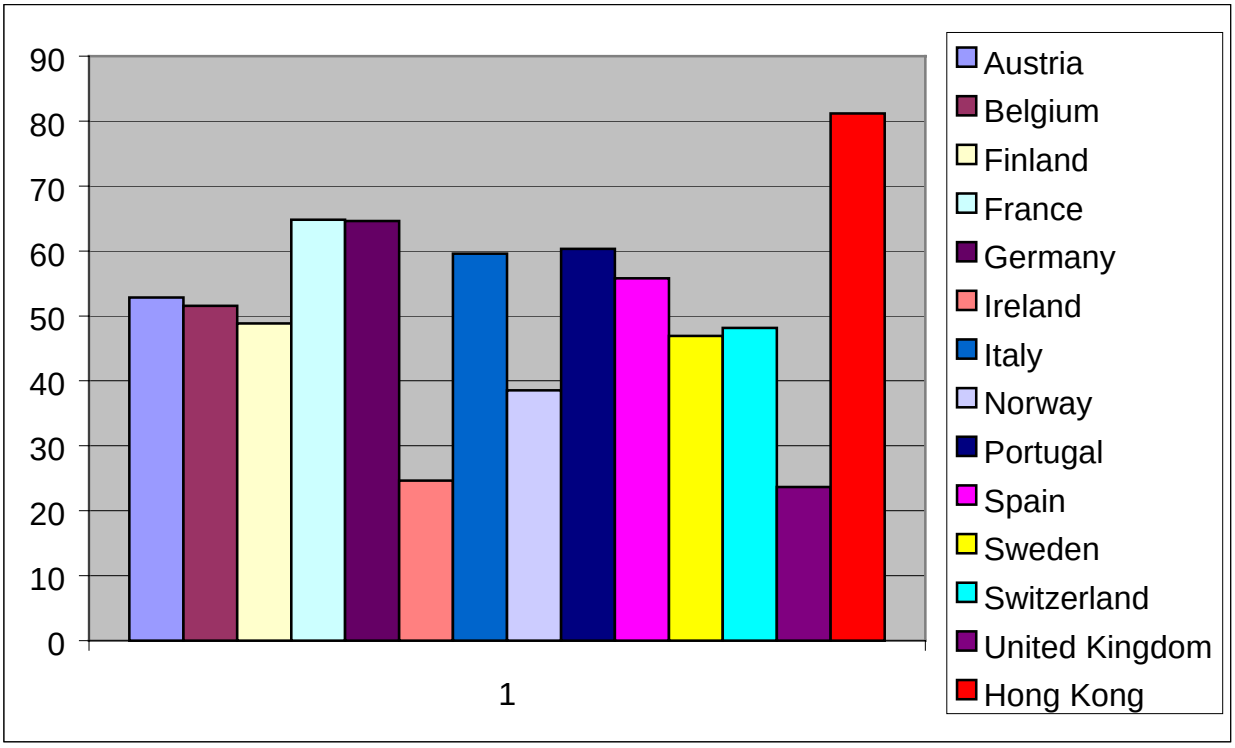


Figure 3.6 Percentage of Family Controlled Companies: Hong Kong and European Economies



Management Exercise by Controlling Family, Control Pyramid and Involvement of Second Generation of the Controlling Family

3.13 Our evidence suggests that Hong Kong companies are family controlled, the next step is to examine some of the special features of the family controlled companies. The following items are studied: if a member of the management team comes from the controlling family, if the company is controlled via a pyramid structure and if the second generation of the controlling family active in the daily management of the company.

3.14 The special feature of a pyramid structure is that the controlling family can use a small amount of capital to control a listed company down at the bottom of a control pyramid. Using the ABC Group as an example. The ABC Family controls 35% of ABC (Holdings) (0000), which controls 49.9% of BCD, which in turn controls 84.6% of ABC Infrastructure Holdings, which in turn, controls 38.2% of ABCDE Holdings.

3.15 Some statistics can show how Hong Kong differs from other economies in using pyramid structure. Using the same methodology in finding whether the companies use pyramiding in their ownership structure, we search the *Worldscope* database and compute the percentages of pyramiding companies in each economy. Table 3.3 demonstrates the percentages of companies using pyramid in Asian and European economies.

Table 3.3 Percentage of Companies Using Pyramid Structure in Different Economies

Panel A: Asian Economies	
Economies	Percentage of Companies Using Pyramid Structure
Hong Kong	94.83
Indonesia	60.11
Japan	62.74
South Korea	33.33
Malaysia	37.39
Philippines	33.33
Singapore	65.61
Taiwan	43.26
Thailand	8.98
Asian Average	48.85
Panel B: European Economies	
Economies	Percentage of Companies Using Pyramid Structure
Austria	25.26
Belgium	25.62
Finland	6.31
France	17.75
Germany	24.22
Ireland	20.75
Italy	26.90
Norway	35.88
Portugal	12.94
Spain	14.59
Sweden	22.73
Switzerland	7.87
U.K.	27.55
Europe Average	20.64

3.16 From Table 3.3, it can be shown that virtually all Hong Kong companies surveyed in this study are controlled through pyramid structures.

3.17 Findings in Table 3.3 are also shown in Figures 3.7 and 3.8

Figure 3.7 Percentage of Companies in Control Pyramid: Hong Kong and Other Asian Economies

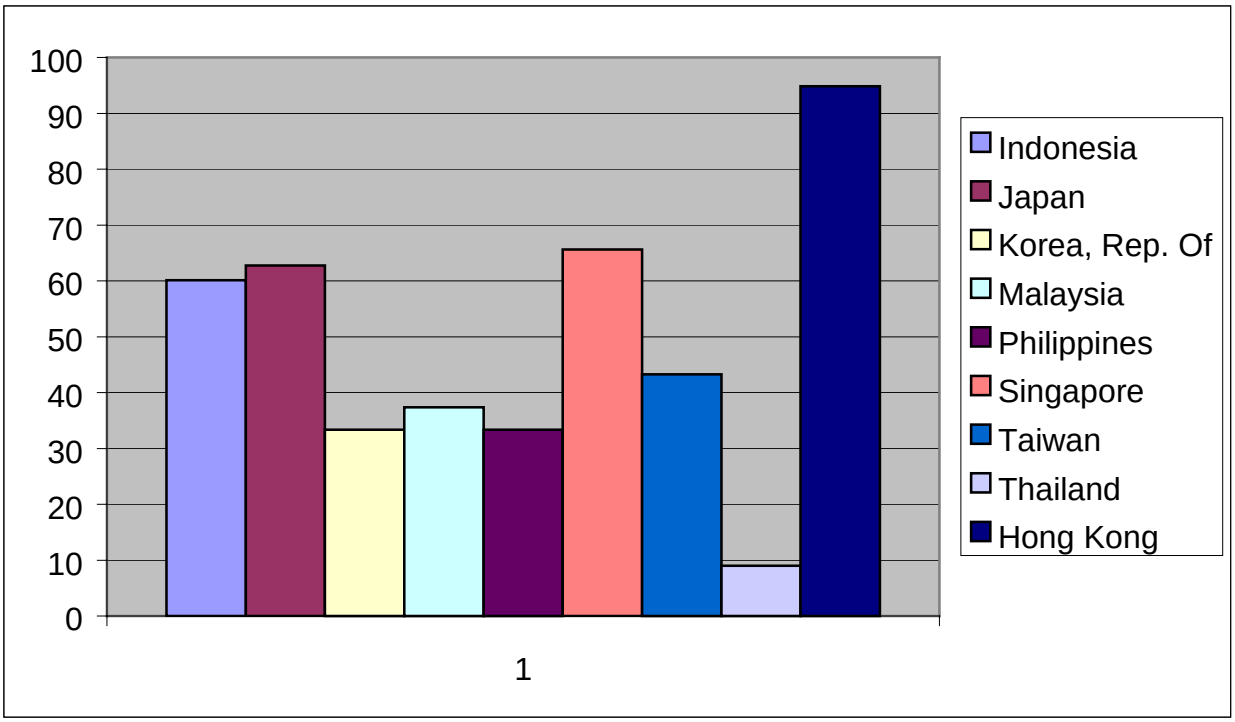
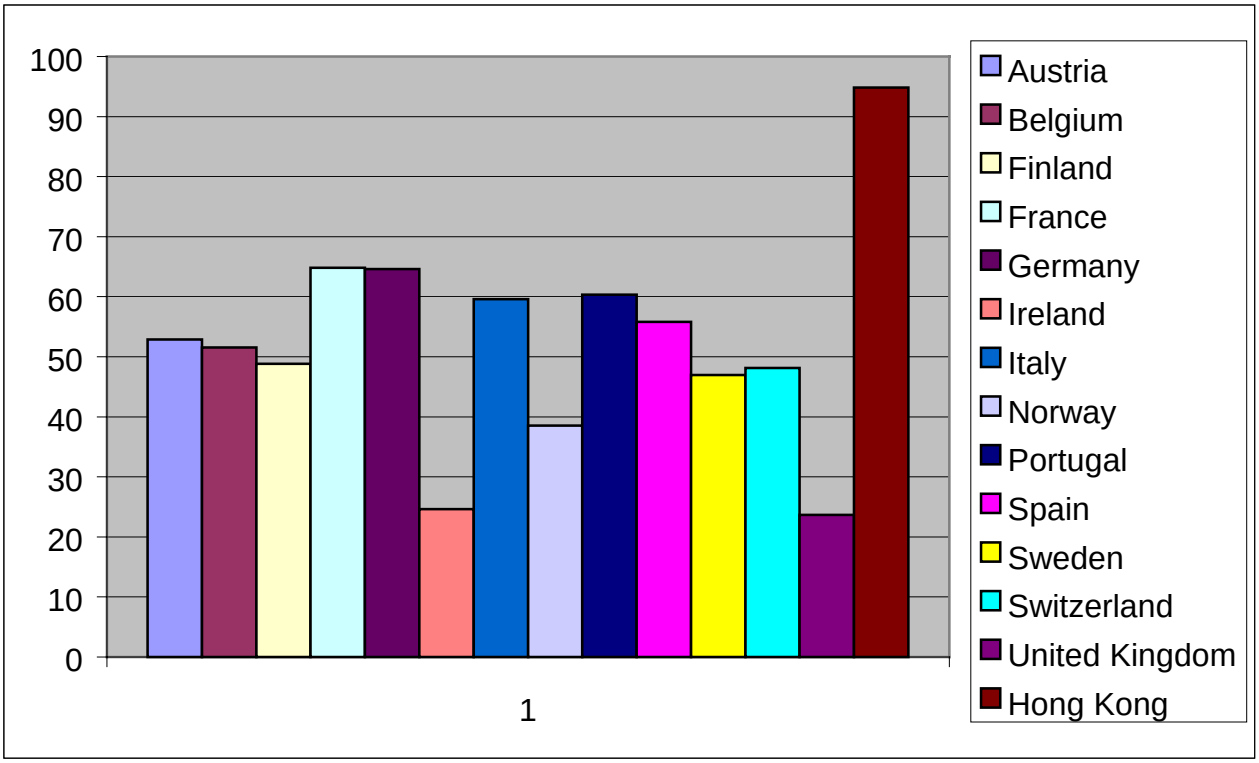


Figure 3.8 Percentage of Companies in Control Pyramid: Hong Kong and European Economies



3.18 Since Hong Kong companies are characterized by pyramid structures, it will be useful to examine which layer of the control pyramid the listed company is in. To simply the classification, we use three layers in our pyramid structure definition. To illustrate, suppose we have the following structure: A holds 51% of B, B holds 51% of C, C holds 51% of D and D holds 51% of E. A is classified to be in the first layer, B and C will be in the second layer; and D and E are in the third layer. If there are four companies in the pyramid, say, only A, B, C and D in the control pyramid, the A is in the first layer, B and C are in the second layer and D will be in the third layer. When there are three companies, A will be in the first layer, B in the second layer and C in the third layer. Very often, there are cases in which the controlling owner holds 100% of A, and A holds 100% B, B holds 100% C, C holds 100% D and D holds 51% of E. A, B, C and D can be private companies or family trusts. In such cases, we consider E to be in the first layer of the

control pyramid, since from companies A to D, there is 100% ownership with no implications on the ratio of control right to cash flow right.

3.19 Take the ABC Group as an example. It is documented earlier that the ABC Family controls ABC Holdings (ABC) through a series of family trusts, and ABC controls BCD (BCD), and BCD controls ABC Infrastructure (ABCI) and ABCI controls ABCDE. Under this classification, ABC will be in the first layer, though technically the ABC is not in the first layer of the pyramid, BCD and ABCI are in the second layer and ABCDE is in the third layer.

3.20 Using this classification to classify the companies surveyed, a very interesting and important finding is obtained. Only 15 companies in the sample are in the second layer of the control pyramid. When we compare with the number of companies studied, this means that less than 2% of the companies are in the second layer of the control pyramid. Table 3.4 shows these 15 companies.

Table 3.4 List of Companies in the Second Layer of the Control Pyramid

Stock Code	Company Name
4	WHARF HOLDINGS
13	HUTCHISON
17	NEW WORLD DEV
19	SWIRE PACIFIC A
36	FE TECH INT'L
97	HENDERSON INV
156	LIPPO CHINA RES
219	SHUN HO TECH
226	LIPPO
293	CATHAY PAC AIR
413	SOUTH CHINA IND
488	LAI SUN DEV
501	RNA HOLDINGS
617	PALIBURG HOLD
1038	CKI HOLDINGS

3.21 Since the number of companies in the second layer is too small, the analyses involving the second layer will not be meaningful due to the small sample size. The analysis will be

difficult and possible bias may be introduced since the number of companies in the second layer is too small. If there are a few exceptional cases in the second layer, then our results will be biased by these exceptional observations, making the analysis not reliable. Because of this potential problem, instead of using a three-layer model in the pyramid structure, we divide the sample into first layer companies and non-first layer companies for purposes of analyses.

3.22 Table 3.5 below shows the percentage of companies in each layer of the control pyramid, as well as the distribution of companies across the main board and the GEM.

Table 3.5 Distribution of Companies in Each Layer of Control Pyramid

Panel A: All Companies Included	
Pyramid Layer	Percentage of Companies
First	72.02
Non-First	27.98
Panel B: Main Board Companies Only	
Pyramid Layer	Percentage of Companies
First	74.24
Non-First	25.76
Panel C: GEM Stocks Only	
Pyramid Layer	Percentage of Companies
First	45.76
Non-First	54.24

3.23 From Table 3.5, it can be seen that majority of the listed companies are located at the first layer of the control pyramid. For the GEM companies, a higher percentage of companies is located not at the first layer. This also verifies the phenomenon that many of the internet startups are subsidiaries of the main board companies.

3.24 Since the majority of listed companies in Hong Kong are in the first layer of the pyramid, it will be useful to compare this observation under different ownership structure. Table 3.6 below depicts this comparison.

Table 3.6 Distribution of Ownership Structure and Layers in Control Pyramid		
Panel A: Family Controlled Companies		
Pyramid Layer	Percentage	Cumulative Percentage
First	71.57	71.57
Non-First	27.98	100.00
Panel B: Widely Held Companies		
Pyramid Layer	Percentage	Cumulative Percentage
First	80.00	80.00
Non-First	20.00	100.00
Panel C: Stated Owned Companies		
Pyramid Layer	Percentage	Cumulative Percentage
First	77.55	77.55
Non-First	22.45	100.00
Panel D: Miscellaneous		
Pyramid Layer	Percentage	Cumulative Percentage
First	47.37	47.37
Non-First	52.63	100.00

3.25 From Table 3.6, we can see that majority of the companies are located at the first layer of the control pyramid, regardless of the ownership structure. It is interesting to observe that even for the state owned enterprises, the listed company is also in the top of the control pyramid. For companies that are widely held, the percentage of companies in the bottom layer is the lowest among the four types of ownership structure.

3.26 Apart from the distribution of companies, the next table (Table 3.7) shows the percentage of directors and senior management from the same controlling family under different layers of the control pyramid. Generally speaking, the first layer has the highest percentage of directors coming from the same control family. It shows that the higher the company in the pyramid, the more concentrated of the decision making process within the same control family.

Table 3.7 Percentage of Directors and Senior Management from Same Family by Layers of Control Pyramid		
Panel A: All Companies Included		
Pyramid Layer	Percentage of Directors	Percentage of Senior Management

First	18.02	5.07
Non-First	13.66	4.42
Panel B: Main Board Companies Only		
Pyramid Layer	Percentage of Directors	Percentage of Senior Management
First	18.54	5.30
Non-First	14.62	5.56
Panel C: GEM Stocks Only		
Pyramid Layer	Percentage of Directors	Percentage of Senior Management
First	9.07	1.97
Non-First	8.75	0.69

3.27 The above table also shows the percentage of senior management coming from the same controlling family across different layers of the control pyramid. From this table, it is shown that generally that the first layer has the highest percentage of senior management coming from the same family. For example, on average, 5.07% of the senior management of a company in the first layer of the control pyramid comes from the same family.

3.28 Testing the involvement of second generation aims to find if the existence of second generation affects the economic performance of the company. Second generation is defined as the children, children-in-law, nephew and niece of the founders. In case the founder of the company has passed away and the second generation has taken up management responsibility for many years, the second generation becomes the “first generation” and the second generation in this case actually refers to the third generation of the family.

3.29 Management team refers to both the board of directors and senior operating officers of the company. If a member of the controlling family is a director or a senior manager of the company, then the company is classified as having management team from the controlling family. Directors are defined as the members of the board of directors (executive directors and independent non-executive directors) and they are reported in the corporate reports of the companies. Senior management refers to operating officers who have influence on the daily operations of the company. Examples include financial

controller, general manager, marketing director, production manager, human resources manager. Information on senior management is also collected from company reports.

3.30 Table 3.8 below shows the percentages. Similar to Table 3.1, results for the full sample (all companies included) and sub samples (state controlled companies excluded, Main Board stocks only, and Gem stocks only) are presented.

Table 3.8 Management Exercise by Controlling Family, Control Pyramid and Involvement of Second Generation of the Controlling Family

Panel A: All Companies Included		
	Percentage of Yes	Percentage of No
Management Team from Controlling Family	79.60	20.40
Control via a Pyramid Structure	94.83	5.17
Second Generation of Controlling Family Play a Role in Daily Management of the Company	16.00	84.00
Panel B: H-Shares and State Owned Enterprises Excluded		
	Percentage of Yes	Percentage of No
Management Team from Controlling Family	91.59	8.41
Control via a Pyramid Structure	94.34	5.66
Second Generation of Controlling Family Play a Role in Daily Management of the Company	20.83	79.17
Panel C: Main Board Companies Only		
	Percentage of Yes	Percentage of No
Management Team from Controlling Family	78.71	21.29
Control via a Pyramid Structure	94.53	5.47
Second Generation of Controlling Family Play a Role in Daily Management of the Company	19.60	80.40
Panel D: Growth Enterprise Market Companies Only		
	Percentage of Yes	Percentage of No
Management Team from Controlling Family	91.53	8.47
Control via a Pyramid Structure	98.31	1.69
Second Generation of Controlling Family Play a Role in Daily Management of the Company	0.00	100.00

3.31 Table 3.8 indicates that 79.60% of the companies have at least one manager from the controlling family. However, this picture is distorted because as shown in Table 3.1, state controlled enterprises constitute a substantial portion of the listed companies in Hong

Kong. To better reflect the impact of controlling families on daily management of the companies, Panel B shows the percentage of companies have at least one manager from the controlling family without including the H-shares and the state controlled enterprises in the analyses. The percentage of having at least one member of the management team from the controlling family is 91.59%. This number indicates that Hong Kong companies are not only controlled by families, but the daily operations are also controlled tightly by the families through the active involvement of the controlling families in the companies' management. Day to day family control is an important factor in Hong Kong companies.

3.32 When the sample is divided into Main Board and GEM stocks, one can see that the GEM companies, families still exercise close control over the listed companies. The percentage for GEM stocks is 91.53% (Panel D), while the percentage for both GEM and Main Board is 91.59%. The difference is trivial and this means that no matter the company is listed on the Main Board or on the GEM, controlling families still play active role in the companies' daily management.

3.33 We examine if the listed company is controlled via a pyramidal structure. From the percentages shown in Panels A to D in Table 3.8, no matter if the state controlled companies are excluded or not, the percentages stand at a high level – over the ninetieth percentile. This finding is robust no matter the company is a Main Board or a GEM stock. This means that Hong Kong listed companies are virtually all controlled through a pyramidal structure, even the state owned enterprises are no exception. For the GEM stocks, the percentage of having pyramidal control structure is higher, suggesting that pyramid structure is more popular among the controlling families of new start up ventures.

3.34 We also examine if the second generation of the controlling actively involves in the daily management of the companies. Panel A of Table 3.8 reports that only 16.00% of the listed companies having a senior manager from the second generation of the controlling families. When the state owned enterprises are excluded (Panel B of Table 3.8), the percentage rises to 20.83%. However this percentage is zero when we examine the GEM

stocks. This suggests that for the new start up ventures, the second generation does not involve actively in their management. The companies are still controlled by the first generation.

Number of Listed Companies Controlled by Same Family

3.35 Table 3.9 shows the distribution of number of companies controlled by same family.

Table 3.9 Number of Listed Companies Controlled by Same Family

Number of Listed Companies in Same Group	Percent	Cumulative Percent
1	86.75	86.75
2	7.95	94.70
3	2.48	97.19
4	0.83	98.01
5	0.66	98.68
6	0.66	99.34
7	0.33	99.67
8	0.17	99.83
9	0.17	100.00

3.36 Majority of families (86.75%) control one listed company in their corporate empires. However, around 14% of these families have more than one listed company in their empires. Nearly five percent of the controlling families have 3 or more listed companies in their control group.

Degree of Management Concentration of Hong Kong Listed Companies

3.37 The last item to be examined is the degree of management concentration. Two measures of management concentration are used. The first one is defined as the percentage of directors coming from the controlling family and the second one is defined as the percentage of senior managers coming from the controlling family. Note that only senior officers are included in the percentage of senior management. This ratio is clearly understated, if other junior officers and staff members are included. Table 3.10 shows the descriptive statistics of these two measures of management concentration.

Table 3.10 Degree of Management Concentration				
Panel A: All Companies Included				
	Descriptive Measures (In Percentages)			
	Average	Standard Deviation	Minimum	Maximum
Percentage of Directors From Same Controlling Family	16.77	22.12	0.00	100.00
Percentage of Senior Managers From Same Controlling Family	4.90	17.16	0.00	100.00
Panel B: State Controlled Companies Excluded				
	Descriptive Measures (In Percentages)			
	Average	Standard Deviation	Minimum	Maximum
Percentage of Directors From Same Controlling Family	19.03	22.72	0.00	100.00
Percentage of Senior Managers From Same Controlling Family	5.67	18.42	0.00	100.00
Panel C: Main Board Companies Only				
	Descriptive Measures (In Percentages)			
	Average	Standard Deviation	Minimum	Maximum
Percentage of Directors From Same Controlling Family	17.51	22.46	0.00	100.00
Percentage of Senior Managers From Same Controlling Family	5.36	18.07	0.00	100.00
Panel D: Growth Enterprise Market Companies Only				
	Descriptive Measures (In Percentages)			
	Average	Standard Deviation	Minimum	Maximum
Percentage of Directors From Same Controlling Family	8.90	16.30	0.00	62.50
Percentage of Senior Managers From Same Controlling Family	1.27	5.25	0.00	25.00

3.38 Panel A of Table 3.10 reports that 16.77% of the directors and 4.9% of senior managers of Hong Kong listed companies are from the same controlling family. That means, on average, around one sixth of the board members are from the same family. This percentage hits a highest value of 100% for both directors and senior managers.

3.39 The full sample is analyzed with the state controlled companies excluded. Results are shown in Panel B of Table 3.10. The percentage of management concentration increases to 19.03% and 5.67% for board of directors and senior managers respectively.

3.40 When the sample is divided into Main Board and GEM stocks, an obvious difference is observed. For the main board companies, the percentage of both management concentration measures are much higher than the GEM stocks. For the GEM stocks, the highest percentage of directors and senior managers from same family is only 62.5% and 25% respectively and is much lower than the main board companies.

3.41 In this chapter, a general picture of Corporate Hong Kong is presented. Findings suggest that Hong Kong is family controlled, listed companies are controlled via pyramidal structure. Some important differences among different types of companies are also observed, and this difference will be analyzed together with the economic performances in Chapter 4.

Chapter 4

Empirical Findings on Economic Performance and Ownership Structures

Univariate Analysis

4.1 In this chapter, we present the relationship between economic performance and corporate ownership variables. We use return on asset (ROA) and return on equity (ROE) to measure the economic performance.

4.2 First, the economic performances of Hong Kong listed companies are examined according to their ownership structures. Table 4.1 reports average return on assets, return on equity for family controlled, widely held, state owned, and miscellaneous companies. Cross holdings and other structure are not included because the sample size is too small which will distort our conclusions.

Table 4.1 Economic Performance and Ownership Structure

Panel A: Using Return on Assets (ROA) as Measure for Economic Performance

Ownership Structure	Average	Standard Deviation	Minimum	Maximum
Family Controlled	0.043	0.123	-0.454	0.314
Widely Held	0.005	0.123	-0.163	0.204
State Owned	0.041	0.100	-0.214	0.207
Miscellaneous	0.022	0.074	-0.133	0.090

Panel B: Using Return on Equity (ROE) as Measure for Economic Performance

Ownership Structure	Average	Standard Deviation	Minimum	Maximum
Family Controlled	0.076	0.191	-0.487	0.481
Widely Held	0.019	0.190	-0.240	0.308
State Owned	0.066	0.162	-0.336	0.322
Miscellaneous	0.039	0.093	-0.149	0.143

4.3 Using Panel A as an example, the average return on assets of family controlled companies is 4.30%. From results in this table, family controlled companies have the highest ROA (4.3%) and ROE (7.6%), hence the best economic performance. Stated owned enterprises are second in economic performance (ROA = 4.1%, ROE = 6.6%), followed by miscellaneous (ROA = 2.2%, ROE = 3.9%) and widely held companies (ROA = 0.5%, ROE = 1.9%). Results in Table 4.1 shows that the presence of families

does not lower the economic performance of the companies, indeed, family controlled companies perform the best. Thus, day-to-day family control is an important factor.

4.4 Information in the Panels A and B of the above table can be more easily seen from Figure 4.1 and Figure 4.2.

Figure 4.1 Economic Performance (Return on Assets) and Ownership Structure

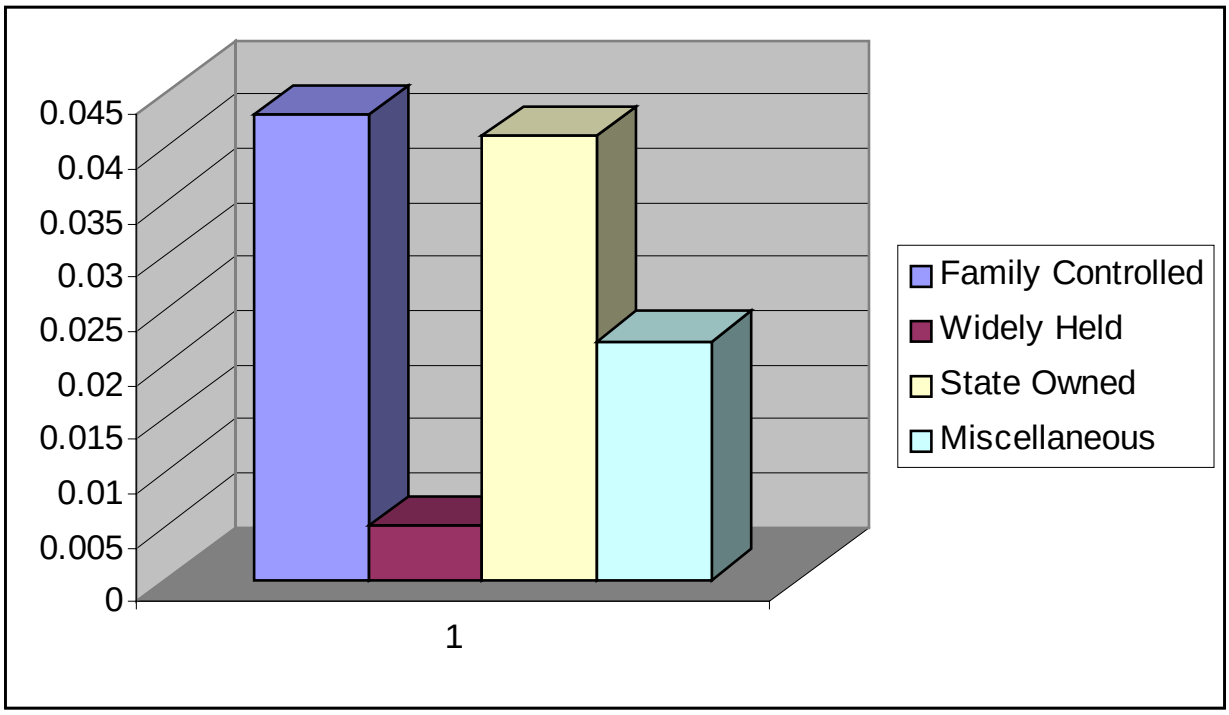
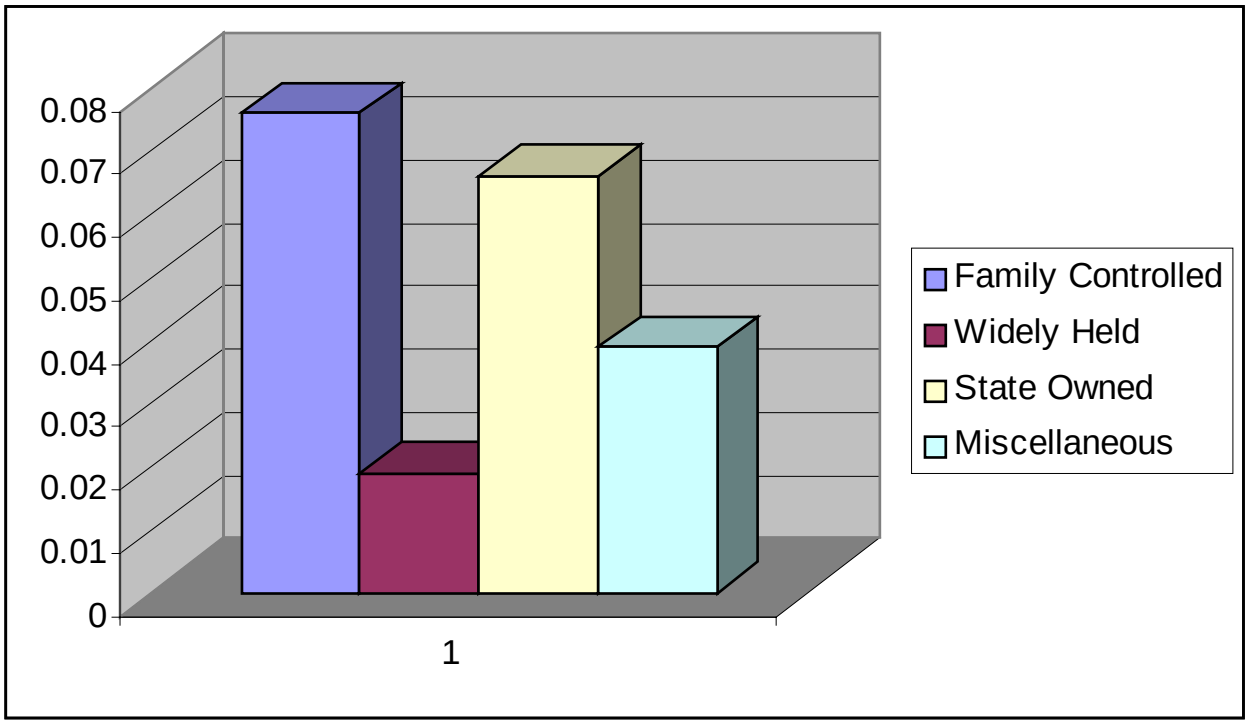


Figure 4.2 Economic Performance (Return on Equity) and Ownership Structure



4.5 Conclusions from the two panels in Table 4.1 also suggest that the economic performance of family controlled companies is similar to state-owned companies, when measured by ROA and ROE.

4.6 The next issue to examine is whether economic performances of companies are affected by the percentages of family members who serve board of directors and senior management. This examination can further test the economic performance of family influence. Table 4.2 shows the distribution of companies' economic performance and percentage of directors from the same family.

Table 4.2 Economic Performance and Percentage of Directors from Controlling Family

Panel A: Using Return on Assets as Measure for Economic Performance

Percentage of Directors from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	0.033	0.128	-0.454	0.287
Middle 1/3	0.021	0.108	-0.425	0.221

Highest 1/3	0.071	0.117	-0.308	0.314
Panel B: Using Return on Equity as Measure for Economic Performance				
Percentage of Directors from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	0.056	0.200	-0.487	0.415
Middle 1/3	0.045	0.163	-0.484	0.385
Highest 1/3	0.115	0.188	-0.406	0.481

4.7 Results in three Panels of Table 4.2 are plotted into Figures 4.3 to 4.4.

Figure 4.3 Economic Performance (ROA) and Directorship Concentration

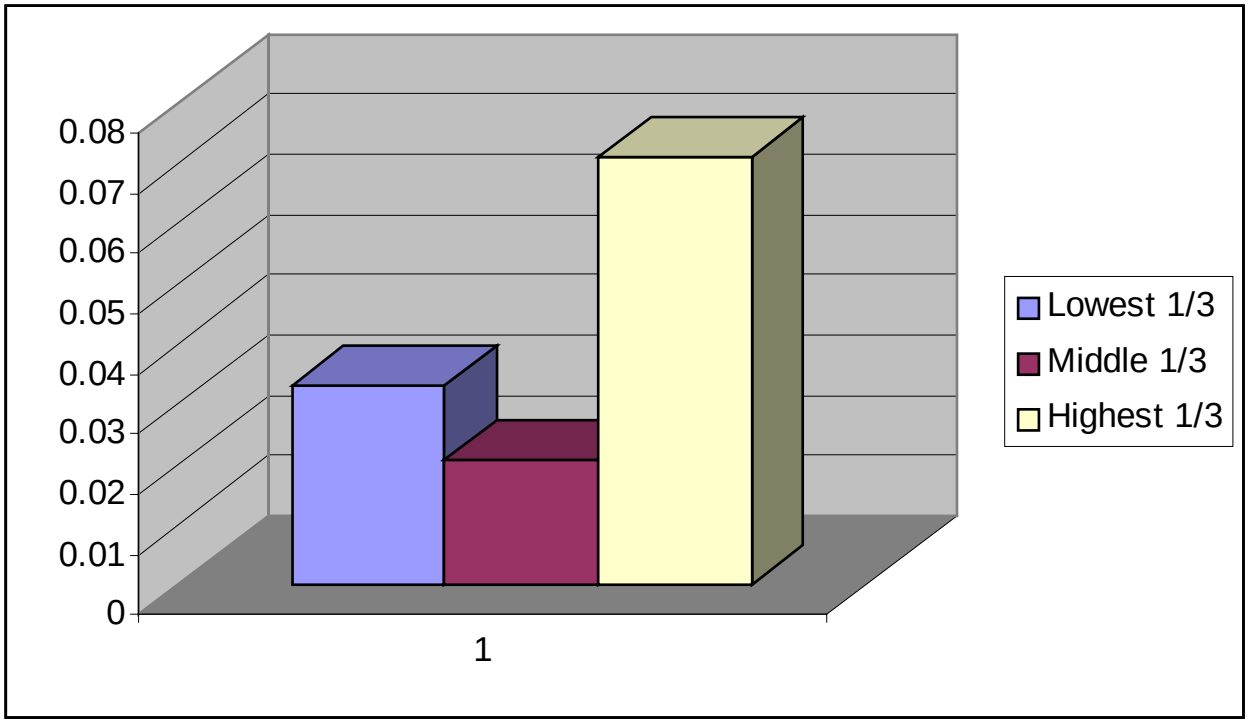
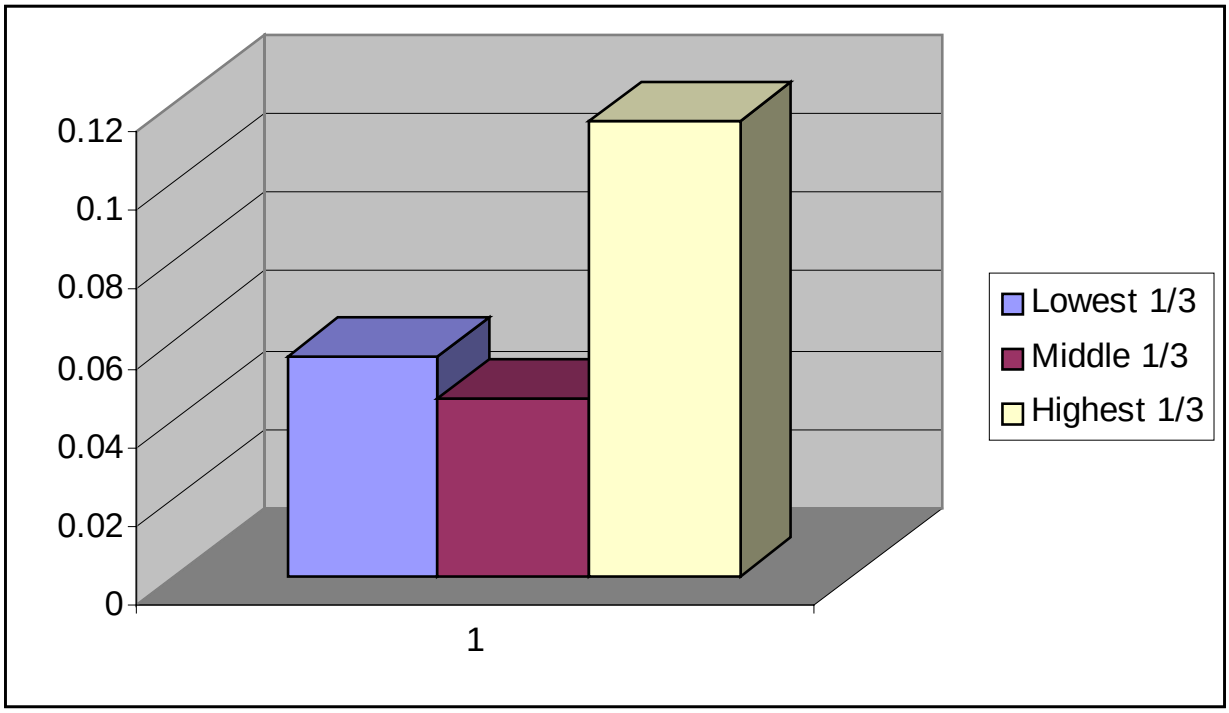


Figure 4.4 Economic Performance (ROE) and Directorship Concentration



4.8 Results in Table 4.2 do not suggest a trend in the relationship between economic performance and degree of family control, as the highest 1/3 has the best ROA and ROE, while the lowest 1/3 has the middle ROA and ROE. It appears that the middle 1/3 has the worst economic performance.

4.9 Table 4.3 reports the distribution of companies' economic performance and percentage of senior managers from the same family. Results of the three Panels in Table 4.3 are plotted into Figures 4.5 to 4.6.

Table 4.3 Economic Performance and Percentage of Senior Management from Controlling Family

Panel A: Using Return on Assets as Measure for Economic Performance

Percentage of Senior Management from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	0.026	0.122	-0.425	0.282
Middle 1/3	0.029	0.114	-0.454	0.287
Highest 1/3	0.069	0.119	-0.308	0.314

Panel B: Using Return on Equity as Measure for Economic Performance				
Percentage of Senior Management from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	0.049	0.182	-0.484	0.381
Middle 1/3	0.050	0.183	-0.487	0.415
Highest 1/3	0.115	0.188	-0.406	0.481

Figure 4.5 Economic Performance (ROA) and Senior Management Concentration

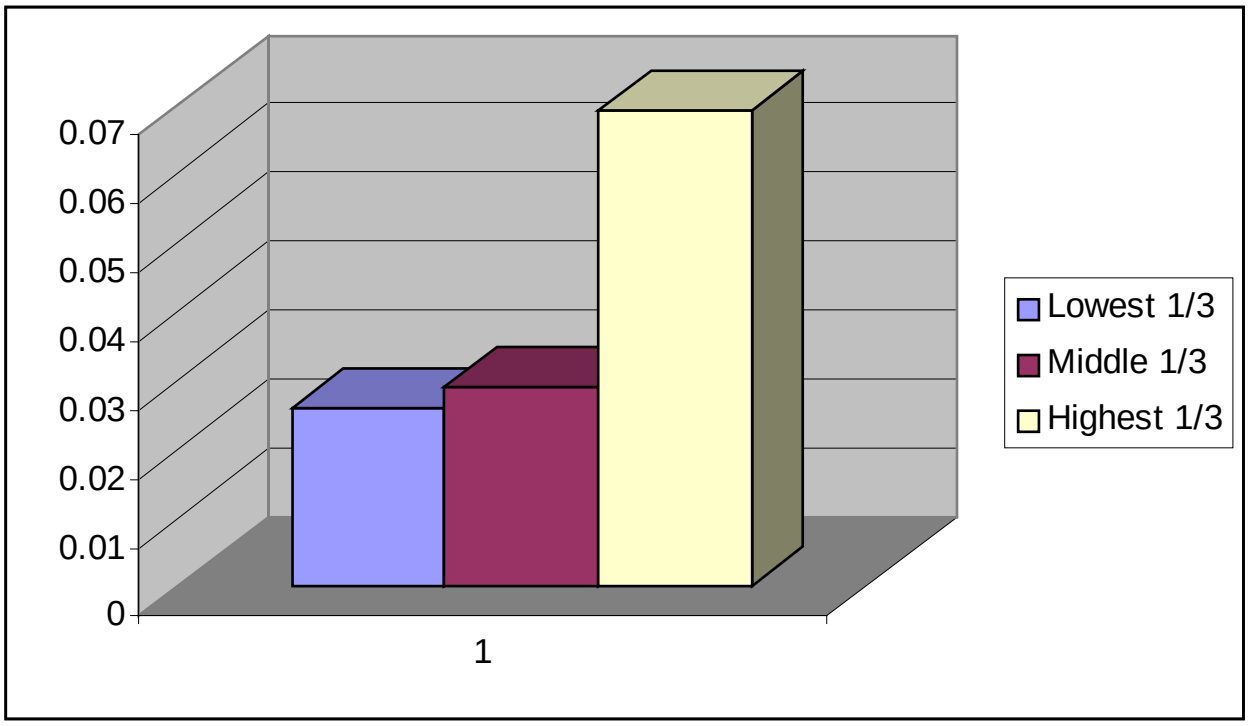
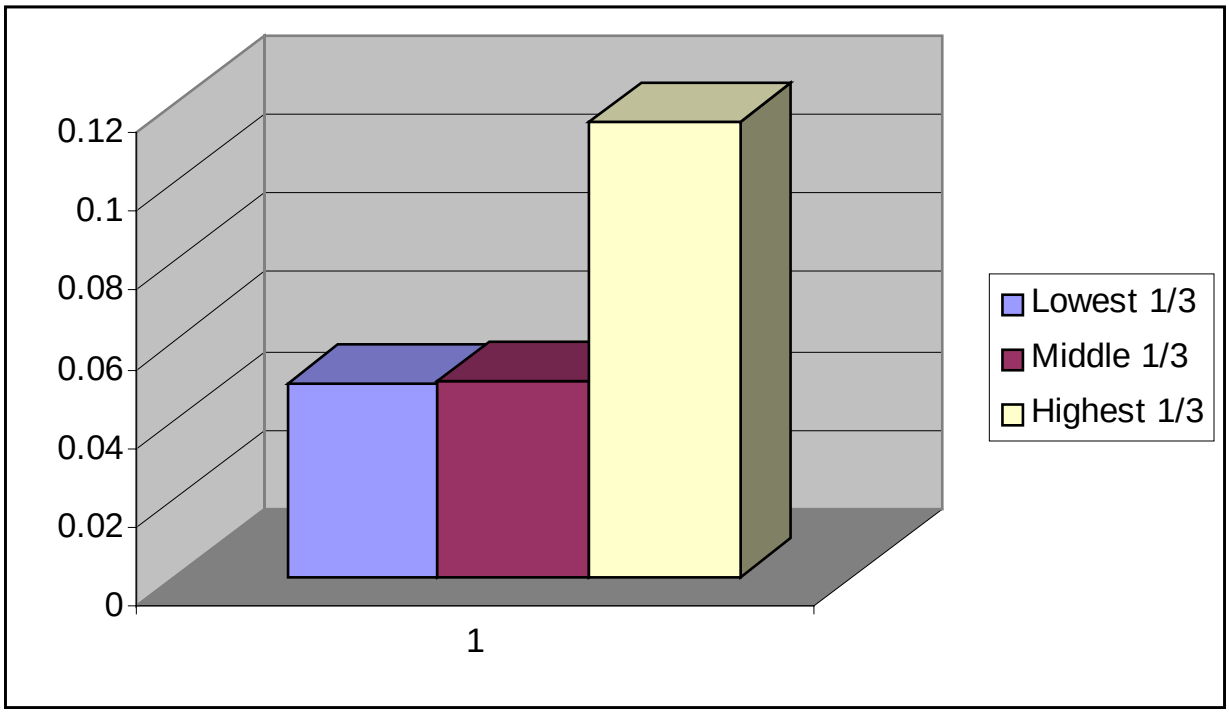


Figure 4.6 Economic Performance (ROE) and Senior Management Concentration



4.10 Table 4.3 (Figures 4.5 - 4.6) shows that the percentage of family members serving senior management does not lower the economic performance. For example, the lowest 1/3 has the lowest ROA and ROE. The middle 1/3 has the medium ROA, ROE. The highest 1/3 has the highest ROA and ROE. This finding, however, is subject to a caveat. As shown in Table 3.6, the percentage of family members serving senior management is not high. The highest percentage is only 5.6%, which indicates generally a low involvement of family members in the senior management of daily operations of the company.

4.11 Nevertheless, we would like to argue from Figures 4.3-4.4 and Figures 4.5-4.6 that the existence of family members in the management of the company does not lower the company's economic performance. This evidence is interesting in that to shareholders benefit, it is always better either to have more family members to serve the board of directors and senior management.

4.12 Next we would like to examine the impacts of involvement of second generation in the management of the companies and economic performance. Results are shown in Table 4.4. From this table, there does not have concrete evidence to suggest a difference in economic performances if the second generation has involvement in the operations of the companies. More specifically, the ROA and ROE between the two groups are essential the same and the difference is statistical insignificant.[6] Results in this Table is not surprising, given over 80% of companies studied do not have involvement from second generation (Table 3.8).

Table 4.4 Economic Performance and Involvement of Second Generation

	Involvement of Second Generation		
Economic Performance	Yes	No	t-Statistic
Return on Assets	0.042	0.041	0.07
Return on Equity	0.069	0.072	0.10

4.13 Results earlier suggest that majority of companies are controlled via pyramid structure. To examine if the position of the company in the control pyramid has impact on economic performance, the companies are classified into two groups (first layer against non-first layer) according to their position in the control pyramid. The descriptions on the pyramid layers are contained in Chapter 3. The average economic performances of these two groups are presented in Table 4.5.

Table 4.5 Economic Performance and Location in the Control Pyramid

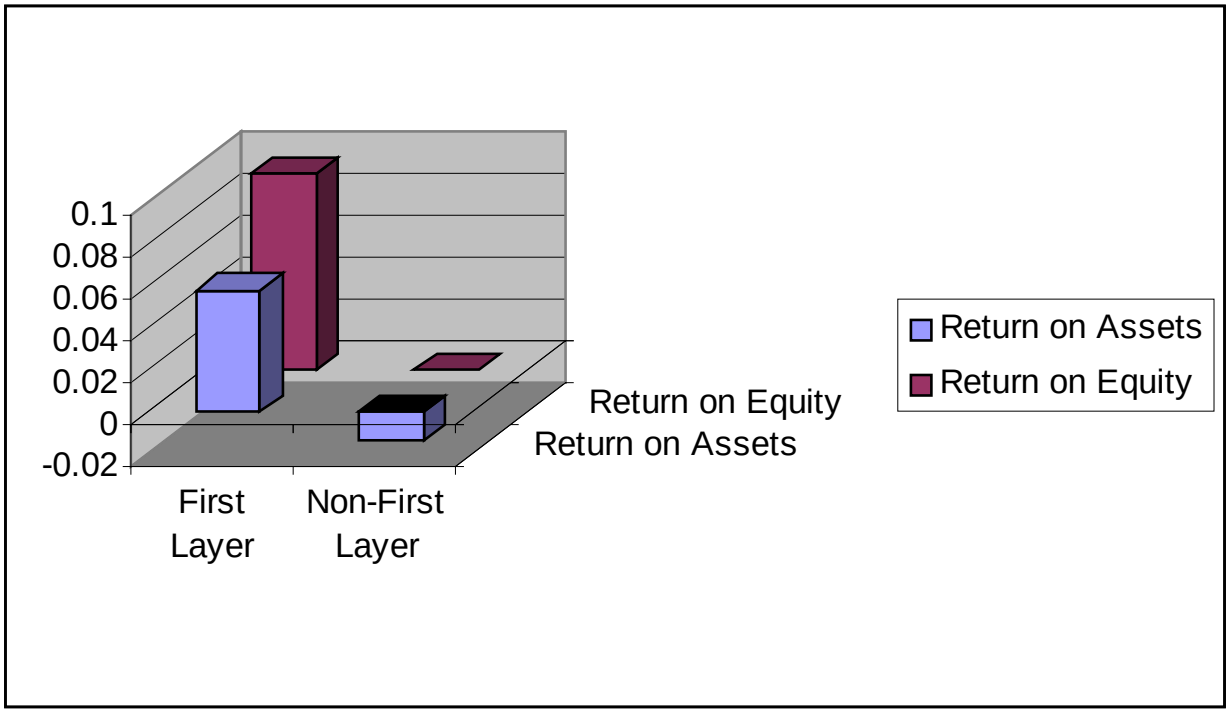
	Layers of the Control Pyramid		
Economic Performance	First Layer	Non-First Layer	t-Statistic
Return on Assets	0.058	-0.014	4.23
Return on Equity	0.094	-0.000	3.53

4.14 Table 4.5 shows that companies in the top layer of the control pyramid generally have higher level of economic performances. When we compare the ROA and ROE of the first

[6] "Statistically significant" means that there exists scientific evidence to support a conclusion. "Statistically insignificant" means that there are no evidence to support a conclusion. A t-statistic

layer companies against those of non-first layer companies, the differences are statistically significant, indicating that ROA and ROE of first layer companies are larger. We plot this observation in Figure 4.7. This evidence indicates that for companies in the bottom of the control pyramid (lowest group), their economic performance tend to be worse than those in the top of the control pyramid (highest group).

Figure 4.7: Economic Performance and Position in the Control Pyramid



4.15 Given the nature of poorer performance for companies down in the bottom of a control pyramid in Hong Kong, it would be interesting to compare the cash flow right to control right of other economies. Cash flow right to control right is defined as the ratio of actual ownership to effective control exercise. Using the pyramid structure depicted in Figure 1.1, which is reproduced below as Figure 4.8, the cash flow right is only 6.7% (multiplication of all ownerships, i.e. 51% x 51% x 51% x 50% = 6.7%) because of the

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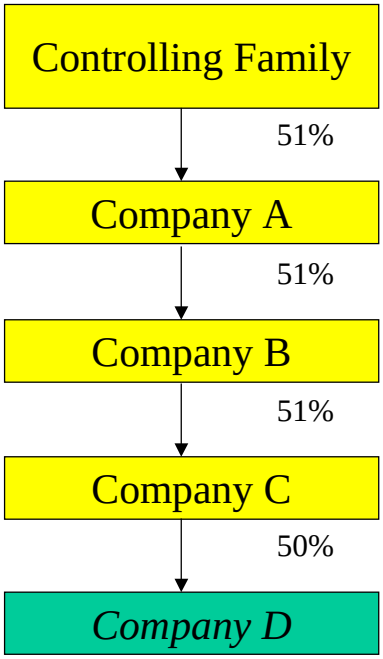
of absolute value larger than 1.96 is usually accepted as statistically significant. Please refer to Appendix 2 for an intuitive explanation of this concept.

pyramiding, while the control stake is 50%. Hence, the cash flow right to control right is 0.134.

Figure 4.8 A Pyramid Structure



4.16 Such comparison is given in Table 4.6.[7] In Asia, the separation of ownership and control is highest in Japan, Indonesia, and Singapore and lowest in the Philippines and Thailand. For example, the typical large control holder in Japan has ten ultimate votes for each six direct shares held, as indicating by the 0.602 cash flow right to control right. When compared, the Hong Kong average cash flow right to control right is 0.888. That means, on average, a typical block holder in Hong Kong has 10 votes for 8.8 shares held. In other words, the controlling owner needs not put up 10 shares of capital for 10 voting rights. Instead, the controlling owner puts up 8.88 shares and obtains 10 voting rights through

[7] When compared with the results in earlier chapters, the sample sizes for other economies are different. It is because there are missing values for different variables, making the sample sizes differ from one table to another.

pyramiding. Note that the 8.88 cash flow right to control right is only an average and there are variations among the companies. Without loss of generality, we take the ABC Group as an example. Through earlier discussion, we know that the ABC Family holds 35% of ABC Holdings. ABC Holdings holds 49.9% of BCD. BCD holds 84.6% of ABC Infrastructure, which in turn, holds 38.2% of ABCDE. Through pyramiding, the ABC Family effectively controls ABCDE. The ABC Family's control right for ABCDE is 38.2%, but the cash flow right for ABCDE is only 5.64% (35% X 49.9% X 84.6% X 38.2%). Hence, for ABCDE, the cash flow right to control right is 0.148 (5.64% / 38.2%). In other words, the ABC Family only puts up 1.48 shares of ABCDE for 10 shares of voting right of ABCDE. If we take the average of this ratio, the Asian average is 0.82 and the European average is 0.84.

Table 4.6 Statistics of Cash Flow Right to Control Right of East Asian Companies

Economy	Number of Corporations	Mean	Standard Deviation	Median	1st Quartile	3rd Quartile
Hong Kong	**754**	**0.888**	**0.233**	**1.000**	**0.800**	**1.000**
East Asian Economies						
Indonesia	178	0.784	0.241	0.858	0.630	1.000
Japan	1117	0.602	0.376	0.600	0.200	1.000
Korea	211	0.858	0.229	1.000	0.700	1.000
Malaysia	238	0.853	0.215	1.000	0.733	1.000
Philippines	99	0.908	0.201	1.000	1.000	1.000
Singapore	211	0.794	0.211	0.800	0.600	1.000
Taiwan	92	0.832	0.198	0.975	0.700	1.000
Thailand	135	0.941	0.164	1.000	1.000	1.000
European Economies						
Austria	95	0.851	0.224	1.000	0.704	1.000
Belgium	120	0.779	0.36	1.000	0.596	1.000
Finland	119	0.842	0.246	1.000	0.800	1.000
France	604	0.930	0.189	1.000	1.000	1.000
Germany	690	0.842	0.267	1.000	0.709	1.000
Ireland	68	0.811	0.321	1.000	0.683	1.000
Italy	204	0.743	0.337	0.971	0.548	1.000
Norway	149	0.776	0.341	1.000	0.532	1.000
Portugal	86	0.924	0.218	1.000	1.000	1.000
Spain	610	0.941	0.178	1.000	1.000	1.000
Sweden	244	0.790	0.339	1.000	0.526	1.000
Switzerland	189	0.740	0.290	0.83	0.468	1.000
United Kingdom	1628	0.888	0.228	1.000	0.907	1.000

Source: Claessens, S., S. Djankov and L.H.P. Lang (2000), Separation of Ownership from Control of East Asian Companies, *Journal of Financial Economics* 58, 81-112; Claessens, S., S. Djankov, J. Fan and L.H.P. Lang (2002), The Pattern and Valuation Effects of Corporate Diversification: A Comparison of the United States, Japan, and Other East Asian Economies, forthcoming in *Journal of Finance*; Faccio, M. and L.H.P. Lang (2002), The Ultimate Ownership of Western European Corporations, forthcoming in *Journal of Financial Economics* and authors' calculations.

4.17 In Europe, the ratio of cash flow right to control right is generally higher than in East Asia. The overall results show that Hong Kong is not particularly worse off in terms of cash flow over control right ratio.

4.18 To show these comparisons more effectively, the cash flow right to control right of companies for East Asia are shown in Figure 4.9 and for European companies in Figure 4.10.

Figure 4.9 Cash Flow Right to Control Right of Hong Kong and other East Asian Companies

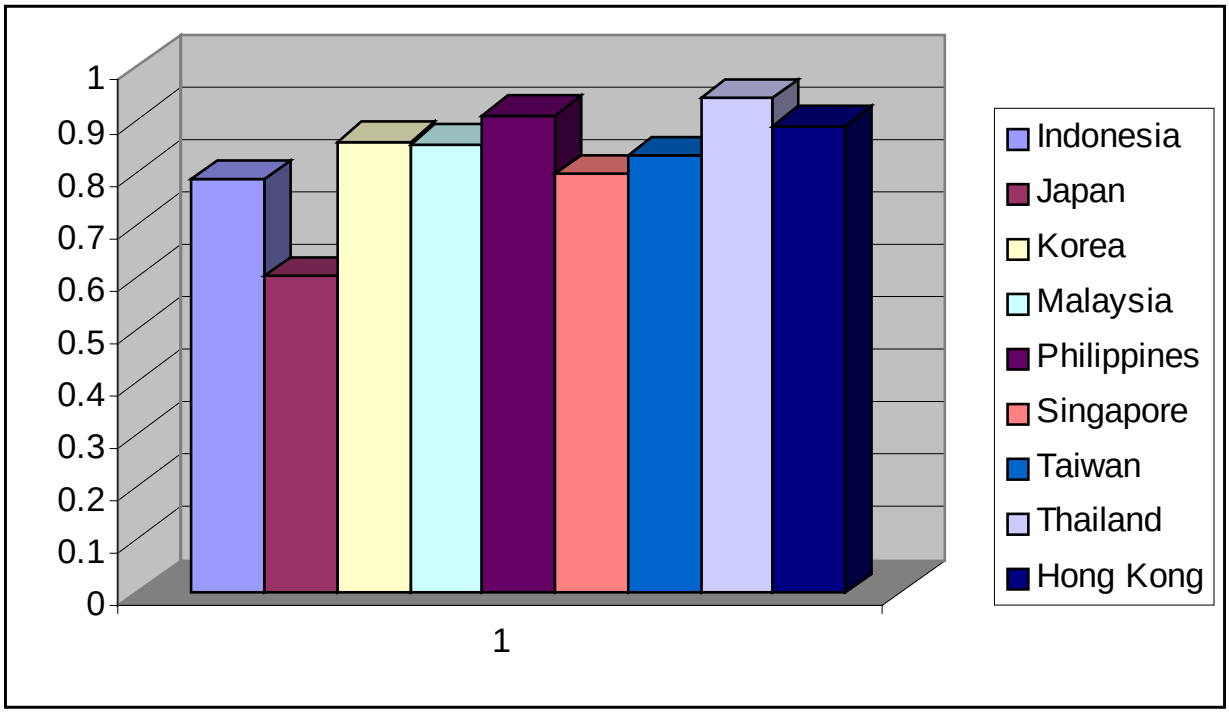
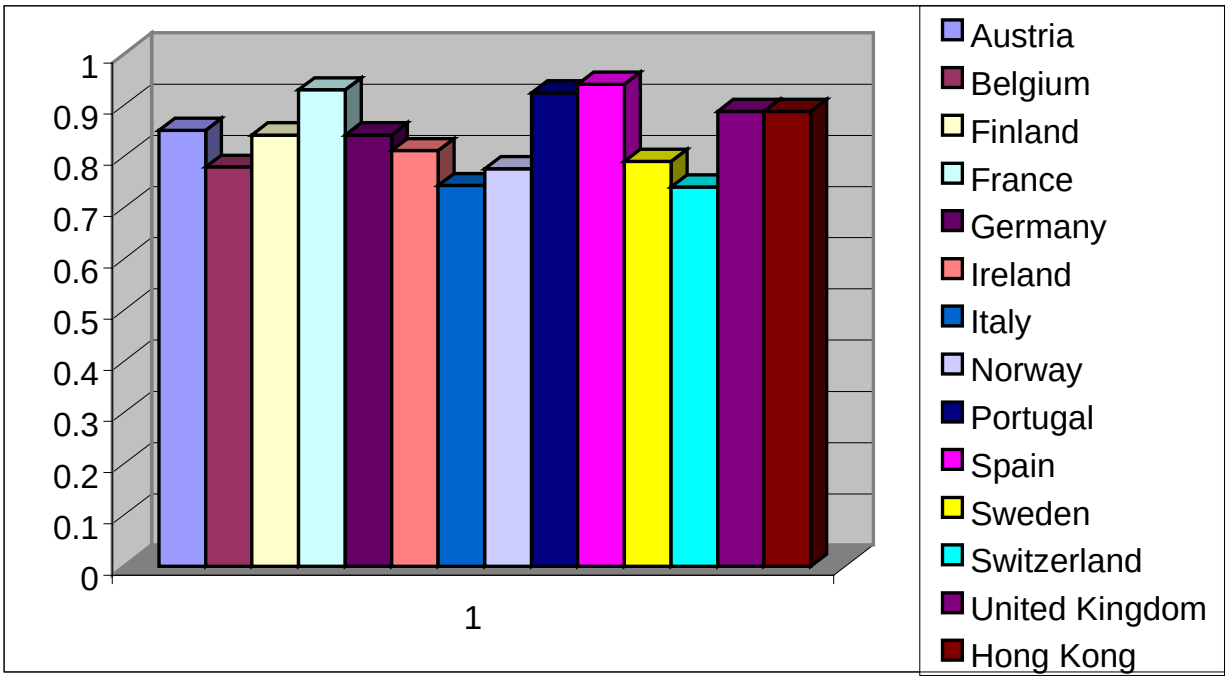


Figure 4.10 Cash Flow Right to Control Right of Hong Kong and other European Companies



Differences Across Industries

4.18 In this section, we examine if economic performances differ across industries. Table 4.7 shows this comparison.

Table 4.7 Comparisons of Economic Performance Across Industries					
Panel A: Using Return on Assets as Measure for Economic Performance					
Industries	Number	Average	Standard Deviation	Minimum	Maximum
Banking & Finance	46	0.009	0.093	-0.239	0.118
Utilities	18	0.022	0.125	-0.214	0.153
Properties	132	0.031	0.087	-0.191	0.252
Consolidated Enterprises	427	0.050	0.117	-0.425	0.314
H-Shares	32	0.013	0.009	0.007	0.019
GEM Stocks	52	0.015	0.172	-0.454	0.282
Panel B: Using Return on Equity as Measure for Economic Performance					
Industries	Number	Average	Standard Deviation	Minimum	Maximum
Banking & Finance	46	0.038	0.141	-0.243	0.254
Utilities	18	0.073	0.234	-0.336	0.385
Properties	132	0.053	0.166	-0.409	0.481

Consolidated Enterprises	427	0.081	0.185	-0.484	0.480
H-Shares	32	0.048	0.027	0.028	0.067
GEM Stocks	52	0.050	0.228	-0.487	0.414

4.19 From the above table, we conclude that in terms of return on asset and return on equity consolidated enterprises always perform the best, while banking and finance always perform the worst. In terms of return on asset only, consolidated enterprises ranked number 1 followed by properties and utilities. Similarly, in terms of return on equity only, consolidated enterprises still perform the best followed by utilities and properties. The other three industries including banking and finance, H-shares and Gem stocks always perform badly.

4.20 Findings in Table 4.7 are reproduced in Figures 4.11 to 4.12 for easy references.

Figure 4.11 Average Return on Assets Across Industries

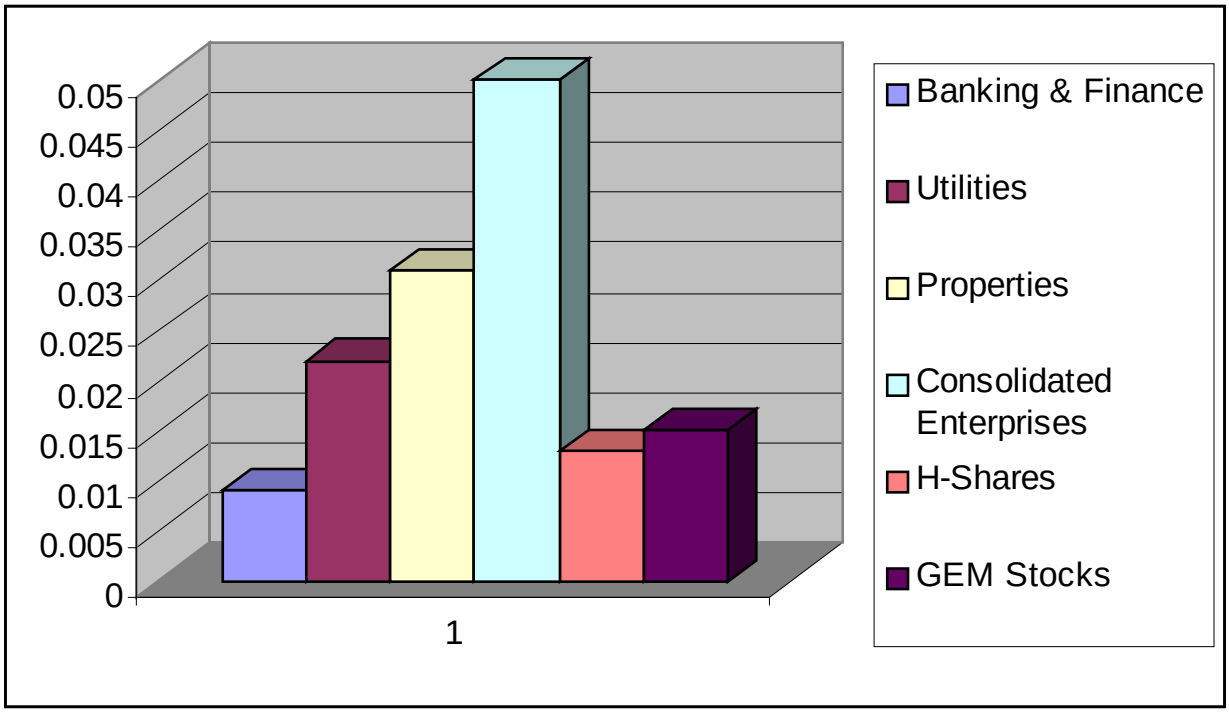
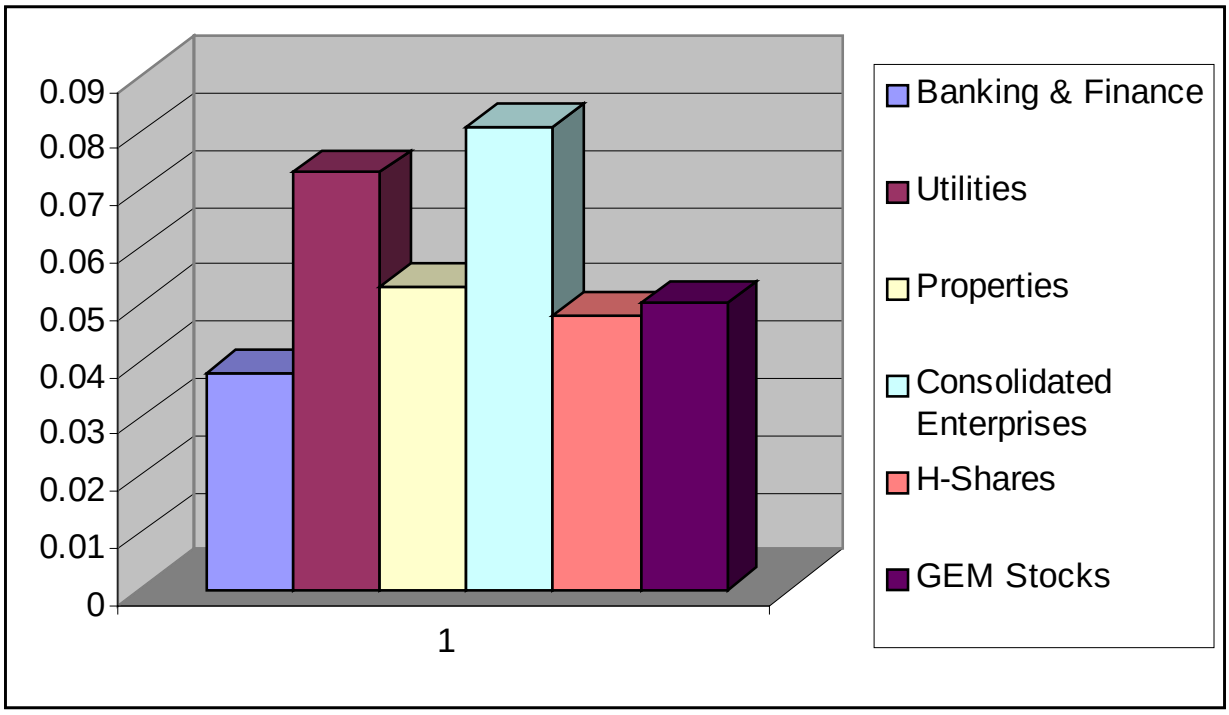


Figure 4.12 Average Return on Equity Across Industries



4.21 Empirical results documented in this Chapter suggest that family controlled companies have the best economic performance. Participation of the second generation in the companies' management does not affect economic performance of the companies. Furthermore, the percentage of senior management and directors from the controlling families by and large affects the overall economic performance. We also document evidence that for company in the top layer of the control pyramid, the economic performance will generally be the best.

Chapter 5
Market Valuation of Economic Performance

5.1 In Chapter 4, it is documented that family controlled companies have the best economic performance, as measured by their superior ROA and ROE. Nevertheless, stock market valuation may not always be in line with good economic performances. For example, the internet startups and dotcoms may command a high market value even though they are not having any net profits. In this Chapter, we shall briefly discuss the market assessment of valuation of the companies' economic performance. The reasons behind this market valuation are outside the scope of this report.

5.2 In measuring the market assessment of valuation, we use the ratio of market-to-book value of assets. This ratio measures how much premium the market is willing to pay for the assets the company owns. Details of the calculation of the ratio of market-to-book value of assets can be found in Chapter 2.

5.3 Table 5.1 below compares the market valuation of different ownership structure. From this table, family controlled companies have the smallest market-to-book value of assets. Family controlled companies, on average, command a market value "discount" of 3.5% over their asset values.

Table 5.1 Market-to-Book Asset Ratio of Different Ownership Structures

Ownership Structure	Average	Standard Deviation	Minimum	Maximum
Family Controlled	0.965	0.452	0.501	2.454
Widely Held	1.141	0.666	0.581	2.381
State Owned	1.130	0.579	0.505	2.389
Miscellaneous	1.219	0.227	1.008	1.617

5.4 Table 5.2 below contrasts market valuation of companies and degree of management concentration from the same controlling family. The percentages of directors and senior managers coming from the same family are used as the measure of management concentration from same family.

Table 5.2 Market-to-Book Asset Ratio of Companies and Degree of Management Concentration From the Controlling Family				
Panel A: Percentage of Directors from Controlling Family				
Percentage of Directors from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	1.083	0.512	0.513	2.292
Middle 1/3	0.987	0.470	0.503	2.454
Highest 1/3	0.916	0.428	0.501	2.389
Panel B: Percentage of Senior Management from Controlling Family				
Percentage of Senior Management from Same Controlling Family	Average	Standard Deviation	Minimum	Maximum
Lowest 1/3	1.001	0.490	0.503	2.454
Middle 1/3	1.038	0.463	0.503	2.218
Highest 1/3	0.944	0.474	0.501	2.389

5.5 From Table 5.2, it can be seen that the companies having the least percentage of directors coming from the controlling family have the highest market-to-book asset ratio. For example, for the lowest 1/3, it means that the market is willing to pay on average, 8.3% "premium" over the asset values. For senior management, it appears that the middle 1/3 has the highest market-to-book asset ratio. Nevertheless, as demonstrated in Chapter 3, the average percentage of senior management coming from the same controlling family is only 4.90%, which is at a low level. The differences in the ratio for senior management concentration may not be meaningful.

5.6 We show that in Chapters 3 and 4, the involvement of second generation in daily management of the companies is not high; and further, economic performance is not affected by this involvement. And, given majority of Hong Kong listed companies are controlled via pyramid structure, Table 5.3 below shows how market perceives the involvement of the second generation in management and the effects of pyramiding on market valuation assessments.

Table 5.3 Market-to-Book Asset Ratio of Companies and Involvement of Second Generation and Layers in the Pyramid
Panel A: Involvement of Second Generation in Daily Management

Involvement of Second Generation		
Yes	No	t-Statistic
0.817	1.032	-2.71
Panel B: Location in the Control Pyramid		
Layers of the Control Pyramid		
First Layer	Non-First Layer	t-Statistic
0.991	1.013	-0.32

5.7 The ratio market-to-book value of assets for companies having no involvement of second generation in the daily management of the companies is higher than those have such involvement. The difference is statistically significant. It indicates that the market tends to give companies with no involvement from second generation a higher valuation. For the ratio of market value to book value of assets, though the ratio of market value to book value of assets for non-first layer companies is higher, the difference is not statistically significant, meaning that the ratios of market to book value of assets for the two groups of companies are essentially the same.

5.8 Finally, we present the comparison of the ratio of market-to-book value of assets for companies of different industries. It appears that utilities have the highest ratio, followed by the GEM stocks and Consolidated Enterprises. Banking and finance and property companies, respectively, rank fourth and fifth. H-shares have the lowest market-to-book value of assets ratio.

Table 5.4 Comparisons of Market Valuation Across Industries

Industries	Number	Average	Standard Deviation	Minimum	Maximum
Banking & Finance	46	0.935	0.345	0.605	1.715
Utilities	18	1.347	0.468	0.713	2.085
Properties	132	0.782	0.340	0.503	1.905
Consolidated Enterprises	427	0.996	0.496	0.501	2.454
H-Shares	32	0.581	0.090	0.517	0.644
GEM Stocks	52	1.235	0.400	0.525	2.205

5.9 In this Chapter, we supplement the economic performance of companies with their market valuation. It shows that market valuation may not always go in line with

economic performance. Companies with low economic performance may have high market valuation.

Chapter 6
Conclusions

6.1 In this study, we examine the relationship between ownership structure and economic performance of listed Hong Kong companies.

6.2 Several important observations are documented. The first one is that the listed Hong Kong companies surveyed in this study are virtually all controlled by families.

6.3 We also document that families use pyramid structure to control the listed companies. Pyramid structure is widely practiced and the state owned enterprises are no exceptions.

6.4 Hong Kong companies are not just characterized by strong family control, we also document that the controlling families participate in daily management of the companies. Majority of the companies have at least one member of the senior management team from the controlling family.

6.5 We observe low participation of the second generation of the controlling family in the company's daily management, however their participation does not affect the economic performance. We also observe that the controlling family concentrates the controlling power on the founder not on the second generation especially in the GEM market.

6.6 We adopt return on asset and return on equity as measures of the economic performance. To examine the economic performance of the companies, several findings are noted. First, family controlled companies perform better than widely-held and state-owned corporations.

6.7 The participation of the second generation of the controlling family does not affect the economic performance. This may be because the first generation of the controlling family is still in power and the second generation is not the actual decision making body.

6.8 We document the impact of the position in the control pyramid on economic performance. Our evidence shows that economic performance of companies is highest when the company is located at the top of the control pyramid.

6.9 The degree of management concentration, as measured by the percentage of directors from the same family in the company's board of directors and percentage of senior managers from the same family, does not lower economic performance.

6.10 In addition, this report provides results of market valuation on economic performance. The market valuation is not in line with economic performance measures in Hong Kong. Family controlled firms have the lowest market valuation relative to other types of firms. Market also gives a lower valuation to the participation of second generation and the concentration of directors and senior officers.

Appendix 1 The Consultancy Team

A1.1 The consultancy tem consists of three members from The Chinese University of Hong Kong: Dr. Larry H.P. Lang, Chair Professor of Finance, Mr. C.K. Low, Associate Professor of Corporate Law, and Dr. Raymond W. So, Assistant Professor of Finance. Brief biographies of the three members are contained in the following paragraphs.

A1.2 Dr. Larry H.P. Lang earned his PhD in Finance at the Wharton School, University of Pennsylvania in 1986. He also earned BA in Economics at Tunghai University in Taiwan in 1978, MA in Economics at National Taiwan University in 1980 and MA in Finance at the Wharton School, University of Pennsylvania in 1985. Professor Lang has taught at several Business Schools around the globe including the Wharton School, Michigan State University, Ohio State University, New York University, The University of Chicago and the Chinese University of Hong Kong. Professor Lang has been serving as the consultant of corporate governance to the World Bank since 1998. He has been coordinating the research team on corporate governance at World Bank and has published the World Bank Discussion Paper No. 409. This report generated the first shareholding structures for nine East Asian countries and was cataloged in the Library of the US Congress in 2000. Professor Lang's main expertise and interest are in the fields of corporate governance, project financing, direct investments, corporate restructurings, mergers & acquisitions, and bankruptcy. He has published numerous papers in the world's leading economics and finance journals, including *Journal of Political Economy, American Economic Review, Journal of Financial Economics, Journal of Finance*, and *Journal of Accounting Research*. Professor Lang has been an active advocate of enhancing the protection of minority shareholders and has engaged in the debate on the *Securities and Futures Bill*, on which his views have been widely publicized by mass media.

A1.3 Mr. Low Chee Keong (CK), is an Associate Professor in Corporate Law in the School of Accountancy of The Chinese University of Hong Kong which he joined following his admission as an Advocate and Solicitor of the High Court of Malaysia in 1992. He holds degrees in economics and law from Monash University in Australia and obtained his Master of Laws at the University of Hong Kong. CK is currently the Director of the Master of Accountancy Programme, which office he assumed in

September 2000. He has focused primarily on the issues pertaining to corporate governance and regulatory frameworks on which he has published in numerous internationally refereed academic journals. CK is also the author of *Securities Regulation in Malaysia* and the editor of *Financial Markets in Malaysia* and *Financial Markets in Hong Kong*. In addition, he has co-authored two books on company law, namely, *Understanding Company Law in Malaysia* and *Understanding Company Law in Hong Kong*. CK is highly respected for his work on corporate law, regulatory framework of financial markets and corporate governance in selected Asian countries including Hong Kong, Malaysia and Singapore. He was also instrumental in the organisation of a recent well attended symposium on corporate governance and disclosure which panel of high profile speakers included Mr Andrew Sheng, Mr Anthony Neoh, Mr David Carse, Dr the Hon Eric Li, the Hon Mr Sin Chung Kai and Mr Andy Lee.

A1.4 Dr. Raymond W. So is an assistant professor of Finance and Director of Master of Science Programme in Finance at The Chinese University of Hong Kong. He received his Ph.D. in Business Administration with a major in Finance and a minor in Economics. He worked for the Standard Chartered Bank before starting his academic career. Prior to joining The Chinese University of Hong Kong in 1997, Dr. So has previously held teaching appointments at the Lingnan College in Hong Kong and the Louisiana State University in the United States of America. His research interests include e-finance, international finance, global financial markets, and investment. The findings of his research have been published in reputable internationally refereed journals, including *Journal of Futures Markets, Journal of Real Estate Finance and Economics* and *Review of Quantitative Finance and Accounting,* and *Journal of Multinational Financial Management*. Apart from his academic endeavors, Dr. So was also a member of the Examination Panel of the Stock Exchange of Hong Kong and currently serves as an Examiner of the Hong Kong Securities Institute. His business views have also been publicized in media including the *Globe, Hong Kong Economic Weekly*, *Hong Kong Economic Journal*, and the *Benchmark.*

Appendix 2 Technical Details of Empirical Methodology

A2.1 Descriptive statistics refer to measures of properties of the variables. In this study, we use mean (average), standard deviation and percentages as the descriptive statistical measures. Percentages are commonly used, and it is not discussed here.

A2.2 Mathematically, mean ($\overline{R}$) is defined as $\overline{R} = \sum_{i=1}^{n} X_i / n$, where X_i is individual observation (i=1,2, …, n), n is the number of observation. Mean is also commonly known as average.

A2.3 Since mean is too pool all observations to provide a measure of average, some information is lost. For example, suppose we have two groups. Group 1 contains 1, 2, and 3. The mean of Group 1 is 2. Group 2 contains –10, 6, and 10. The average of Group 2 is also 2. Clearly, members of Group 1 show greater degree of homogeneity than those of Group 2. Standard deviation is a statistical technique measuring how individual observation deviates from the average. Mathematically, standard deviation (σ) is defined as $\sigma = \sqrt{\sum_{i=1}^{n} (X_i - \overline{R})^2 / n}$, where X_i is individual observation (i = 1,2, …, n), n is the number of observation, and $\overline{R}$ is the average. If standard deviation is higher, it means that the variables show greater variability from the average measure, hence, the variables are less homogenous. On the contrary, if the standard deviation is low, it means that the variables are more homogenous.

A2.4 T-test is a statistical technique which tests for the difference of averages between two groups. The two-sample t-test compares the mean of the first sample minus the mean of the second sample to a given number. For example, we can examine the economic performance of different corporate governance structure (e.g., family control, widely held, etc.). If the t statistic is significant, it means that the difference is significant and there exists difference between the two groups.

A2.5 Analysis of Variance (ANOVA) is similar to t-test in the sense t-test tests for the difference of means between two groups. ANOVA, however, test for the differences of means among groups. Since we have more than two groups, the test statistic used is

the F- statistic. If the F-test statistic is statistically significant, it means that there are differences among the groups.

A2.6 We use the term statistically significant to indicate that there exists scientific evidence to support or to reject a hypothesis. For example, we compare economic performance between two groups, say, family controlled companies and state owned enterprises. It is impossible to have the same economic measures for two groups. We can only test if the difference in economic performance is material or not. Take the weight of a person as an analog. Person A weighs 50 kg while person B has a weight of 50.0001 kg. On surface, B is heavier than A; but the difference clearly is immaterial. In statistics, we employ different test statistics (e.g., the t-statistic and the F-statistic mentioned above) to test if the difference is material. If the difference is material (immaterial), we call it statistically significant (insignificant). Statistically significant means that we have concrete scientific evidence to make a conclusion.

Appendix 3 Dataset Used in This Study

The table below gives an explanation of the dataset and the variables. The actual dataset is contained in subsequent pages.

Variable	Values	Meaning
Obs	1 to 852	Observation Number
In_sample	1 or 0	1 = included in the sample, 0 = excluded in the sample
H_Share	1 or 0	1 = H-share, 0 = not H-Share
Stock_Code	Numerical	Stock code maintained at the Hong Kong Exchange
Company	Alphabets	Company name
Industry	1 to 6	1 = finance, 2 = utility, 3 = Properties, 4 = Consolidated Enterprises, 5 = H-Shares, 6 = GEM Stocks
Pyramid_layer	1, 2, 3	1 = first layer, 2 = second layer, 3 = third layer of the company in the control pyramid
MGT	1 or 0	1 = management is from controlling family, 0 otherwise
Group_No	Numerical	Each family or business group is assigned a number to indicate which business group the company is in.
Pyramid	1 or 0	1 = the company is controlled via a pyramid structure, 0 otherwise
Structure	1, 2, 3, 4, 5 or 6	1 = family controlled, 2 = widely held, 3 = stated owned, 4 = cross holdings, 5 = widely held, controlled by Financial Institution, 6 = widely held, controlled by Government
Next_Gen	1 or 0	1 = second generation is in the management team, 0 otherwise
Own1	0, 3, 4, 8, 9	Owner classification of largest blockholder. 0 = widely held, 3 = controlled by corporation, 4 = controlled by financial institution, 8 = controlled by family, 9 = controlled by government
C1	Numerical	Percentage of control right of largest blockholder
O1	Numerical	Percentage of ownership of largest blockholder
Own2	0, 3, 4, 8, 9	Owner classification of second largest blockholder. 0 = widely held, 3 = controlled by corporation, 4 = controlled by financial institution, 8 = controlled by family, 9 = controlled by government
C2	Numerical	Percentage of control right of second largest blockholder
O2	Numerical	Percentage of ownership of second largest blockholder
Own3	0, 3, 4, 8, 9	Owner classification of third largest blockholder. 0 = widely held, 3 = controlled by corporation, 4 = controlled by financial institution, 8 = controlled by family, 9 = controlled by government
C3	Numerical	Percentage of control right of third largest blockholder
O3	Numerical	Percentage of ownership of third largest blockholder
Own4	0, 3, 4, 8, 9	Owner classification of fourth largest blockholder. 0 = widely held, 3 = controlled by corporation, 4 = controlled by financial institution, 8 = controlled by family, 9 = controlled

		by government
C4	Numerical	Percentage of control right of fourth largest blockholder
O4	Numerical	Percentage of ownership of fourth largest blockholder
Own5	0, 3, 4, 8, 9	Owner classification of fifth largest blockholder. 0 = widely held, 3 = controlled by corporation, 4 = controlled by financial institution, 8 = controlled by family, 9 = controlled by government
C5	Numerical	Percentage of control right of fifth largest blockholder
O5	Numerical	Percentage of ownership of fifth largest blockholder
Market	Alphabet	Mainboard = mainboard companies, GEM = GEM companies
No_of_Director	Numerical	Number of directors coming from same controlling group
Director_Family	1, 0	1 = director comes from the same family, 0 otherwise
No_of_SMGT	Numerical	Number of senior managment coming from same controlling group
SMGT_No	1, 0	1 = senior management comes from the same family, 0 otherwise
TA00	Numerical	Total Assets of the company
MKTVAL00	Numerical	Market value of the company
LT_Debt00	Numerical	Book value of long term debt of the company
TE00	Numerical	Total equity of the company
NI00	Numerical	Net Income of the company