DETERMINANTS OF EXECUTIVE DIRECTORS' REMUNERATION AMONG MALAYSIAN PUBLIC LISTED COMPANIES

By

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I dedicate this thesis to my wife and my three daughters.

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ABSTRACT

Directors' remuneration has been subjected to continuous study by researchers in different fields such as accounting, management, human resource and psychology. Accounting scholars primarily based their research on agency theory. Recent papers focused on the affect of corporate governance on the determination of directors' remuneration.

This study aims to investigate the effect of three main variables on directors' remuneration – corporate governance variables, human capital attributes and firm performance. The study controls the effect of firm size, type of industry, leverage, diversification and location. 417 (50%) Malaysian public listed companies were selected using stratified random sampling for three years period from 2004 to 2006. Only non-financial companies are included in the sample because financial companies are subjected to different set of regulations in Malaysia.

Using multiple regression method, it is found that seven corporate governance variables are significantly related to directors' remuneration. The study shows that board size, CEO-chairman duality role, proportion of independent directors and proportion of interlocking directors in the board are significantly related to directors' remuneration. Proportion of non-executive directors in the board, percentage of indirect directors' shareholding and percentage of block holders' shareholdings are found to be negatively related to directors' remuneration. Of the three human capital attributes studied, only executive directors' average age and tenure are found to be significantly related to the level of directors' remuneration. No evidence was found to conclude the role of qualification towards level of directors' remuneration.

The model used was tested for its robustness using different set of alternative measures for some of its key variables. Corrections were also made to address other common problems associated with multiple regression such as outliers, non-normality of residuals, heteroscedasticity and multicollinearity. Finally, the study extends the analysis by running fixed effect model in order to control for firm specific effects. There are few discrepancies between the pooled regression model and fixed effect model result but this may be caused by little variation over time among governance variables. Finally, the findings further supports the agency theory by showing that, among Malaysian companies, performance still plays significant role in determining rewards for its directors

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LIST OF ABBREVIATION

AGM	Annual general meeting
BAFIA	Banking and Financial Institution Act 1989
BMB	Bursa Malaysia Berhad
CA	Companies Act 1965
CCM	Companies Commission of Malaysia
CEO	Chief executive officer
CMMP	Capital Market Master Plan
EBIT	Earnings before interest and tax
EVA	Economic value added
FCCG	Finance Committee on Corporate Governance
FRA	Financial reporting Act 1997
FSMP	Financial Sector Master Plan
GDP	gross domestic product
IMF	International Monetary Fund
IPC	Infrastructure Project Companies
IPO	Initial public offerings
KLSE	Kuala Lumpur Stock Exchange
MICPA	Malaysian Institute of Certified Public Accountants
MASB	Malaysian Accounting Standard Board
MBE	Market based equity
MCA	Malaysian Chnises Association
MCCG	Malaysian Code on Corporate Governance
MIA	Malaysian Institute of Accountants
MIC	Malaysian Indian Congress
MICG	Malaysian Institute of Corporate Governance
MSWG	Minority Shareholders Watch Group
NPL	Non-performaing loan
OLS	Ordinary least square
RM	Ringgit Malaysia
ROA	Return on asset
ROCE	Return on capital employed
ROE	Return on equity
ROS	Return on sales
SCA	Securities Commission Act 1993
SIA	Securities Commissino Act 1973
SICDA	Securities Industry (Central Depositories) Act 1991
t_cashrem	Total cash remuneration
t_totalrem	Total remuneration
UMNO	United Malays National Organisation
VIF	Variance inflation factor

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The evolving literature on directors' remuneration has spanned across a number of disciplines, such as accounting, economics, finance, industrial relations, law, organisational behaviour, psychology and strategy. Hallock and Murphy (1999) document the escalating number of academic papers published on directors' remuneration based on their search in the Social Science Citation Index database. They observed only one to two papers was published annually prior to 1985 but sixty papers were written on the subject by the year 1995. The sudden burst of interest on executive remuneration is parallel to the emerging trends of separation of ownership and control in modern corporation and general acceptance of agency theory (Murphy 1999).

Voluminous of studies have attempted to relate directors' remuneration and corporate performance since the early 1960s till now (for instance Marris 1963; Williamson 1964; Gregg et al 1993; Conyon and Leech 1994; Conyon et al 1995; Deckop 1998; Eriksson 2000). In fact, Bender (2004) quoted Taussig and Barker's paper in 1925 as the earliest study on remuneration. However, the results found are inconclusive (Barkema and Gomez-Mejia 1998). Some studies found strong relationship between remuneration and performance (for instance Lewellan and Huntsman 1970; Main et. al 1996; Deckop 1998), some found weak relationship (for instance Main 1991; Conyon 1997; Finkelstein & Boyd 1998; Buck 2003) while others found no

significant relationship at all (for instance Gregg et. al 1993; Ezzamel & Watson 1997).

The main reasons for such inconclusive findings among scholars on this topic are the variety of techniques and analysis employed by researchers. Tosi et. al (2000) conducted a meta analysis on 137 studies that examined CEO pay. They found 16 different measures of company size and 30 different measures of company performance. They conclude that:

> "*..different methods of collection, different statistical techniques, different samples, the presence of moderator variables and difference in how the constructs of interest have been operationalised in the various st*udies" (p. 305)

Pavlik et al (1993) provided a good summary of thirty-one studies from 1962 to 1993 that attempted to link performance and directors' remuneration. However, most of the studies were conducted in developed countries, particularly in the US, thus suffers from North American perspective bias (Werner and Ward 2004). In the Asian context, or developing economies in general, research in this area is still lacking.

Beside performance, substantial number of studies tested the link between director's remuneration and corporate size (for instance Agrawal 1981; Murphy 1985; D'Orio 2001), industry (Ely 1991), diversification (Cordeiro and Veliyath 2003; Chen 2004), risk (Core et. al 1999; Abdullah 2006) and human capital attributes such as director's tenure and age (for instance McKnight and Tomkins 2004; Clarkson et. al 2005; Abdullah 2006). Majority of these studies involve testing hypotheses and developing model to explain director's remuneration. The hypotheses developed are mostly based on the agency theory (Indjejikian 1999).

Duffhues and Kabir (2008) suggest in their vigorous study on pay performance link that other ways of resolving agency problem is needed. In recent years, governance structure was identified as another complementary factor to control directors' in their decision, including remuneration. For instance, studies have looked at the affect of firms' ownership (Hambrick and Finkelstein 1995; Holderness 2003) and board characteristics (Boyd 1994; Core et. al 1999; Hermalin and Weisbach 2003) on directors' remuneration. In general, they found that the governance structure of the company affects the level of directors' remuneration.

Despite the fact that numerous studies has been conducted in this area for nearly six decade, scholars find research in this area is far from end, in particular from the emerging market perspective (Barkema and Gomez-Mejia 1998; Werner and Ward 2004). The importance of linking the governance structure and other variables to explain directors' remuneration becomes even more imperative as the public demands to know the justification for increasing pay to directors. This study extends this line of research and examines the determining factors that explain executive directors' remuneration in emerging markets such as Malaysia, focusing on three important factors; governance structure, human capital attributes and firm performance.

The investigation on how these three variables affect executive directors' remuneration in Malaysia is motivated by three factors. First, Malaysia has experienced tremendous change in its governance settings after the Asian financial crisis in 1997. Among the changes made were introduction of Malaysian Code of Corporate Governance, revamping of legal and stock exchange listing requirements and establishment of new bodies to improve the governance structure in Malaysia

such as Malaysian Institute of Corporate Governance (MICG) and Minority Shareholders Watch Group (MSWG)[1]. Previous empirical studies have established that governance structures have strong influence on CEO compensation (Core et. al 1999; Davila and Penalva 2006). It is argued that additional agency cost associated with governance structure is needed in order to govern the executive directors from exerting their bargaining power to write optimal contracts that are more favourable to his or her interests. However, limited number of studies of this kind is conducted in other emerging and less developed countries. Rosen (1990) urged scholars to broaden their scope to other countries other than the US. Hence, it is important to examine whether such case applicable in emerging economies like Malaysia.

Second, Malaysia placed very much weight on human capital development, particularly though training and education. This is translated in the form of yearly national budget, in which significant amount of money was allocated for education. For instance, in Malaysian Budget 2007 and 2008, RM 33.4 billion RM30 billion respectively were allocated for education sector. In addition, MCCG recommends a board should be made up of a combination of executive directors, with their intimate knowledge of the business and of outside non-executive directors, who can bring a broader view to the company's activities. Furthermore, companies must ensure that the succession planning is carried out in order to ensure the highest calibre person is appointed. MCCG also recommends directors should receive further training from time to time, particularly on relevant new laws and regulations and changing commercial risks also are encouraged to go for training. It is therefore expected that

[1] The details of these changes are presented in Chapter 2.

such emphasis on human capital attributes would have an effect on the directors' remuneration.

Third, the figure of directors' remuneration attracts widespread attention from the Malaysian public and investors. Based on the KPMG's survey on Malaysian public listed companies directors' remuneration in 2001, the total aggregate of directors' payout in 639 Malaysian public listed companies has grown by 23% from RM 1.3 billion to RM 1.6 billion (2005-2006) (Kaur, 2007, pp.16-17). The public perceived such increment should be reflected by directors' performance. Furthermore, MCCG recommends that the executive directors' remuneration should be linked to corporate or individual performance.

1.2 Objective of the study

The main objective of this study is to determine the key variables that explain the level of directors' remuneration in Malaysia. In particular, this study intends to know whether (i) governance structure affects the level of directors' remuneration; (ii) human capital attributes of the directors affect the level of directors' remuneration; and (iii) firm performance affects the level of directors' remuneration. Other significant factors previously taken into consideration in earlier studies such as firm size, industry, diversification, location and risk will be used as control variables.

Hence, this study contributes to the understanding of the role of governance structure, human capital attributes and firm performance in explaining the level of directors' remuneration. At the end of the study, it is hoped that the role of corporate governance structure and performance can be linked to explain executive director's

remuneration. This research is distinctive in the sense that it contributes from the perspective of emerging economy.

Using a combination of agency theory and human capital theory, the study attempts to answer three main research questions:

1) Is governance structure of company affects the level of directors' remuneration? Specifically, is the board characteristics and firm ownership affects the level of directors remuneration? The board characteristics considered in this study are (i) board size and effectiveness (measured by board size and frequency of board meetings); (ii) board independence (measured by proportion of independent directors in board, proportion of independent directors in audit committee, proportion of independent directors in remuneration committee and proportion of non executive directors in board); (iii) board composition (measured by proportion of interlocking directors, proportion of old non executive directors and proportion of busy non executive directors) and (iv) board leadership (measured by CEO-Chairman dual role). The ownership structures used in the study are direct managerial ownership, indirect managerial ownership and outside block holder ownership.

2) Is human capital attributes of the director affects the level of their remuneration? This study will examine three aspects of human capital attributes, namely age, tenure and qualification.

3) Is corporate performance affects the level of executive directors' remuneration?

Besides the above key variables, there are other control variables that will be used in determining the level of executive directors' remuneration such as firm size, firm diversification, industry and firm risk. These variables are expected to have significant effect on directors' remuneration.

1.3 Scope of the study

The study covers the sample from Malaysian listed companies only. Foreign companies listed in Bursa Malaysia are excluded because their practices maybe influence by their home country's practice and regulation. The sample also excludes banks and financial institutions as they are guided by addition rules and regulation that are unique to this industry alone. The period in which this study is undertaken is from 2004 to 2006 inclusive. Prior to 2001, the disclosure on director's remuneration in Malaysia was not yet established. Year 2002 and 2003 are considered as grace period for companies to act on MCCG's recommendation thus not included in this study.

This study only uses the total board remuneration rather than CEO, and other directors' remuneration separately. This is due to limited disclosure by Malaysian listed companies despite recommendation by the MCCG to disclose directors' remuneration individually. However, Dogan and Smyth (2002) argued the use of total board remuneration is better proxy for executive remuneration because the board as a whole will affects corporate performance.

1.4 Research Methodology

This research employs quantitative approach. The first part of the study involves research on the theory and existing literature on directors' remuneration and its contributing factors. Based on this, a set of hypotheses are developed. For each of the factors identified, at least one proxy is selected to measure that factor. In some cases, a few proxies are selected in order to get the best proxy for that factor. Having a few proxies also enabled sensitivity analysis and robustness tests to be carried out. This will enhance the final results of the study.

Based on the secondary data obtained from annual reports of sampled companies, multiple regression is used to test the research hypotheses presented in chapter 3 and answer the research questions stated earlier in section 1.2. This method is chosen mainly due to the limitation of both data and access to the directors (Ewers 2002). Very few studies (for instance Bender 2004) adopted interview survey in this topic. However, Bender (2004) spent over one year and a half to conduct the interviews alone but only managed to interview few respondents, mainly through her contact from her previous employment. In addition to the multiple regression, the error term of the regression is further analysed using panel data analysis. The use of panel data analysis enables further clarification of the effect of firm characteristics of firms from the normal cross section regression.

This study covers the period from 2004 to 2006 inclusive. An initial total number of 816 listed companies in Bursa Malaysia were selected as at the end of year 2003.

Accordingly, the number was reduced in order to exclude all foreign companies, bank, insurance and unit trust companies. A sample of 50% of companies from each industry was selected. The study only includes companies that survive for the entire period of study. In other words, new listed companies and insolvent companies during the three year period are excluded from the study.

1.5 Significance of the study

Corporate governance code was established in order to realign and guard shareholders' interest by governing the management. This study will provide empirical evidence on the level and effectiveness of corporate governance in Malaysia from the perspective of executive directors' remuneration. According to agency theory, directors' remuneration is one of the most effective ways to keep managers and shareholder's interest in line. Thus, the findings of this study will enhance confidence among investors, in particular foreign and institutional investors to invest in Malaysia. In short, the findings will indirectly contribute towards the development and economic activities in Malaysia.

The findings of this study also will expand and benefit the foreign investors as they are more aware and able to expand their choices to invest according to the level of corporate governance in overseas market. This is inevitable as more newly developing economies countries become more influential in shaping the global economy.

From the academic perspective, the study will provide evidence on the level of executive compensation practices with governance structure, human capital attributes

and company performance. It tests whether agency theory and human capital theory are applicable in the context of developing country such as Malaysia.

1.6 Organisation of the thesis

The thesis is organised into seven chapters. The first chapter introduces the overall objectives, scope, the significance of the study and the research methodology employed. Chapter two provides an overview of the Malaysian accounting and corporate governance environment.

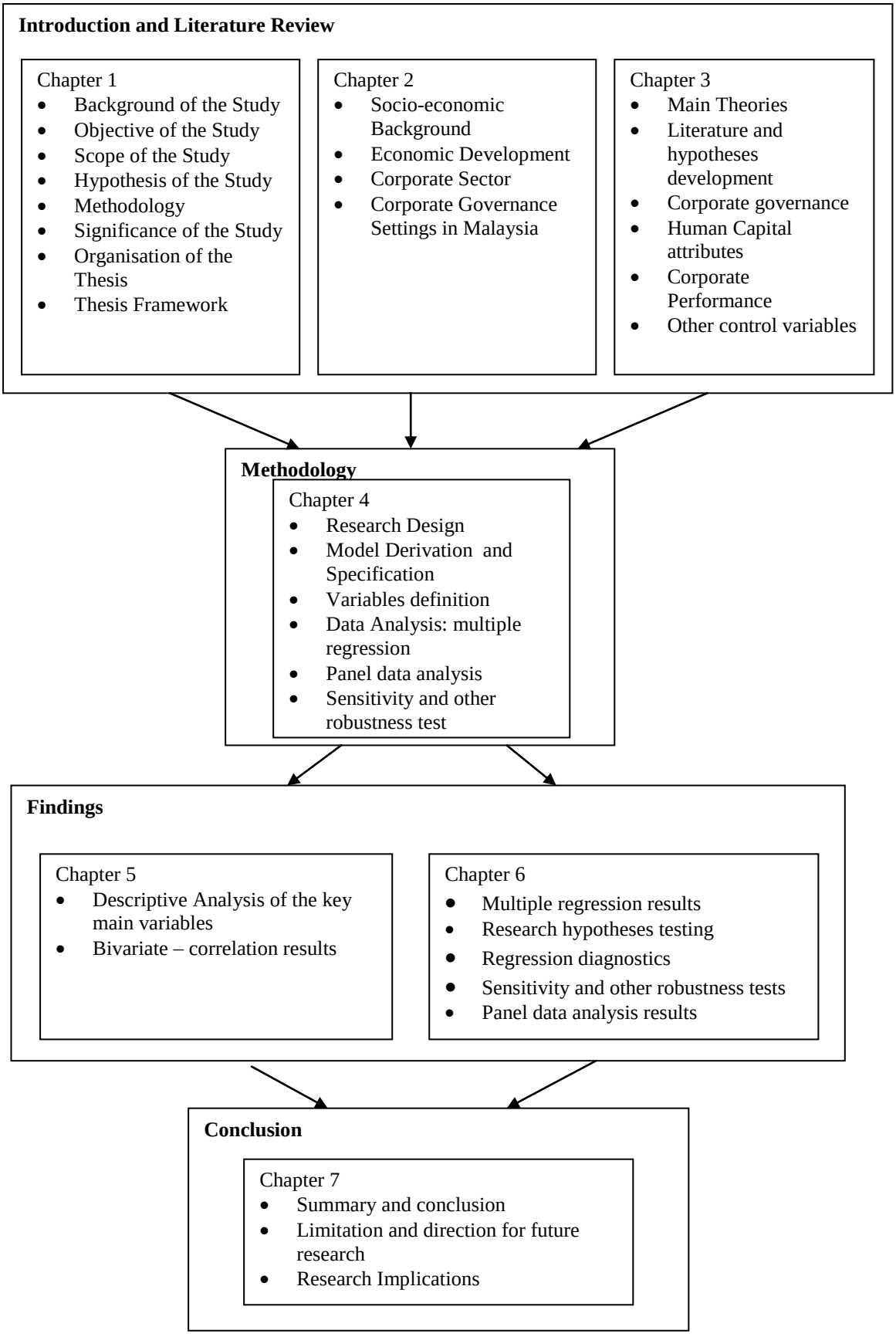
Chapter three covers the theories and existing literature on the corporate governance issue, both in developed and developing countries. Based on the literatures and theories, hypotheses development is also presented concurrently in this chapter. These two chapters will further illustrate evidence on the need and importance to conduct the present study.

Chapter four explains the methodology used in the study. It includes the research design, sample selection, modelling specifications and definitions of variables and measurements. This chapter also explains the statistical methods used in this study, namely multiple regression and panel data analysis.

Chapter five and six will present the results of secondary data analysis. In Chapter five, the results of descriptive and bivariate analysis will be presented. Chapter six will explain the findings of multivariate analysis. The discussion of the findings is done concurrently with the analysis.

The final chapter summarised the main findings of the study and provide the overall conclusion of the study. Suggestion for future research and limitations of the study are also presented in this chapter.

1.7 Thesis Framework



CHAPTER TWO

CORPORATE GOVERNANCE AND DIRECTORS' REMUNERATION IN MALAYSIA

2.1 Introduction

Chapter two aims to provide a general understanding on Malaysia particularly, on its corporate sector and corporate governance environment. This chapter will present a general institutional framework of this study. It illustrates the unique and special characteristics to study Malaysian corporate governance and executive directors' remuneration in contrast to those in the West. The chapter is divided into six sections. Sections 2.2 commence a brief discussion on Malaysian social and economic background. Section 2.3 discusses Malaysian corporate sector, Section 2.4 provides background on corporate sector in Malaysia and Section 2.5 outlines the Malaysian corporate governance system followed by Malaysian corporate governance settings prior and after Asian Crisis in 1997 in section 2.6. Finally, section 2.7 presents the summary and conclusion of the chapter.

2.2 Social-Economic Background

Malaysia (formerly known as 'Malaya') is located in the South East Asia. It is a federation of thirteen states: eleven states are located in the Peninsular Malaysia and the remaining two in the northern part of Borneo Island. Malaysia has an estimated total population of 25.3 million in 2005. There are three main ethnic communities in Malaysia: Malay, Chinese and Indian.

Malaysian social and economy were greatly influenced by its previous colony masters: Portuguese, Dutch and British. These colonial masters were drawn primarily to Malaysia due to the richness and prosperity of the port of Malacca, a well-known business hub for traders from various countries such as Arabs, Chinese, Indians, Malays and Persians. By the end of 15th century, Malacca hosted some 15,000 merchants, and it is claimed that there were more ships in the harbour than any other ports in the then known world (Md Ali 2001). Under the colonial masters ruling, in particular the British, the three main ethnic in Malaysia was purposely separated in order to prevent inter-ethnic unity – Malays concentrate on paddy field thus reside in rural areas; Chinese dominates the timber extractions activities, thus reside in the big cities; and Indians work and reside in rubber estates. This British 'divide and rule' policy creates economic imbalance between the ethnic. The policy ensures significant separation of occupational and economic activities, spatial development and cultural attributes (Rasiah 1997). Other differences such as language, religion, residence and dietary habits contribute more towards the disparity (Young et al 1980: 11).

On 31 August 1957, Malaysia gained her independence after numerous negotiations between the British and leaders representing major ethnic groups like United Malays National Organisation (UMNO) (representing Malays), Malaysian Chinese Association (MCA) (representing Chinese) and Malaysian Indian Congress (MIC) (representing Indians). The final agreements were documented in Malaysian constitutional whereby Malays and other minority ethnic groups originated from Malaysia such as Iban, Murut and Orang Asli (known as 'bumiputera') were given privileges in most economic, political and social spheres while Chinese and Indians were given nationality in Malaysia without questions.

The economic imbalance inherited from the colony masters remains the main concern of the government in the early post independence period. The occurrence of a tragic interracial riot on 13th May 1969 causes government to realise the importance of balancing the economic and status among all ethnic groups. As a result, a series of government policies were introduced over time, in which the first New Economic Policy (NEP) was launch in 1971. The main aim of this policy is to restore equal economic, social and asset ownership distribution amongst major ethnics in Malaysia.

Other later policies are concerned with the promotion of industrialisation, export orientation, privatisation and foreign investment (Jomo 1997). As a result of these policies, certain bodies such as Permodalan Nasional Berhad (PNB) through its subsidiaries Amanah Saham Bumiputra (ASB) and Amanah Saham Nasional (ASN) was set up to increase bumiputera ownership. FELDA and FELCRA were established to help bumiputera increase their income and economic status by opening new areas for rubber and palm oil plantations. PERWAJA and HICOM and were later founded to promote industrialisation. The government also identified several areas as Free Trade Zones to support export among manufacturing industries. Privatisation occurred in the late 1980s, where several public enterprises like telecommunication (TELEKOM) and utilities (TENAGA) were made public. Foreign investment restrictions on equity in manufacturing industries were relinquished in order to promote foreign investment (IMF 1999).

2.3 Economic Development

In its early years after independence, Malaysian economy continued to focus on the tin and rubber industries, whereby 75% of exports earnings were derived from these industries (Baharumshah and Rashid 1999: 389). However, the economy underwent radical transformation over the three decades since her independence time. The initial dependency on a few primary commodities such as tin and rubber has changed over the years with manufacturing sector dominating the national output and employment (Mohamed Arif 1991: 7). Currently, Malaysia is also known as one of the 'South East Asian tiger' for her very fast economic development and become the envy and role model of many other developing countries.

It was mentioned in Section 2.2 that government policies were implemented and contributed significantly to the overall economic condition during 1980s and 1990s. Two world economic recessions in 1981-1982 and in 1985-1986 had slowed down the economic development in Malaysia. Despite this, Malaysia continues to gain economic growth and the private sectors replacing the public sector to generate strength to the Malaysian economy. In 1990s, manufacturing sector become the primary sectors that driving the growth of the economy. This sector observes a steady growth at an average of eight percent per year from 1990 to 1997. During this period, Malaysia recorded a constant increment of its per capita income, low inflation rates and gradual decrease of poverty among the public.

2.4 Asian Financial Crisis in 1997

The financial crisis in the late 1997 has greatly affected Malaysian economy, particularly its equity market. The Malaysian currency, Ringgit Malaysia (RM) deflated from a peak exchange rate of RM2.493 to US$1 in April 1997 to its lowest rate of RM4.88 on 7 January 1998. As a result, the market capitalisation of Bursa Malaysia Berhad (BMB) (formerly known as the Kuala Lumpur Stock Exchange) dropped significantly from RM807 billion in 1996 to RM376 billion in 1997 and further to RM182 billion in 1998. Most of the companies' equity or share prices fall drastically from 1300 points of the stock index in February 1997 to 262 points on 2 September 1998, on the day after the announcement of capital controls by the government (Jomo 2001).

The crisis causes the public; in particular investors lose confidence on the local stock market, corporate governance and financial reporting system as a whole. This is reflected on the cash flow movement where the country observes a significant decrease in capital inflows and increase in capital outflows. In addition, the crisis led interest rates to increase and Malaysian Ringgit to depreciate against other currencies.

There are two possible reasons to explain why the financial crisis took place (Bank Negara Report (1998: 11-16). First, the crisis was caused by domestic policy weaknesses such as overheated economies, fixed exchange rates, exorbitant public sector spending, large account deficits, speculative property and stock markets, poor risk management techniques resulting in poor-quality investments and non-performing loans, unhedged borrowing by local corporations of short-term foreign

capital dominated in foreign currencies, inadequate financial sector supervision and lack of transparency in data. The proponents of this argument include International Monetary Fund (IMF), the World Bank, Paul Krugman and Rudi Dornbusch.

Second reason is supported by Jeffrey Sachs and regulators in Malaysia and Hong Kong that the financial crisis was caused by external factors, particularly on weaknesses in the international financial system. The proponents of this argument believed that the crisis was lead by massive movements of portfolio capital by highly leveraged institutional investors that besieged small financial markets in Asia. This later led chaos among investors that further exacerbate the capital flows and created mismatch of maturities and currencies of Asian borrowers (Bhattacharya 2001).

The Asian financial crisis in 1997 causes the Malaysian government to take several measures to revive and stabilise the economy including strengthening the level of corporate governance in Malaysia. Among the important measures are the incorporation of National Economic Action Council (NEAC) on 7th January 1998 to consult the Cabinet and set up a National Economic Recovery Plan (NERP). The plan contains a detailed framework for economic recovery, including recommendations to government on how to restore the economy and prevent it from going into recession. At the same time, in order to create a framework for corporate governance in Malaysia, the government established the Finance Committee on Corporate Governance (FCCG) on 24th March 1998. The members of this high level committee consisted of both government and industry. The key task of the committee was to establish a framework for corporate governance and to set the best practices for the industry (Report on Corporate Governance 1999).

In addition, Danaharta and Danamodal were incorporated to offer companies or organisation restructuring plans and to take over the non-performing loans (NPLs) of local banking institutions. Danaharta is an asset management company and was set up to remove large NPLs from the worst affected banks and financial institutions. In total, Danaharta has acquired RM23.1 billions NPLs, accounting of 31.8 per cent of the total NPLs in the banking system, thus successfully reducing the level of NPLs to 12.4 per cent (Mahani 2000). This step is necessary in order to restart the economy, as bankers are allowed to focus more on lending rather than on debt collecting. On the other hand, Danamodal deals with restoring liquidity to the banking system by injecting funds to financial institutions, thus pre-empting potential systematic risks to the financial sector (Jomo 2001). A total of RM6.4 billion was injected to ten financial institutions. As a result, the capital adequacy ratio of the banking system was increased to 12.7 per cent; exceeding the international recognised standard of 8 per cent (Mahani 2000). Further discussion on corporate governance reform after Asian crisis will be presented in section 2.5.2.

The economic growth finally improves in 2002 after experiencing a negative growth in 1998 and 1999 and a stall in 2001. The real gross domestic product (GDP) between 2002 and 2004 showed an improvement whereby the growth was recorded at 4.1% in 2002, 5.4% in 2003 and 7.1% in 2004. In 2005, the real GDP growth declines to 5.3% but is projected to increase to 5.5% in 2006 due to strong private consumption and the ongoing recovery of fixed private investment (IMF Survey 2006).

2.5 Corporate Sector

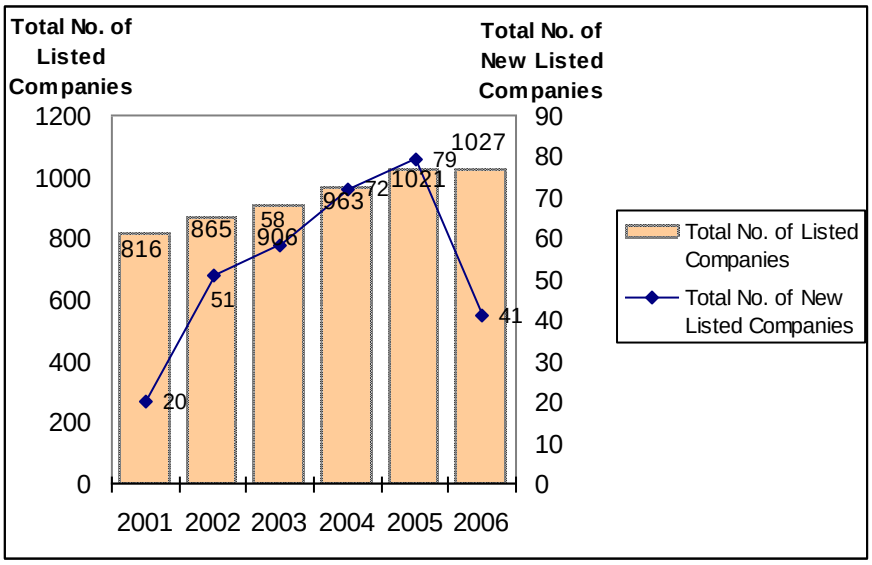
Malaysian corporate sector in the post independence period was initially controlled by British capital through its large companies such as Guthrie Corporation, Sime Darby and Renong. The companies operated in various industries like plantation, mining, agency housing, rubber and timber extraction. These companies were initially traded in the London Stock Exchange and later obtained a second listing on the Malaysian and Singaporean Stock Exchange. The formation of Kuala Lumpur Stock Exchange (now known as Bursa Malaysian Berhad) in 1973 creates a market place to trade for shares, bonds and other forms of financial instruments of listed companies.

During 1970s and 1980s, the government employ several entities to take over these companies in order to increase bumiputera's entities. For instance, Sime Darby and London Tin (now known as Malaysia Mining Corporation Bhd) were taken over by Permodalan Nasional Berhad (PNB) and Perbadanan Nasional Berhad (PERNAS) (Thillainathan 1999). Similarly, in the banking sector, the government holds majority of rights in three biggest banks in Malaysia at that time, Malayan Banking Berhad, Bank Bumiputera Berhad and United Malayan Banking Corporation Berhad (Sori 2005).

In the 1990s, Malaysian corporate sectors expanded. A number of listed companies in Bursa Malaysia grew from 285 in 1990 to 708 companies in 1997, particularly due to the new launch of second board of KLSE, whereby smaller companies with good growth prospects are allowed to enter to capital market. The Asian Financial Crisis in 1997/98 slowed down the growth of listed companies as only 28 new companies are

listed in 1998. Table 2.1 presents the breakdown of new companies listed in Bursa Malaysia from 1990 to 2005 according to the board. By the end of 2005, 1,021 companies were listed in Bursa Malaysia. Figure 2.1 shows the number of new companies listed in Bursa Malaysia from 2001 to 2005.

Figure 2.1. Total Number of Listed Companies and Total Number of New Listed companies in Bursa Malaysia Berhad 2001 to 2006.



Source: http://www.bursamalaysia.com/website/bm/listed_companies/ipos/listing_statistics.html as at 5 February 2007

At present, there are two dominant categories of public listed companies in Malaysia: (i) large privatised entities such as Telekom Malaysia, Tenaga Nasional and Petronas Dagangan; and (ii) smaller-sized companies which are mainly owner-dominated enterprises, seeking new avenues for raising capital (Report on Corporate Governance 1999: 42). Thus, the corporate sector in Malaysia comprises of companies with unique characteristics and different from other capital market in developed countries. This further justifies the importance of studying corporate governance in Malaysia, in particular of its executive remuneration aspect.

2.6 Corporate Governance System in Malaysia

There are two main systems of corporate governance: insider system and outsider system. The insider system refers to a system with the following characteristics: (i) high concentration of ownership; (ii) the corporate sector has controlling interests in itself; (iii) the number of listed companies is relatively small; (iv) the capital market is illiquid due to dominant controlling block holdings rather than trading; (v) large number of holdings or interlocked companies acting to deter outsiders from acquiring control; and (vi) major shareholders typically also part of active management team and have large influence over the major decision in the company. Majority of countries in the world, including continental Europe and Asia belong to this system. On the other hand, the outsider system refers to a system where ownership and control remain with the outside party, usually institutional investors. This system applies in the US and the UK.

2.7 Corporate Governance Settings in Malaysia

This section is divided into two parts in order to establish the significant improvement on the corporate governance settings in Malaysia after Asian financial crisis 1997. The first part explains the corporate governance settings in Malaysia prior to the Asian financial crisis in 1997 and the later part presents the corporate governance settings after the Asian financial crisis 1997.

2.7.1 Prior to Asian Crisis 1997

Prior to the financial crisis in 1997, Malaysia had established its corporate governance framework in pieces. There was a combination of statutory legislation as well as stock exchange requirements that governs the corporate sector in Malaysia. It inherited a strong common law system, including corporate law system from the British. It also adapted changes to its law based on new development from other commonwealth jurisdictions with variations to suit local environment. The initial establishment of corporate governance requirements in Malaysia can be traced back to 1965 in which the Companies Act was enacted.

Beside statutory legislation and stock exchange requirements, accounting standards also play an important role in shaping the level of corporate governance in Malaysia. However, the accounting standards were not legally enforced to all companies but rather to the members of professional bodies like Malaysian Institute of Accountant (MIA) and Malaysian Association of Certified Pubic Accountants (MACPA) until 1997. Prior to the enactment of Financial Reporting Act 1997 (FRA), the two professional bodies compete with each other to dominate the standard setting process. The following sections discuss the details of different aspects of corporate governance in Malaysia prior to Asian financial crisis in 1997.

Legal Requirements of Capital Market

There are three main acts that governed the non-financial corporate sectors in Malaysia: the Companies Act 1965 (CA), the Securities Industry Act 1983 (SIA) and the Securities Commission Act 1993 (SCA). CA becomes the foundational basis for

corporate governance requirement in Malaysia. The Act itself was modelled on the Australian Uniform Companies Act 1961 and the UK Companies Act 1948 (Craig and Diga, 1996). The Act governs all aspect of company law in Malaysia. It covers the basic principal requirements governing corporate governance practices such as financial disclosure, directors' duties and liabilities and shareholders rights. For instance, it is stated in provision 55 and 166 of the Act about the 'one-share-one-vote' rule and the requirements governing the duties and responsibilities of directors, including their duties to prepare financial statement respectively. In a cross country study carried out in 1996, Malaysia was found to be one of only 11 countries out of 49 which impose a genuine one-share-one-vote-rule. In 1987, Malaysian Code on Take-overs and Mergers was gazetted under the CA 1965. This code aims to regulate takeovers and mergers among corporations.

The Securities Industries Act 1973 (SIA) also supplements Malaysian corporate law. This Act was subsequently repealed and replaced by a similar Act in 1983. The establishment of this Act provides more protection on investor interests and more specific regulations on the securities industry. The SIA covers among other things, powers to curb excessive speculation, insider trading, market manipulation and enhancement of supervision and control of the industry. In addition, the SCA was also enacted. SCA establishes an entity called Securities Commission, which acts as a regulatory body for the capital market. In 1995, SCA was amended to mark the first move of the Malaysian regulatory regime towards a disclosure-based regime.

In the banking and financial institutions sector, a specific regulation known as Banking and Financial Institution Act (BAFIA) 1989 was enacted. Basically, BAFIA

regulates the licensing and the activities of all financial institutions including money broking services. Two years later, the Securities Industry (Central Depositories) Act 1991 (SICDA) was enacted. SICDA governs the maintenance and operation of a central depository system. Since this study did not intend to include any of the financial institutions, further discussion on this area is not necessary.

It is apparent from the above discussion that, in terms of statutory requirements, Malaysia has already established a strong background to govern its corporate sectors. This is acknowledged by La Porta *et. Al* (1998) in which they found Malaysia has a fairly strong legal frameworks relating to corporate governance, and those governing creditors' and shareholders' protection are comparable to those of develop countries. It is also evident that changes have been made to these legislations in order to incorporate new requirements to further strengthen the corporate environment in Malaysia. However, no specific requirements are stated in any of these statutory requirements regarding any aspect of directors' remuneration. In addition to these statutory requirements, companies are also bound to comply with accounting standards and stock exchange listing requirements. The details are presented in the following sections.

Bursa Listing Requirements

Another important aspect of corporate governance structure in Malaysia is the Bursa Malaysia Listing requirements (previously known as Kuala Lumpur Stock Exchange (KLSE)). Since its incorporation in 1973, the listing requirement experience continuous amendment that would enhance greater control and disclosure among the companies. A new company seeking to be listed in KLSE would be required, among

other things to include minimum thresholds regarding the number of shareholders and the value and volume of public shares, earnings and balance sheet criteria over a number of years; an assessment of the potential of the firm and industry it belongs to; qualitative criteria regarding corporate governance; and credible documentation of compliance with the above criteria (Thillainathan 1999).

Initially, Bursa Malaysia used merit-based system to decide which companies were allowed to be listed. Merit reviews are judgements by regulatory bodies on Initial Public Offerings (IPOs) solely on the merit of the prospective investment. Merit-based systems usually also include a strong role for the regulatory institution in setting prices and allocating rights for IPOs, thus shifting the investment decision role from investors to the regulatory authorities. From the mid 90s, the merit- based system was gradually replaced by a disclosure-based regulatory regime. Under the disclosure-based system, the pricing of corporate offers in Malaysia was to be fully determined by market forces. The initial intention was to complete the implementation of the disclosure-based regime by the beginning of 1998. However, due to the regional financial crisis, the target date was moved to 1 January 2001 (Thillainathan 1999).

Over time, the listing requirements have included a number of provisions to provide for checks and balances to enhance transparency and accountability. For instance, it introduced the requirements for independent directors on boards of public listed companies in 1987. In 1993, a new listing rule was introduced for which every listed company need to establish their own audit committees. However, the rule took effect on the following year. Nevertheless, prior to the financial crisis, the listing

requirements did not stipulate any obligation to disclose any matters regarding directors' remuneration.

Accounting Standards

Prior to 1967, there was no legislation to regulate accounting profession in Malaysia (Susela 1999). Thus, Malaysian Institute of Certified Public Accountants (MICPA), formerly known as Malaysian Association of Certified Public Accountants (MACPA), a private association set up in 1958 by chartered accountants from UK and Australia, was the only body that issues technical guidelines, provides training and sets up professional exams. MICPA was supported by the Big Six (now Big Four). Later, the Accountancy Act 1967 was enacted. The Act requires registration of accountants and the establishment of Malaysian Institute of Accountant (MIA). The establishment of MIA however did not hinder MICPA from being the forefront body in developing accounting standards in Malaysia until 1987. As majority of MICPA members are chartered accountants from UK, Malaysian accounting profession and practices are greatly influenced by the British accounting systems in its early years (Md Ali 1999).

The accounting standard setting activities commenced in the early 1970s. However, during the period of 1970 to 1980, the accounting standards setting activity was very much an ad hoc activity as basic infrastructure was being put into place during. International Accounting Standards (IASs) were adopted without consideration of its suitability to local environment (Susela 1999). In 1987, MIA's function was broadened to include its involvement in standard settings. Although the two bodies managed to co-operate to set accounting standards for the period of May 1987 to 1992, disagreement among them later lead each body to pursue their own accounting

standards2. The matter is only resolved with the enactment of Financial Reporting Act (FRA) 1997 in which a new body, Malaysian Accounting Standard Board (MASB) was established to become the sole body to issue accounting standards. FRA therefore has taken away the accounting standard setting activities from the profession.

It was apparent that the accounting standards in Malaysia prior to 1997 are not properly established as the two bodies compete with each other to dominate the accounting standard setting activities. Such unstable circumstances lead to confusion and inconsistency of reporting and disclosure among companies. Therefore, accounting standards also do not address matters with respect to directors' remuneration.

2.7.2 After Asian Crisis 1997

Corporate governance issues became the centre of public concern following the collapse of East Asian economies in the later part of 1997. The government has taken significant steps in order to improve the strength of corporate governance in Malaysia. The major reforms that took place were the issuance of Malaysian Code on Corporate Governance (MCCG) by FCCG, Capital Market Master Plan (CMP) by Securities Commissions and Financial Sector Master Plan (FSMP) by Bank Negara Malaysia. Other significant reforms are the establishment of key institutions such as Malaysian Institute of Corporate Governance (MICG) and Minority Shareholders Watchdog Group (MSWG). The details of which are presented in the following sections.

[2] See Susela (1999) for the details of conflict between MIA and MACPA.

Malaysian Code of Corporate Governance (MCCG)

It was mentioned in section 2.3.1 that the Asian Financial crisis has led the Malaysian government to establish FCCG. The FCCG published a comprehensive 275-page report, which contains 70 recommendations pertaining to the proposed Code on Corporate Governance, reformation of law and regulations and training and education of directors. This section will address specifically the code of corporate governance and followed by discussion the changes in laws and regulations.

The FCCG released the Malaysian Code on Corporate Governance in March 2000. The hybrid approach was adopted in order to give companies broad principles that can be used as guidance, thus allowing for variation depending on the circumstances of each company. The hybrid approach combines the prescriptive and non-prescriptive models. The prescriptive model sets standards of desirable practices for disclosure of compliance. The Non-prescriptive model requires actual disclosure of corporate governance practices Hence, by combining this two models, the Code allows for a more "*constructive and flexible response to raise standards in corporate governance as opposed to the more black and white response engendered by statute and regulation*" Khoo (2003).

The code comprises of four parts: (i) principles for good corporate governance; (ii) best practices in corporate governance; (iii) exhortations to other corporate participants and (iv) explanatory notes to principles and best practices. The first part of the Code aims to allow flexibility for companies to apply broad principles of good corporate governance depending on their individual circumstances. Companies are required by the Bursa listing requirements to include in their annual report a narrative

statement of how they apply the relevant principles to their particular circumstances. Hence, investors and others indirectly will be able to assess companies' performance and governance practices, and respond in an informed way.

The second part of the MCCG elucidates a set of guidelines or practices intended to assist companies in designing their approach to corporate governance. Companies are not mandated to comply with best practices, as it is voluntary. However, companies will be required as a provision of the Bursa listing requirements to state in their annual reports, the extent to which they have complied with the best practices. If the companies' practices differ from the best practices, the companies need to provide justification as to why such differences exist.

Part three of the Code is relevant only to investors and auditors. It explains how they can enhance their role in corporate governance. These are purely voluntary. The final part of the Code provides explanatory notes to the first three parts set out earlier. Additionally Part 4 also sets out best practices directed at listed companies that do not require companies to explain circumstances justifying departure from best practices - "mere best practices".

The underlying principles of the code stated in part 1 are divided into four main areas - board of directors, directors' remuneration, shareholders and accountability and audit. A brief discussion on each of these areas is presented below. However, given the focus of this study is on the directors' remuneration, the section on the directors' remuneration aspects is explained in more detail.

Board of Directors

The principle of corporate governance states that every listed company should be leaded and controlled by an effective board. The board should be balanced with a mix of executive directors and non-executive directors (including independent non-executives) in order to prevent domination of an individual or small group of individuals in the board's decision making. The board should be supplied in a timely fashion with information in a form and of a quality appropriate to enable it to discharge its duties. There should be a formal and transparent procedure for the appointment of new directors to the board. Finally, all directors should be required to submit themselves for re-election at regular intervals and at least every three years.

Directors' Remuneration

In relation to directors' remuneration, the code suggests that

> *'The levels of remuneration should be sufficient to attract and retain directors needed to run the companies successfully. The components parts of remuneration should be structured so as to link rewards to corporate and individual performance, in the case of executive directors. In the case of non-executive directors, the levels of remuneration should reflect the experience and level of responsibilities undertaken by the non-executive director concerned.'*

The code also pointed the needs for companies to establish a formal and transparent procedure for developing policy on company's executive remuneration and for fixing remuneration packages for each director. The explanatory notes further explain the need to ensure that directors, whether executive or non-executive, should not participate in decisions on their own remuneration packages. Companies are also required to disclosure details of remuneration for each director in their annual reports. It is further explain in part four of the Code that standards should be set which provide a rational and objective remuneration policy. The Code gives two examples of the

objective of remuneration policy; (i) to ensure that the company attracts and retains the directors needed to run the company successfully; and (ii) to link remuneration rewards to corporate and individual performance.

Shareholders

The Codes outlines the necessity for companies and institutional shareholders to be ready, where practicable, to enter into a dialogue based on the mutual understanding of objectives. The companies also should encouraged private investors to participate in corporate governance process by improving the use of the AGM.

Accountability and Audit

The final area in the principle of corporate governance is on audit and accountability. It states that the board should present a balanced and understandable assessment of the company's position and prospects. In addition, the board should maintain a sound system of internal control to safeguard shareholders' investment and the company's assets. The code also place equal importance on the board to establish formal and transparent arrangements for maintaining an appropriate relationship with the company's auditors.

Capital Market Master Plan (CMMP)

CMMP was introduced to shape the direction of the Malaysian capital market for the next ten years. It was approved by the Ministry of Finance in December 2000 and later launched in February 2001. The CMMP visions are to create efficient mobilization and allocation of funds and at the same time to obtain high degree of

confidence to market participants. Thus, good corporate governance practices among public listed companies is considered vital to build investors confidence on Malaysian capital market.

Financial Sector Master Plan (FSMP)

FSMP was launched in March 2001 to chart the future direction of the financial sector over the next ten years. The plan was launched by Bank Negara Malaysia with the aim to develop a more resilient, competitive and dynamic financial systems that contributes to the economic growth and technology driven. Again, the anchor to attain these objectives rests on the level of corporate governance practices among financial institutions in Malaysia.

The plan was divided into two phases. The first phase of the plan targeted on the domestic capacity and capability enhancement. The second phase focuses on the transition towards a more competitive environment and finally towards greater international integration by 2007. Among the recommendations of the plan were to have board committees to further improve corporate governance, the implementations of a transparent and clearly structured early warning system for weak banking institutions. It also encourages mergers between banking institutions and establishment of a deposit insurance fund.

Legal Requirements of Capital Market

The FCCG also responsible to review the existing corporate laws and regulation and suggests whether legislative or regulatory reform is required to bring them up-to-date

with current commercial reality as well as with internationally accepted concepts on corporate governance. In FCCG reports published in February 1999, it states that the review covers the following areas:

- *Duties, obligations, rights and liabilities of directors, company officers, and controlling shareholders;*
- *Adequacy of disclosures and conflicts of interests with respect to transactions that involve the waste of corporate assets;*
- *Enhancing the quality of general meetings;*
- *Shareholders' rights and remedies;*
- *Developing effective governance and enforcement mechanisms within the regulatory framework.*

(Source:Reports on Corporate Governance 1999: 105)

The reviews cover the statutory legislation, in particular Companies Act 1965, securities law and listing requirements. Following the FCCG recommendation, a number of provisions in the Companies Act (1965) were amended.

A new body, Companies Commission of Malaysia (CCM) was established through the enactment of Companies Commission of Malaysia Act 2001. CCM is a statutory body and is a merger between the Registry of Companies (ROC) and Registry of Business (ROB). The establishment of CCM is expected to further improve the surveillance and enforcement of corporate legislation. CCM started its operation on 16 July 2002 and is responsible for the administration and enforcement of the following legislation:

- Companies Act 1965 (Act 125);
- Registration of Businesses Act 1956 (Act 197);
- Trust Companies Act 1949 (Act 100);
- Kootu Funds (Prohibition) Act 1971 (Act 28);

- any subsidiary legislation made under the Acts specified above such as: Companies Regulations 1966; and Registration of Businesses Rules 1957.

SIA was amended in 2003 to incorporate better control and improvement of the securities industry, in terms of its disclosure, enforcement and reports. For instance part VIIIA capital market development fund section 83K states that:

> *'..member of the board must disclose the existence and nature of his or her interest either direct or indirect interest in relation to any matter under discussion by the board'*

Improvements also is observed in term of enforcement power of the Securities Commission, for instance section 11 states that

> *'a person who fails to comply with the rules of stock exchange, or a recognized clearing house or rules of a central depository or provisions of this Act other than the provisions of Part IX, the Commission may take any one or more of the following actions: (a) direct the person in breach to comply with, observe, enforce or give effect to such rules or provisions; (b) impose a penalty in proportion to the severity or gravity of the breach on the person in breach, but in any event not exceeding one million ringgit; (c) reprimand the person in breach; (d) require the person in breach to take such steps as the Commission may direct to remedy the breach or to mitigate'*

The amendment of SIA also requires annual Regulatory Report on compliance with ongoing requirements, as stated in provision 11E.

The Securities Commission (Amendment) Act 2000 was passed by both houses of parliament in April 2000 and received royal assent on May 30th. The act introduces enhanced disclosure obligations on issuers and stringent sanctions for false and misleading information in prospectuses. It gives investors the right to pursue civil action against companies, directors and their advisers where there has been a

contravention of the law. The SC is also empowered to pursue civil action on behalf of investors where it is in the public interest to do so.

Finally, Malaysian Accounting Standard Board (MASB) was established with the enactment of Financial Reporting Act 1997 (FRA). FRA requires all public listed companies in Malaysia to comply with the approved accounting standards issued by MASB. Thus, non-compliance has become illegal in the country. Thus, the power to set accounting standards was taken away from the professional bodies and rest solely in the hand of MASB.

It is clear from the above discussion that the statutory requirements level of corporate governance in Malaysia has been improved after the financial crisis. The amendment and introduction of new legislation further clarify and strengthen the enforcement of the laws, in which it was lacking before.

Bursa Listing Requirements

Effective from 1 June 2001, Bursa's listing requirements was revamp. The revamps are found to be consistent with the MCCG (see Section 2.5.4.1) and CMMP (see section 2.5.4.2) objectives. The main aims of the new listing requirements are to enhance corporate governance and transparency, enhance efficiency in capital market activities, strengthen investor protection and promote investors confidence. This new listing requirement affects all public listed companies both in the main and second board.

By virtue of paragraph 15.26 of the Bursa Listing Requirements, all listed companies should state in their annual report how they have applied the principles set out in Part 1 of the Code and the extent to which they have complied with the best practices set out in Part 2 and identify and give reasons for any areas of non-compliance, and where applicable, state the alternative practice(s) adopted. In other words, companies need to provide narrative statement of how they apply the relevant principles to their own particular circumstances in their annual report. In respect of Parts 1 and 2, boards are not expected to comment separately on each item of the Code with which they are complying, but areas of non- compliance will have to be dealt with individually. (MCCG 2000). Practice note 9/2001 was issued in order to further clarify the listing requirements related to the MCCG and the state of internal control.

The MCCG also includes best practices in corporate governance to guide companies in their approach towards corporate governance. Companies are not required to comply with these best practices. However, companies are required under listing requirement to provide explanation if their practices differ from the best practices.

Accounting Standards

With the enactment of FRA 1997, the structure for standard settings is clearer. The FRA 1997 requires an establishement of Financial Reporting Foundation (FRF). The FRF acts a trustee body, has responsibility for the oversight of the MASB's performance, financial and funding arrangements, and as an initial source of views for the MASB on proposed standards and pronouncements. The FRF comprises representation from all relevant parties in the standard setting process, including preparers, users, regulators and the accountancy profession.

Continuous improvements were shown in the development of accounting standards. In 2004, MASB issued Financial Reporting Standard (FRS) to replace MASBs. It was among steps taken in the effort by MASB to be compatible with other international standards.

Establishment of New Bodies

The Malaysian government had established a few new bodies in order to ensure successful reformation plan. The establishment of these bodies where an extra efforts by the government in order to strengthen the corporate governance settings in Malaysia.

Malaysian Institute of Corporate Governance (MICG)

MICG was established in March 1998 by the High Level Finance Committee on Corporate Governance. It is a not-for-profit public company limited by guarantee. Its founding members are the Federation of Public Listed Companies (FPLC), the Malaysian Institute of Accountants (MIA), the Malaysian Association of Certified Public Accountants (MICPA), the Malaysian institute of Chartered Secretaries and Administrators (MAICSA), and the Malaysian Institute of Directors (MID).

The purpose of MICG's establishment is to raise the awareness and practice of good corporate governance in Malaysia. In order to meet its objective, MICG is actively co-operating with other bodies such as MIA, FPLC and MASB. MICG involves in

organising various dialogues, training and conferences that promotes good corporate governance and corporate social responsibilities.

Minority Shareholders Watch Group (MSWG)

In August 2000, MSWG was incorporated to protect the interests of minority shareholders. The establishment of this body is part of the government efforts to provide avenue of market discipline on corporate governance matters amongst public listed companies. MSWG provides a platform and a collective voice to both retail and institutional minority shareholders, and it advises on voting at general meetings of public listed companies. This has been the first step towards encouraging shareholder activism without recourse to the courts.

MSWG also acts as the think-tank and resource centre for minority interest and corporate governance matters in Malaysia. It develops and disseminates the educational aspects of corporate governance to its members. By doing so, MSWG indirectly encouraged its members to raise enquiry on questionable practices by management of public listed companies. Collectively, the voice of minority shareholder will be voiced out by MSWG in order to influence the decision making process in public listed companies as the leader for minority shareholders' legitimate rights and interests. This enables MSWG to monitor for breaches and non-compliance in corporate governance practices by public listed companies. In case where MSWG found any breaches or non-compliance in corporate governance practices, it will initiate reports to regulatory authorities.

MSWG role has an impact on the improvement on corporate governance in Malaysia. The body has been very active since its incorporation and provide excellent reference point to minority shareholders.

2.8 Summary and Conclusion

As one of the commonwealth country, many aspects of Malaysian landscape were greatly influenced by the United Kingdom, including its financial system and capital market system. This is evident from the history where the UK influence was very strong in Malaysia's early post independent years. However, that influences were slowly changing in the subsequent years and Malaysia had developed and became one of its own, unique country. For instance, from the capital market perspective, the common law was established based on the UK law prior to the Asian Financial Crisis in 1997. Bursa Listing requirement was also in place and accounting standards were in its very early development stage. However, no specific regulations, be it compulsory or voluntary were developed on directors' remuneration.

The financial crisis however had triggered and escalated the reformation in many aspects of corporate governance in Malaysia. The government had realised the importance to strengthen the capital market regulations. The capital market master plan was drawn in order to deal with this. As a result, a number of bodies were established in order to deal specifically with the task of improving the capital market system. For instance, MICG was established to come out with MCCG while MASB was established to come out with accounting standards to govern accounting practices

in Malaysia. MSWG was established in order to protect and act in the interest of minority shareholders.

Along the process, laws and regulations were amended to be more relevant. Bursa Listing requirements also had been revamped and many new rules were established, in order to govern the corporate sector and eventually gain back investors' confidence in Malaysian capital market. MCCG was also introduced and has included directors' remuneration as part of items need to be disclosed by listed firms. These changes made it timely to look at various aspect of corporate governance in Malaysia, such as directors' remuneration. In addition, Malaysian unique background and capital market system made this study relevant and of importance to many.

CHAPTER THREE

THEORY AND LITERATURE REVIEW: DETERMINANTS OF EXECUTIVE DIRECTORS' REMUNERATION

3.1 Introduction and Overview

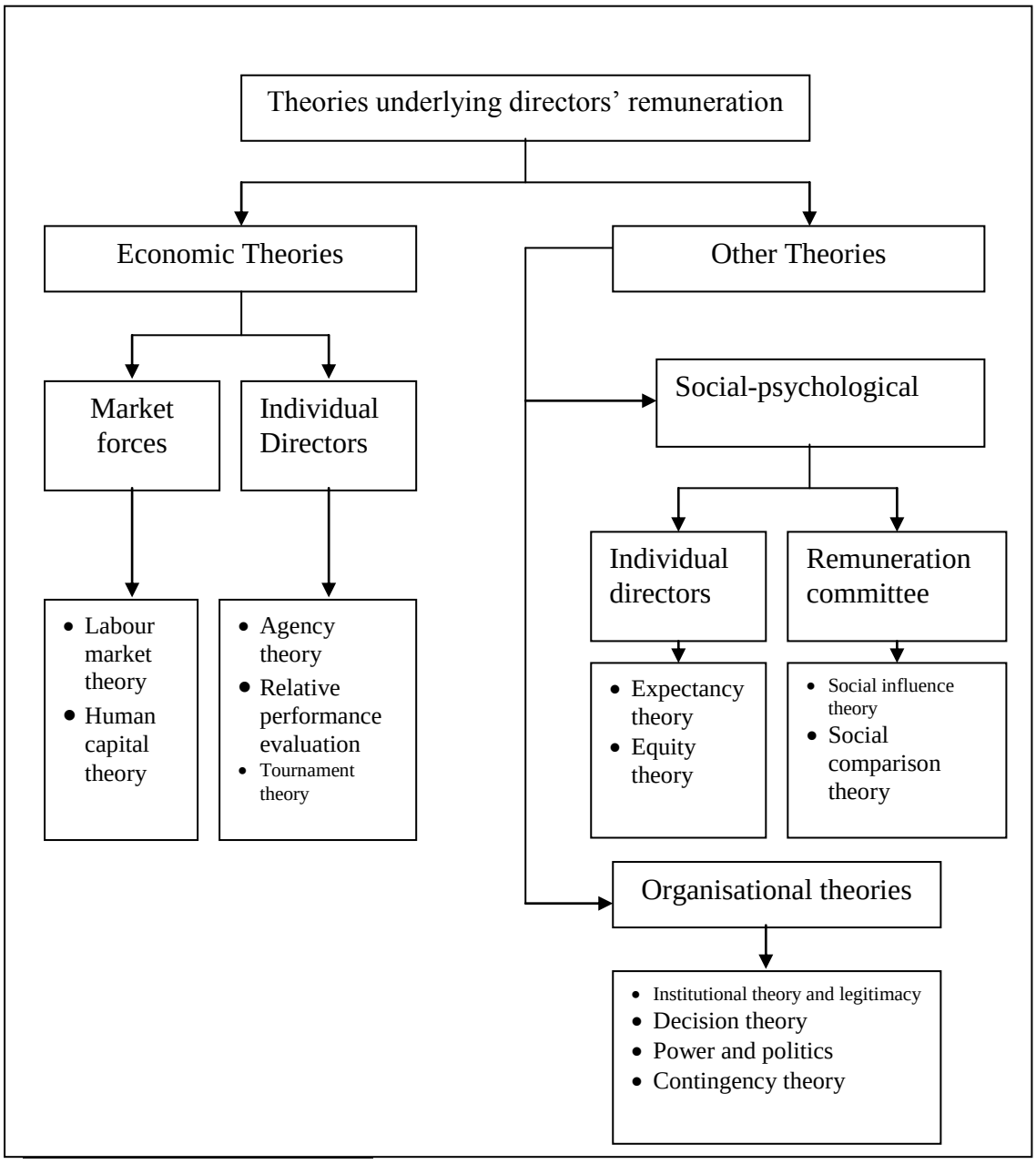
Chapter three aims to provide review of theories and literatures on determinants of executive directors' remuneration. The purposes of this chapter are (i) to identify and review the theories that explain what determines the level of executive directors' remuneration in the context of this study; (ii) to evaluate the extent in which scholars have addressed the issue of directors' remuneration determinants; and (iii) to identify the gap in the literature thus leads towards the current research questions and research hypotheses.

Theory acts as the basis to identify and raise research problems. It helps to identify relevant factors, concept or variables and relationship, interpret and understand observations or data and more importantly to advance explanations (Ghauri and Gronhaug 2002: 52). Figure 3.1 summarises three main theories used by different researchers to explain directors' remuneration (Bender 2004). The selection of theory depends on the philosophical stance of the researcher. In general, it is more common for economists, finance and accounting scholars to use economic theories (for instance studies by Murphy 1985; Indjejikian 1999; Ewers 2002), while psychologists (for instance Belliveau et al 1996) tend to use social-physiological theories like equity theory, expectancy theory, social influence theory and social comparison theory.

This study is based on economic theories, in particular agency theory and human capital theory. Justification for using these two theories will be discussed in the following discussion. Hence the following discussion will only focus on agency theory and human capital theory[3]. Research hypotheses for this study are developed concurrently with literature review in this chapter.

Figure 3.1 Overview of Extant Theories Of Directors' Remuneration

(Source: Bender 2004: 20)



[3] For further discussion on the other theories, please refer to Appendix 1.

This chapter is divided into six sections. Section 3.2 and 3.3 review agency theory and human capital theory respectively and its relation to directors' remuneration. Section 3.4 and 3.5 evaluate studies on remuneration in developed countries and developing countries respectively. Section 3.6 assesses the common measurements and variables used for remuneration, performance, governance structure and other key variables that affect directors' remuneration such as size, leverage and risk. Finally, section 3.7 outlays the conclusion comments from literature review and direction for future research.

3.2 Agency Theory

The central theory used in this research is agency theory. This theory is used by majority of the research on directors' remuneration (Murphy 1999; Bender 2003a). Agency theory spans from the believe that there is mismatching between owner and manager of a firm, which leads to the need for certain measures to be taken in order to realign their interest back. The origin of agency theory can be traced back to 1960s when modern corporations were developed whereby control of the company changed from owner to manager. Economists began to explore different risk attitudes among individuals and groups that lead towards risk sharing problems between owners and managers (Arrow 1971; Wilson 1968).

Jensen and Meckling (1976) defined agency relationship as a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent. Assuming both the principal and the agent are utility

maximisers, potential conflict may arise whereby the agent may not always act in the same interest as the principal. In other words, this theory emphasis that rational individual will behave in manner that maximise its utility function. In the context of managerial-company relationship, the goal of shareholders (principal) is to maximize their wealth, while the goals of management (agent) is to maximize a utility function that includes pay, prestige, size and power. Jensen and Meckling (1976) also argued that both agent and principal may have different risk preference that will further escalate the problem. Consequently, the management tends to pursue their own interests instead of increasing the owners' wealth. In addition, the principal-agent relationship still inherits problems such as cheating, limited information and bounded rationality in general (Perrow 1986). Although such relationship is governed by a contract specifying what the manager does with the funds and how the returns are divided between them, agency problems arise because the agent cannot possibly contract for every possible action whose outcome affects both his own welfare and the welfare of the principal (Brennan 1995).

In order for principal to minimise agent's deviation from its interest, the principal can provide appropriate incentives and adequate monitoring mechanism. According to Jensen and Meckling (1976), such incentives must be able to restraint the agent from taking any actions that may not in the best interest of the principal or to ensure that the principal will be compensated if he does take such actions. The principal also must establish appropriate monitoring mechanism that will minimise aberrant activities by the agent. However, it is impossible to ensure the agent always act in the interest of the principal. There must always be divergence between agent's decision and principal's decision. This cost is referred to by Jensen and Meckling (1976) as

residual loss. Therefore, agency costs are the sum of (i) the monitoring expenditure, (ii) the incentive (bonding) expenditure, and (iii) the residual loss (Jensen and Meckling 1976).

This theory was used extensively by researchers in the following years (Eisenhardt 1989). It became the backbone for various studies that mainly focusing on aligning the shareholders' and managers' interests through incentives and governance mechanisms (Gomez-Mejia and wiseman 1997). For instance, based on agency theory, the performance-related pay will induce the management so that their interests coincide with the shareholders' goals. Hence, management contracts must be written in such a way as to facilitate this (Prendergast 1999). Other mechanisms to align the interests of managers and shareholders include improving the roles of board of directors (Fama and Jensen 1983) through appointment of independent directors and separation between chairman and chief executive director (CEO). In other words, governance structure of the company will assist the owner in aligning their interest with the management of the company.

Jensen (1983) identified two streams of research based on agency theory: the 'principal-agent' stream and the 'positivist' stream. Basically, the research focus for each stream is different but the underlying assumptions for both streams are indistinguishable (Eisenhardt 1989). Both streams study the contract between the principal and the agent and recognised the same assumptions of agency theory such as self-interest, bounded nationality and risk adverse preference, information as a purchasable commodity, partial goal conflicts and information asymmetry between organisational participants (Chen 2006, Eisenhardt 1989).

The main focus of 'principal–agent' stream is on identifying optimal contract in order to control agency costs. This stream involves careful specification of assumptions and logical deduction and mathematical verification. Studies under this stream tested different conditions such as scenario when the principal has complete information about the agent's efforts. The most optimal contract is based on behaviour since an outcome contract will not transfer risk to a risk-averse agents (Eisenhardt 1989). The more realistic condition is when the principal does not have complete information about the agent's efforts. In this scenario, two aspects of agency problem may occur – moral hazard and adverse selection (Eisenhardt 1989; Chen 2006). Moral hazard, also known as 'shirking' arises when the agent cheats on the agreed efforts. Adverse selection refers to the principal inability to verify the skills or capabilities of the agent either at the time of hiring or after due to agent's misrepresentation on his or her ability or qualifications. To control for both of these agency problems, the principals can either hire some mechanisms to discover the agent's behaviour or to transfer the risk to the agent by designing an outcome-based contract, such as incentive alignment (Gomez-Mejia and Wiseman 1997; Chen 2006).

Subsequent researchers in this stream also examine other types of scenarios by relaxing basic assumptions of agency theory. For instance, taking away assumption on risk-averse agent (Harris and Raviv 1979) and relaxing the assumption on interest conflicts (Demski 1980). However, by relaxing many of the basic assumptions in agency theory has made the research under this stream less supportive to agency theory (Gomez –Mejia and Wiseman 1997). In addition, researches under this stream are criticised as less accessible to organisational researchers due to the normative and

deterministic nature of the stream, thus making limited impact on organisational studies in general (Beatty and Zajac 1994; Eisenhardt 1989).

On the other hand, 'positivist' stream focuses on introducing governance mechanism to limit the agent's behaviours through identifying goal-conflicting situations (Eisenhardt 1989; Gomez-Mejia and Wiseman 1997; Chen 2006). Under this stream, governance mechanism are captured by two proposition – incentive alignment and information system. Incentive alignment will be able to mitigate the conflict of self interests between the agent and the principal if the rewards for both parties depend on the same outcome. Information system will be able to curb the agent's opportunistic behaviours through making the agent aware that the principal have the information and control on what the agent is doing. One way of obtaining the information is through the establishment of board of directors (Fama and Jensen 1983).

Agency theory was used exhaustively by numerous studies and its contributions were well acknowledged. Gomez-Mejia and Wiseman (1997) identified the most significant contribution of agency theory is the articulation of specific mechanisms to help control the managements' opportunistic behaviour. Agency theory also establishes the importance of formal information systems such as budgeting and corporate governance systems that will limit the management opportunism. However, agency theory is also being criticised, mostly on its unrealistic assumptions. For instance, agency theory assumes a causal relationship between the manager's actions and firm performance and that the effect of other factors can be separated. However, such assumption is not possible in reality.

3.3. Human Capital Theory

The human capital theory was first proposed by Schultz (1961) and later developed extensively by Becker (1964). The theory stems from labour economics and has been developed in the sixties due to the realization that the growth of physical capital has only small part of growth in the growth of income (Becker 1964). Relatively, the emergence of education and skills training in military technology has also played an important part in the discovery of this theory.

Human capital theory suggests that education or training raises the productivity of workers by imparting useful knowledge and skills, hence raising workers' future income by increasing their lifetime earnings (Becker, 1964). It suggests that expenditure on training and education is costly, and should be considered as an investment since it is undertaken with a view to increase personal incomes. The human capital approach is often used to explain occupational wage differentials, including directors. In general terms, human capital can be viewed as the ability to read and write, or in specific terms, such as the acquisition of a particular skill with a limited industrial application. According to Becker (1964), human capital is similar to "physical means of production", e.g., factories and machines: one can invest in human capital (via education, training, medical treatment) and one's outputs depend partly on the rate of return on the human capital one owns. Thus, human capital is a means of production, into which additional investment yields additional output. Human capital is substitutable, but not transferable like land, labour, or fixed capital (Becker 1964).

The human capital model proposes that an individual's decision to invest in training is based upon an examination of the net present value of the costs and benefits of such an investment. Individuals are assumed to invest in training during an initial period and receive returns to the investment in subsequent periods. Workers pay for training by receiving a wage which is lower than what could be received elsewhere while being trained. Since training is thought to make workers more productive, workers collect the returns from their investment in later periods through higher marginal products and higher wages. Human capital models usually decompose training into specific training, which increases productivity in only one firm, and general training, which increases productivity in more than one firm. Purely general training is financed by workers, and the workers receive all of the returns to this training. In contrast, employees and employers will share in the costs and returns of specific training. Despite these differences between general and specific training, the model predicts that both forms of training lower the starting wage and increase wage growth.

Block (1990) criticised the human capital theory as a poor concept of capital because the theory unable to understand human activity other than as the exchange of commodities. The theory treats the notion of capital employed as purely a quantitative one. This misses the point that capital is an independent social force where the creation of social value comes about through its capital accumulation. Therefore, Block (1990) argued that human capital is not capital but an abstract form of labour - a commodity. Commodities such as human capital are therefore part of the life cycle of capitalism as a form of labour and not able to be exchanged independently of it.

Another criticism that could be argued here is based on assumption that education in fact improves productivity. A higher productivity or performance then leads to an increase in the remuneration. However productivity or performance itself is a function of many other variables and its relation to education is questionable. Does the duration of education and training really could increase productivity? In addition, there are differences of remuneration in different regions and different type of industry.

In essence, human capital theory implicitly believes that there is a 'true value' for remuneration, captured in some way by using market forces or human capital (Bender 2004). It provides justification to employer to accept a prospective employee, including director that the employee is capable of delivering whatever the tasks he or she required to do. Thus, human capital theory argues that directors' remuneration is determined not solely on the job itself but rather incorporates the human capital that he or she owns. Agrawal (1981) argued that directors with greater amount of human capital should be able to perform his or her job thus should be paid more.

Both agency theory and human capital theory provide reasons and justification for the directors' remuneration by companies. Merchant et al. (2003) argued that most of different theories explain a single phenomenon. Thus, by using one theoretical explanation, the research conclusion will be limited and incomplete. It is also noted that most of the studies, except a few (for instance Ezzamel and Watson 1998; Bender 2004; Chen 2006), adopted multiple theories to explain director's remuneration.

3.4 Review of Remuneration Studies in Developed Countries

It is found that this topic received wide interest among scholars from various discipline from early 1960s until now. Majority of the early studies were conducted in the US. In other developed countries such as the UK, Canada and other European countries, studies on remuneration are relatively low compared to the US. Scholars used different terms and label to study executive directors' remuneration. Frequent terms used by previous studies are executive compensation, CEO compensation, directors' compensation, directors' remuneration, board remuneration, managerial remuneration, executive pay, directors' pay and bosses' pay (Ewers 2002). In the forthcoming discussions, the terms are used interchangeably.

Based on the literature, a number of factors were identified as determinants of directors' remuneration. Initial studies on directors' remuneration focused on linking directors' remuneration with corporate performance and firm size (Marris 1963; Williamson 1964; Roberts 1959). Later on, Agrawal (1981) initiated the argument that individual human capital should have an impact on the remuneration level. His argument was empirically supported by subsequent studies like McKnight and Tomkins (2004), Murphy (1985) and Tosi and Gomez Mejia (1989). There are also studies that look at other variables such as firm diversification, firm risk and industry classification in order to improve the explanation on directors' remuneration (for instance Balkin and Gomez-Mejia 1990; Murphy 2000). In addition, the most recent corporate scandals and mismanagement had triggered the emphasis on corporate governance mechanism thus new requirement and disclosures were imposed on firms. As a result, researchers started to look at the corporate governance mechanism, in

particular board characteristics and ownership structure and tried to link them with directors' remuneration (for instance Core et. al 1999; Boyd 1994; Conyon 1997).

Executive directors' remuneration and corporate performance studies had started as early as 1960s in the developed world, particularly in the US (for instance Marris 1963; Williamson 1964). The number of studies on this subject rises significantly during 1980s to 1990s (Hallock and Murphy 1999). Murphy (1999) argues that this is due to the emerging trend of separation control in corporation and the acceptance of agency theory among the scholars. This is evident from the US-based literature in which majority of studies used agency theory as the basis to study remuneration-performance studies (for instance Lewellan and Huntsman 1970; Deckop 1988; Finkelstein and Hambrick 1989). Pavlik et. al (1993) divided the US studies on executive compensation into two categories: (i) studies that examine the association between compensation and performance over time and across firms; and (ii) studies that examine whether available set of incentive contracts appears to successfully align manager and shareholder interests. The latter category is investigated by examining the stock market's response to the adoption of compensation plans or its response to merger and disposition activity contingent on the set of compensation contracts in place. Since this study belongs to the first category of executive remuneration studies suggested by Pavlik et al. (1993), the literature reviewed in this study will exclude the studies in the latter category.

However, majority of the early studies on US focuses on the CEO remuneration rather than all directors (see Murphy 1999 for extensive review of literature on this). Directors' remuneration has started to receive attention only recently by the US firms

(Brick et. al 2006). The studies no longer look at performance per se, but include corporate governance mechanism as a factor to explain variation in directors' remuneration level. Among the recent studies that examine the directors' remuneration are Conyon (1997), Bryan et al. (2000) and Adam (2000).

In the UK, the number of studies on this area is relatively lower to the US (Bender 2004). Most of the studies (with exception Cosh 1975) were conducted after 1990s, following the public concern at cases of mismanagement (for instance the collapse of BCCI bank and Polly Peck and the misappropriation of employees' pension monies at the Mirror Group) and excessive pay or '*fat cat*' awards to executive directors. As a result, a number of reports have been published such as Cadbury Committee Report (1992), Greenbury Committee Report (1995) and Hempel Committee Report (1998). Cadbury Committee Report (1992) recommended 'Code of Best Practice' that relates to the appointment and responsibilities of executive directors, the independence of non-executive directors and tighter internal financial control and reporting procedures. The Greenbury Report (1995) deals more specifically on executive directors' remuneration in which it recommends executive directors' remuneration should be determined by remuneration committee that consist only non-executive directors. In addition, share awards given to the executive directors under executive share option schemes and long term incentive plans (LTIP) should be linked to company's performance. The Hempel Committee Reports (1998) further suggests 'principle of good governance' in relation to the power of individual executive director, more independent and stronger voice of non-executive director and more accountability of shareholders during the AGM. The code of best practice and 'principle of good governance' were incorporated as listing rules for London Stock Exchange.

Hence, the combination of public concern and increasing corporate disclosure by UK companies provides great opportunity for scholars to carry out more rigorous research on the relationship between remuneration and performance. For instance Ewers (2002) carried out extensive analysis of directors' remuneration by segregating between different types of directors and different types of remuneration. More importantly, studies have looked at various corporate governance mechanisms and examined their impact on directors' remuneration level (Conyon and Murphy 2000; Vafeas and Theodorou 1998). Similar situation happens in other developed countries like European countries, Canada, Australia, New Zealand and Japan. The issue on executive remuneration has not received much attention by the scholars until in 1990s. The lack of paper published on the subject probably due to the limitation of publicly available data on directors' remuneration as corporate governance was not heavily emphasised earlier (Eriksson and Lausten 2000). For instance, analysis on executive remuneration was only possible in Canada after 1993 after all publicly traded companies in the Toronto Stock Exchange were required to disclose top executive directors' remuneration under the new Ontario Securities Regulation (Zhou 2000). Similarly, executive directors' remuneration studies in Japan are also hindered by the lack of disclosure among Japanese companies (Kato and Kubo 2004). In Japan, companies are not required to disclose remuneration for every single directors but are only required to disclose the total salary and bonuses of all directors, hence forcing the researcher to use this information or create a proxy in order to improve the analysis (for instance Kato and Rockel 1992; Kaplan 1994; Kato and Kubo 2004)

Despite the growing number of studies that attempt to link between directors remuneration with various factors, the findings of the studies are not robust, even in the case of performance-pay link. For instance, empirical studies from US alone found inconsistent results on performance-pay link, ranging from strong positive relationship (for instance Lewellen and Huntsman 1970; Murphy 1985; Deckop 1988; Finkelstein and Hambrick 1989; Mehran 1995) to weak positive relationship (for instance Jensen and Murphy 1990; Abowd 1990). Similar results were found from other studies in other developed countries. More importantly, the growing interest to link corporate governance mechanisms with directors' remuneration level is evident in the developed countries literatures. The urge to restore public confidence in corporate governance following the scandals in the US has led the introduction of the Sarbanes-Oxley Act in 2002. Similar situations were found in other developed countries. However, due to overwhelming interests on corporate governance mechanisms, few studies attempted to examine human capital effect on directors' remuneration level; despite it was proven important in the earlier studies. Summary of selected studies in developed countries is presented in the Appendix 2.

3.5 Review of Remuneration Studies in Developing Countries

Studies on remuneration are relatively new in the developing world. One of the reasons for slow development in this area of studies is the lack of available data on director's remuneration. It is only recently, following the corporate scandals and financial market crisis that sparks the importance of corporate governance, which later leads to greater disclosure by companies. For instance, Malaysia introduced its code of corporate governance in 2000, Singapore (2001), India (1998) and China (2001).

Therefore, most of the studies in the developing countries started to explore directors' remuneration and performance after the period. Most studies include firm performance as one of the explaining variable on directors' remuneration. Firm size, firm risk and other variables such as industry classification are added as control variables. Only few studies examine the impact of human capital (for instance Ghosh 2006) and corporate governance mechanisms (for instance Chen 2006) on directors' remuneration level. Hence, this study will include these two factors as its focal variables.

In Malaysia, few studies were conducted to examine the directors' remuneration level (for instance Santhapparaj and Tong 2004; Dogan and Smyth 2002). Santhapparaj and Tong (2004) examine the relationship between corporate performance and directors' remuneration in Malaysia. They found that companies' assets and turnover are positively related to directors' compensation but surprisingly, shareholders fund are negatively related to directors remuneration. They argued the reason for such unexpected relationship depends on the cause of shareholders funds depletion for instance when shareholders fund reduced due to operating losses, shareholders may need to hire new management at higher compensation to replace the existing management. However, this study uses only 10% sample size (113 companies) and covered one-year period. The study did not distinguish between cash compensation and other form of compensations like ESOS. These factors may contribute to lack of reliability and unexpected results of the study.

Dogan and Smyth (2002) examined Malaysian listed companies for period of 1989 to 2000. However, the sample size ranges from 45 to 222 firms over the years, due to

exclusion of firms that do not disclose the required measurement used by the study, particularly data on ownership concentration. The variation and exclusion of sample size cast doubt on the generalisation of the results of this study. Nevertheless, they found positive relationship between board remuneration and sales turnover and negative relationship between board remuneration and ownership concentration.

Other studies on directors' remuneration are Haniffa and Hudaib (2006) and Abdullah (2006). Both of these studies do not directly study the determinants of board remuneration. For instance, Haniffa and Hudaib (2006) examined the relationship between corporate governance structure and corporate performance of Malaysian listed companies. They used secondary data and employed five years timeframe in which 347 companies were included. They found board size, substantial shareholdings, managerial shareholdings, multiple directorship and role duality to be associated with performance. On the other hand, Abdullah (2006) examined whether firm performance, board structure and ownership structure explains directors' remuneration in distressed companies in Malaysia. By focusing on the distressed companies, Abdullah (2006) indirectly assumes that there is a difference between healthy and distressed companies in terms of its governance and internal control thus leading to poor performance. He found no relationship between firm performance and board remuneration but found governance structure did constrain the level of remuneration. Instead, firm growth and size are found to be important to affect board remuneration.

It is clear from the above discussion that corporate governance mechanism was not fully explored by earlier researchers in the Malaysian context. Although Haniffa and

Hudaib (2006) did explore various aspects of governance, the study did not link it directly to directors' remuneration. Other studies like Abdullah (2006) and Dogan and Smyth (2002) did not examine the governance factor in detailed. On the other hand, Santhapparaj and Tong 2004 based their study on single period, making their conclusion less reliable. None of the previous studies in Malaysia has taken all the variables intended to be examined in this study thus making this study able to come out with more extensive model to explain directors' remuneration. Specifically, the human capital attributes were not examined in any of the previous studies. The findings of this study would therefore contribute this gap in the literature. Summary of selected studies in the developing countries is presented in the Appendix 3.

3.6 Determinants of Remuneration and Hypotheses Development

Based on studies in both developed as well as in developing studies, this study identified three main factors that influence the level of directors' remuneration - corporate governance, human capital attributes and firm performance. Other variables like firm size, firm risk, firm diversification and industry classification are treated as control variables. The following discussions for each variable and measurement will lead to the development of research hypotheses.

3.6.1 Corporate Governance Mechanisms

Corporate governance mechanisms have become important following various corporate scandals and mismanagement (for instance Enron and World.com). Recent studies showed tremendous importance of corporate governance environment factors in explaining executive directors' remuneration. In general, corporate governance

mechanisms are divided into two main groups – board characteristics and ownership structure. Different aspects of board characteristics are examined such as board size and activities (Chen 2006; Jensen 1993), board independence (Core et. al 1999), board structure (Core et. al 1999; Chen 2006) and board leadership (Jensen 1993; Conyon 1997). Similarly, different ownership structures are examined such as managerial ownership (Mehran 1995; Jensen and Murphy 1990), institutional ownership (Mehran 1995; Gomez-Mejia and Wiseman 1997) and in unique market such as China, state ownership and legal person ownership (Chen 2006).

The empirical results are mixed. Baysinger and Butler (1985), Hermalin and Weisbach (2003) and Bhagat and Black (1997) found no meaningful relation between various characteristics of board composition and firm performance. Others like Core et al (1999), Chen (2006) and Randoy and Nielsen (2002) found corporate governance mechanism does affect directors' remuneration. The following discussion focused the relevant literature for each of aspect of corporate governance mechanism separately.

Board Size and Activities

Large board size means larger group of people from different background and expertise. This will enable larger board to have wider connections with outside world and resources that make them decide, control and monitor in a more effective way. An effective board of directors can monitor executives' behaviour and design appropriate remuneration packages. It follows that an effective board would lead to a more sensitive link between executive pay and performance.

Studies across the world, both in developed countries and developing countries have shown that board size have a linear relationship with level of executive directors' remuneration For example, Randoy and Nielsen (2002) empirically proven that board size is positively related to executive directors' remuneration in Sweden and Norway. The same result was reported in the US (Core et al. 1999; Jensen 1993) and Malaysia (Abdullah 2006). However, Hermalin and Weisbach (2003) argued that larger boards do not necessarily reflect a better board in case where meeting agenda is always been pre-determined by chairman or CEO. If such case happened, board meeting will not functioning as it should. Yermack (1996) also found an inverse relationship between pay performance and board size, suggesting board effectiveness decrease with large boards. Chen (2006) found that the size of the board has a positive relationship with firm performance only up to a certain point (to be specific, when board size consists of eight members) and will have an inverse relationship afterwards. In other words, she argued board size has a non-linear relationship.

The mix results presented above lead to believe that there is a relationship between directors' remuneration and size of the board. However, the direction of the relationship is not clear. Hence, the following non directional hypotheses are drawn:

H1a: There is a relationship between directors' remuneration and board size.

H1b: There is a relationship between directors' pay-performance sensitivity and board size.

Board Activity – frequency of board meetings

Vafeas (1999) found that board activity is an important dimension of board operations. He found that board activity measured by board meeting frequency is related to corporate governance. The more frequent the meeting, the more activities are conducted by the company. The meeting acts as a monitoring device for the managers on behalf of the shareholders thus ensure the effectiveness of the board. Both Adams (2000) and Davila and Penalva (2006) further support this claim. Hence, it is argued that the frequency of meeting should have an impact on the directors' remuneration.

The hypotheses for this variable are as follows:

H2a: There is a relationship between directors' remuneration and frequency of board meeting.

H2b: There is a relationship between directors' pay-performance sensitivity and board meeting.

Board independence

Board independence is an important aspect of governance structure that ensures the effectiveness of the board (Chen 2006; Core et al. 1999; Weisbach 1988). Inside directors are prone to take side with the CEO's orders and suggestions and not to be protective towards shareholders (Jensen 1993). Internal directors' positions in the organisation are determined by the CEO himself. This fact alone makes the inside directors not independent. Outside directors are more likely to be independent because they are not from the organisation. Various governance reports such as Cadbury

report, Greenbury report and Malaysia Corporate Governance Report suggested the employment of non executive directors on the board as a governance mechanism that could help reducing agency cost. However, it is argued that non executive directors are not necessarily independent (Chen 2006). Non executive directors can be affiliated and influenced by the CEO of the organisation by many ways. For example, challenging the CEO may risk both their personal and professional relationships as well as the non executive directors' seats in the board. Singh and Harianto (1989) noted that CEOs may offer non management directors attractive contracts and consulting agreements. Almost certainly, future relationships of this type will be jeopardized should directors fail to support the CEOs' wishes. Where personal relationships constitute the basis for directors' affiliation, a sense of obligation to the CEOs may be even stronger (Fierman, 1990).

A number of studies have empirically test the effect of board independence on directors' remuneration. Dahya et al. (2002) found board independence improved the quality of the monitoring effectiveness of the board in the UK. Core et al. (1999) found a link between outside director's effectiveness and pay-performance. Similar results are reported by Rupp and Smith (2002), Chen (2006) and Mehran (1995). Most of the previous studies use the proportion of independent directors as a measure of board independence (Core et al. 1999; Chen 2006). Few studies further examined the independence of remuneration committee and audit committee and its affect on the remuneration level. For instance, Daily et al (1998) examined composition of compensation committee as determinants of executive pay level. They found no evidence to support board independence with directors' remuneration, even at the compensation committee level. They argued this inconsistent finding with agency

theory may be due to popular press with regard to excessive CEO compensation that has greatly raised general awareness of this issue. In Malaysia, such issue are not greatly publicised in the press. Hence, it may be argued that this finding is relevant to the US sampled firms only. On the other hand, Conyon (1997) found evidence on the negative link between board remuneration and remuneration committee.

The above discussions lead to the development of the following hypotheses:

H3a: There is a negative relationship between directors' remuneration and the proportion of independent directors in the board of directors.

H3b: There is a positive relationship between directors' pay-performance sensitivity and the proportion of independent directors in the board of directors.

Board composition

Board composition are measured using four proxies, namely proportion of non executive directors in the board, proportion of interlocking directors (Core et al 1999, Ferris et al 2003), proportion of old non executive directors (Core et al 1999, Ferris et al 2003) and proportion of busy directors (Core et al 1999, Ferris et al 2003). Theoretically, high proportion of outside directors will improve the monitoring mechanism of the CEO. However, empirical evidence on the link between outside directors and directors' remuneration level is mixed. Rosenstein and Wyatt (1990) provide evidence that shareholder wealth is affected by the proportion of outside directors by documenting a positive stock price reaction at the announcement of the appointment of an additional outside director. Few studies found contrary evidence on this matter. For instance, Firth et al (1999) found a strong positive relationship

between the number of non executive directors and average directors' compensation in Hong Kong. Similarly, Boyd (1994) document a negative relationship between CEO compensation and the percentage of the inside directors. Boyd (1994) explained that insider directors, particularly those considered as possible successor of the CEO may fear the appearance of siding with the CEO and alienating outside board members. In addition, legal obligations and concern for professional reputation contribute towards hindering inside directors to show their support for their CEO. On the other hand, Finkelstein and Hambrick (1989) and Yermack (1996) found that compensation is unrelated to the percentage of outside directors on the board. Due to inconsistent results in the literature, the following non-directional hypotheses are developed.

H4a: There is a relationship between directors' remuneration and the proportion of non executive directors.

H4b: There is a relationship between directors' pay-performance sensitivity and the proportion of non executive directors in the board of directors.

Another aspect of board composition is the number of interlocked directors among the board members. Core et al. (1999) define an outside director to be interlocked if an inside director of the firm serves on the board of that outside director's firm. An interlocked director may be less independent because an insider has influence over the interlocked director's own board. Hallock (1997) finds that CEO compensation is higher at firms with interlocked outside directors. Similarly, Core et al. (1999) and Bilimoria (1997) reported positive relationship between board compensation with proportion of interlocking directors. Their findings suggest that high proportion of

interlocked directors would affect the independence of the board and ultimately the directors' remuneration. Hence the following hypotheses are developed:

H5a: There is a positive relationship between directors' remuneration and the proportion of interlocked directors in the board of directors.

H5b: There is a negative relationship between directors' pay-performance sensitivity and the proportion of interlocked directors in the board of directors.

Another aspect of board composition examined in the previous literature is 'old' non executive directors. 'Old' non executive directors are defined as any directors aged more than 70 years old. Many company boards require mandatory retirement at age 70 for directors. In fact, it is stated in section 129 (2) of the Malaysian Companies Act 1965 that the age limit for director of a public limited company is not more than 70 years old. However, the company at the general meeting may extend the director's term until the next general meeting. The extension must be approved by a special resolution of the company in general meeting. Core et al (1999) found old directors are less effective compared to younger directors thus lead to high CEO compensation. The following hypotheses are therefore predicted for old directors.

H6a: There is a positive relationship between directors' remuneration and the proportion of old directors in the board of directors.

H6b: There is a negative relationship between directors' pay-performance sensitivity and the proportion of old directors in the board of directors.

The final aspect of board composition is busy directors. Busy directors are defined as directors who serve more than three other boards or retired directors who serve more than six other boards (Core et al. 1999). This definition is consistent with NACD guidelines (1996) whereby some reform advocates suggest that many directors serve on too many boards to attend to their duties adequately. The empirical findings are mixed. Core et al. (1999) found a positive relationship between busy directors and CEO compensation while Shivdasani (1993) found a negative association between additional directorships with directors' effectiveness. Hence, the following non-directional hypotheses are developed:

H7a: There is a relationship between directors' remuneration and the proportion of busy directors in the board of directors.

H7b: There is a relationship between directors' pay-performance sensitivity and the proportion of busy directors in the board of directors.

Board leadership – CEO duality

Jensen (1993) argues that boards of directors are ineffective because board culture discourages conflict, the CEO determines the agenda and information given the board, there is little equity ownership by managers and non managers on the typical board, boards are too large, and the CEO and the chairman is frequently the same person. When CEO holds both the position of CEO and the chairman of board of directors, he or she will have strong influence on the decision making in the board. Therefore, the CEO will most likely to exert his or her influence on matters concerning their pay, regardless of the performance of the company. Many studies, both from developed and developing countries found positive relationship between directors' remuneration

and CEO duality (for instance Core et al 1999; Finkelstein and Hambrick 1989; Chen 2006). However, few studies found little evidence to support the effect of CEO-chairman duality towards directors' remuneration (for instance Conyon 1997). The related hypotheses are as follows:

H8a: There is a positive relationship between directors' remuneration and CEO duality role.

H8b: There is a negative relationship between directors' pay-performance sensitivity and the CEO duality role.

Ownership structure

Ownership structure is another governance mechanism that helps to minimise agency problems. Theoretically, institutional or block shareholders should have more resources to monitor the management's opportunistic behaviour compared to minority shareholders. Hence, in company where ownership disperses among many parties, shareholders would exercise less monitoring because it will costly for them to do so. In addition, assuming self-interest attitude among the shareholders, they are not willing to incur costs for the benefits of others (Chen 2006).

Previous research documented negative association between ownership concentration and managerial opportunistic behaviour (Gomez-Mejia and Wiseman 1997; Dogan and Smyth 2002). Gomez-Mejia and Wiseman (1997) reviewed the previous literature and found that higher ownership concentration leads toward (1) stronger linkage between executive pay and performance (Boyd 1994; Mehran 1995); (2) less

influence of firm size over executive performance (Gomez-Mejia et al. 1987); (3) lower agency costs in executive remuneration (Goldberg and Idson 1995); (4) weaker CEO power and influence over the board of directors (Tosi and Gomez-Mejia 1989); and few other unrelated variables for the purpose of this study such as less financial manipulation and more risk taking.

Previous literature mainly examined two types of ownership – external block holder ownership and managerial ownership. In general, consistent results were reported on relationship between external block holder ownership and executive remuneration both in developed (Core et al. 1999; Randy and Nielsen 2002) and developing countries (Firth et al 1999; Cheung et al. 2005). However, the findings on managerial ownership and executive remuneration were not consistent. Most study not only looked at the relationship between ownership concentration and pay level but also addressed the pay-performance sensitivity in the presence of a block holder (Holderness 2003).

Managerial Ownership

Jensen and Meckling (1976) emphasized the role of executive stock ownership as a mechanism to align the interests of managers and shareholders, and promote greater managerial efforts as well as stricter value enhancing decisions. When managers have only a small stake in the firm, executive stock ownership plans can be used for reducing the fixed (cash) portion and increasing the variable (stock-related) portion of CEO compensation. As a result, there should be a negative relation between cash compensation and share ownership. However, the empirical findings are mixed.

Core et al (1999) and Khan et al. (2005) found that ownership structure explains a significant amount of cross sectional variation in CEO compensation among their US sampled firms. Allen (1981) reports that the level of CEO compensation is a decreasing function of the equity held by the CEO (and his family), as well as the extent of equity holdings by board members not related to the CEO. Randy and Nielsen (2002) also found negative relationship between CEO compensation and CEO ownership in Scandinavian companies. However, other studies did not support this relationship. For instance, Holderness and Sheehan (1988) provide evidence that those managers who are majority shareholders (defined as individuals owning at least half but not all of the common stock) in publicly held corporations receive marginally higher salaries than other officers. Morck et al. (1988) demonstrate that firm value first rises with increases in inside ownership as the incentive alignment effect of share value dominates, then falls as the entrenchment effect of insider voting control becomes stronger. Cheung et al. (2005) find managerial concentrations are positively related to cash remuneration among Hong Kong firms.

This inconsistency warrants further research. In the Malaysian context, many public listed companies are originally family owned business. Hence, in many cases, ownership is not confined only to the managers but also to other family members. This study will follow the previous studies' definition of managerial ownership that includes both managerial ownership and their close member of the family (Allen 1981). However, this study will separate the direct managerial ownership and indirect managerial ownership. Direct shareholdings refer to percentage of shares held under the name of the directors. Indirect shareholdings refer to percentage of shares held by close relatives of the directors. Close relatives included are parents, spouse (wife or

husband) and children. Hence the following hypotheses, based on agency theory are developed:

H9a: There is a negative relationship between directors' remuneration and directors' direct shareholdings.

H9b: There is a positive relationship between directors' pay-performance sensitivity and directors' direct shareholdings.

H10a: There is a negative relationship between directors' remuneration and directors' indirect shareholdings.

H10b: There is a positive relationship between directors' pay-performance sensitivity and directors' indirect shareholdings.

Block holder shareholding

A block holder is defined as an external shareholder who owns at least 5% of the total shares of the company. External block holders, normally consists of institutional investors act as deterrent to managerial opportunistic behaviour. Lambert et al. (1993) find that CEO compensation is lower when the CEOs ownership is higher and when there is a block holder among the company's shareholders. Yeo et al. (2002) reported block holder ownership moderates the relationship between managerial ownership and agency conflict. Thus, the result implies that block holder ownership can become an effective monitoring mechanism on managerial incentives.

Chen (2006) identified at least three reasons why institutional investors are more active in monitoring than individual shareholders. First, it is incumbent upon the institutional investors to be proactive because they are investing on behalf of their

clients or shareholders. In other words, it is their legal fiduciary duties to act according to their stakeholders. Second, institutional investors must exercise their power in response to poor firm performance. Failure to do so may result in lowering the share price thus affecting them badly as they own substantial percentage of the company's shares. Finally, institutional investors are able to govern and judge remuneration policy due to their economy of scale and opportunities to interact with other firms. In addition, David et al. (1998) also highlighted the fact that institutional investors may have difficulties to find substitute investments due to their volume of ownership, thus motivated them to monitor executives.

Previous studies both in developed and developing countries support the relationship between block holder ownership and directors' remuneration. For instance, David et al. (1998) and Hartzell and Starks (2003) conducted studies on US firms and conclude that institutional investors have a direct impact on CEO pay policy. Chen (2006) and Firth et al. (1999) also documented similar findings based on their study in China and Hong Kong respectively. Despite consistency of result reported in the previous study, little evidence was found in the Malaysian environment. Dogan and Smyth (2002) has tested the relationship and found some evidence on the ownership concentration but this study suffers from sample selection bias and inconsistent sample size over the sampled period. Hence, the hypotheses related to block holder ownership are presented as follows:

H11a: There is a negative relationship between directors' remuneration and block shareholdings.

H11b: There is a positive relationship between directors' pay-performance sensitivity and block shareholdings.

3.6.2 Human capital attributes

Human capital theory suggests that individual human capital explains the remuneration level. An individual with high human capital attributes should become more productive and efficient than those individual with less human capital attributes thus should be rewarded higher (Agrawal 1981). This proposition was supported by a number of studies (Finkelstein and Hambrick 1989; McKnight and Tomkins 2004; Milbourn 2003; Tosi and Gomez-Mejia 1989). In addition, Malaysian government has placed great emphasis on human capital development among the people. It is therefore important to examine whether the firms are recognising the attributes accordingly in the case of executive directors. Among the most common human capital attributes examined are directors' age, tenure and education.

Directors' Age

Age is one aspect of human capital attributes that reflects experience and expertise of a person. Older directors would be exposed to various training that raises their productivity, knowledge and skills (Becker 1994). Thus it will be reflected in their level of pay. Age is also expected to have an influence on individual attitudes towards risk (McKnight and Tomkins 2004). Hitt and Tyler (1991) argue that risk acceptance is encouraged by modifying reward systems at different levels of the organization. Research to date suggests that younger individuals are more ready to accept risk (Hambrick and Mason 1984). In addition, prior research suggests that age may be related to corporate growth (Child, 1974), strategic decisions (Wiersema and Bantel, 1992) and remuneration decisions (Hitt and Barr, 1989).

Prior research has provided mixed results with regard to CEO age (Ingham and Thomson 1995; Kostiuk 1990; McKnight and Tomkins 2004; Deckop 1988). For instance, Ingham and Thomson (1995) and Hogan and McPheters (1980) both reported a positive influence of directors' age on CEO remuneration. On the other hand, Deckop (1988) examined the incremental effect of CEO age on cash remuneration, measured by salary plus bonus, and concluded that age was not a significant pay determinant. McKnight and Tomkins (2004) found weak influence of directors' age on remuneration. Due to this inconclusive findings, the following non-directional hypothesis is developed:

H12: There is a relationship between directors' remuneration and average directors' age.

Directors' Tenure

Long tenure can also be related to high experience and expertise of a person. More importantly, long tenure would allow director to build a proven track record and develop new relationships with key individuals both within and outside the organization (i.e. a political dimension). Throughout this process, an executive may also accumulate wealth in the form of company stock (i.e. many times via share options). These two power dimensions allow an executive to acquire the respect and confidence of key board members; enough perhaps to exercise influence over their voting rights. As a result, an executive in this position may encourage the appointment of board members more sympathetic towards his or her views. Hill and Phan (1991) relate this directly to the matter of executive pay and argue that through

increased tenure the CEO may gain control over the pay setting process and in turn design remuneration schemes to his or her preference.

Empirical studies on tenure and directors' remuneration is also mixed. For example, Deckop (1988) claimed executive tenure was a significant variable in determining total executive pay, whereas Randoy and Nielsen (2002), Hill and Phan (1991) and Finkelstein and Hambrick (1989) found no association. McKnight and Tomkins (2004) explain that such contrasting findings may be partially due to selection of a single measure of CEO pay; that is, the aggregate of the aggregate of salary and bonus. Lewellen et al. (1982) argued changes in salary are lagged with respect to achievement (usually growth in size of the firm) whereas a performance bonus is contemporaneous with the relevant measure of performance (profit, return on investment, etc). McKnight (1996) follow this suggestion and found that by splitting salary from bonus, both the size and level of the lagged (salary) and contemporaneous (bonus) coefficients increased considerably; suggesting each pay component is influenced by a diverse set of factors. However, this study could not follow this suggestion as it considers other determining factors on directors' remuneration. Separating different types of remuneration would lead to multiple models that would complicate the subject matter. In some cases (for instance McKnight and Tomkins 2004; Ewers 2002), such move did not improve the model at the end. Hence, the following non-directional hypothesis is developed:

H13: There is a relationship between directors' remuneration and average directors' tenure.

Qualification

Qualification or the extent of education background is one of the important aspects of human capital attributes. In general, qualifications provide justification to employer to accept a prospective employee, including director that the employee is capable of delivering whatever the tasks he or she required to do. In the Malaysian context, qualification is one of the most important agenda of the country and became the key factor to influence level of pay. To the author's knowledge, there are no studies consider this aspect of human capital. Hence, the direction of the relationship cannot be determined. The following hypothesis is predicted:

H14: There is a relationship between directors' remuneration and directors' qualifications.

3.6.3 Corporate performance

Despite the growing number of studies that attempt to link between directors remuneration and corporate performance, the findings of the studies are not robust. Empirical studies from US alone found inconsistent results, ranging from strong positive relationship (for instance Lewellen and Huntsman 1970; Murphy 1985; Deckop 1988; Finkelstein 1989; Mehran 1995) to weak positive relationship (for instance Jensen and Murphy 1990; Abowd 1990). Similarly, the UK-based studies also found inconclusive findings. However, consistent with agency theory and majority of empirical evidence in the US, most UK studies found significant positive relationship between directors' remuneration and performance (for instance Main et. al 1996; Cosh and Hughes 1997; Ewers 2002;). Other studies found weak relationship

(for instance Main 1991; Gregg et. al 1993; Conyon et. al 1994; Ezzamel and Watson 1997; Conyon 1997; Conyon 1998; Buck et. al 2003).

The studies in other developed countries also found inconclusive evidence on the relationship between executive directors' remuneration and corporate performance. Crespi and Claden (2003) found a significant positive relationship between board remuneration and company performance in their studies for large and listed Spanish companies for the period from 1990 to 1995. Similar result was found in Italy (Brunello et. al 1999), Denmark (Eriksson and Lausten 2000), Germany (Kaplan 1994b, 1997; Schwalbach and Grasshoff 1996), Canada (Zhou 2000) and Japan (Kato and Rockel 1992; Kaplan 1994a, 1997; Kato and Kubo 1996; Kang and Shivdasani 1995; Abe 1997). However, Randøy and Nielsen (2002) found no evidence to support this relationship for their study on Norwegian and Swedish companies except in the case of Norwegian firms when they used a change in market-to-book performance measure. In Australia, few studies found significant relationship between the two variables (Matolcsy 2000; Merhebi et. al 2006) while others found no relationship or negative relationship (Defina et. al 1994; Izan et. al 1998; O'Neill and Iob 1999).

The inconsistency of results offered by previous studies warrant more careful examination. Overall, the inconclusive results are due to the differences in variable measurements, statistical techniques, data sets and the way constructs are studied among these studies (Tosi et. al 2000). Early studies conducted after 1960s attempt to empirically test sales-maximisation hypothesis introduced first by Baumol (1967). His hypothesis states that when there is a separation between owners and control of an organisation, managers tend to pursue their own goals. Managers are expected to act

to increase sales rather than to maximise the present value of the company. Hence, the early remuneration-performance studies (for instance Lewellen and Huntsman 1970; Cosh 1975; Ciscel and Caroll 1980; Hogan and McPheters 1980) uses cash compensation as a measure of remuneration and sales as the measure of performance. They found positively association between remuneration and performance and to a lesser degree between accounting profits and remuneration, hence their findings support Baumol's hypothesis. However, these early studies suffer from a number of weaknesses. They ignore other form of remuneration except cash compensation; exclude stock performance as a measure of company performance, employ cross-sectional methodology that fails to consider differences between individuals and firms and focus only on remuneration level *per se* but not on changes in remuneration (Pavlik et. al 1993).

Subsequent studies made adjustments to overcome these shortcomings. For instance, remuneration's measurement was broadened to include options, long-term incentives, executive stock holdings and other components. Mason (1971) uses comprehensive compensation measurements such as cash, bonuses, deferred compensation, retirement benefits and stock options and stock market return as performance measurement. He found that comprehensive compensation was strongly related to firm stock market performance but not with sales performance. He concluded that the hypothesis present-value maximisation better explains firm behaviour than Baumol's hypothesis of sales maximisation. His conclusion was further supported by several studies (Murphy 1985; Antle and Smith 1986; Clinch 1991; Jensen and Murphy 1990). They found that the inclusion of stock-related type of remuneration directly cause relationship between executive directors' remuneration and wealth of

shareholders (measured by stock return). In addition, few studies (Benson 1985; Murphy 1985) found that the changes in directors' wealth from holding stock are very large compare to their salaries during the time when company's stock return is high. This suggests that directors are likely to be interested to maximise stock return and therefore justify the importance of stock-related compensation in aligning manager and shareholder interests.

Studies in developing countries also found mixed results. Dogan and Smyth (2002) found significant positive relationship between form performance (measured by sales turnover) and board remuneration among Malaysian firms. In Hong Kong, Firth et al (1999) also found significant positive relationship between accounting profitability and management remuneration, but no relationship in the case of stock returns. Based on the above discussion, most of the empirical studies support agency theory, thus leads to the following hypothesis:

H15: There is a positive relationship between directors' remuneration and firm performance.

3.6.4 Other factors – control variables

The determination of executive directors' remuneration is not entirely associated with corporate performance alone. Previous studies in the developed countries documented other factors that affect performance. In general, these factors can be divided into two groups – company attributes and personal attributes. These factors are not the main focus of this study but are included as control variables in many remuneration-

performance studies (for instance Ewers 2002; Clarkson et. al 2005). The most common company attribute that has been established by scholars to have relationship with executive directors' remuneration is company size. It has been empirically proven that company size has strong affect on the level of executive directors' remuneration (Tosi et al 2000; Gregg et. al 1993). Other variables include leverage, risk, industry, whether a company has a multiple listing, ownership structure and whether a company is being audited by big four firms or smaller firms.

Firm size

Both economic and sociological theory can be used to explain the relationship between remuneration and company size. Roberts (1959) explains using neo-classical economic theory that the marginal productivity of a chief executive varies directly with the size of the company he manages. In other words, large company will have higher marginal productivity and remuneration as compared to the smaller company. Alternatively, Simon (1957) explains that remuneration and company size is related based on three sociological premises. First, remuneration must be internally 'consistent' whereby the determination of director's remuneration must be competitive with the lowest executive levels or new employees hired from outside organisation. Second, remuneration is also determined socially, in which a norm for the 'steepness' of organisational hierarchies (also known as the span of control) must be met. Finally, due to influence of competitive market forces, companies are forced to pay the similar salaries with other companies in the similar market.

The above theoretical proposition was supported by empirical works of other studies (for instance Marris 1967; Lewellen and Huntsman 1970; Leonard 1990; Ewers 2002;

Merhebi 2006). The most common variables used to measure size are total asset, sales revenue and market capitalisation. Main (1991) found no evidence to support that firm size has an impact on directors' remuneration among his US sampled firms. McKnight (1996) found strong relationship between firm size and executive directors' salary in UK firms. In Hong Kong, Firth et al (1999) also found similar result to support firm size as the major determinants for management remuneration. In Canada, Zhou (2000) found positive relationship between firm size and CEO compensation. Similar findings found by Crespi-Cladera and Gispert (2003) in their study using Spanish firms as the sample. Randoy and Nielsen (2002) also found positive relationship between CEO remuneration and firm size measured by market capitalisation among Scandinavian companies.

Firm Risk

According to agency theory, managers are assumed to be risk averse (Jensen and Meckling 1976). Thus, managers that manage firms with higher risk should be compensated more than managers who manage firms with low risk. The additional compensation is to reward the managers for their willingness to face insecurity of firms' return. Therefore, firm risk, both as a measure of the firm's information environment and the risk of its operating environment, is also a potentially important determinant of the level of CEO compensation. Consistent with other empirical research on compensation (e.g., Smith and Watts 1992; Core 1997), this study includes measures of firm risk as control variables for the level of compensation.

Garen (1994) and Miller et al. (2002) reported an positive relationship between firm risk and total remuneration. Miller et al. (2002) also found that firm specific risk are

stronger than those of market-driven risk. Other studies such as Bloom and Milkovich 1998; Chen 2006; Murphy 2000) also reported the same findings both in developed and developing countries. This study will therefore control for firm risk effect.

Firm Diversification

Firm strategic stance was another factor that may affect directors' remuneration. In particular, level of firms' diversification is expected to increase the complexity of management's job (Finlekstein and Hambrick 1989). A diversified firm needs managers to make strategic allocation decisions that require him or her significant understanding of more than one product markets (Rose and Shepard 1997). Management of a diversified company needs to exercise greater efforts to learn and master knowledge of its various customers, competitors, product life cycles and competitive strategies in multiple product lines. As a result, it is expected the management remuneration would increase as a reward for managing this added complexity.

Finkelstein and Hambrick (1989) and Riahi-Belkaoui and Pavlik (1993) both found diversifications relate positively to CEO remuneration. Hence, this study will include diversification as one of its control variable.

Industry

Companies that operate in different industry faced different level of competitiveness and challenges. It is therefore affect the level of firm risks. For example, companies that operate in fast changing technology environment will face high competition thus more risky than the other industry. Accordingly, the managers in the industry should be compensated higher for the risk that they have to take. Zhou (2000) found

executives in utility firms earn lower pay and their compensation is less responsive to performance compare to their counterparts in other industries in Canada. This shows that there is differentiation between the levels of directors' remuneration among different industry. Thus, the study will control of the industry effects.

3.7 Summary

This chapter has discussed and reviewed critically both agency and human capital theory. An overview of literatures found in both developed and developing countries were presented separately in order to show the lack of studies in the developing countries. This shows the importance and the motivation for the author to pursue this study. I have also reviewed the literature based on each factor that may affect directors' remuneration. It was clear from the discussions in this chapter that the empirical findings are still not consistent. It therefore warrants for further research.

This study aims to examine the determinants of executive directors' remuneration in Malaysia, specifically focusing on corporate governance mechanisms, human capital attributes and firm performance. Based on the literature, theory and institutional background in Malaysia, several hypotheses were developed in this chapter. Table 3.1 summarise the factors included in this study and the predicted sign of the relationship between the variables.

Table 3.1. Summary of hypotheses and their predicted sign

Hypothesis	Dependent variable	Independent variable	Predicted sign
1a	Directors' remuneration	Board size	?
1b	Directors' pay-performance sensitivity		?
2a	Directors' remuneration	Frequency of board meetings	?
2b	Directors' pay-performance sensitivity		?
3a	Directors' remuneration	Proportion of independent directors	-
3b	Directors' pay-performance sensitivity		+
4a	Directors' remuneration	Proprotion of non executive directors	?
4b	Directors' pay-performance sensitivity		?
5a	Directors' remuneration	Proportion of interlocked directors	+
5b	Directors' pay-performance sensitivity		-
6a	Directors' remuneration	Proportion of old directors	+
6b	Directors' pay-performance sensitivity		-
7a	Directors' remuneration	Proportion of busy directors	?
7b	Directors' pay-performance sensitivity		?
8a	Directors' remuneration	CEO- chairman duality	+
8b	Directors' pay-performance sensitivity		-
9a	Directors' remuneration	Directors' direct ownership	-
9b	Directors' pay-performance sensitivity		+
10a	Directors' remuneration	Directors' indirect ownership	-
10b	Directors' pay-performance sensitivity		+
11a	Directors' remuneration	Block holder ownership	-
11b	Directors' pay-performance sensitivity		+
12	Directors' remuneration	Directors' age	?
13	Directors' remuneration	Directors' tenure	?
14	Directors' remuneration	Directors' qualification	?
15	Directors' remuneration	Firm performance	+

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1 Introduction and Overview of the Chapter

Chapter three presents review of theories and literature on corporate governance that relates to the determinants of executive directors' remuneration. Accordingly, several research hypotheses were developed. This chapter aims to describe the research methodology employed by this study in order to fulfil the research objectives and research questions stated in section 1.2.

This study adopts quantitative research approach. Quantitative approach involves precision and can offer statistical and significant effects while qualitative approach yields rich source of data. Most studies (except a few for instance Bender 2003) in this area applied quantitative approach due to difficulty in getting access and information from public listed companies' directors. More importantly, quantitative approach is appropriate as it fits to answer the research objectives and questions.

To test the research hypothesis stated in section 1.3, the study uses a panel data set of 417 Malaysian listed companies for the period of 2004 to 2006. The data was first analysed using cross sectional pooled data ordinary least square (OLS) regression. However, OLS fails to control for unobservable firm specific factors that might affect directors' executive remuneration. Hence, panel data techniques are used in order to control for those factors and at the same time reduce the effect of omitted data on the final result (Hsiao 2003).

This chapter is divided into ten sections. The first section presents the introduction followed by section 4.2 which explains the research design used in this study. Section 4.3 describes the sample selection and section 4.4 explains the data collection used. The following section presents the modelling specification used in this study. Section 4.6 defines the variables and measurement for all dependent and independent variables for this study. Section 4.7 and 4.8 respectively describe the descriptive and multivariate analysis carried out in this study. Finally, section 4.10 concludes this chapter.

4.2 Research Design

Essentially, the selection of research methodology should be based on the ability of that approach to address the specific research questions. Majority of the studies conducted in this area employed quantitative methods, with few studies used qualitative methods (for instance Bender 2004, Main & Johnston 1993, McNulty et. al 2003; Perkins and Hendry 2005) and the combination of both methods (for instance Conyon & Murphy 2000, Ogden and Watson 2004). The main reasons that hinder researchers from using qualitative methods are difficulties in getting access to the individuals involved in remuneration settings and the sensitivity of the subject matter to the respondents (Ewers 2002; Chen 2006).

Few studies tried to adopt qualitative approach in studying directors' remuneration. Bender (2004) provides evidence that qualitative approach able to generate deeper understanding of how executive remuneration is determined. She managed to provide excellent insights of remuneration setting process that adds our understanding to this

topic. However, pure qualitative approach is difficult to follow as it is difficult to gain access to directors and time consuming. For instance, Bender (2004) spent nearly one and a half year in conducting interviews and observations alone.

Despite the strength and weaknesses of both approaches, the final selection of the methods must be based on the specific research questions that this study seeks to answer. To recap, this study aims to examine the factors that affect the level of executive directors' remuneration in Malaysia, in particular governance structure, corporate performance and human capital attributes. In other words, this study attempts to answer the '*what*' question rather than '*how*' question. The questions also need large number of samples in order to generalise the results. It is therefore appropriate to use quantitative approach for this study.

This study will utilise secondary data that are available from companies' annual reports. Most previous researchers (for instance Ewers 2002; Chen 2006) acknowledged that remuneration is a sensitive subject to respondents and most of them chose not to discuss the area in details. Due to the sensitivity of the subject, it is argued that directors will be reserved on what they say and it is likely to get different information other than information that were publicly available. Hence, the use of questionnaire would generate few responds and less answers from the directors. Same problems were faced in the researcher's attempt to do interviews. Only one director agreed conditionally to do the interview after several attempts via letter, email and phone calls to the directors. Bender (2004) highlighted the key reason for her ability to do interviews and observations is the personal contact with the respondents.

The data will be analysed using cross sectional pooled data ordinary least square (OLS) regression. Different models were tested and some improvement and modifications were made in order to improve the final model. The final model presented was the best model after taking into consideration of major issues like normality, heteroscedasticity, multicollinearity etc. Each issue will be discussed separately in the later parts of this chapter

4.3 Sample Selection

The main research method used in this study is secondary data analysis. This method enables the results to be generalisable, provided the sample size is sufficiently large. Scholars have different opinions of what constitute large. Tabachnick and Fidell (1996) argued that sample size should depend on the number of independent variables used. They device a specific formula to calculate sample size: $N>50 + 8m$ (where m is equal to the number of independent variables). Stevens (1996) suggest reliable equation should use 15 subjects per independent variable.

In this study, there are limited numbers of companies listed in BMB. In 2004, there are a total of 963 companies listed in both the main and secondary listing board. This study covers the period from 2004 to 2006 inclusive. In order to reduce the number of missing data, only companies that are listed during the entire period of study will be included. Thus, new companies listed after 2004, insolvent or de-listed companies will be excluded from the sample. In addition, all financial related and investment companies will also be excluded from the sample as these companies are subjected to

other specific regulations. Thus the total selected sample for this study is reduced to 842 companies with 2,526 total observations.

Based on BMB classification, this study grouped the public listed companies in Malaysia into five main industry group (Table 4.1). Few original industry classification by BMB are being combined together in order to improve the number of companies in that group. For instance, property, hotel, plantation and mining companies are grouped together. Fifty percent of the companies in each of the category are selected randomly to make up the final sample of 417 companies. The study does not choose the sample according to size of the companies (main or second board) because the models used later will control the firm size. The stratified random sampling technique will ensure the results based on the sample can represent all type of industries in Malaysia. The final companies selected for this study according to their industry classification are presented in Table 4.1.

Table 4.1. Sample size according to industry classification

Industry	Size		Percentage
	Population	Sample	
Consumer Product	133	66	50%
Industrial Product	281	139	50%
Trading & Services/ Technology	216	107	50%
Construction / IPC	65	32	50%
Property/Hotel/Plantation/ Mining	147	73	50%
Total	842	417	50%

4.4 Data Collection

Section 4.2 explains the quantitative approach and the use of secondary data by this study. The study derived its secondary data from two main sources. The first source is from DataStream database. Using this database, only financial data were extracted, for

examples market capitalisation, total assets, net profit and total equity value. The second source of data used is from individual sampled firms' annual reports. Majority of the data on corporate governance and human capital attributes are not available from the database, for instance number of independent directors in board, number of interlocking directors, number of 'busy' directors, age and tenure of directors. The individual firms' full annual reports were downloaded from BMB's website.

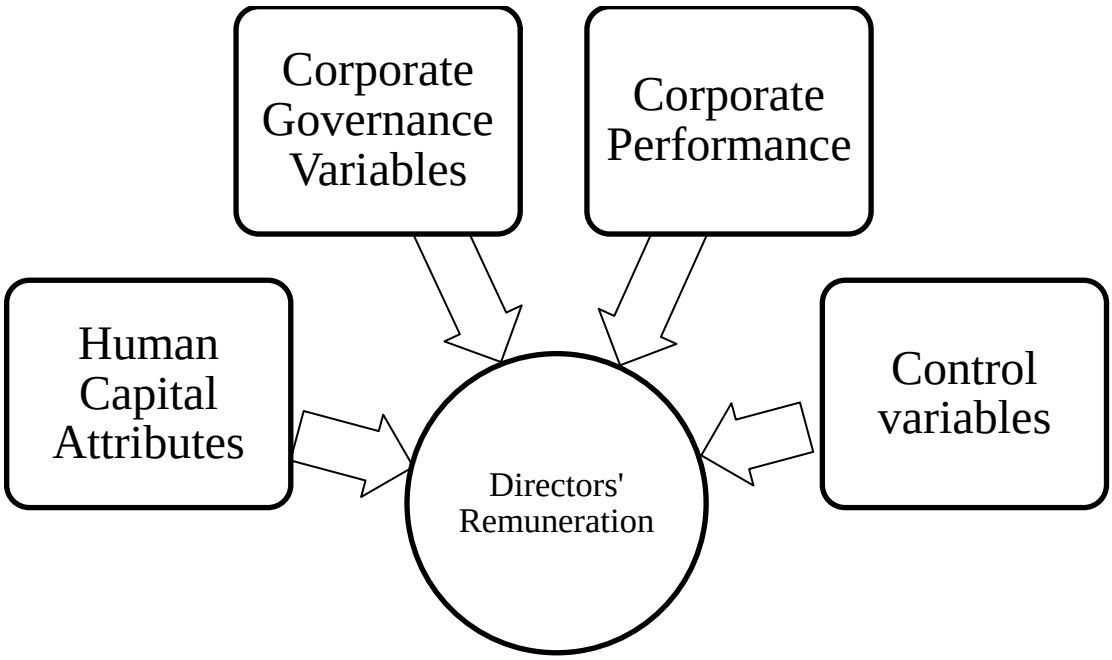
All data collected are for the three year period from 2004 to 2006. However, for a number of variables like return on asset and return on equity, the relevant data are collected for year 2003 in order to calculate the lag effect of these variables. The period was chosen because prior to 2001, disclosures on corporate governance matters were very limited. The issuance of MCCG and the new listing requirements by BMB had improved the disclosure on corporate governance matters, in particular on directors' remuneration significantly. The study allows for two years adjusting period for the firms to ensure consistent level of disclosure among the listed firms. Three years period is appropriate to separate company's specific effects on directors' remuneration through panel data analysis.

4.5 Modelling Specification

This study seeks to develop a model that able to explain the level of executive directors' remuneration among Malaysian listed firms. In particular, the executive directors' remuneration model will explain the impact of corporate governance variables, human capital attributes and corporate performance. The models will be used to test the hypotheses specified in section 1.3.

It was explained in chapter 3 that corporate governance variables, human capital attributes and corporate performance are among the important variables that affect the level of executive directors' remuneration. These three factors are the main focus of this study. Other factors like firm size, firm risk and firm diversification are also considered in this study. However, these variables will only act as control variables thus will not be the discussed in length. Figure 4.1 summarises the main three factors that affect executive directors' remuneration considered in this study.

Figure 4.1. Summary of factors that affects executive directors' remuneration



In order to test the hypotheses 1a, 2a, 3a, 4a, 5a, 6a, 7a, 8a, 9a, 10a, 11a,12, 13, 14 and 15, the following model is used:

$$\text{Lntotalrem}_{it} = \beta_0 + \beta_1 \text{Perf}_{it} + \sum \beta_g \text{CG}_{git} + \sum \beta_h \text{HC}_{hit} + \sum \beta_c \text{Control}_{cit} + \sum \delta_t \, Dummy_t + \varepsilon_{it}$$

where:

i = 1, 2, 3….N (1 to 417 companies);

t = 1, 2 ….T

$Lntotalrem_{it}$ refers to the log of reported total remuneration of executive directors' remuneration for company *i* in the year *t*.

$Perf_{it}$ refers to firm performance of company *i* for year *t*.

CG_{it} refers to corporate governance variables for company *i* in the year *t*. CG consists of twelve specific variables – (1) board size (Boardsize); (2) frequency of board meetings (BMeet); (3) proportion of independent directors (Indpt_Board); (4) proportion of non executive directors (Nexecdir); (5) proportion of interlocking directors (Interlock); (6) proportion of old non executive directors (Old); (7) proportion of busy non executive directors (Busy); (8) CEO-chariman duality (CEO_Dual); (9) direct managerial ownership (Directshare); (10) indirect managerial ownership (Indirectshare); and (11) outside blockholder ownership (Blockshare). Therefore, $\sum \beta_g CG_{git}$ is the sum of all the eleven corporate governance variables (i.e. $\sum \beta_g CG_{git} = \beta_2 Boardsize + \beta_3 BMeet + \beta_4 Indpt\_Board + \beta_5 Nexecdir + \beta_6 Interlock + \beta_7 Old + \beta_8 Busy + \beta_9 CEO\_Dual + \beta_{10} Directshare + \beta_{11} Indirectshare + \beta_{12} Blockshare$), where g = 2 to 12 for coefficients of the eleven corporate governance variables.

HC_{it} refers to human capital attributes for company *i* in the year *t*. HC consists of three specific variables – (1) directors' tenure (Tenure); (2) directors' age (Age); and (3) directors' qualifications (Qualify). Therefore, $\sum \beta_h HC_{hit}$ is the sum of all three

human capital attributes (i.e. $\sum \beta_h \text{HC}_{\text{hit}} = \beta_{13}\text{Tenure} + \beta_{14}\text{Age} + \beta_{15}\text{Qualify}$), where h = 14 to 15 for coefficients of the three human capital variables.

$Control_{it}$ refers to the control variables for company *i* in the year *t*. (such as firm size, leverage and location). *c* is the indexes of the control variables.

$Dummy_{it}$ refers to the set of dummy variables for time.

β and δ_t are both coefficients for independent variables and time dummy respectively.

ε_{it} refers to the error term for company *i* in year *t.*

Note that the model can be extended into several sub-models because there are a number of proxies used for the both dependent and independent variables. The full discussion on definition for each variables and proxies will be explained in Section 4.6.

The above model only captured the direct effects of corporate governance mechanisms on directors' remuneration. This study also interested to know the indirect effects of corporate governance and performance on directors' remuneration (i.e. the interactions terms between the corporate governance variables and performance). This is to test hypothesis 1b, 2b, 3b, 4b, 5b, 6b, 7b, 8b, 9b, 10b and 11b. The following model adds the interactions terms into the existing model presented earlier:

$$\text{Lntotalrem}_{\text{it}} = \beta_0 + \beta_1 \text{Perf}_{\text{it}} + \sum \beta_g \text{CG}_{\text{git}} + \sum \beta_h \text{HC}_{\text{hit}} + \text{Perf}_{\text{it}} \text{ x } \sum \beta_{g+14} \text{CG}_{\text{git}} + \sum \beta_c \text{Control}_{\text{cit}} + \sum \delta_t \, Dummy_t + \varepsilon_{\text{it}}$$

The indexes remain the same as in the original equation, except for the thirteen additional interactions. To recap, the coefficients for main effects of corporate governance variables are from β_2 to β_{13}. The corresponding interactions terms' coefficients would be from β_{17} to β_{28}. For example, the index for Boardsize is 2 (i.e. g = 2) while the index for interaction terms between performance and boardsize is 16 (i.e. g = 2 +14).

4.6 Variables Definition and Measurement

4.6.1 Dependent Variable: Remuneration

Milkovich and Newman (2002) define remuneration as 'all forms of financial returns and tangible services and benefits employees receive as part of an employment relationship'. At present, directors of company receive their rewards in many forms. By right, compensation packages should be design to compensate, sustain, motivate and reward directors of company. In the early 1970s, where the separation of ownership is not yet common, directors were paid simply in the form of cash – both for the salary and bonuses. As the corporate structure becomes relatively more complex, new forms of rewards were needed to sustain and motivate managers.

Pavlik et. Al (1993) has identified eleven components of executive compensation:

i) short-term incentive bonus – A periodic, usually lump sum cash payment based on corporate and/or individual performance;

ii) Stock bonuses – Periodic distribution of shares of stock, usually based on years of service, position, or extraordinary performance.

iii) Deferred compensation – Any type of cash or stock remuneration whose receipt is deferred to future periods. For instance 'golden handcuff', whereby bonus are deferred over a period of time after it is earned.

iv) Stock options – Rights to purchase shares at a fixed price in the future period.

v) Stock appreciation rights – Rights to increase in stock price from the time awarded to payment date.

vi) Restricted stock plan – Stock awarded to managers that remain loyal to company for a number of years.

vii) Long-term incentive performance plans – Accounting-based plans that reward managers based on performance over a period of time, usually at least a three to six year period

viii) Pension plans – Plans to provide managers payment upon retirement.

ix) Interest-free loans

x) Life Insurance

xi) Other perquisites – For instance club membership, medical check-ups, automobiles, etc.

However, most studies used cash from salary and bonuses as their measures of remuneration (for instance Ciscel and Carroll 1980; Agrawal 1981; Deckop 1988; Ezzamel and Watson 1997). More recent studies however adopted more vigorous analysis whereby they include other types of remuneration. For instance, Ewers (2002) identified four categories of directors' remuneration in UK: (i) salary; (ii) short term bonus; (iii) longer term incentive; and (iv) ownership income. Accordingly, he develops four different sets of model for each type of remuneration and links it with

performance. Clarkson et al. (2005) also develop four separate models to explain remuneration in Australia. They examine salary, bonus, options and total remuneration separately. However, their findings show that there not much difference between all the models except for options whereby not a single variable is significant. It is however important to note that such thorough analysis is possible due to increasing disclosure by companies on directors' remuneration.

In the context of Malaysia, the level of disclosure among listed companies is relatively low compared to other developed countries. Companies only report the total executive directors' remuneration and total non-executive directors' remuneration for the year, without being specific the amount each executive director or non-executive director received. In most cases, salary and other emoluments are grouped together and other fringe benefits are grouped into the other category. Given the nature of disclosure among Malaysian listed companies, it is impossible to separate and develop separate models for each type of remuneration. However, Dogan and Smyth (2002) argued that the use of total executive remuneration is more appropriate to explain performance as the performance is determined by the whole board and not only by the CEO or other single executive director of the company. The same argument was put forward by Main et al. (1996) and Crespi-Cladera & Gispert (2003) for using total board directors' remuneration in their studies.

Table 4.3 summarises the variables used in this study and its definitions. Based on the model described in Section 4.5, the dependent variable used in the regression is executive directors' remuneration. Malaysian firms are not required by the MCCG to disclose the exact details of directors' remuneration. It was found that some firms

disclose more than other. Due to such variations, it is only possible to use two type of measurements for executive directors' remuneration; total remuneration (TOTALREM) and total cash remuneration (TOTALCASHREM). Total remuneration is the sum of salary, bonus, fees, benefits and others but not including shares options. Total cash remuneration only measures the sum of salary, bonus and fees. Share options or other market based incentives are excluded from the study because of inconsistent format of reporting among the sampled firms as well as the details of reports varies across the forms. In order to avoid many missing data and inaccurate data, the market based incentives are excluded from the study.

4.6.2. Independent Variables

Corporate Governance Variables

Corporate governance variables are mainly divided into two – board characteristics and ownership structure. This study identifies eleven board characteristics to be included into four different groups.

1. Board size and activities is measured using the board size (BOARDSIZE) and frequency of board meeting (BMEET). BOARDSIZE refers to the total number of directors served in the board. It includes both executive and non executive directors. BMEET is measured as the number of board meetings held over the entire financial year period.
2. Board independence is measure using three different proxies – (i) proportion of independent non executive directors in the board (INDPT_BOARD); (ii) proportion of independent directors in audit committee (INDPT_AUDIT); and (iii) proportion of independent directors in remuneration committee (INDPT_REM).

3. Board composition is measured using four proxies – (i) proportion of non executive directors in the board (NEXECDIR); (ii) proportion of interlocking directors in the board (INTERLOCK); (iii) proportion of old non executive directors (OLD); and (iv) proportion of busy non executive directors (BUSY). Both OLD and BUSY directors are considered as less effective member of the board. Old directors are defined as any director aged more than 70 years old while busy directors are directors who serve in more than three companies other than the company itself (Core et al. 1999).
4. Board leadership is measured by CEO-Chairman duality roles (CEO_DUAL). In order to capture this variable into regression, a dummy variable was created, which equals to 1 if CEO serve as Chairman of the board and 0 otherwise.

Ownership structure is another aspect of corporate governance variables. This study identify three types of ownership structure – (i) proportion of direct managerial ownership (DIRSHARE); (ii) proportion of indirect managerial ownership (INDIRECTSHARE); and (iii) proportion outside block holder ownership (BLOCKSHARE). Indirect managerial ownership includes ownership held by directors' close relatives such as wife or husband, children and parents. An outside shareholder holding more than 5% of the total shares offered will be considered as block holder. In Malaysia scenario, most of the block holders are institutional shareholder, either government link companies or foreign companies.

Human Capital Attributes

Human capital attributes are measured in three ways – (i) directors' age (AGE); (ii) directors' tenure; (iii) directors' qualifications. Previous studies on human capital only look at the CEO age, tenure and qualifications only (for instance Ingham and Thomson (1995); Milbourne (2003); McKnights and Tomkins (2004)). On the other hand, this study looks at the factors affecting executive directors' remuneration. Hence, for this study, AGE is defined as average age of the executive directors. TENURE is defined as average tenure of all executive directors and QUALIFY is measured by dummy variables which equals 1 if the executive director is university graduates or professionally qualified and 0 if he or she is a non university graduates.

Firm Performance

Scholars in business and management discipline had devoted extensive time to better proxy firm performance. In accounting, earlier studies used some basic accounting and accounting ratios measurements as well as stock market measurement. However, recent studies claimed that return on investment (ROI), residual income (RI) and economic value added (EVA) is a better corporate performance measurement. For instance, Spinner (1997) proposed that EVA is the best measure for corporate performance among all other measurement including activity-based costing (ABC). In US-based studies, Tobin's Q is also used widely to measure corporate performance. Pavlik et al. (1993) argued that accounting return explains more of the variance in cash compensation than stock return. Accounting measures reflect many factors including successful role played by board. In addition, accounting measures are not

affected by general economy –wide shocks, thus do not suffer any uncontrollable factors.

Very few studies adopt these new measurements in the remuneration-performance studies (for instance Spinner 1997). Most of the studies employ the classic accounting and stock market return measurements. Specifically, the remuneration-performance literature shows that there are at least five groups of proxy to measure company performance – (i) accounting measures; (ii) accounting ratios; (iii) stock market measures; (iv) economic value measures; and (v) a combination of these measures (Ewers 2002). Among the common accounting measurements and accounting ratios used are accounting profit (for instance Lewellen and Huntsman 1970; Ciscel and Caroll 1980; Jensen and Murphy 1990), sales revenue (for instance Baumol 1987; Coughlin and Schmidt 1985), return on assets (for instance Finkelstein and Boyd 1998), return on equity (for instance Lambert and Larcker 1987; Larcker 1992) and return on capital employed (for instance Abowd 1990; Ante and Smith 1986). Only few studies use total assets (for instance Vafeas and Theodorou 1996) and return on sales (for instance Deckop 1988) as the measurement for corporate performance. Stock market measures are more popular among economists and finance scholars. Among the common measurements are shareholders' return and stock market return (for instance Murphy 1985; Conyon and Gregg 1994; Main et. al 1996; Ezzamel and Watson 1997). Stock return explains more when compensation includes executive stock holdings and other stock equivalents (Pavlik et. al 1993). However, Conyon et. al (2000) argued market based measurements are forward looking because the measures emphasise on the expected return.

Literatures also suggest that timing of performance is important (Chen 2006; Conyon and Leech 1994; Gregg et. al 1993). It was argued that the use of lagged performance variables facilitate reduction on potential ambiguity of mutual causality that may be due to the endogeneity of executive remuneration and firm performance (Jensen and Murphy 1990). In addition, Chen (2006) also argues that the fact that directors' remuneration being determined a year before make lagged performance variables reflect the actual timing of the impact of company performance on executive remuneration.

This study uses both accounting based measures and market based measures. Five top accounting based measures are selected; return on asset (ROA), one-year lag ROA, return on equity (ROE), one-year lag ROE and return on sales (ROS). Two market based measurements are selected; Tobin's Q and market based equity (MBE). However, after initial test on the correlation of all the variables, both of the market based variables have very low and insignificant relationship with directors' remuneration. Hence, this study includes only the accounting based variables.

However, it is found that these five variables have very high correlation as presented in Table 4.2. In order to reduce high correlation between these five accounting based measures, this study run a factor analysis in order to establish an index that take into account different measurement of performance. The principal component analysis extraction method was used and the result is presented in Table 4.3. Thus, only one final variable on performance will be included in the final regression, known as PERF.

Table 4.2. Correlation between financial performance measurement

	Roa	*Lag_roa*	*Roe*	*Lag_roe*	*Ros*
Roa	1.0000				
Lag_roa	0.8533	1.0000			
Roe	0.7636	0.6564	1.0000		
Lag_roe	0.3255	0.4964	0.3122	1.0000	
Ros	04327	0.5068	0.3872	0.2342	1.0000

Table 4.3. Factor analysis results for accounting based performance measures

Factor	*Eigenvalue*	*Difference*	*Proportion*	*Cumulative*
1	3.07293	2.27343	0.6146	0.6146
2	0.79950	0.10723	0.1599	0.7745
3	0.69228	0.36237	0.1385	0.9129
4	0.32990	0.22451	0.0660	0.9789
5	0.10539	-	0.0211	1.0000

Control Variables

There are six control variables used in this study, namely firm size, firm risk, firm diversification, location, industry and year dummies.

Firm Size

It was widely established in the earlier studies that firm size is positively associated with the level of executive directors' remuneration (Tosi *et. al* 2000). Most researchers used market capitalisation, sales and number of employees as the proxy to firm size (O'Reilly et. al 1988). In this study, market capitalisation is used as the main measurement for firm size. Sales are used as an alternative proxy for robustness checks.

Firm Risk

Firm that financed its operation mainly through debt (borrowings) is more risky than a firm that financed itself through equity. If a firm acquires high amount of debt, the firm is obliged to fulfil the enforceable contract with creditors, thus reduce the possibility of directors' opportunistic behaviour (Crespi Cladera and Gispert 2003). In addition, the directors will find less cash flow to allocate freely (Jensen 1986). Thus, if a firm is highly in debt, the discretionary power of the directors would be less and this is reflected in their decision on remuneration as well. This study uses leverage to measure firms' risk. Leverage is defined as total book value of debt over total book value of equity.

Diversification

Firm diversification is one aspect of firm strategic position that may affect executive directors' remuneration. Finkelstein and Hambrick (1989) argued that pay expectation to CEO increase as the company become more diversified due to increase in CEO's responsibilities and jobs becomes more complex. Following Riahi-Belkaoui and Pavlik (1993) and Chen (2006), this study uses product/industry count measures. This measure is selected because it is less subjective and reflects accurately the diversification of a firm. Firm that operates in many industries would require greater expertise on its management as multiple product market needs to be evaluated and understand before resource allocation decision can be made.

Industry

BMB categorised listed companies in Malaysia into eleven industries: consumer product, industrial product, trading and services, technology, construction, IPC,

property, hotel, plantation, mining and financial services. Financial services companies are excluded from the study. Due to small number of companies in few categories, the final industries were regrouped into five main industry: consumer product, industrial product, trading and services/technology, construction/IPC, construction/hotel/plantation/mining. Accordingly, four dummies are constructed. Each dummy will equals to 1 if a company belongs to that particular categories and 0 otherwise.

Location

Location is important in the context of this study because geographically, Malaysia consists of two main parts; the Peninsular and East Malaysia (see section 2.2). The development and cost of living varies even in the Peninsular itself. In particular, Klang Valley is the most developed region in Malaysia and the cost of living is the highest compared to the rest of region in Malaysia. This study breaks the location dummy into two categories; Klang Valley and Non Klang Valley. Accordingly, location dummy will equals to 1 if the corporate office of a company located in Klang Valley and 0 otherwise.

Year

Year dummies are constructed to factor in macroeconomic shocks. Using the year dummies, some effects that are constant across firms but change over time can be ruled out, such as inflation and the economic situation (Chen 2006).

Table 4.4. Summary of variables, measurements and its definition used in this study

Variables	***Measurement / Proxy***	Definition
DEPENDENT VARIABLES:		
Executive directors' remuneration	Total remuneration (TOTALREM)	Salary + Bonus + Fees + Benefits + Others
	Cash remuneration (CASHREM)	Salary + bonus + Fees
INDEPENDENT VARIABLES:		
Board Characteristics:		
Board size and effectiveness	Board size (BOARDSIZE)	Total no of directors in the board
	Frequency of board meeting (BMEET)	No of board meeting in the financial year
Board Independence	Proportion of independent directors in board (INDPT_BOARD)	No. of independent directors/ total no of directors
	Proportion of independent directors in remuneration committee (INDPT_REM)	No. of independent directors in remuneration committee / total no of directors in remuneration committee
	Proportion of independent directors in audit committee (INDPT_AUDIT)	No. of independent directors in audit committee / total no of directors in audit committee
Board Composition	Proportion of non executive directors (NEXECDIR)	No. of non executive directors / total no. of directors
	Proportion of interlocked directors in the board (INTERLOCK)	No. of interlocked directors / total no of directors
	Proportion of old directors in the board (OLD)	No of old directors / total number of directors
	Proportion of busy directors in the board (BUSY)	No of busy directors / total number of directors
Board leadership	Dummy: CEO also chairman of the board (CEO_DUAL)	Yes =1, No = 0
Ownership Structure:		
Managerial ownership	Proportion of direct ownership by directors (DIRECTSHARE)	Book Value of direct shares owned by directors/total book value of shares

Variables	***Measurement / Proxy***	Definition
	Proportion of indirect ownership by directors (INDIRECTSHARE)	Book Value of indirect shares owned by directors/total book value of shares
Block holders ownership	Proportion of shares owned by block holders (BLOCKSHARE)	Book Value of shares owned by blockholders/total book value of shares
Human Capital Attributes:		
Age	Average age of executive directors in the board (AGE)	Total number of executive directors age / number of executive directors in the board
Tenure	Average tenure of executive directors in the board	Total years of tenure of executive directors / number of executive directors in the board
Qualification	Dummy: University graduates/ professional qualifications	Yes = 1, No = 0
Corporate Performance:		
Accounting Based performance	ROA	Annual earnings / total assets
	Lag ROA	Annual earnings year 1 / total assets year 0
	ROE	Net Income / shareholders' equity
	Lag ROE	Net Income year1 / shareholders' equity year 0
	Return on sales (ROS)	Net Income / sales
Market Based performance	Tobin's Q	
	Market based equity (MBE)	(Market Value of firms' equity + debt) / Book Value of total assets
Control Variables:		
Company size	Market capitalisation (MKTVALUE)	Average market capitalization for 5 years
Risk	Company leverage (LEVERAGE)	Book value of total debts / Book value of total equity
Diversification	No of industry segment (INDUSTRY)	No of industry segment
Location	Dummy: Located in Klang valley (LOCATION)	Yes = 1, No = 0
Industry	Type of industry (INDUSTRY)	Dummy variables: 1 if a firm belongs to a certain industry or 0 otherwise

4.7 Data Analysis

There are three steps of data analysis involved in this study: preliminary analysis, descriptive analysis and multivariate analysis.

4.7.1. Preliminary Analysis

Preliminary analysis is carried out to ensure the variables included in the regression are free from error and do not violate the multiple regression assumption on normality of the variables. Based on descriptive statistics for each variable (for instance, minimum and maximum value, mode and average) and scatter graph, several mistakes are identified and corrected. Missing data are also identified and the researcher reconfirm that such data is really missing.

Normality test was also carried out for each variable. This is to ensure that no skewed variable is entered into regression model. Table 4.4 shows the list of variables that requires transformation. After the transformation, the variables are tested once more to ensure it was approximately normal.

Table 4.5. List of variables being transformed

Variable	***Transformation***
MKT_VALUE	Natural log
LEVERAGE	Natural log
TENURE	Square root
BOARDSIZE	Square root
BMEET	Natural log
BLOCKSHARE	Natural log

This study also examines all variables using scatter graph plot and correlation in order to see the pattern and prediction of relationship between dependent and independent variables.

4.7.2 Descriptive Analysis

Descriptive analysis aims to provide better understanding of the data. Summary statistics for each variable is obtained. It highlights the general description of the data, thus enable for comparison between Malaysian data with data from other countries, particularly with the West. The result of descriptive analysis is presented in Chapter 5.

4.7.3. Multivariate Analysis

There are three main multivariate analysis conducted in this study: multiple OLS regression, regression diagnostics and panel data analysis. A few models of OLS regressions are compared in order to find the best model. The model used total remuneration (TOTALREM) as its dependent variable. Total cash remuneration (CASHREM) was only replaced as a robustness check in order to see if there is any significant difference between the two measurements.

The second step in the multivariate analysis is to check if there is any violation of the regression assumption. In OLS regression, there are a series of assumptions that need to be met such as linearity, normality, homogeneity, independence of errors in variables, model specification, influence data and collinearity (Chen 2006; Stock and Watson 2003). This study uses many independent variables and this will increase the chance the model regressed will violate many of these assumptions. In particular, Ciscel and Caroll (1980) named the three most common problems in examining executive directors' remuneration: heteroscedasticity, simultaneous equations bias and

measurement error in the data. The following discussion will explain the relevant statistical techniques used in order to deal with the problems.

First, the study identify any outliers need to be identified. Outliers can affect the reliability of regression model. In order to mitigate this problem, the study used summary statistics and scatter plot and examine each variable. Any outlier found is traced back to the original source of data to ensure that the data is genuine. Corrections are done in the case where data was wrongly entered. If the outliers are genuine, it will remain in the data set. Leverage versus residuals square plots are used after running regression in order to find influential outliers. If the outliers found to be influential, the outliers are removed from the data or using robust regression models. Robust regression models give different weights to the observations, thus are suitable for non-normal and heavy-tailed error distributions (Hamilton 2004).

Second, in order to deal with normality problem, the study used Shapiro-Wilk W test to ensure the errors or residuals of the regression are normally distributed. This is important as normality of residuals signify valid hypothesis testing. In addition, residuals are visually analysed through the use of kernel density plot, QQ plot and histogram with normal curve plot. Any evidence of slight non-normality of residuals is practically acceptable in the case when N is large such as in this study (Chen 2006).

Third is to test for possible heteroscedasticity problem. In the event where heteroscedasticity exists, tests for the significance of variables might not be reliable as the ordinary least squares estimate is inefficient (Wooldridge 2002). The common test used to detect heteroscedasticity is Breusch-Pagan / Cook-Weisberg test. Alternatively, a plot of residuals versus fitted values may also be used to check on this

problem. In order to correct this problem, MacKinnon and White (1985) recommends using robust standard error schemes while Long and Ervin (2000) recommends the 'hc3' correction.

Next, the study will check for any issue on multicollinearity. Multicollinearity problem exists in case where independent variables are correlated with each other. Belsley et al (1980) explain that when multicollinearity exists, the individual p-values may not be correctly presented (in which important variables may have high p-value) and the confidence intervals on the regression coefficients will be very wide. Variance Inflation Factor (VIFs) is calculated in order to examine the seriousness of multicollinearity problem. VIFs value more than 10 indicate serious problem of multicollinearity. In order to deal with multicollinearity, a few factors are grouped together and in some cases (for instance, in this study, corporate performance), factor analysis is used to reduce the number of variables in the model. Factors like average age and average tenure are being represented by mean-centred in order to reduce the multicollinearity between them.

Finally, a link test and a Ramsey RESET test will be conducted to test for model specification error. Model specification error can occur when relevant variables are omitted or irrelevant variables are included. The linktest is based on the idea that if a regression is properly specified, one should not be able to find any additional independent variables that are significant by chance (Chen 2006). One the other hand, Ramsey RESET test performs a regression specification error test (RESET), using powers of fitted values for omitted variables (Chen 2006). The null hypothesis for

both tests is that the model has no specification error. Hence, if the null hypothesis is rejected, then the models need to be reconsidered.

4.7.4 Panel data Analysis

This study is based on 417 sampled firms over three-year period. Therefore, it is suitable to use panel data analysis in order to improve the explanation of the error terms of the regression. The three year period also makes the use of time series technique inappropriate as this method requires longer period. The multivariate regression fails to control for those unobservable firm specific factors that might affect executive directors' remuneration. The panel data techniques are able to address this issue and suffer less from missing variable problem. Specifically, panel data techniques such as fixed and random effects are able to distinguish between residual heterogeneity associated with changes over time (time effects) and across firms (firm effects) (Chen 2006; Stock and Watson 2003). In addition, the power of the estimators to detect effects can be enhanced for the same limited companies or years by increasing the number of cases since there are n x t observations. By using panel data, multicollinearity problems also will be eased off. Murphy (1985) advocates the use of panel data for directors' remuneration study as he found significant difference between cross-sectional techniques and panel data techniques. He argued panel data techniques lead to better identification of the factors affecting changes in corporate governance and remuneration.

Using panel data, there are two methods to estimate the model – fixed and random effects methods. Each method will produce different estimates because both of the methods treat the error structure differently. Fixed effects model is similar to dummy

variable model. It can be estimated using OLS with a set of additive dummies provided there are a few thousand observations on the data set (Greene 2003). The fixed effects model is chosen if the idiosyncratic errors are serially uncorrelated and homoskedastic (Wooldridge 2002). By choosing this model, the unobserved individual effects will be correlated with the included variables.

On the other hand, the random effects method is more appropriate if the individual specific constant terms are strictly uncorrelated with the independent variables. By using this method, the number of coefficients to be estimated is reduced but the estimates might not be consistent if the assumptions are not valid (Greene 2003). The random effects method used generalised least squares (GLS) regressions to identify the possible correlation between the unobserved differences and the error term.

In order to decide which method is appropriate, a Hausman test is conducted. This specification test evaluates the significance of an estimator against an alternative estimator. It checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results (Hausman 1978). Although fixed effects models are regarded as always giving consistent results, random effects model may provide more efficient models to run (Stock and Watson 2003). Hence, it is justifiable to first run random effects and using Hausman test to see whether it is statistically justifiable to do so (Chen 2006). If the null hypothesis of Hausman test is rejected, one or both estimator is inconsistent. Therefore, the fixed effects method should be chosen.

4.10 Summary

This chapter starts off with explanation on the research design of this study. Advantages for using quantitative and qualitative approach was discussed and elaborated. Based on the nature of research questions of the study and sensitivity of the research topic, quantitative approach was adopted. Multiple regression analysis and panel data analysis will be used in order to test the hypotheses identified in Chapter 3.

Several models were developed in order to test the research hypothesis. The models are specified in the forms of panel data but it can also applicable for multiple regression models. A sample of 417 listed companies was selected over the period of 2004 to 2006 inclusive. This panel data set was run using the identified model specifications. Data was collected from two main sources – annual reports of individual companies and Datastream. Multiple regression models are run on total remuneration and total cash remuneration. Each determinant of directors' remuneration measurement is explained in detail. Some variables are measured using more than one measurement. In the next section, explanation on three steps of data analysis was presented – namely preliminary analysis, descriptive analysis and multivariate analysis. The study also addressed the statistical problems related to regressions such as the problem of outliers, normality, multicollinearity and heteroskadasticity. Finally, description on panel data method – fixed and random effects methods was presented.

The next chapter will present the descriptive findings of the research.

CHAPTER FIVE

DESCRIPTIVE ANALYSIS RESULTS

5.1 Introduction

The previous chapter described the research methodology used in this study. This chapter presents the descriptive and bivariate analysis of the six main variables used in the study. The descriptive analysis aims to explore the nature and characteristics of the data thus, giving us the general understanding of the data. Bivariate analysis is useful in detecting possibility of any violation of essential assumptions when using multivariate statistical technique, namely multiple regression later on to test the hypotheses.

A total of 417 companies were used in the final sample. Data for each company are selected for the three years period from 2004 to 2006, resulting 1251 total observations. However, there are some cases where data are missing. Few data, for example total assets and total equity are collected for the year 2003 as well in order to calculate lag variables like one-year lag return on asset and one-year lag return on equity. Data analysis was conducted using mainly STATA statistical software package and in some cases, SPSS statistical software package[4]. Microsoft Excel was used initially for data importing and housekeeping.

This chapter is divided into three sections. Section 5.2 presents the descriptive analysis of the six key variables used this study – executive directors' remuneration,

[4] For instance, SPSS is used to do normal scores transformation and obtain r squared change and F ratio change. STATA cannot perform these functions.

board of directors' characteristics, ownership structure, directors' human capital attributes, firm performance and control variables. Section 5.3 reports the bivariate analysis used to identify the initial correlation between variables. The final section summarises the main findings from the descriptive and bivariate analysis.

5.2 Descriptive analysis of the main variables

This study used six main variables - executive directors' remuneration, board of directors' characteristics, ownership structure, directors' human capital attributes, firm performance and control variable. Each variable will be analysed based on its type. Continuous variables analysis consists of mean, median, standard deviation, minimum and maximum value, skewness and kurtosis. Meanwhile, categorical variables is only analysed by examining their frequency and dispersion.

5.2.1 Executive Directors' Remuneration

The executive directors' remuneration is measured by total cash remuneration (**t_cashrem**) and total remuneration (**totalrem**). Total cash remuneration includes only salaries, fees and cash bonuses of executive directors; while total remuneration includes benefits and other form of payment such as gratuity and pension fund scheme but excluding share options. Share options and other long term incentives are excluded due to inconsistency of disclosure among the sampled firms. Kato and Kubo (2004) faced the same problem in their study in Japan and they removed the share options from their total remuneration. Table 5.1 shows the summary statistics of total cash remuneration and total remuneration for the year 2004 to 2006.

Panel 1 in Table 5.1 shows that over the three year period, the average cash remuneration and total remuneration received by Malaysian executive director are RM1,346,520 (approximately £213,733, assuming £1 = RM6.3) and RM1,694,220 (approximately £268,923, assuming £1 = RM6.3) respectively. This shows an increase of over a quarter of total remuneration reported by Abdullah (2006). Abdullah (2006) reported that the total remuneration of directors among Malaysian listed companies in 2001 was RM1,307,970. However, the directors in Malaysia is much less compensate relative to their counterparts in the UK and the US. Ezzamel and Watson (2002) reported the average cash compensation alone among UK CEOs in their study was £387,000, almost twice higher than the Malaysian directors. The gap was even profound when comparison made with the average total remuneration of CEOs in US. Conyon and Murphy (2000) reported that in 1997, the average total remuneration of CEOs was £3,519,000 (after deducting the average share option and long term incentive plan shares of £42,000 and £4,000 respectively)[5].

Panel 2 in Table 5.1 presents the detail type of directors' remuneration. It is found that more than sixty percent of total remuneration is in the form of salary. Bonus only accounts twelve percent of the total remuneration. This is quite low compared to other Asian countries like Hong Kong (26% as reported by Firth et. al 1999). Panel 2 in Table 5.1 also shows that the increase in average total cash remuneration and average total remuneration over the years are not associated with any particular type of remuneration but are due to increase by all types of remuneration. For example, the average executive directors' salaries raised from RM1,038,900 in 2004 to

[5] The adjustment was made to make the figure reported by Conyon and Murphy (2000) and this study comparable. Note that this study did not include share options or long term incentive plan shares.

RM1,099,890 in 2006 and benefits in kind among directors increased from RM489,550 in 2004 to RM634,114 in 2006.

Table 5.1 Summary statistics of total cash remuneration and total remuneration (in RM thousand)

Panel 1									
Variable	**Year**	**N**	**Mean**	**Median**	**Sd**	**Min**	**Max**	**Skew**	**Kurtosis**
Total cash remuneration	2004	414	1292.48	873.068	1958.01	0	29042	8.28565	104.29
	2005	416	1356.99	903.5	2129.39	0	31081	8.16777	100.222
	2006	415	1389.92	890.06	2276.61	0	31598	8.01522	88.3749
	Pooled	1245	1346.52	888	2124.14	0	31598	8.59187	97.5159
Total remuneration	2004	414	1565.52	994.407	2394.49	6	35711	8.39161	106.257
	2005	416	1686.24	1026.96	2700.36	4	40254	8.50696	107.575
	2006	415	1830.61	1089.72	3250.73	10.2	49708	9.20534	121.044
	Pooled	1245	1694.22	1044.48	2804.39	4	49708	9.06132	122.721
Panel 2									
Salary	2004	414	1038.90	761.185	1691.23	0	28697	11.2834	176.151
	2005	416	1080.60	765.185	1800.96	0	30751	11.3828	180.029
	2006	415	1099.89	750	1884.35	0	31273	10.9220	164.007
	Pooled	1245	1073.16	757.567	1792.75	0	31273	11.2103	173.901
Bonus	2004	414	192.338	0	632.497	0	8702	8.17140	91.8034
	2005	416	209.985	0	771.987	0	11944	10.0902	136.865
	2006	415	216.822	0	884.369	0	14208	11.2927	162.293
	Pooled	1245	206.396	0	769.428	0	14208	10.6151	154.464
Fees	2004	414	61.2454	24	105.5	0	1038	3.74280	24.9411
	2005	416	66.4106	24	114.772	0	838	3.33198	17.4298
	2006	415	73.2110	24	142.437	0	1247	4.10909	24.8422
	Pooled	1245	66.9598	24	121.924	0	1247	3.94037	24.8574
Benefit	2004	413	48.9550	17.4283	99.6847	0	1112	5.04104	40.5945
	2005	416	59.4744	21	140.994	0	1651	6.94747	67.4625
	2006	415	63.4114	23	158.673	0	17654	8.01522	84.2280
	Pooled	1244	57.2954	20.3125	135.475	0	17654	8.59187	106.211
Others	2004	414	224.204	8.7195	683.809	0	8020	6.69429	61.1768
	2005	415	270.424	10	872.273	0	9236	6.62079	56.8819
	2006	415	378.003	17.797	1350.74	0	17654	7.84932	84.2280
	Pooled	1244	290.931	11.0195	1010.25	0	17654	8.11603	106.21
Panel 3									
n_tcashrem	2004	414	-0.1548	-0.0277	0.9610	-2.2	2.819	0.0779	2.8216
	2005	416	0.00401	0.02865	1.0024	-2.2	2.947	0.0507	2.7003
	2006	415	0.01772	0.006	1.0062	-2.2	3.155	0.0044	2.8654
	Pooled	1245	0.00210	0.002	0.9894	-2.2	3.155	0.0444	2.7979
n_totalrem	2004	414	-0.0525	-0.0534	0.9735	-2.9	2.819	0.0286	2.8509
	2005	416	-0.0033	-0.0181	1.0036	-3.2	2.947	-0.0066	2.8693
	2006	415	0.05564	0.0725	1.0082	-2.8	3.155	-0.0296	3.0169
	Pooled	1245	0.00001	0	0.9954	-3.2	3.155	0.00008	2.9143

Panel 1 and 2 also show that directors' remuneration variables range widely. The large standard deviation (2,804,390) suggested that there is large variation of the directors' remuneration across time and between firms. For instance, the total

directors' remuneration ranges from RM4,000 to RM49,708,000. In addition, the directors' remuneration variables show high level of skewness (the third central moment) and kurtosis[6] (the fourth moment). This presents a potential problem in regression. In order to rectify this, the directors' remuneration variable are transformed to a normal scores estimation using a Van der Waerden[7] normal scores data transformation technique. Cooke (1998) argued this technique enable us to avoid data deletion due to negative value and/or extreme value problems. Panel 3 in Table 5.1 shows that the normal transformation has reduced the skewness level to nearly zero and that of kurtosis to near 3, which suggest that the distribution has now approximately normal.

5.2.2 Board of Directors' Characteristics

Board characteristic is one part of governance structure examined in this study. The board of director characteristics are further analysed into four distinctive groups - board size and activity, board independence, board composition and board leadership. Each characteristic is measured by different measurements. Table 5.2 presents the summary statistics of these characteristics. Each characteristic is discussed separately as follows.

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[6] Stata follows Bock's definition of kurtosis, where Kurtosis = $\frac{(x-\bar{x})^4}{x^2}$ (note this formula does not subtract 3). Thus, following this definition normal distribution would have a kurtosis of 3.

[7] Van der Waerden approach is one of the methods of rank transformation. This approach transforms the data by dividing the normal scores of each data (n_i) with the total of size of sample plus 1 (n+1) (i.e. $\frac{n_i}{(n+1)}$).

Board Size and Activities

Panel 1 in Table 5.2 shows at least three directors and at most sixteen directors were appointed in the board of the sampled firms. On average, the sampled firms appointed seven directors on board, similar to the board size reported in Norway and Sweden (Randoy and Nielsen 2002) but lower if compared with other Asian countries like Hong Kong and China (both average of nine directors as reported by Cheng & Firth 2005 and Chen 2006 respectively) and India (average ten directors as reported by Ghosh 2006). The average of board size found in this study is almost similar to other previous Malaysian studies, for instance Haniffa and Hudaib (2006) and Price Waterhouse and Coopers (1998) both reported 7.94 and 8 board size respectively. MCCG recommend that every board should examine its own size, with a view to determining the impact of the number upon its effectiveness. Larger board means wider diversity and expertise among its members thus can enhance boards in their monitoring, controlling and decision making (Haniffa and Hudaib 2006). However, bigger boards may become symbolic rather than being part of management process (Hermalin and Weisbach 2003). Lipton and Lorsch (1992) suggested an ideal board size is between eight and nine and any additional members to the board will not generate enough benefit when compared to the extra costs associated with it. Thus, the result suggests Malaysian companies have a reasonable number of members in their board, despite four observations recorded having three members in their board.

Board meeting is an important platform for its members to exercise monitoring, controlling and important decision making in the interest of shareholders. Despite no exact number of meetings suggested by MCCG, the code recommends the board

should meet regularly. Vafeas (1999) found that the frequency of board meetings increase the effectiveness of board. He argued boards that meet more regularly are beneficial to shareholders as they have more time to carry out their duties. The result shows that the median board meetings held is five times a year, with only one observation recorded one meeting in a year and another 22 observations recorded board meetings of only two times per year. Majority of the sampled firms held three or more board meetings per year. This frequency of meeting found is lower compared to Vafeas (1999) whereby he found the median number of board meetings for his sampled firms is seven. However, Jensen (1990) suggested boards should be relatively inactive, by having less board meetings because the chief executive officers almost always setting board's agenda, making the routine tasks dominating the time of meeting. Taking this argument into consideration, the average of five board meetings per year can be considered appropriate.

Board Independence

Panel 1 also exhibits that on average, three or forty two percent of board size is independent. There is almost no variation on the percentage of independent directors from year to year. The percentage of independent director ranges from 14% to 86%, with low standard deviation of 0.11. The result supports other previous studies in Malaysia (for instance Abdullah 2006). On this aspect, Malaysian firms seemed to be better than other emerging countries like China (30% independent directors in 2003 – Chen 2006). This suggests that most sampled companies have followed the MCCG recommendation. As stated earlier in Chapter 2, MCCG recommends companies to have at least one third of the board to be independent.

Similarly, the MCCG recommendation on the number of independent directors in audit and remuneration committee is observed. On average, 67% of audit and remuneration committee members are independent. However, note that there are 18 observations (six companies) with no independent members in their remuneration committee. Separate analysis on these companies is unnecessary as the number of companies with this situation is not significant. However, it would be interesting if further study can be made on these companies to investigate what prompt them to behave in that way and the impact of this behaviour on directors' remuneration.

Board Composition

Panel 2 in Table 5.2 presents the board composition, in particular on its non executive directors' characteristics. On average, there are 64% of non executive directors in the sampled firms compared to 58.53% reported earlier by Haniffa and Hudaib (2006). Earlier researchers suggested non executive directors presence in board will help to monitor and control the behaviour of management thus help to alleviate the agency problem (Williamson 1985; Jensen and Meckling 1976). Non executive directors also can ensure managers not solely evaluating themselves (Baysinger and Hoskisson 1990), provide extra strength to the board and quality decision making with their expertise, prestige and contacts (Grace et. al 1995).

On average, there are 15% interlocked directors with small increment over the years compared only over 3% among US firms (Core et al 1999). Interlocked director is defined as any executive director of the firm who also serves on the board of that non-

executive director's company. Hence this study supports Dogan and Smyth's (2002) assumption that Asian directors are mostly interlocked.

Table 5.2. Summary statistics of board characteristics

Panel 1: Board size and effectiveness									
Variable	*Year*	*N*	*Mean*	*Median*	*Sd*	*Min*	*Max*	*Skew*	*Kurtosis*
board_size	2004	417	7.6	8	1.92	4	16	0.678	4.198
	2005	417	7.6	7	1.93	3	15	0.597	3.961
	2006	417	7.5	7	1.88	3	15	0.537	3.853
	Pooled	1251	7.6	7	1.91	3	16	0.607	4.017
Frequency of board meetings	2004	417	5.3	5	2.10	2	27	4.237	35.35
	2005	417	5.2	5	2.03	2	24	4.055	29.05
	2006	417	5.3	5	2.26	1	27	4.293	32.39
	Pooled	1251	5.3	5	2.13	1	27	4.220	32.66
Panel 2: Board independence									
tid	2004	417	3.1	3	0.96	1	9	1.398	7.912
	2005	417	3.1	3	0.98	1	9	1.369	7.539
	2006	417	3.1	3	0.90	1	7	0.858	4.169
	Pooled	1251	3.1	3	0.95	1	9	1.237	6.799
Indpt_dir	2004	417	0.41	0.38	0.11	0.14	0.86	1.063	4.413
	2005	417	0.42	0.4	0.11	0.14	0.83	1.053	4.371
	2006	417	0.42	0.4	0.11	0.14	0.83	0.834	3.835
	Pooled	1251	0.42	0.4	0.11	0.14	0.85	0.988	4.219
Indpt_audit	2004	417	0.70	0.67	0.09	0.33	1	1.172	8.388
	2005	417	0.71	0.67	0.09	0.33	1	1.484	7.738
	2006	417	0.71	0.67	0.09	0.33	1	1.226	7.575
	Pooled	1251	0.71	0.67	0.09	0.33	1	1.280	7.896
Indpt_rem	2004	375	0.67	0.67	0.17	0	1	-0.89	6.748
	2005	379	0.67	0.67	0.17	0	1	-0.86	6.251
	2006	377	0.67	0.67	0.17	0	1	-0.72	6.190
	Pooled	1131	0.67	0.67	0.17	0	1	-0.83	6.399
Panel 3: Board composition									
Non-Executive	2004	417	0.64	0.66	0.17	0.28	0.91	-0.22	1.955
	2005	417	0.64	0.66	0.16	0.28	0.93	-0.20	2.004
	2006	417	0.64	0.66	0.17	0.20	0.91	-0.23	1.993
	Pooled	1251	0.64	0.66	0.17	0.20	0.93	-0.22	1.985
Interlock	2004	417	0.15	0	0.09	0	1	9.561	113.6
	2005	417	0.14	0	0.09	0	1	9.895	124.1
	2006	417	0.17	0	0.10	0	1	8.388	90.89
	Pooled	1251	0.15	0	0.09	0	1	9.229	108.1
Busy	2004	417	0.22	0.14	0.25	0	1	0.969	3.023
	2005	417	0.22	0.16	0.25	0	1	0.997	3.141
	2006	417	0.21	0.16	0.24	0	1	0.965	3.071
	Pooled	1251	0.22	0.16	0.25	0	1	0.978	3.082
Old	2004	417	0.09	0	0.16	0	0.8	1.826	6.045
	2005	417	0.10	0	0.16	0	1	1.991	8.404
	2006	417	0.10	0	0.16	0	0	1.676	5.675
	Pooled	1251	0.10	0	0.16	0	1	1.829	6.698
Panel 4: Board leadership									
			2004		*2005*		*2006*		*Pooled*
Non Ceo_duality	Freq.		368		368		369		1105
	Percent		88.25		88.25		88.49		88.33
Ceo_duality	Freq.		49		49		48		146
	Percent		11.75		11.75		11.51		11.67

Table 5.2 also shows that on average twenty two percent of the non executive directors are classified as busy. This figure is almost half of the percentage (over 45%) found by Core et al (1999) using 205 public companies in US but more higher (six percent) than what reported by Ferris et al (2003), which also using US sampled firms. Comparatively, Malaysian capital market are far less small than the US, thus explains the variation of busy directors in both countries. Busy directors are defined as directors who hold directorships in three or more other listed companies, excluding the present company (Core et. al 1999). This also the limit set by the Council of Institutional Investors in the US (Ferris et al 2003). Retired directors (i.e. age 70 years and above) are considered busy if they serve six or more other listed companies, excluding the present companies. Fich and Shivdasani (2004) provide evidence to show that busy directors are associated with weak corporate governance.

Finally, Panel 2 also shows that on average around ten percent of the non executive board members are 'old' compared to only eight percent among US companies (Core et al 1999). 'Old' directors are defined as directors who reached the age of 70 or over. One reasonable explanation to this is that many Malaysian listed firms are originally formed as family businesses but later become public limited companies. Hence, the founders of the companies are likely to remain in the board longer due to their influence over the companies. In addition, Malaysian human expertise in some area is less than the US. This limits the choice of individuals to serve on the board and hence affect the length of service for directors.

Board Leadership

Panel 3 in Table 5.2 shows the percentage of CEO and chairman duality on the board of sampled firms. It is found that on average, over 88 percent of the sampled firms have separation of CEO and chairman duty. It is noted that there are only very little improvement over the three years period, although it can be considered better than the year 2000 (15.1% duality) and 2001 (13.9% duality) (Abdullah 2006). Again, it would be interesting to focus on these remaining 11 percent of the sampled firms to study the reasons for not following the MCCG recommendation on this matter.

5.2.3 Ownership Structure

Another part of governance structure considered in this study is ownership structure of the firms. Table 5.3 shows that the average direct shareholdings by directors are found to be around 10% per year with slight increment every year. This shows that Malaysian directors owned higher proportion of shares compared to their counterparts in other countries. For example, Clarkson et al (2005) and Merhebi et al (2006) reported CEO in Australia hold only 4% and 7.96% of company's shares. However, the percentage of management ownership in other Asian companies is also high. For example, Cheng and Firth (2005) reported that average CEO ownership alone among Hong Kong companies alone is 22.9%, chairman ownership is at 29.5% while 31.4% shares are owned by independent non executive directors.

Table 5.3. Summary statistics of ownership structure

Variable	*Year*	*N*	*Mean*	*Median*	*Sd*	*Min*	*Max*	*Skew*	*Kurtosis*
Directors' direct shareholding	2004	416	9.51	3.37	13.41	0	61.85	1.78	5.60
	2005	416	9.91	3.31	13.86	0	61.58	1.67	5.05
	2006	416	10.11	3.62	13.70	0	61.16	1.57	4.70
	Pooled	1248	9.84	3.38	13.65	0	61.85	1.67	5.11
Directors' indirect shareholding	2004	416	24.45	25.01	21.63	0	76.04	0.28	1.80
	2005	416	23.46	22.59	22.13	0	74.99	0.38	1.79
	2006	416	23.10	19.92	22.45	0	89.19	0.45	1.89
	Pooled	1248	23.67	22.77	22.06	0	89.19	0.37	1.82
Total directors shareholding	2004	416	33.96	36.82	21.74	0	78.11	-0.22	1.94
	2005	416	33.37	36.54	22.17	0	77.78	-0.14	1.89
	2006	416	33.22	35.44	22.41	0	89.19	-0.12	1.89
	Pooled	1248	33.52	36.51	22.10	0	89.19	-0.16	1.90
Block shareholding	2004	416	14.52	6.66	19.29	0	90.62	1.65	5.20
	2005	416	15.09	7.89	19.53	0	90.62	1.56	4.81
	2006	416	15.58	7.7	20.12	0	82.02	1.39	3.95
	Pooled	1248	15.06	7.51	19.64	0	90.62	1.53	4.62

Table 5.3 also shows that the mean of directors' indirect shareholding is around 23%. The directors' indirect shareholding includes any companies' equities owned by directors' close relatives or various other entities in which he or she has interest in them. This finding supports the claim by earlier studies (for instance Haniffa and Hudaib 2006; Dogan and Smyth 2002) that Asian corporate ownership structure, particularly Malaysia is mostly concentrated. In addition, the average percentage of blockholders (i.e. corporation or individual that owned more than 5% of the total equities of a company) is found to be around 15%. Again, this is consistent with earlier studies that most of the Asian corporate environment are found to be concentrated among few shareholders (Dogan and Smyth 2002; Tricker 2001). This finding signified the difference between Malaysian market and its counterparts in the Western countries.

Dogan and Smyth (2002) explained that the high level of ownership concentration in Malaysian is due to the fact that many companies are founded and run by close family

– making family control more prevalent in these companies compared to other companies in other countries. In addition, there is also significant level of state involvement in many of the listed companies. Claessens et al. (2001) quoted three main political parties such as United Malays National Organisation (UMNO), Malaysian Chinese Association (MCA) and Malaysian Indian Congress (MIC) as the examples of state-related organisations that own substantial shareholdings in Malaysia.

Block shareholder is any individual or entity that owns more than 5% of the firm's total shares. It is found that the mean block shareholder shareholdings is around 15%, much lower than reported elsewhere, for instance Mangel and Singh (1993) reported 52% block shareholder among their sampled US firms. In Malaysia, most of the block shareholders are government related organisation. Private sector in Malaysia is much smaller compared to the US, thus explain the low percentage of block shareholders in Malaysia compared to US.

5.2.4 Human capital Attributes

There are three aspects of human capital attributes considered by this study – age, tenure and qualification. Panel 1 of table 5.4 shows that the mean of directors' age did not vary much over the years, with pooled mean age of 51.2 year. This finding is similar to McKnight and Tomkins (2004), where the mean age of directors in the UK is found to be 53.5 year. However, big difference is found for the range of directors' age in Malaysia and the UK. In this study, the minimum age of directors is 28 while the maximum age of directors is 85. McKnight and Tomkins (2004) reported that the

minimum and maximum age of directors in their sampled firms are 40 and 69 year respectively. This wide range of directors' age in Malaysia may possibly due to high concentrated ownership of the sampled companies. Most directors tend to hold its position as long as possible with retirement from the position being replaced with his or her young siblings. It is also possible to argue that Malaysia has limited pool of expertise to become directors of the companies. This is evident with the large number of interlocking directors, 'old' directors and 'busy' directors in Malaysia.

Directors' tenure averaged between eight to nine years, with a median of seven years for 2004 and 2005 but increased to eight years in 2006. Agency theory propose that longer tenure might reflect greater organisation-specific investment by CEO or chairman, and the board should compensate the CEO or chairman for his or her risky investment (Mangel and Singh 1993).

Table 5.4 Summary statistics of human capital attributes

Panel 1									
Variable	*Year*	*N*	*Mean*	*Median*	*Sd*	*Min*	*Max*	*Skew*	*Kurtosis*
Age	2004	417	50.6	50.3	6.46	32.5	83	0.295	4.411
	2005	417	51.2	51	6.61	32	84	0.332	4.602
	2006	417	51.7	52	6.61	28	85	0.208	4.855
	Pooled	1251	51.2	51	6.57	28	85	0.280	4.606
Tenure	2004	417	8.1	7	5.95	0	36	1.464	5.391
	2005	417	8.6	7	6.12	0	37	1.435	5.374
	2006	417	9.1	8	6.27	0	38	1.354	5.130
	Pooled	1251	8.6	7	6.12	0	38	1.414	5.288

Panel 2: Qualification					
		2004	2005	2006	Pooled
University/Professional Graduate	Freq	298	302	306	906
	Percent	72.3	72.9	73.9	73.1
Non-University Graduate	Freq	114	112	108	334
	Percent	27.7	27.1	26.1	26.9

Panel 2 of table 5.4 shows that on average, more than 72% of the board directors obtained university or professional qualification. There is slight increment over the

three years period among the university and professionally qualified directors. In Malaysian context, very much emphasis is being made on education. This phenomenon is common in developing countries. In Malaysian, a significant amount of national's budget is on education, for instance in 2009's budget, RM 47.7 billion was allocated for education and training, accounting 23% from the total 2009 budget[8].

5.2.5 Firm Performance

Previous studies used different types of firm performance measures. Table 5.5 shows the summary of different types of firm performance measures used in this study. Four different types of performance measurement – return on equity (ROE), return on asset (ROA), Tobin's Q and market based equity (MBE). The first two measurements represent accounting based performance measurement and the later two represent market based performance measurement.

Table 5.5 Summary statistics of corporate performance measurements

Variable	*Year*	*N*	*Mean*	*Median*	*Sd*	*Min*	*Max*	*Skew*	*Kurtosis*
ROE	2004	378	0.00052	0.00065	0.000031	-0.0189	0.036	2.312	59.35
	2005	379	0.00041	0.00060	0.000020	-0.0114	0.023	2.943	58.44
	2006	380	0.00031	0.00057	0.000018	-0.0147	0.010	-3.17	26.05
	Pooled	1137	0.00041	0.00061	0.000024	-0.0189	0.036	1.838	70.75
ROA	2004	381	0.05748	0.05620	0.08303	-0.3267	0.6644	0.370	14.222
	2005	386	0.05259	0.05405	0.07008	-0.1909	0.4526	0.264	7.040
	2006	385	0.04845	0.04966	0.07210	-0.8174	0.3016	-0.817	6.343
	Pooled	1152	0.05284	0.05432	0.10592	-0.3267	0.6644	-2.848	10.591
Tobin Q	2004	343	0.543	0.395	0.6212	0.017	6.329	4.783	36.603
	2005	341	0.536	0.373	0.6015	0.011	5.125	3.744	21.775
	2006	329	0.596	0.395	0.7215	0.024	7.283	4.784	35.428
	Pooled	1013	0.558	0.392	0.6491	0.011	7.283	4.562	33.470
MBE	2004	343	1.059	0.706	1.8993	-6.521	24.66	7.692	85.818
	2005	341	0.930	0.696	1.7895	-5.331	13.98	4.757	48.922
	2006	329	1.074	0.738	1.3059	-1.690	13.60	4.619	35.428
	Pooled	1013	1.020	0.707	1.5055	-6.521	24.66	7.047	87.083

[8] Source: The Malaysian Budget speech by Datuk Seri Abdullah Ahmad Badawi, (former) Prime Minister and Finance Minister.

The findings show a declining pattern of ROE and ROA over the three years period. However, the average ROA of 5.28% is doubled than ROA reported in Dogan and Smyth (2002). The result also indicates that Malaysian firms perform better than firms in other developing countries such as Hong Kong (Cheung et al. 2005) and China (Chen 2006). Cheung et al (2005) and Chen (2006) reported ROA of their sampled firms at 3.2% and 0.7% respectively. However, the dispersion for ROA is high whereby the minimum ROA recorded was – 32.67% to 66.44%.

Table 5.5 also shows that all corporate performance measurements have high level of kurtosis, and on certain years, high level of skewness as well. This will present problem to regression analysis to be carried out later. In order to rectify the problem, the measurements are being transformed to a normal scores data using the same technique as described earlier in section 5.2.1.

5.2.6 Other control variables

This study uses five control variables – firm size, firm risk, firm diversification, industry and location. Table 5.6 and 5.7 shows the summary statistics of the control variables. The average sampled firms market value increases over the three year period from RM618,596,300 in year 2004 to RM684,085,900 in 2006. Table 5.6 shows high dispersion of firm size based on high standard deviation between 2,106,725 and 2,559,849 with the minimum firm value of RM3,400,000 and the maximum of RM37,500,000,000. This dispersion results high kurtosis and skewness

for all three periods. It is therefore necessary to carry out transformation on the variable before including them in regression.

Table 5.6 Summary statistics of other control variables

Variable	*Year*	*N*	*Mean*	*Median*	*Sd*	*Min*	*Max*	*Skew*	*Kurtosis*
Market Value of Firm (in RM'000)	2004	385	618596.3	128560	2106725	5650	29700000	8.852	105.01
	2005	387	647274.8	112060	2329430	5270	34000000	9.467	118.4
	2006	386	684085.9	120330	2559849	3400	37500000	9.698	122.0
	Pooled	1158	650010.4	123335	2337635	3400	37500000	9.509	120.2
Debt ratio (%)	2004	384	6.04	4.46	0.103	0.022	151.8	9.118	113.2
	2005	386	6.14	4.23	0.102	0.000	116.7	7.062	63.50
	2006	385	6.42	4.31	0.142	0.008	240.4	12.45	194.4
	Pooled	1155	6.20	4.36	0.117	0.000	240.4	10.99	174.09
Diversification (number of industry)	2004	414	3.03	3	1.724	1	11	0.751	4.156
	2005	416	3.03	3	1.721	1	11	0.743	4.156
	2006	415	3.01	3	1.700	1	11	0.690	3.895
	Pooled	1245	3.02	3	1.713	1	11	0.729	4.074

Table 5.6 shows that mean debt ratio increases over the three years to record 6.42% in 2006. Cheng et al (2005) reported much higher mean debt to asset ratio (9%) among Hong Kong companies in 1995 to 1998. Haniffa and Hudaib (2006) reported the mean gearing ratio for the year 1996 to 2000 is between 41% and 44% with one exception in 1999 whereby the gearing ratio is recorded at 39%.

Table 5.6 shows that there were little discrepancies with regards to firm diversification in Malaysia. The average and median diversification among the sampled firms is three, suggesting that the level of diversification in Malaysia is not particularly high compared to the developed countries such as the US or the UK. However, the maximum industry that the sampled firms diversified is eleven. Based on this finding, it is expected that there will be less impact of the diversification on the level of directors' remuneration.

Table 5.7 (panel 1) shows that executive directors in construction and IPC firms receive the highest pay, both in terms of total remuneration and total cash remuneration. The average director's remuneration in construction and IPC firms is also reported highest than any other industry. Executive directors in industrial product recorded the lowest average pay among all directors. This support the earlier studies (for instance Merhebi 2006 and Ewers 2002) that argue firm size and industry act as differentiating factor in labour market. The finding also consistent with Deck (1988) that reported directors' remuneration varies from industry to industry.

In terms of location, more than half of the sampled firms are situated in the Klang Valley. Table 5.7 (panel 2) shows almost 66% of the firms' head office are located in the Klang Valley while the remaining 34% are located all over the place in Malaysia. The result indicates that the Klang Valley area is still the favourite location to companies due to its strategic and well established business area. On average, total remuneration per director in companies located in Klang Valley is RM236,503 per year, much higher than their counterparts in other areas in the country, RM178,575 per year. This reflects the different living cost in the Klang Valley area as compared to other location in the country.

5.3 Summary and Conclusion

This chapter reported the descriptive findings of the sampled firms in Malaysia over the period of 2004 to 2006. 424 firms were included in the sample, representing approximately 50% companies from each industry. This study only includes non-financial firms listed in Bursa Malaysia Berhad.

Table 5.7. Summary statisctics of industry and location

Panel 1						
Type of Industry	*Freq*	*%*	*Mean Total Cash Remuneration*	*Mean Total Remuneration*	*Mean cash remuneration per director*	*Mean total remuneration per director*
Consumer Product	183	14.69	RM1,282,457	RM1,714,579	RM171,207	RM208,078
Industrial Product	406	32.61	RM1,124. 970	RM1,383,783	RM151,051	RM184,966
Trading and services / Technology	311	24.97	RM1,385,194	RM1,855,087	RM170,146	RM231,413
Construction / IPC	87	6.98	RM2,331,510	RM2,714,220	RM248,342	RM288,702
Property/ Hotel/ Plantation / Mining	258	20.72	RM1,361,817	RM1,728,673	RM184,005	RM230,876
Panel 2						
Location						
Klang Valley	820	65.9	RM1,500,049	RM1,872,219	RM189,410	RM236503
Other Place	425	34.1	RM1,050,290	RM1,350,793	RM139,613	RM178,575

Descriptive statistics provides information on the nature of the data and the background of the sample data. Based on the descriptive analysis, the reliability of the data can be improved in certain ways. For instance, errors or mistakes can be minimised by looking at the extreme value of the variables. In case where a variable is not normally distributed, certain kinds of data transformation are needed. Traditional transformation such as log or square root is adopted in order to improve the distribution of the variable. By improving the variables at the initial analysis, the subsequent multivariate analysis would become much reliable, thus contribute towards the final conclusion.

The descriptive analysis also provides avenue for comparison between firms in other countries as well as changes over the time. For instance, firm performance such as ROA was showing a decreasing trend over the three year period and high ownership among directors is comparable to other Asian countries.

The following chapter will present the results of multivariate analysis.

CHAPTER SIX

MULTIVARIATE ANALYSIS RESULTS

6.1 Introduction

Chapter six reports the results of multivariate analysis conducted in this study. The two main analyses are multiple regression and panel data analysis. To recall, this thesis aims to determine the factors that affect executive directors' remuneration in Malaysia. The results would determine the acceptance or rejection of hypotheses developed earlier in chapter three. Discussions on the results obtained are presented concurrently within this chapter, with reference made to the existing literature and Malaysian environment context.

The results indicate that most of the three main variables used in this thesis are significant. Corporate governance variables measured by board size, CEO and chairman duality roles, proportion of independent directors in board, proportion of non executive directors, proportion of interlock directors and block holder ownership are significantly related to directors' remuneration. Only directors' tenure was found significantly related to directors' remuneration among the human capital attributes. Firm performance is also found to be significant in one of the models. Other control variables used in this thesis are also significantly affect directors' remuneration. In particular, firm size, leverage and firms diversification are all found to be positively related to directors' remuneration.

This chapter is divided into seven sections. Section 6.2 presents the results of multiple regression analysis for total cash remuneration model. Section 6.3 presents the

regression diagnostics results for the model. Section 6.4 presents the other robustness tests result, followed by panel data analysis results in Section 6.5. Finally, discussion and summary of findings are presented in Section 6.6.

6.2 Executive Directors' Remuneration Model

This model was run using multiple regression in order to test the hypotheses related to the variables identified earlier in Chapter 3 of this study. In the first model, total cash remuneration is the proxy used to measure executive directors' remuneration. To recall, there are fifteen hypotheses to be tested in this study – eleven hypotheses are related to corporate governance mechanisms, three hypotheses related to human capital attributes and one hypothesis on firm performance. These hypotheses are summarised in Table 3.1 in chapter 3.

In order to test the hypotheses, four models were examined. Panel 2 in Table 6.1 shows that F-ratios values for all four models examined are significant at 1% level. The first model includes only traditional variables used by earlier studies, namely firm performance, log of firm's market value, log of leverage, type of industry, diversification, location and year dummies as independent variables. This model however only explains 16.65% of variation in directors' remuneration level in Malaysia.

The second model includes directors' age, tenure and qualification as additional independent variables. The explanatory power of this second model improves to 19.95%. The third model incorporates corporate governance variables as additional

independent variables. The results show further improvement in explanatory power of directors' remuneration level. In comparison with the second model, the adjusted r square improved from 0.1995 to 0.4359. The last model takes into account the interaction terms between corporate governance variables and firm performance. The adjusted r square again rose to 0.4443. Panel 2 in Table 6.1 also shows that the F change ratios from one model to another are all significant at 1% level except the last model which is significant at 5% level. This indicates that the increase in r squared is not merely caused by additional number of variables added to the later models but significantly improve the variation explanation power of the model. Hence, model 4 is the best model and it will be used for further discussion on each of the explanatory variables in the following sections. Note that the possible issues such as outliers, normality of residuals, heteroskasdasticity and multicollinearity has been addressed and will be explained in details in section 6.3.

In order to test the robustness of the model, the same steps are repeated by replacing the proxy for executive directors' remuneration by total remuneration. The results are shown in Table 6.2. For comparison purpose, the result of each variable from both models is summarised in Table 6.3.

6.2.1. Corporate Governance Variables

This thesis looks at two main corporate governance variables – board characteristics and ownership structure. The board characteristics are further divided into board size and activity, board independence, board composition and board leadership. Each characteristic is discussed separately below followed by two types of ownership structure – directors' shareholdings and outside block shareholdings.

Table 6.1. Multiple regression results when using total cash remuneration as dependent variable

PANEL 1

	Model 1			*Model 2*			*Model 3*			*Model 4*		
	Coef	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***
Constant	-20.17	-4.30	0.000**	-18.74	-3.25	0.001**	-20.73	-2.12	0.034*	-20.77	-2.11	0.035*
Performance	0.050	0.10	0.924	0.152	0.29	0.769	-0.081	-0.14	0.888	1.536	1.75	0.080#
Ln_mktvalue	4.874	12.55	0.000**	4.743	12.26	0.000**	3.753	7.8	0.000**	3.619	7.27	0.000**
Ln_leverage	2.067	4.43	0.000**	2.003	4.37	0.000**	1.278	2.41	0.016*	0.954	1.76	0.079#
Industry2	-0.400	-0.26	0.794	-0.185	-0.12	0.902	2.687	1.43	0.152	2.701	1.44	0.151
Industry3	-4.107	-2.46	0.014*	-3.807	-2.31	0.021*	-1.660	-0.81	0.417	-1.153	-0.54	0.590
Industry4	6.220	2.65	0.008**	5.330	2.30	0.021*	4.493	1.65	0.099#	4.535	1.64	0.101
Industry5	-4.653	-2.73	0.006**	-4.084	-2.42	0.016*	2.167	1.04	0.298	2.439	1.16	0.245
Location2	0.649	0.59	0.554	1.141	1.04	0.299	0.923	0.69	0.488	0.889	0.66	0.509
Yr_dummy2	0.949	0.78	0.435	0.808	0.68	0.499	0.829	0.61	0.545	0.613	0.45	0.654
Yr_dummy3	0.827	0.68	0.496	0.363	0.30	0.762	0.558	0.64	0.521	0.559	0.40	0.687
Diversify	0.569	1.90	0.058#	0.470	1.59	0.112	-0.179	1.54	0.124	0.744	2.04	0.042*
Age	-	-	-	-0.220	-2.69	0.007**	2.609	-1.76	0.078#	-0.147	-1.44	0.150
Sqrt_tenure	-	-	-	3.823	7.08	0.000**	0.705	3.66	0.000**	2.480	3.49	0.001**
Qualify	-	-	-	0.8334	0.72	0.437	16.69	0.48	0.634	0.416	0.28	0.781
Sqrt_boardsize	-	-	-	-	-	-	4.089	9.01	0.000**	16.82	9.02	0.000**
Ceo_dual1	-	-	-	-	-	-	-1.127	2.01	0.045*	3.738	1.80	0.073#
Ln_bmeeting	-	-	-	-	-	-	15.36	-0.58	0.563	-1.346	-0.69	0.493
Indpt_board	-	-	-	-	-	-	-9.082	2.51	0.012*	17.209	2.74	0.006**
Indpt_audit	-	-	-	-	-	-	-0.775	-1.45	0.148	-9.864	-1.56	0.119
Indpt_rem	-	-	-	-	-	-	-45.93	-0.23	0.815	-1.864	-0.56	0.574
P_nexecdir	-	-	-	-	-	-	10.936	-11.02	0.000**	-46.25	-10.84	0.000**
P_interlock	-	-	-	-	-	-	3.058	1.98	0.049*	11.762	1.76	0.078#
P_old	-	-	-	-	-	-	3.0352	-0.70	0.482	-5.120	-1.17	0.241
P_busy	-	-	-	-	-	-	-0.133	1.14	0.255	4.3475	1.58	0.115

PANEL 1

	Model 1			*Model 2*			*Model 3*			*Model 4*		
	Coef	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***
Indirectshare	-	-	-	-	-	-	-0.057	-3.64	0.000**	-0.138	-3.76	0.000**
Directshare	-	-	-	-	-	-	-2.033	-1.07	0.285	-0.056	-1.04	0.299
Ln_blockshare	-	-	-	-	-	-	-20.73	-2.30	0.022*	-2.117	-2.39	0.017*
Perf x boardsize	-	-	-	-	-	-	-	-	-	2.8109	1.17	0.243
Perf x ceodual	-	-	-	-	-	-	-	-	-	-0.702	-0.29	0.773
Perf x bmeeting	-	-	-	-	-	-	-	-	-	4.1460	1.95	0.051#
Perf x indptboard	-	-	-	-	-	-	-	-	-	6.7602	1.24	0.214
Perf x pnexecdir	-	-	-	-	-	-	-	-	-	-6.940	-1.28	0.201
Perf x pinterlock	-	-	-	-	-	-	-	-	-	-9.183	-1.24	0.217
Perf x pold	-	-	-	-	-	-	-	-	-	7.1953	1.86	0.063#
Perf x pbusy	-	-	-	-	-	-	-	-	-	5.4200	1.78	0.075#
Perf x indirectshare	-	-	-	-	-	-	-	-	-	0.1010	2.17	0.031*
Perf x directshare	-	-	-	-	-	-	-	-	-	0.0685	1.07	0.286
Perf x blockshare	-	-	-	-	-	-	-	-	-	1.1678	0.92	0.357

PANEL 2

	Model 1	*Model 2*	*Model 3*	*Model 4*
F ratio	21.63	21.14	18.43	13.82
Sig F	0.000**	0.000**	0.000**	0.000**
R-squared	0.1746	0.2094	0.4609	0.4790
Adj R-squared	0.1665	0.1995	0.4359	0.4443
R-squared change	0.186	0.035	0.237	0.024
F change	12.384	8.917	19.606	2.167
Sig. F change	0.000**	0.000**	0.000**	0.012*

** significant at 1% level * significant at 5% level # significant at 10% level

Table 6.2. Multiple regression results when using total remuneration as dependent variable

PANEL 1												
	Model 1			*Model 2*			*Model 3*			*Model 4*		
	Coef	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***
Constant	4.5634	18.13	0.000	4.7207	15.44	0.000	4.3541	8.24	0.000*	4.3385	8.20	0.000**
Performance	-0.008	-0.28	0.776	-0.002	-0.11	0.915	-0.063	-2.03	0.043*	0.0488	1.04	0.300
Ln_mktvalue	0.2362	11.33	0.000**	0.2297	11.21	0.000**	0.1840	7.07	0.000**	0.1649	6.17	0.000**
Ln_leverage	0.1318	5.26	0.000**	0.128	5.28	0.000**	0.0802	2.80	0.005**	0.0626	2.15	0.032*
Industry2	-0.051	-0.62	0.533	-0.028	-0.35	0.725	0.0548	0.54	0.588	0.0452	0.45	0.655
Industry3	-0.177	-1.98	0.048*	-0.158	-1.82	0.070#	0.0783	0.71	0.479	0.1036	0.93	0.352
Industry4	0.2377	1.88	0.060#	0.1866	1.52	0.128	0.0482	0.33	0.742	0.0900	0.61	0.544
Industry5	-0.323	-3.54	0.000**	-0.283	-3.17	0.002**	0.0098	0.09	0.930	0.0137	0.12	0.903
Location2	-0.034	-0.59	0.557	0.0056	0.10	0.923	-0.020	-0.29	0.774	-0.015	-0.22	0.826
Yr_dummy2	0.0836	1.28	0.200	0.0834	1.32	0.188	0.0541	0.73	0.465	0.0450	0.61	0.541
Yr_dummy3	0.1227	1.88	0.060#	0.0968	1.52	0.128	0.0683	0.91	0.363	0.0527	0.71	0.479
Diversify	0.0256	1.59	0.112	0.0226	1.44	0.150	0.0066	0.34	0.735	0.0193	0.99	0.322
Age	-	-	-	-0.014	-3.35	0.001**	-0.017	-3.27	0.001**	-0.016	-2.95	0.003**
Sqrt_tenure	-	-	-	0.2243	7.85	0.000**	0.1861	4.84	0.000**	0.1827	4.78	0.000**
Qualify	-	-	-	0.0107	0.17	0.862	0.0464	0.58	0.563	0.0437	0.54	0.586
Sqrt_boardsize	-	-	-	-	-	-	0.8566	8.55	0.000**	0.8586	8.57	0.000**
Ceo_dual1	-	-	-	-	-	-	0.2159	1.96	0.050*	0.1588	1.42	0.156
Ln_bmeeting	-	-	-	-	-	-	0.0875	0.83	0.406	0.0534	0.51	0.612
Indpt_board	-	-	-	-	-	-	0.3478	1.05	0.294	0.4483	1.33	0.184
Indpt_audit	-	-	-	-	-	-	-0.286	-0.84	0.399	-0.226	-0.67	0.505
Indpt_rem	-	-	-	-	-	-	-0.068	-0.38	0.701	-0.094	-0.53	0.596
P_nexecdir	-	-	-	-	-	-	-2.519	-11.19	0.000**	-2.404	-10.49	0.000**
P_interlock	-	-	-	-	-	-	0.5149	1.72	0.086#	0.4572	1.28	0.202

PANEL 1												
	Model 1			*Model 2*			*Model 3*			*Model 4*		
	Coef	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***	***Coef***	***t***	***Sig***
P_old	-	-	-	-	-	-	0.1983	0.84	0.399	0.0930	0.40	0.692
P_busy	-	-	-	-	-	-	-0.081	-0.56	0.572	-0.018	-0.13	0.900
Indirectshare	-	-	-	-	-	-	-0.001	-0.90	0.370	-0.002	-1.04	0.301
Directshare	-	-	-	-	-	-	0.0029	1.000	0.318	0.0030	1.06	0.292
Ln_blockshare	-	-	-	-	-	-	-0.008	-0.17	0.866	-0.004	-0.10	0.923
Perf x boardsize	-	-	-	-	-	-	-	-	-	0.2272	1.76	0.079#
Perf x ceodual	-	-	-	-	-	-	-	-	-	0.0545	0.42	0.677
Perf x bmeeting	-	-	-	-	-	-	-	-	-	0.1652	1.45	0.148
Perf x indptboard	-	-	-	-	-	-	-	-	-	0.3175	1.09	0.277
Perf x pnexecdir	-	-	-	-	-	-	-	-	-	-0.626	-2.15	0.032*
Perf x pinterlock	-	-	-	-	-	-	-	-	-	-0.311	-0.78	0.435
Perf x pold	-	-	-	-	-	-	-	-	-	0.5939	2.86	0.004**
Perf x pbusy	-	-	-	-	-	-	-	-	-	-0.028	-0.18	0.861
Perf x indirectshare	-	-	-	-	-	-	-	-	-	0.0041	1.68	0.094#
Perf x directshare	-	-	-	-	-	-	-	-	-	0.0038	1.11	0.267
Perf x blockshare	-	-	-	-	-	-	-	-	-	0.0178	0.26	0.793

PANEL 2				
	Model 1	*Model 2*	*Model 3*	*Model 4*
F ratio	17.64	19.07	17.16	13.27
Sig F	0.000**	0.000**	0.000**	0.000**
R-squared	0.1471	0.1929	0.4678	0.4689
Adj R-squared	0.1387	0.1828	0.4324	0.4335
R-squared change	0.130	0.068	0.245	0.026
F change	8.115	16.875	19.712	2.293
Sig. F change	0.000**	0.000**	0.000**	0.007**

** significant at 1% level * significant at 5% level # significant at 10% level

Table 6.3 Summary of results of total cash remuneration model and total remuneration model

Variable		Total cash remuneration model					Total remuneration model			
	Result	Hypothesis	Predict sign	Actual sign	Decision	Result	Hypothesis	Predict sign	Actual Sign	Decision
Sqrt_boardsize	Significant at 1%	1a	?	+	*Support*	Significant at 1%	1a	?	+	*Support*
Ln_bmeeting	Not significant	2a	?	-	Reject	Not significant	2a	?	+	Reject
Indpt_board	Significant at 1%	3a	-	+	Reject	Not significant	3a	-	+	Reject
P_nexecdir	Significant at 1%	4a	?	-	*Support*	Significant at 1%	4a	?	-	*Support*
P_interlock	Significant at 10%	5a	+	+	*Support*	Not significant	5a	+	+	Reject
P_old	Not significant	6a	+	-	Reject	Not significant	6a	+	+	Reject
P_busy	Not significant	7a	?	+	Reject	Not significant	7a	?	-	Reject
Ceo_dual1	Significant at 10%	8a	+	+	*Support*	Not significant	8a	+	+	Reject
Directshare	Not significant	9a	-	-	Reject	Not significant	9a	-	+	Reject
Indirectshare	Significant at 1%	10a	-	-	*Support*	Not significant	10a	-	-	Reject
Ln_blockshare	Significant at 5%	11a	-	-	*Support*	Not significant	11a	-	-	Reject
Age	Not significant	12	?	-	Reject	Significant at 1%	12	?	-	*Support*
Sqrt_tenure	Significant at 1%	13	?	+	*Support*	Significant at 1%	13	?	+	*Support*
Qualify	Not significant	14	?	+	Reject	Not significant	14	?	+	Reject
Performance	Significant at 10%	15	+	+	*Support*	Not significant	15	+	+	Reject

Variable		Total cash remuneration model					Total remuneration model			
	Result	**Hypothesis**	**Predict sign**	**Actual sign**	**Decision**	**Result**	**Hypothesis**	**Predict sign**	**Actual Sign**	**Decision**
Perf x boardsize	Not significant	1b	?	+	Reject	Significant at 10%	1b	?	+	*Support*
Perf x bmeeting	Significant at 10%	2b	?	+	*Support*	Not significant	2b	?	+	Reject
Perf x indptboard	Not significant	3b	+	+	Reject	Not significant	3b	+	+	Reject
Perf x pnexecdir	Not significant	4b	?	-	Reject	Significant at 5%	4b	?	-	*Support*
Perf x pinterlock	Not significant	5b	-	-	Reject	Not significant	5b	-	-	Reject
Perf x pold	Significant at 10%	6b	-	+	*Support*	Significant at 1%	6b	-	+	*Support*
Perf x pbusy	Significant at 10%	7b	?	+	*Support*	Not significant	7b	?	-	Reject
Perf x ceodual	Not significant	8b	-	-	Reject	Not significant	8b	-	+	Reject
Perf x directshare	Not significant	9b	+	+	Reject	Not significant	9b	+	+	Reject
Perf x indirectshare	Significant at 5%	10b	+	+	*Support*	Significant at 10%	10b	+	+	*Support*
Perf x blockshare	Not significant	11b	+	+	Reject	Not significant	11b	+	+	Reject
Ln_mktvalue	Significant at 1%	N/A	N/A	N/A	N/A	Significant at 1%	N/A	N/A	N/A	N/A
Ln_leverage	Significant at 10%	N/A	N/A	N/A	N/A	Significant at 5%	N/A	N/A	N/A	N/A
Industry2	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Industry3	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Industry4	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A

Variable		Total cash remuneration model						Total remuneration model		
	Result	Hypothesis	Predict sign	Actual sign	Decision	Result	Hypothesis	Predict sign	Actual Sign	Decision
Industry5	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Location2	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Yr_dummy2	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Yr_dummy3	Not significant	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A
Diversify	Significant at 5%	N/A	N/A	N/A	N/A	Not significant	N/A	N/A	N/A	N/A

Board size and activities

Panel 1 in Table 6.1 shows that the coefficient and t statistics of square root of board size in model 4 is significant at 1% level. This result suggests a positive relationship between executive directors' remuneration and board size hence supports hypothesis 1a. The result is consistent when total remuneration was used instead of total cash remuneration (refer to Table 6.2 Panel 1). This finding is consistent with agency theory and earlier studies such as Core et al (1999), Randoy and Nielsen (2002) and Abdullah (2006). It implies that the current board size in the sampled firms is effective to monitor the board decisions on executive directors' remuneration. On average, the sampled firms have seven board members (refer to Table 5.2). The MCCG did not specify the exact number of board members. The code leaves the companies to decide the appropriate number of board members that they think will work effectively in the board.

However, the result does not support the relationship between the frequency of board meeting and the level of directors' remuneration. Both total cash remuneration model as well as total remuneration model reported insignificant effect of the variable (refer to Table 6.3). Thus, hypothesis 2a is not supported. It implies that frequency of board meeting is not considered a way to increase board effectiveness, contradicting with earlier studies (for instance Davila & Penalva 2006; Adams 2000; Vafeas 1999) and the MCCG' recommendation for the boards to meet regularly to discharge their duties and responsibilities. There are two reasons to explain this result. First, the frequency of meetings will not increase the monitoring effort by board if the board itself is not effective. A board becomes ineffective if the board culture discourages conflict, the

CEO determines the agenda and information given in the board, poor attendance of board members or if the CEO and chairman is the same person (Jensen 1993). If the board is effective, then only the frequency of board meetings will influence the board monitoring effort. Second, the details of meetings' agenda may also contribute towards making the board meeting ineffective way of monitoring the board's decision. However, such information is not publicly available thus cannot be justified empirically.

Board Independence

This thesis examines board independence at three levels – proportion of independent directors in the board as a whole, proportion of independent directors in audit committee and proportion of independent directors in remuneration committee. For total cash remuneration model, the result shows that only t statistics and coefficient of proportion of independent directors in the board as a whole is statistically significant at 1% level. However, the direction of the result suggests that the proportion of independent directors in the board is positively related to directors' remuneration, hence leads to rejection of hypothesis 3a. In total remuneration model, the result shows none of the independence variable tested is significant. Although the coefficient is not significant, the direction of the coefficient is similar to the coefficient in total cash remuneration model. Thus, the result is consistent. Note however both models show a negative relationship between directors' remuneration and proportion of independent directors in audit and remuneration committee, although all results are not significant. Similar results were found when each variable

is included separately in the regression. The results is consistent with Chen (2006) but contradict with Abdullah (2006) and Conyon and Peck (1998).

This finding suggests the lack of effectiveness of independent directors in the board. As independent directors are selected and recruited by chairman or CEOs, it is most likely those recruited are among people that will go along with him or her. In addition, the title and the prestige of the independent directors are among the primary consideration in the selection process (Mace 1986). Thus, based on the result above, the independent directors in the sampled companies may not ready to use their powers to monitor and discipline managers, resulting increase in directors' remuneration.

Board composition

This study looks at four aspects of board composition – proportion of non executive directors in the board, proportion of interlocking directors, proportion of 'old' non executive directors and proportion of 'busy' non executive directors. Panel 1 in Table 6.1 shows two out of four hypotheses are supported in total cash remuneration model. The proportion of non executive directors in the board is found negatively related to directors' remuneration, thus supporting hypothesis 4a. It was also found that the proportion of interlocking directors is positively related to directors' remuneration at 10% level, thus supports hypothesis 5a. Two other variables – proportion of old and busy directors are found not significantly related to directors' remuneration. In the total remuneration model, proportion of interlocked directors is no longer significance (Table 6.2 Panel 1). The results of other variables are consistent.

The results suggest that the lack of non executive directors in a board will lead to higher level of executive directors' remuneration. This fits well with the agency theory and previous studies such as Rosenstein and Wyatt (1990). The result implies that the presence of non executive directors in the board is effective and they managed to monitor the board through their professional and independent advice to the board. As a result, board decisions, in particular on executive directors' remuneration are monitored by the presence of non executive directors.

The above result also suggests that high number of interlocking directors in a board will lead to high level of executive directors' remuneration. The result is consistent with Core et al. (1999) and Hallock (1997). Chen (2002) argued one possible explanation for this is that there is a quid pro quo between such directors and the executive directors. It was argued that interlocked directors may be inclined to support CEO and other executive members in the hope to get the same support in their own board meetings. When executive members possess more direct influence over the non executive directors, it will affect their effectiveness and involvement (Long, Dulewicz & Gay 2005). In other words, it was found that interlocked directors are not likely to be independent, including in making decisions of executive directors' remuneration.

Hypotheses 6a and 7a were not supported. The less effective non executive directors measured by 'old' and 'busy' non executive directors are found not significantly related to directors' remuneration. The findings suggest that age and multiple directorships hold by a non executive director does not affect executive directors' remuneration. Contrary to the findings reported by Core et al. (1999), it implies that less effective directors are not being penalised by the board in terms of remuneration. However, this findings support Ferris et al. (2003) whereby they found no evidence

that multiple directors shirk their responsibility to serve on board committees. Hence, 'old' and 'busy' directors may not be appropriate measure of less effective non executive directors. Other measures such as level of expertise on the business area may be more accurate to measure the level of effectiveness of non executive directors. Future studies may want to incorporate these measures.

Board leadership

The t statistics and coefficient of duality role of CEO and chairman is found to be significant at 10% in total cash remuneration model. Hence, hypothesis 8a is accepted. This suggests that when CEO and chairman is the same person, it will positively affect the level of directors' remuneration. The finding is consistent with other studies such as Kanagaretnam et. al (2008), Dogan and Smyth (2002) and Chen (2006). This finding supports the notion that when the CEO holds the position as chairman of the board, it will have influence on the board decision making, in particular on the remuneration package for the directors. Jensen (1993) argued CEO-chairman duality gives the CEO too much power over the decision making process and scope to pursue personal interests at the expense of shareholders' interests. Chen (2006) argues the CEO-chairman duality leads to failure of internal control systems because the board cannot effectively perform its key control functions. This will result higher chance of incurring executive entrenchment by overpaying themselves and not linking their pay to firm performance.

However, the results became insignificant when total remuneration is used as the dependant variable. This is consistent with few studies conducted earlier such as Conyon (1997) and Conyon and Leech (1994) which claim no evidence to support the

association between CEO-chairman duality and directors' remuneration. It implies that the CEO-chairman duality plays little role in mitigating agency problems associated with directors remuneration settings.

Directors' Shareholdings

This thesis distinguished the directors' shareholdings into two groups – direct shareholdings and indirect shareholdings. The result for the total cash remuneration model shows there is a weak negative relationship between direct directors' shareholding and directors' remuneration but strong negative relationship between indirect directors' ownership and directors' remuneration. In Table 6.1, the t-statistics and coefficient of proportion of indirect directors' ownership is significant at 1% level. Thus only hypothesis 10a is supported. Proportion of directors' direct ownership is found not to be significant, thus hypothesis 9a is not supported. The findings are consistent with Holderness and Sheehan (1988) and Mehran (1995) but contradict with Cheung et. al (2005), Chen (2006) and Randy and Nielsen (2002). Cheung et al. (2005) reported that a strong positive relationship between percentage of directors' ownership with their cash emoluments received. However, they observed that this relationship is mainly among the CEO or chairman that own low level of ownership in their respective firms.

Mehran (1995) explains that the negative relationship between directors' ownership and directors' remuneration is due to less importance of cash remuneration for directors holdings significant equity stakes in the firm since the majority of their income would come from their equity stakes. In my case, the percentage of ownership

based on directors' indirect ownership (i.e. family) provide significant impact on total directors' ownership. However, in total remuneration model, both of the variables are no longer significance at 5% level. This further confirms Mehran's (1995) argument that cash remuneration must be used rather than total remuneration when linking between directors' ownership and directors' remuneration.

Outside Blockholders

Panel 1 in Table 6.1 also shows that hypothesis 11a is supported. It is found that block holders' shareholding is negatively related to directors' remuneration and significant at 5% level. This support the argument that the higher the percentage of block holders, the lower the directors' remuneration. This is due to the pressure made by the block holders to ensure directors show good performance in order to earn higher income. In Malaysia, the block holders are normally institutional firms, mostly government linked companies. Thus, they have more reasons to be responsible to their shareholders and people in general. It is their fiduciary duties to monitor the managerial opportunistic behaviour, including level of executive directors' remuneration. Besides, institutional investors have the resources to do so.

This result further supports the existing evidence on block holder ownership and directors' remuneration. For example, Yeo et al. (2002) found similar result when investigating the impact of block holder ownership on directors' pay among Singaporean firms. However, the result changed in the total remuneration model whereby block holder ownership is not significantly related to the directors' remuneration. Again, as explained earlier, this result may be due to inclusion of other

types of remuneration that is not sensitive to directors' performance. Dogan and Smyth (2002) also found insignificant result due to the use of total remuneration as their measure of directors' remuneration.

6.2.2. Human Capital Attributes

This thesis examines three types of human capital attributes – age, tenure and qualification. The result shows that only directors' tenure is significantly related to directors' remuneration for both models. The t statistics and coefficient of square root of tenure are significant at 1% level, thus making hypothesis 13 valid. However, directors' age is found to be significantly related to directors' total remuneration but not to directors' cash remuneration. Hence, hypothesis 12 is partially supported by one model. Directors' qualification is not significantly related to any of the models. Hence, hypothesis 14 is rejected.

The findings are interesting because earlier on, total cash remuneration model suggests many corporate governance variables to be associated with directors' remuneration. However, total remuneration model better explains better the role of human capital attributes towards directors' remuneration. To recall, total remuneration includes payment in the form of gratuity and pension fund scheme. These two types of remuneration are clearly associated with the directors' age and tenure of the firm. Pension fund scheme and gratuity do increase with the length of tenure and age of the directors. Hence, this study will use total remuneration model in order to decide which human capital attributes are related to directors' remuneration.

According to human capital theory, age and tenure reflect experience and expertise of a person. Senior directors would have undergone various training and experience that enhances their productivity, knowledge and skills (Becker 1994). Directors who served longer also gain enough respect and confidence over the board members that it may influence their decisions. This study supports the aforementioned argument. Other previous studies such as Ingham and Thomson (1995) and Hogan and McPheters (1980) reported the similar findings.

The last human capital attribute considered in this thesis is the level of qualification of the directors. It is found that no significant evidence to link between directors' remuneration and directors' qualification. This indicates that the level of directors' remuneration is no longer related to their qualifications. The relationship would probably hold when explaining the lower level of jobs in business, such as junior or senior management level. At the directors' level, experience and skills is proven more important than qualification. It is also found around 73% of directors in the sampled firms obtained university or professional qualifications (refer to Table 5.4). This may explain why the relationship between directors' remuneration and qualifications is not significant.

6.2.3 Corporate Performance

There is another conflicting result between total cash remuneration and total remuneration model on the association between corporate performance and directors' remuneration. Corporate performance is measured using performance index generated by factor analysis (described in chapter 4). It is found that corporate performance has a positive relationship with directors' remuneration in total cash remuneration model.

Table 6.1 shows that the additional insertion of interaction variables in model 4 does not affect the significance level of corporate performance variable. This finding is consistent with the agency theory which states that directors should be compensated based on the firm's performance.

In total remuneration model, firm performance was initially found to be significantly related to directors' remuneration at 5% level (refer to Panel 1 table 6.2). However, after including the interactions between performance and corporate governance variables, it is found that performance is no longer has significant influence over directors' remuneration. Based on this, the result does not support the agency theory. This finding is consistent with Ozkan (2007) and Gregg et al. (2004). Previous studies using Malaysian sample also found no evidence to link between performance and directors' remuneration (Abdullah 2006; Hassan et. al 2003). In fact, Nurani and Sakan (2003) concluded in their study that Malaysian companies are significantly far-off from linking directors' remuneration with their performance. Their conclusion was made based on interviews survey among several human resource experts in Malaysian companies. In order to test the robustness of the result, performance index is replaced by each of individual performance measurement such as ROA, ROE, ROS, Tobin's Q and MBE. The results remain consistent. Alternatively, one year lag of ROA and ROE were used to represent performance. Again, the results remain insignificant. Hence hypothesis 15 is not supported.

However, the inconsistency of results among previous studies is well acknowledged. Tosi et al. (2000) explained the inconsistent evidence of the association between firm performance and directors' remuneration is due to difference in variable

measurements, statistical techniques, data sets and the way constructs are studied. This study seems to support this argument. In my case, only one measurement variable (that is remuneration) is changed while the statistical techniques, data sets and the way construct are studied remain the same.

6.2.4 Other control variables

Firm size is significantly related to total cash directors' remuneration and total directors' remuneration model at 1% level. This is consistent with most of the previous studies (for instance Jensen and Murphy 1990; Tosi et al. 2001; Greg et al. 1993; Chen 2006). The result suggests directors' managing big firms should be rewarded higher than directors in small firms.

Another control variable used in this study is firm risk, measured by firms' leverage. Directors managing risky companies should be rewarded higher in order to compensate for the risk that they have to take. The result shows that leverage significantly affects directors' remuneration at 10% and 5% level for total cash remuneration and total remuneration model respectively. This is consistent with other previous studies such as Smith and Watts (1992), Core (1997) and Miller et al. (2002).

Firm diversification will affect the complexity of the tasks and role of the directors. Directors in a diversified firms needs to make strategic allocation decisions based on in depth understanding of different market, competitors and environment. Thus, firm diversification should have an effect on the directors' remuneration. The results in Table 6.1 show that firm diversification is significantly related to directors'

remuneration at 5% level. This is consistent with previous studies such as Finkelstein and Hambrick (1989) and Riahi-Belkaoui and Pavlik (1993).

The study also control for industrial effects. The industrial effect is significant in the Model 1 and 2 (refer to Table 6.1) but becomes no longer significant when corporate governance variables and interaction terms are included in the model. This indicates that with the presence of corporate governance mechanisms, industrial effects no longer significant towards the determination of directors' remuneration. Similarly, there are very little effects of location of the firms and year dummies on directors' remuneration.

6.2.5 Interaction Terms

Interactions terms are added in model 4 to take into account the fact that certain corporate governance variables increase the pay performance sensitivity. The results are related to Hypotheses 1b, 2b, 3b, 4b, 5b, 6b, 7b, 8b, 9b 10b and 11b. All of these hypotheses relate to test the existence of corporate governance mechanisms enhance pay-performance sensitivity. In total cash remuneration model, it is found that adding these interactions increase the adjusted r squared from 0.4359 to 0.4443. The interaction term between performance and percentage of indirect directors' shareholdings shows a significant impact at 5% level. The other three interactions term – between performance and frequency of board meeting, proportion of old non executive directors and proportion of busy non executive directors are all have a significant effect on directors' remuneration at 10%. Other interactions are found to have no significant impact on directors' remuneration. Hence, hypothesis 2b, 6b, 7b

and 10b are supported while hypothesis 1b, 3b, 4b, 5b, 8b, 9b, 11b are rejected (refer to Table 6.3).

In total remuneration model, adjusted r square rose from 0.4324 to 0.4335 due to insertion of the interaction variables. Four interactions are found to be statistically significant. Two out of four significant interactions are similar to the previous model – interactions between performance and proportion of old directors and interaction between performance and directors' indirect ownership, both significant at 1% and 10% respectively. Two other interactions found to be significantly affecting directors' remuneration are interaction terms between performance and board size and interaction term between performance and proportion of non executive directors. Other interaction terms are not significantly related to directors' remuneration. Hence, hypothesis 1b, 4b, 6b and 10b are supported while hypothesis 2b, 3b, 5b, 7b, 8b, 9b and 11b are rejected (refer to Table 6.3).

To summarise, the results show that large number of old directors would positively leads to pay performance sensitivity. This finding is interesting because it is expected that the old non executive directors would be ineffective member of the board, thus enable the other executive members to influence them and leads to less pay-performance sensitivity (Core et al 1999). The contradicting findings suggest that old directors are effective enough to affect decisions in the board. This may be due to their vast experience, knowledge and skills. Alternatively, old directors may not easily influenced by the CEO or other executive directors.

Second, high percentage of indirect directors' ownership leads to pay performance sensitivity. This is consistent with the earlier argument on the negative relationship between directors' indirect ownership and directors' remuneration. The result indicates that in Malaysia, directors' family who owns shares in the company pay less importance on the cash remuneration of the directors but rather focus to earn their income through their equity stakes (Mehran 1995). This is good news to other investors, particularly minority shareholders because to a certain extent, the evidence found in this study suggests that family members of the directors have the same interest as them.

Next, the study found that the addition of board size and frequency of board meeting leads to higher pay-performance sensitivity. This indicates that although frequency of board meeting did not directly relate to directors' level of pay, it has a positive impact on pay performance sensitivity. Hence, the code of corporate governance in Malaysia is right in encouraging regular board meetings for members to discuss and make decision. In terms of board size, previous studies (for instance Chen 2006) found that the board size will affect positively pay performance up to a certain point only and thereafter it will have a negative impact on pay performance. Chen (2006 reported that the average board size in China is 9.8 compared to 7.6 found in this study. Hence, Malaysian firms need to be aware of the possible inverse affect of the size of the board on pay performance sensitivity.

Finally, the result also suggests that inclusion of more non executive members has reduced the pay performance sensitivity. Since non executive members are usually expected to be independent, this finding is consistent with the earlier discussion that

non executive directors do not effectively play their role to represent the interest of shareholders. On the other hand, the inclusion of more busy non executive members leads to increase in pay performance sensitivity. This is an interesting result where busy directors, similar to old directors are regarded as ineffective directors because their multiple directorships will lead towards less commitment and lack of responsibilities on their role as directors of the firm. This is not true for this study. In fact, the finding is consistent with Ferris et al. (2003). They found no evidence that multiple directors shirk their responsibility to serve on board committees. The result indicates that busy directors are effective directors possibly due to their experience and expertise that they gained through multiple directorships.

6.3 Regression Diagnostics

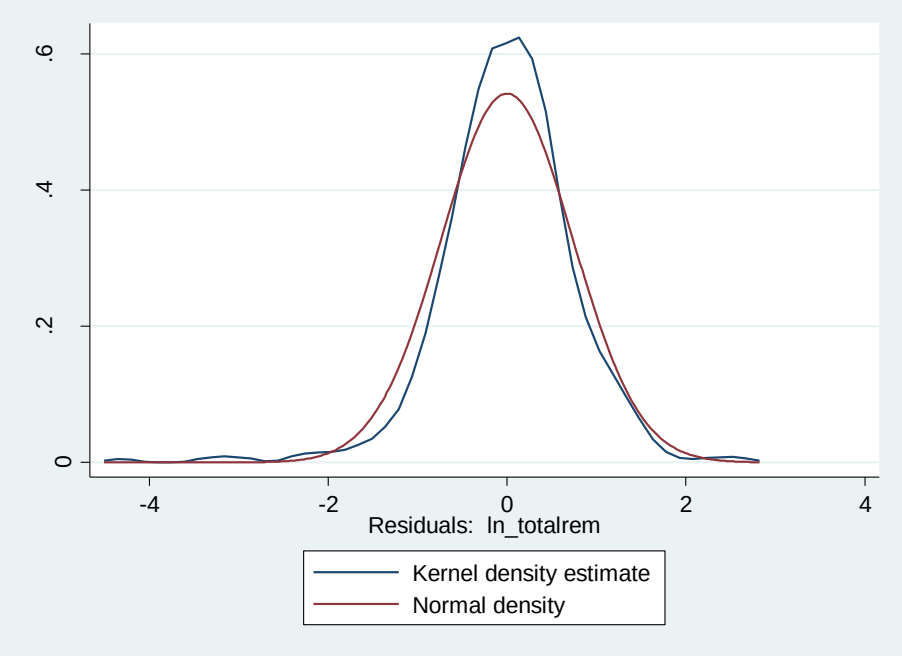
This section reports the results of research diagnostics carried out on model 4, prior to the final result presented in Table 6.1 and 6.2. Research diagnostics are carried out in order to make sure the model used are robust and free from regression related problems such as non-linearity, non-normality, heteroscedasticity, dependence of errors in variables, influencial data and collinearity. In short, the regression diagnostics strengthen the validity of the results presented earlier.

First, the study used the leverage versus residual–squared plot (lvr2plot) in order to detect any outliers. The model was re-estimated by deleting a few outliers (four firms in this case). This has resulted adjusted R square to improve from 0.4386 to 0.4790 for total cash remuneration model and 0.4307 to 0.4335 for total remuneration model. The exclusion of the outliers does not change substantially the effects of the

explanatory variables. The study did not run a robust regression models because the distribution of data is normal (see discussion on normality below). Robust regression models are suitable for non-normal and heavy-tailed error distributions (Hamilton 2004).

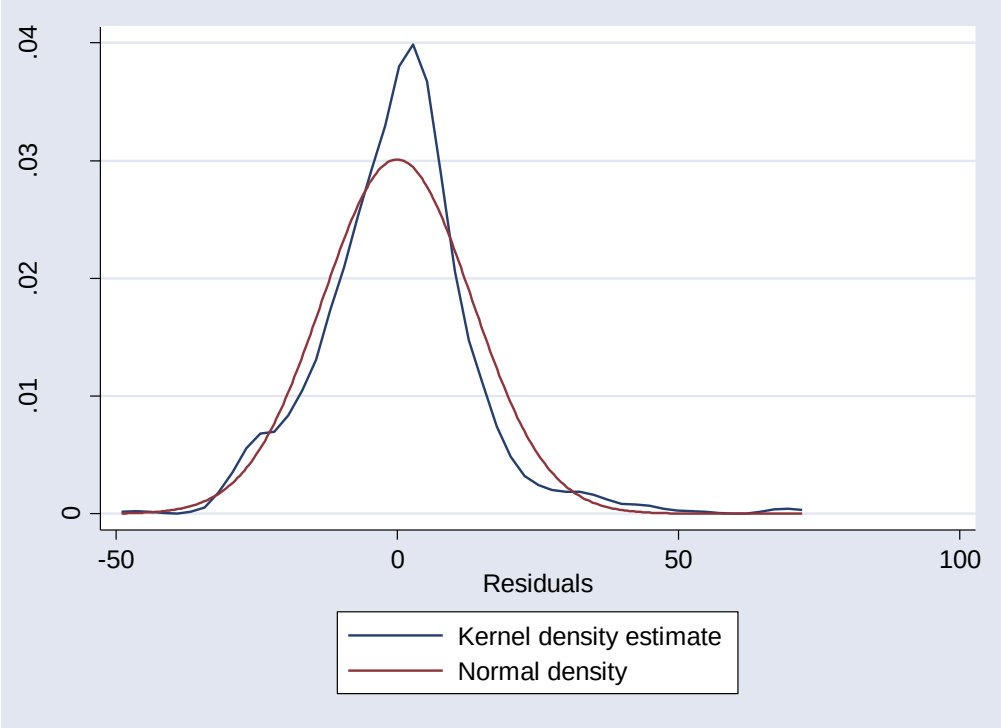
Second, a Shapiro-Wilk W test was run to check for the normality of the residuals of the final model (Model 4) for both total cash remuneration model and total remuneration model. The result for total cash remuneration model (W= 0.9544, p = 0.0000) suggests that the residuals of the model are not normally distributed. Similarly, the result for total remuneration model (W = 0.95607, p = 0.0000)[9] also indicates problem of normality. This is further illustrated in the Kernel density plot of residual for total cash remuneration model and total remuneration model shown in Figure 6.1 and 6.2 respectively. However, in practical, it is acceptable to have non normal residual when N is large (Chen 2006).

Figure 6.1 Kernel density plot of residual for total cash remuneration model



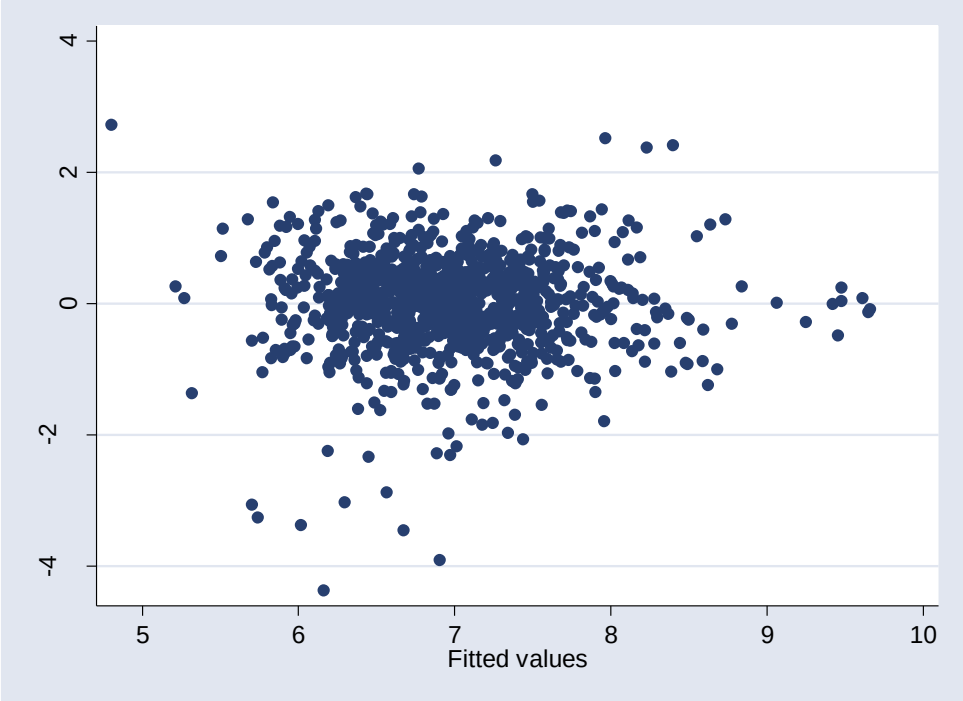
[9] The null hypothesis for the test is that the distribution is normal

Figure 6.2 Kernel density plot of residual for total remuneration model



The next test is to check on the heteroscedasticity problem in the model. The Breusch-Pagan / Cook-Weisberg test was conducted in order to detect this problem. The results show that there is a no problem of heteroscedasticity problem in both models. The result for total cash remuneration model and total remuneration model are (χ (1) = 73.83, p = 0.000) and (χ (1) = 7.76, p = 0.0053) respectively. Due to no evidence of heteroscedasticity found in both model, the study carried did not pursue on the 'hc3' correction as suggested by Long and Ervin (2000). The residuals versus fitted values plot further confirms that the variance of residuals is quite homogenous as shown in Figure 6.3.

Figure 6.3 Residual versus Fitted Values plot of total remuneration model 4



Next, the issue of multicollinearity is being addressed. Multicollinearity is a common problem in multiple regression. Initial multicollinearity test suggests multicollinearity problem exists between a few of variables, in particular between interaction terms. However, this problem is dealt with by using the mean centred of each variable used in calculating interaction variable. Table 6.4 shows the variance inflation factor (VIF) for all variables used in the final model. It was found that all of VIF do not exceed five. Mason and Pereault (1991) suggested that if VIF is more than 10, it signals multicollinearity problem in the model tested. Based on the results presented, there is no evidence of multicollinearity problem in the final model.

Finally, the linktest and Ramsey RESET test were conducted. The linktest is used in order to test for model specification error while Ramsey RESET test is used for testing omitted variables. Both of the test do not found any reason to reject null

hypotheses (p-value =0.4130 and p-value =0.3203 respectively) for total cash remuneration model. Similarly, there is no issue for total remuneration model whereby both of the null hypotheses are not rejected (p-value = 0.8321 and p-value = 0.1218 respectively).

Table 6.4 Multicollinearity among independent variables

	Total Cash Remuneration Model	
Variable	***VIF***	***1/VIF***
Perf x indptboard	4.27	0.234253
Perf x ceodual	3.80	0.262995
Perf x indirectshare	3.66	0.273166
Perf x nexecdir	3.19	0.313629
Perf x pold	3.01	0.331855
Perf x boardsize	2.85	0.351077
industry3	2.80	0.357334
Performance	2.78	0.359378
Perf x blockshare	2.57	0.389510
industry2	2.47	0.404497
industry5	2.33	0.428915
Perf x bmeeting	2.21	0.452732
Perf x pintelock	2.21	0.452937
industry4	1.96	0.509290
ln_mktvalue	1.96	0.510057
Perf x directshare	1.93	0.516864
indirectshare	1.80	0.554589
nexecdir	1.74	0.573852
pinterlock	1.71	0.584905
directshare	1.69	0.592657
ln_blockshare	1.64	0.610842
Perf x pbusy	1.63	0.613125
indpt_board	1.58	0.632049
sqrt_tenure	1.52	0.659944
sqrt_boardsize	1.51	0.660714
pbusy	1.48	0.674788
age	1.45	0.690875
yr_dummy3	1.41	0.710088
yr_dummy2	1.38	0.723276
location2	1.36	0.734910
qualify	1.32	0.759575
ln_bmeeting	1.31	0.761655
pold	1.28	0.784175
diversify	1.27	0.789588
indpt_rem	1.26	0.795712
indpt_audit	1.25	0.800924
ln_leverage	1.22	0.816427
ceo_dual1	1.21	0.828124
Mean VIF	2.00	

6.5 Panel Data Analysis – Fixed Effects Models

OLS regressions are not able to control for unobserved and time-constant firm effects. Hence, this study used panel data techniques – fixed effects model and random effects model to address this issue. The Hausman test was performed in order to decise whether a fixed or random effects model is more appropriate to treat the error structure (Hausman 1978). The null hypothesis of Hausman test is that estimates with random effects model are more efficient. Hence, the rejection of null hypothesis would lead to a conclusion that fixed effects estimates are more consistent and therefore it should be used. If fixed effects regression is used, any variables such as industry and location that do not varies over time should be excluded. Year dummies were retained in order to control for time effects.

The results of Hausman test on both total cash remuneration model and total remuneration model are presented in table 6.5. In both cases, the null hypothesis of Hausman test is rejected. This indicates that fixed effects models are more efficient than OLS models with pooled data. The results of fixed effect model show that firms effects are significant ($F(227,348) = 12.96$, $p < 0.0001$) and ($F(227,348) = 14.07$, $p<0.0001$). This indicates that fixed effects models are more efficient than OLS models with pooled data. In total cash remuneration model, the performance coefficient remains significant and positive at 10% level, while year dummies became significant at 10% level. However, the other governance variables and human capital variables including those significant variables such as boardsize, proportion of non

executive directors, proportion of interlocked directors and directors' tenure are no longer significant under the fixed effects model.

Table 6.5 Hausman test results

	Total Cash Remuneration Model	Total Remuneration Model
χ^2 (33)	95.88	108.12
p-value	0.0000	0.0000

Chen (2006) and Himmelberg et al. (1999) also found similar result when comparing the results between fixed effects model and the cross sectional OLS models. For instance, Chen (2006) found that board structure, supervisory board size, duality dummies, ownership concentration is no longer significant under fixed effects model. Similarly, Himmelberg et al. (1999) found managerial ownership no longer explain performance when the both observed firm characteristics and firm specific effects is controlled. One reason for such discrepancies is that there was very little variation among governance variables and human capital variables over time. Stock and Watson (2003) pointed out that insufficient variation in a variable can adversely affect statistical power, resulting in Type II errors (failing to reject a null hypothesis when the null hypothesis is false). However, since this study aim is to identify the individual effect of these governance variables and human capital variables, the OLS models are used as main models, though the firm specific effects should also be borne in mind.

6.6 Discussions and Conclusions

This chapter presents the main empirical findings of the study using 417 sample non-financial firms listed in Bursa Malaysia Berhad over the period 2004 to 2006. The

main objective of the study is to determine the key variables that explain the level of executive directors' in Malaysia. Three focal variables examined in this study are governance mechanisms, human capital attributes and firm performance. Three steps of multivariate analysis were performed in order to test the hypotheses presented in chapter 3. Two models were tested, namely total cash remuneration model and total remuneration model.

In terms of corporate governance mechanism, a number of board characteristics and ownership were found to be significantly related to directors' remuneration. Board size was found to be positively related to directors' remuneration for both of the models. The result supports agency theory and consistent with the literature (Jensen 1993; Randoy and Nielsen 2002; Core et al. 1999; Abdullah 2006). However, no evidence was found to support the relationship between frequency of board meetings and directors' remuneration. This contradicts with the findings by Adams (2000); Vafeas 1999 and Davila and Penalva (2006). It implies that frequency of meetings does not function as an effective monitoring tool for the managers to exercise their role of protecting shareholders. The presence of board size and frequency of board meeting however does have a positive impact on pay performance sensitivity. This implies that large board size and frequent board meetings enhance the pay-performance sensitivity. In Malaysia, companies are encouraged to regularly meet but no indication was made to encourage larger board size. However, the code of governance states that the board members should be balanced between executive and non executive. This can be interpreted as encouragement for larger board size.

From the perspective of board independence, the study found that proportion of independent directors is significantly related to directors' remuneration, but in the wrong direction. This study found the increase in independent directors in the board leads to higher directors' remuneration. This indicate that the lack of effectiveness of the independent directors, possibly due to appointments of directors that go along with the CEO or the main criteria for choosing independent directors are set to be those with title and prestige (Mace 1986). Further, it is found that large number of independent directors has no positive impact on pay-performance sensitivity.

In terms of board composition, this study found that the proportion of non executive directors significantly reduced the level of directors' cash remuneration. It implies that the non executive directors play a monitoring role in the board to protect the shareholders. This findings is consistent with the agency theory and literature (for instance Rosenstein and Wyatt 1990; Core et al. 1999; Hallock 1997). However, it is also found that the non executive directors have a negative effect on pay performance sensitivity in total remuneration model. This conflicting results may possibly caused by different definition of remuneration used in the model. Non executive directors are considered effective when compared against cash remuneration but not for the total remuneration.

Busy and old directors are found not to be significantly related to directors' remuneration. However, both busy and old directors are found to be positively related to pay performance sensitivity. This finding indicates that busy and old directors are effective and responsible members of the board (Ferris et al 2003). The notion that

assumes old directors or directors with multiple directorships are not effective should be relooked.

CEO-chairman duality is found to positively (though weakly) relate to directors' total cash remuneration. The finding is consistent with other studies such as Kanagaretnam et al. (2008), Dogan and Smyth (2002) and Chen (2006). This finding supports the notion that when the CEO holds the position as chairman of the board, it will have influence on the board decision making, in particular on the remuneration package for the directors. However, the result is not significant when total directors' remuneration is used as dependant variable. The inclusion of other types of remuneration such as gratuity and pension fund scheme arguably has further reduced the CEO-chairman and pay performance sensitivity.

In terms of directors' ownership, the empirical suggest that the indirect directors' ownership is negatively related to the level of directors' remuneration at 1% level. Indirect directors' remuneration refers to the director's close family ownership (i.e. spouse, children and parents). The result indicates that directors' family placed less importance of directors' cash remuneration but focuses more on income derived from their equity stakes (Mehran 1995). This is further supported by hypothesis 10b, where directors' family ownership is positively affect the pay performance sensitivity. However, not enough evidence to support the relationship holds for the direct directors' ownership.

The relationship between block holders' ownership and directors' remuneration revealed mixed results. In total cash remuneration model, hypothesis 11a is supported,

where increase in block holders' ownership leads to lower directors' remuneration. However, the relationship is no longer supported in total remuneration model. Similarly, the study did not have enough evidence to link the block holders' ownership with pay performance sensitivity. Again, I would argue the inclusion of other types of remuneration such as gratuity and pension fund scheme has further diluted the pay performance relationship between the variables.

From the perspective of human capital attributes, the study found that most of the significant results are derived from total remuneration model, with the exception on directors' tenure where the results is also significant for total cash remuneration model. It is argued that the other types of remuneration such as gratuity and pension fund scheme are related to years of service (thus relates to directors' tenure and age) rather than performance. Hence, it is found that total remuneration is significantly related to directors' age and tenure at 1%. This finding is consistent with the literature (for instance McKnight and Tomkins 2004; Hitt and Tyler 1991; Hill and Phan 1991). They argued increased in directors' age and tenure enable them to exercise influence over board's decision, provide enough time for them to acquire respect and confidence over the board members and enable them to accumulated enough shares (mainly through stock options). These factors therefore will increase the directors' remuneration.

The models used for the above discussions are subjected to vigorous statistical tests. The results of regression diagnostics show that the associated problems with OLS regressions model have been taken care off. It is found that the model presented is free from non normality problems, influence data, heteroscedasticity,

multicollinearity, and measurement and specification errors. The study further extends the OLS results to fixed effects panel data analysis in order to control for unobserved and time-constant firm effects. It was found that fixed effects models are more efficient than OLS models with pooled data. Both models reported significant and positive coefficient for performance but not on all other governance variables and human capital variables including those significant variables such as board size, proportion of non executive directors, proportion of interlocked directors and directors' tenure. Stock and Watson (2003) explains that one reason for such discrepancies is that there was very little variation among governance variables and human capital variables over time resulting in Type II errors (failing to reject a null hypothesis when the null hypothesis is false). Nevertheless, the OLS models are used as main models because the aim of this study is to identify the individual effect of these governance variables and human capital variables.

CHAPTER SEVEN

SUMMARY AND CONCLUSION

7.1 Introduction

At this stage, most of the main parts of the thesis have been covered. In the beginning of this thesis, the aims and motivation for the author to embark on this study has been explained. Chapter two provides the institutional hindsight of Malaysia. Then, an extensive review of the literature, from both developed and developing countries were critically assessed and based on that, several numbers of hypotheses were developed. In the following chapter, the research methodology of the study is presented followed by the descriptive and multivariate findings of the study. This chapter aims to summarise the main themes of the study and draws the conclusions of the study.

The main objective of this study is to determine the key variables that explain the level of directors' remuneration in Malaysia. In particular, this study intends to know whether governance mechanisms, human capital attributes and firm performance affects the level of directors' remuneration. Previous literature found inconsistent results despite the fact that this topic has been widely researched (Tosi et al. 2000). It is also noted that not enough research has been done in the developing countries like Malaysia. Malaysia has its own unique institutional settings such as concentrated ownership that warrants enough interest for the investors, policy makers as well as the academia world. The empirical analyses were conducted on a sample of 417 non financial companies listed in Bursa Malaysia Berhad for the period of 2004 to 2006.

The results show that governance mechanisms – both board characteristics and ownership concentration are significantly affects directors' remuneration level. Human capital attributes and performance are also found to be significantly related to directors' remuneration among Malaysian companies. The findings of this study will benefit the investors, policy makers, business practitioners as well as contributes towards the body of knowledge on this matter. This final chapter will recaps the research objectives and hypotheses of the study, summarise the main findings and discuss the contributions, implications and limitations of this study, as well as potential future research.

The chapter is organised as follows. Section 7.2 reviews the research objectives, hypotheses and methods. Section 7.3 will discuss the main findings of this research. Next section will discuss about contributions and implications of the study. Section 7.5 identifies the limitations of the thesis as well as suggestions for future research. Final section will conclude this chapter.

7.2 Reviews of research objectives, hypotheses and methods

The motivation to embark on this research is based on three factors. First, major reformation has taken place on the corporate governance settings in Malaysia after the Asian financial crisis. In many instances, for example the introduction of code of corporate governance was made based on the code of corporate governance in the West (i.e. the UK). Thus, its applicability is somehow questionable. Second, the Malaysian government has invested billions of ringgit in education and training, aiming to develop human capital among its people. It is therefore interesting to see to

what extent the human capital attributes affect the level of directors' pay in Malaysia. Third, there has been a public concern over the directors pay that do not being reflected in the firms' performance.

The aim of this study is to investigate the determining factors of directors' remuneration. Specifically, the study examined three focal variables – corporate governance variables, human capital attributes and performance. The study also incorporates other traditional factors such as firm size, firm risk, diversification, location and industrial effects.

Based on the literature, agency theory, human capital theory and the specific institutional settings in Malaysia, the following fifteen hypotheses were developed:

H1a: There is a relationship between directors' remuneration and board size.
H1b: There is a relationship between directors' pay-performance sensitivity and board size.

H2a: There is a relationship between directors' remuneration and frequency of board meeting.
H2b: There is a relationship between directors' pay-performance sensitivity and board meeting.

H3a: There is a negative relationship between directors' remuneration and the proportion of independent directors in the board of directors.
H3b: There is a positive relationship between directors' pay-performance sensitivity and the proportion of independent directors in the board of directors.

H4a: There is a relationship between directors' remuneration and the proportion of non executive directors.

H4b: There is a relationship between directors' pay-performance sensitivity and the proportion of non executive directors in the board of directors.

H5a: There is a positive relationship between directors' remuneration and the proportion of interlocked directors in the board of directors.
H5b: There is a negative relationship between directors' pay-performance sensitivity and the proportion of interlocked directors in the board of directors.

H6a: There is a positive relationship between directors' remuneration and the proportion of old directors in the board of directors.
H6b: There is a negative relationship between directors' pay-performance sensitivity and the proportion of old directors in the board of directors.

H7a: There is a relationship between directors' remuneration and the proportion of busy directors in the board of directors.
H7b: There is a relationship between directors' pay-performance sensitivity and the proportion of busy directors in the board of directors.

H8a: There is a positive relationship between directors' remuneration and CEO duality role.
H8b: There is a negative relationship between directors' pay-performance sensitivity and the CEO duality role.

H9a: There is a negative relationship between directors' remuneration and directors' direct shareholdings.
H9b: There is a positive relationship between directors' pay-performance sensitivity and directors' direct shareholdings.

H10a: There is a negative relationship between directors' remuneration and directors' indirect shareholdings.
H10b: There is a positive relationship between directors' pay-performance sensitivity and directors' indirect shareholdings.

H11a: There is a negative relationship between directors' remuneration and block shareholdings.
H11b: There is a positive relationship between directors' pay-performance sensitivity and block shareholdings.

H12: There is a relationship between directors' remuneration and average directors' age.

H13: There is a relationship between directors' remuneration and average directors' tenure.

H14: There is a relationship between directors' remuneration and directors' qualifications.

H15: There is a positive relationship between directors' remuneration and firm performance.

To test these hypotheses, several multiple regression models were run with a panel data consisting of 417 non-financial companies listed in Bursa Malaysia Berhad over 3 years period. Two models were run namely total cash remuneration model and total remuneration model. In order to check the robustness of the final results, various techniques were employed.

7.3. Summary of Discussion and Findings.

In general, all three focal variables of this study were found to be significantly related to the level of directors' remuneration. The detailed discussions were presented in Chapter 6. Interestingly, the study found few findings on the relationship between corporate governance mechanisms and directors' executive remuneration. First, the study reveals that in Malaysia, independence of director is questionable. The study

found that the increased number of independent directors in the board leads to higher directors' remuneration level. It is found that the incremental number of independent directors has no positive impact on pay-performance sensitivity. This suggests that the independent directors in the sampled firms may not ready to use their powers to monitor and discipline managers, resulting increase in directors' remuneration. Mace (1986) suspects the selection of directors are according to the CEO's wish or the main criteria to be appointed as directors is based on title and prestige.

The study found that board size is positively related to directors' remuneration and pay performance sensitivity. This finding is consistent with the literature and agency theory. However, there is no evidence to support the role of board meetings in monitoring the level of directors' remuneration. However, it is found that frequency of board meetings has a positive impact on pay performance sensitivity. In other words, the findings support the recommendation by the Malaysian code of corporate governance for board to meet regularly in a year.

There is one contradicting result found. The non executive directors are found to be negatively related to directors' cash remuneration. On the other hand, non executive directors are negatively related to the performance pay sensitivity in total remuneration model. The results indicate two conflicting ideas of the effectiveness of non executive directors. However, this conflict may possibly caused by different definition of remuneration. Non executive directors are considered effective when compared against cash remuneration but not for the total remuneration.

Another interesting result from the study is the contradicting relationship between old and busy directors on directors' remuneration. This study found that the existence of old and busy directors leads towards better pay-performance sensitivity. This indicates that the old and busy directors are effectively functions in the board. This is contrary to the calls by policy maker to impose mandatory retirement ages or term limits and to limit the number of other boards on which a board member may serve. Ferris et al. (2003) found no evidence to support multiple directorships are not effective and not responsible members of the board (Ferris et al 2003). Hence, this study suggests the policy maker to relook again their preposition on old and busy directors.

It is interesting to find that directors' remuneration is negatively related to directors' family ownership. This result implies that directors' family are no longer concern about the cash remuneration but rather interested to get their rewards through equity based stake. If this is true, other shareholders of the company would be very pleased to see their interest is in line with the majority of shareholders – that is the directors' family members. However, the study did not found enough evidence to support the same interest on directors himself because the directors' direct ownership is not significantly related to directors' remuneration. However, note (refer to Table 6.3) that direction of this relationship is also negative.

From the perspective of human capital attributes, the study found that most of the significant results are derived from total remuneration model, with the exception on directors' tenure where the results is also significant for total cash remuneration model. It is argued that the other types of remuneration such as gratuity and pension fund scheme are related to years of service (thus relates to directors' tenure and age)

rather than performance. Hence, it is found that total remuneration is significantly related to directors' age and tenure at 1%. This finding is consistent with the literature (for instance McKnight and Tomkins 2004; Hitt and Tyler 1991; Hill and Phan 1991). They argued increased in directors' age and tenure enable them to exercise influence over board's decision, provide enough time for them to acquire respect and confidence over the board members and enable them to accumulated enough shares (mainly through stock options). These factors therefore will increase the directors' remuneration.

The rest of the findings is consistent with the agency theory and the literature, including those of control variables such as firm size, firm risk and diversification. The summary of results and the decision to reject or support the hyptheses is presented in Table 6.3. In summary, the empirical results of the data analyses show mixed support for hypotheses (hence mixed support to agency theory and human capital theory). Hypotheses 1a, 2b, 3a, 4a, 5a, 6b, 7b, 8a, 10a, 10b, 11a, 13 and 15 is supported in total cash remuneration model while hypotheses 1b, 2a, 3b, 4b, 5b, 6a,7a,8b, 9b, 11b, 12 and 14 is not supported. For total remuneration model, only hypotheses 1a, 1b, 4a, 4b, 6b, 10b 12 and 13 is supported while the rest of the hypotheses is rejected. Hence, from theoretical perspective, agency theory and human capital theory cannot probably provide full guidelines for corproate governance reform. Additional perspectives as laid out by Bender (2003) in Figure 3.1 may be of relevance. However, this requires more research work to be done.

7.4 Contributions and Implications of the Study

This study contributes towards the literature on determinants of executive directors' remuneration, specifically on corporate governance variables, human capital attributes and firm performance. It also provides inputs towards policy makers, investors as well as business practitioners in Malaysia and internationally.

This study contributes to the body of literature on directors' remuneration in a number of ways. First, the study contributes towards the relationship between directors' executive remuneration and corporate governance mechanisms, namely the board of directors and ownership structure. This study examined various aspects of board characteristics in depth such as board size and activities, board independence, board composition and board leadership. In each of the aspect considered, several dimensions were explored. For instance, in board size and activities, two variables were examined – board size and frequency of board meetings. Board independence looks at proportion of independent directors in the board, proportion of independent directors in remuneration committee and proportion of independent directors in audit committee. Board composition explores four dimensions – proportion of non executive directors, proportion of interlocked directors, proportion of old directors and proportion of busy directors in the board. Finally, board leadership examined the effect of CEO-chairman duality roles on directors' remuneration. The study also separate the effect of directors' ownership and family ownership in order to gauge better understanding of the determinants of directors' remuneration.

Second, this study also explores the relationship between human capital attributes and directors remuneration. The current literature does not explore much of this area, especially in the developing countries like Malaysia. Most of the studies were conducted in the US and UK (for instance Ingham and Thomson (1995); McKnight and Tomkins 2004). Thus, this study becomes among the first to study on the link between directors' remuneration and human capital attributes in Malaysia. The findings of this study should shed light to the policy makers and business practitioners on the importance of human capital attributes in determining directors' pay level. Interestingly, it is also found that human capital attributes are more related to the total directors' remuneration rather than total cash remuneration. The inclusion of other types of remuneration such as pension fund scheme and gratuity has lead the improvement of relationship between human capital attributes and directors' remuneration. Qualification is no longer play a role in determining the level of pay for directors.

Third, the results of this thesis yield robust results due to the use of various statistical techniques to check the validity and reliability of the findings. The results of other control variables also provide useful information on how executive remuneration is determined in Malaysia. Fourth, this study also uses human capital theory as part of theories to explain the determination of directors' remuneration. Since this study is based on sampled firms in Malaysia, the application of this theory has now extended to Malaysia. It was found that human capital theory did apply to the Malaysian context.

On the practicality side, this study has a number of applications to the policy makers, investors and business practitioners. Some of the findings contradict to with the policy makers' recommendation. For instance, calls have been made for limiting the multiple directorships among directors and imposing age limit for the non executive directors. My results show otherwise.

7.5 Limitations and future research

One of the limitations of this research is the exclusion of stock options from directors' remuneration. This is unavoidable due to inconsistent reporting and valuation of options among Malaysian firms. Some firms opt to report in detail on stock options in their annual reports. Thus, unless requirement or standard is imposed for all firms to disclose the information on stock option owned by managers, the exclusion of stock options from directors' remuneration is here to stay.

This study excludes the foreign-owned firms from the sample. Future research should include foreign firms in order to see further understands the effect of corporate governance variables on directors' remuneration. Future studies also can extend the number of observation years in order to expand the choice of statistical techniques to analyse the data.

Finally, this study used only two main theories – agency theory and human capital theory. It was highlighted earlier in Figure 3.1 that there are other theories to explain the level of remuneration. Future studies should consider this in order to better understand what affects directors remuneration level.

7.6 Conclusion

To conclude, many of the findings of this study is consistent with the guidelines proposed by Malaysian Code of Corporate Governance (MCCG). For instance, recommendations for improving corporate governance by separating the Chairman and CEO, relying on smaller boards, eliminate gray directors are all consistent with my results. While my results indicate that, on average, these guidelines have identified substantive issues in the creation of effective governance mechanisms, the evidence does not imply that it is appropriate to adopt strict rules for the composition of the board or ownership structure. Contrary to MCCG, I found no evidence that independent outside directors create a more effective board than inside directors, nor do I found that greater equity ownership by outside directors results in improved governance systems. Given the prior mixed evidence on the importance of outside directors and the evidence that inside directors may be superior to outside directors, the attention focused on the importance of outside directors and their ownership stakes appears to be misplaced.

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APPENDIX 1

Bender (2004) outlined three main categories of theory used to study directors' remuneration, namely economic theories, social-psychological theories and organisational theories (see Figure 3.1). All theories attempt to explain the same phenomenon but these theories differ in several ways. For instance, economic theories tend to emphasise on the operation of the firm or market while psychological theories tend to focus on the motivation of individuals within the firm or market.

Economic Theories

Economic theories dominate the remuneration related literature. Basically, economic theories are derived from two assumptions. First, the economists assume the real world is a perfect market whereby prices are determined by the influences of supply and demand. Second, the economists assume that rational individual always acts to achieve his or her maximum utility. Accordingly, the economic theories used in remuneration related studies can be divided into two – one which emphasis on market

forces as the significant influence and the other one which regard individual rational behaviour as significant influence on managerial remuneration (Bender 2004).

Labour Market Theory

This theory is based on the fundamental principles of perfect market. In a perfect market, 'equilibrium price' is achieved when the quantity of demands equal to quantity of supplies (Begg et. al 1991). If demands are greater than supplies or vice versa, the market will adjust itself until it reaches its equilibrium state. The labour market theory assumes the labour market also follows the same principle. In the context of executive directors' remuneration studies, proponents of labour market theory suggest that companies had to pay high remuneration to the executive directors because there is a shortage of individuals who has the capability to lead and run corporate successfully (Gomez-Mejia and Wiseman 1997; Finkelstein and Hambrick 1996).

The application of labour market theory can be clearly illustrated when the director's market itself is further segmented. For instance, it is shown by previous studies that director's remuneration will vary according to industry (Deckop 1988) and size (Ewers 2002; Merhebi 2006). They argued that both industry and size act as a differentiating factor in the labour market. Therefore, directors of large companies need to be highly paid due to the fact that they are highly skilled (Gomez-Mejia (1994). This phenomenon leads labour market to be segmented. Similarly, directors of companies in certain industry like information technology (IT) and manufacturing that are very competitive and volatile would need to be compensated more than other established industries such as plantation or agricultural industries.

Bender (2004) argued that as a result of remuneration survey conducted by various parties to provide justification for suffice remuneration to retain and motivate directors' in UK companies, the directors can compare their salaries with the average in the industry hence push up the remuneration even further.

Human Capital Theory

The human capital of individuals includes their age, qualifications and experience. It provides justification to employer to accept a prospective employee, including director that the employee is capable of delivering whatever the tasks he or she required to do. Thus, human capital theory argues that directors' remuneration is determined not solely on the job itself but rather incorporates the human capital that he or she owns. Agrawal (1981) argued that directors with greater amount of human capital should be able to perform his or her job thus should be paid more.

Both labour market theory and human capital theory implicitly believe that there is a 'true value' for remuneration, captured in some way by using market forces or human capital (Bender 2004). Both theories provide reasons and justification for the level of director's pay by companies. Hence, this study incorporates the human capital attributes of the directors and the firm size and industry.

Agency Theory

Agency theory is used by majority of the research on directors' remuneration (Murphy 1999; Bender 2003). It was first developed from risk-sharing literature discovered by economists during 1960s and the early 1970s (Eisenhardt 1989). This

theory emphasis that rational individual will behave in manner that maximise its utility function. In the context of managerial-company relationship, whereby there is separation of ownership from decision-making, management tends to pursue their own interests instead of increasing the owners' wealth. The underlying assumption of agency theory is that the goal of shareholders is to maximize their wealth, while the goals of management is to maximize a utility function that includes pay, prestige, size and power. Clearly, this theory assumes that there is a conflict of interest between management (agent) and its owners (shareholders). Agency problems arise because the agent cannot possibly contract for every possible action whose outcome affects both his own welfare and he welfare of the principal (Brennan 1995).

The theory also assumes that the directors can be motivated to perform according to shareholders' goals by using a form of performance-related pay and their contracts are written in such a way as to facilitate this (Prendergast 1999). The performance-related pay is believed to induce the management so that their interests coincide with the shareholders' goals. Other mechanisms to align the interests of managers and shareholders include improving the roles of board of directors (Fama and Jensen 1983) through appointment of independent directors and separation between chairman and chief executive director (CEO). In other words, governance structure of the company will assist the owner in aligning their interest with the management of the company.

Relative Performance Theory

Relative performance theory stems from agency theory. Agency theory suggests that directors' remuneration should be based on company's performance. However, it is

argued that company performance is not entirely within the control of directors, for there may be external factors that may accelerate or deteriorate performance. For instance, company performance may be affected by macroeconomic factors or political factors. In such case, reward based solely on corporate performance is no longer appropriate.

Relative performance evaluation (RPE) incorporates the fact that due to anomalies, an individual director's or company's success or failure alone is not appropriate measure of performance. The effects of such anomalies can be reduced or eliminated by looking at the comparative results to those of suitable peer groups. This idea was first developed by Holmstrom (1982). Using RPE, shareholders are able to evaluate directors fairly and directors are not penalised or rewarded for uncontrollable factors.

Tournament Theory

Tournament theory differs from the previous theories described earlier. This theory was first developed by Lazear and Rosen (1981). Tournament theory argued that the level of individual executive's remuneration is a reflection of his or her position in the company. Proponents of tournament theory believe that organisational hierarchy is a form of tournament, whereby each individual compete for prize of promotion and a higher salary. Due to the fact that organisational hierarchy is mostly pyramid shaped, each level provides fewer opportunities thus warrant for an increase pay for each level. It is therefore argued that the level of pay at the director's level must be high so that it will motivate the lower level people of the hierarchy to compete and obtain the highest level.

Social-psychological Theories

Social-psychological theories provide alternative views from economic theories. In economic theories, variation in remuneration (i.e. money – a form of extrinsic reward) is seen to be a motivating factor to directors to act according to the aspiration of shareholders. However, some authors challenged this idea and argued that intrinsic reward (such as job satisfaction) may be important as well. Bender (2004) distinguishes the social-psychological into two categories: (i) theories that relate directly to the individuals (directors), and (ii) theories that relate to remuneration committee and the remuneration process itself.

Expectancy Theory

Expectancy theory argues that individual's motivation depends on two factors: (i) how he or she perceived the probability of success in achieving the expected target; and (ii) how one perceived the level of attractiveness of the final reward (Vroom 1964). Thus, expectancy theory recognises different preferences of each individual and assumes that different structured packages will motivate different set of people.

Equity Theory

Equity theory states that employees always consider how they are treated as compared to others and how well rewarded they are as compared to the amount of effort they have put in. If they perceived themselves to be treated unfavourably, they will become less motivated to work in order to restore equality. Alternatively, they could change their level of pay, influence the others to work less or change their reference point to other employees whose more alike them.

Both expectancy and equity theory explain individual's motivation towards work. However, Bender (2004) argued that these motivational theories are insufficient to explain how final remuneration packages are decided.

Social Influence Theory

'Social influence' in the context of director's remuneration settings refers to several different types of relationship among board of directors. These relationships may be in the form of seeking way to return favours among directors, a way to demand respect for the power and authority one's possessed, a plain social interactions between two good friends or a relationship that exists due to common or differences in social status. Whatever type of relationship that exists between the remuneration committees, it will affect the level of pay of directors. Main *et. al* (1995) discovered that CEO compensation was significantly higher if the non-executive director who serve as chair of the remuneration committee had been appointed after the CEO joined the company. They conclude that this is evident of the first type of relationship. This relations.hip

Social Comparison Theory

Social comparison theory assumes that individuals make evaluation based on their comparative judgement with other people whom they believe have similar abilities with them. Considering the fact that most of the non-executive directors who sit in the remuneration committee are also directors of other companies, it is inevitable for them to make comparison and judgement based on their own experiences. This theory is supported by empirical findings (for instance O'Reilly et. al 1995).

Organisational Theories

Previous sections explain remuneration based on economic and social-psychological perspectives. Organisational theories seek to explain phenomenon from organisational point of view.

Institutional and Legitimacy Theory

Institutional theory argues the impact of isomorphic pressures on companies force them to act in the similar ways as other companies. According to DiMaggio and Powell (1983), there are types of isomorphic: (i) coercive; (ii) mimetic; and (iii) normative. Coercive isomorphic is pressures from other organisations, which the company is dependent upon, and the cultural expectations of society. Mimetic isomorphism is pressures to imitate others when the future direction is not clear and other organisations seem to know better. Finally, normative isomorphic results from the pressure created by professionals to control and legitimised their professional practices. In the context of

This theory provides good explanation of homogeneity of remuneration practices between companies, specifically within the same industry. For instance, Bender (2004) found that utilities companies in UK have similar remuneration structure and level of pay due to isomorphic pressures, thus support institutional theory. In other words, companies are seeking to gain acceptance from the society and make themselves legitimate. Given that the society in general demands greater disclosure on directors' remuneration matters, it is important for companies to gain legitimacy from the society in which their shareholders reside.

Decision Theory

Tversky and Kahneman (1974) specify two aspects of decision theory that are relevant to remuneration setting process: adjustment and anchoring heuristic. They argued that in most circumstances, people make numerical estimates based on an initial value (anchor) and make insufficient adjustment to reach a biased final figure towards initial value. In the remuneration setting process, remuneration may use current pay levels, what he or she feels is reasonable based on his or her experience (equity) or even figures from remuneration surveys.

Power and Politics

Another aspect of decision theory that is relevant to consider here is power and politics. It is argued that in a decision-making process, specifically in the context of deciding the level of director's pay, there are negotiations between top management and remuneration committee members and among the committee members itself. The final decision will support the most powerful protagonist. According to the literature, the sources of power include executive share ownership, executive tenure, the proportion of non-executive appointed by the CEO and CEO's social capital (Bender 2004).

Contingency Theory

Contingency theory states that there is no universal and ideal pay structure for all organisations. Rather, the proponents of this theory believe that each organisation requires unique remuneration packages that suited its own characteristics and reflects its own operating external environment. If organisation follows other remuneration structure, it may not match its strategy thus cannot achieve high performance.

APPENDIX 2

Summary of selected studies on directors' remuneration in developed countries

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
Murphy (1985)	US	Regression	All (more than 100) publicly held corporations in Fortune 500 (1964-1981)	Salary, Bonus, Salary + bonus, deferred compensation, ex-ante value of stock, total compensation (inclusive of fringe benefits & saving plans but exclude annual accruals of penions benefit.	Firm size, growth, postion dummies (chairman, CEO, president, vice president), firms variables (sales, stock index, stock variance, industry relative and abnormal performance indices)	Firm performance is strongly and positively related to managerial compensation. Growth of firm sales (also measure of firm performance strongly related to compensation.
Bilimoria (1997)	US	Chi- square	300 companies of the 1984 Fortune list	CEO compensation	Stockhodling, interlocking board, performance	Board interlocked is positively related to CEO compensation, 5% stockholding is negatively associated with CEO compensation
Daily et. al (1998)	US	Multiple regression	200 firms from Fortune 500 (1992-1994)	Non-contingent pay (salary and other cash compensation), contingent pay (stock options,	Non managment compensation committee (affiliated, interdependence, proportion of CEO in compensation	High proportion of CEOs on a compensation committee is associated with a lower level of change in total pay. No evidence to support

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
				bonus & long term incentives), total pay	committee), Control variables (firm size, performance, ownership structure, ceo tenure and industry average CEO compensation).	relationship between compensation with any of the key variables.
Agrawal (1981)	US	Multiple regression	168 US life insurance companies	Compensation	Job complexity (span of control, functional divisions, management levels, geographical diversity), employers' ability to pay (profit, rate of return) and executive human capital (educational level, field of study and work experience)	All three factors account almost 80% of variation in executive compensation. All three factors have significant effect on compensation.
Kato and Kubo (2006)	Japan	Panel data analysis	51 Japanese companies (10 years period)	CEO base salary, CEO total annual cash compensation	ROA, sales, growth of sales, profit, negative profit (dummy), number of employee, stock returns	Positive relationship between CEO pay and performance (ROA)
Randoy and Nielsen (2002)	Norway and Sweden	Cross sectional OLS regression	224companies (120 Norway and 104 Sweden)	CEO compensation	Financial performance, CEO tenure, board size, foreign board membership, ceo ownership, debt ratio,	Significant positive relationship between board size, foreign board membership and market capitalisation with CEO

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
					market capitalisation, firm age, nationality and industry dummies	compensation Significant negative relationship between company performance and CEO tenure with CEO compensation.
Vafeas (1999)	US	OLS and 2-Stage Least Square regression	307 firms (1990-1994)	Board frequency,	Board size, inside ownership, % of independent directors	Board frequency is related to corporate governance and ownership characteristics
McKnight and Tomkins (2004)	UK	Regression	228 UK firms	Salary annual performance, change in the value options held	CEO tenure, CEO age, size, performance	Positive relationship between shareholder return and increases in the value of executive options held decreases with CEO tenure. Suggest non linear functions as CEO influence over pay setting process may not significant until about the 6th year of tenure.
Mangel and Singh (1993)	US	OLS regression	100 largest industrial companies (1988	Cash compensation (salary + bonus)	Firm size, performance, tenure, board composition, external ownership, institutional ownership, director equity	Institutional investors do limit the payment of unearned compensation to CEO but the presence of 5% equity owner does not have significant effect. Also found longer tenure

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
						lead to greater compensation, but no significant relationship between compensation and percentage of outside director, director retainer, CEO's year of company service
Crespi_Cladera & Gispert (2003)	Spain	Regression	113 listed Spanish companies (1990-1995)	Board member remuneration, total cboard remuneration	Company performance, leverage, ownership structure.	Positive relationship between board remuneration and company performance. Governance structure of companies is relevant when explaining the power of the compensation-performance relationship
Cheung et al (2005)	Hong Kong	Regression, fixed effects	412 firms (1995-1998)	Cash remuneration	Ownership concentration, CEO duality, firm performance, audit committee, % of independent non executive directors	Positive relationship between managerial ownership and cash remuneration
Li et. al (2006)	China	OLS regression, iteratively reweighted	296 observations (206 firms listed in	CEO compensation	Corporate governance (CEO duality, ownership structure), control variables (CEO age,	Little evidence to show Chinese companies take advantage of weaker board structures or less

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
		least square (IRLS) regressionOLS regression, iteratively reweighted least square (IRLS) regression	Shanghai stock exchange and Shenzen stock exchange)		tenure, firm size and growth rate).	demanding shareholdings to get higher compensation package. Compensation is more related to increasingly global managerial labour market and compensation standard
Ghosh (2006)	India	Pooled Regression with fixed effects	462 firms (1997-2002)	Board compensation, CEO compensation	Firm performance, board size, proportion of NED, CEO duality, firm diversification	Board compensation largely related to current and past year performance and diversification CEO compensation depends on current performance only. Also significant are age, experience and education
Firth et. al (1999)	Hong Kong	Regression	351 companies (1994 and 1995)	CEO, average director pay, average bonus per director pay, average bonus per average pay	Performance (stock return), return on shareholder equity, valuation ratio, firm size, growth, directors shareholdings, proportion of NED, institutional investors	Corporate size & accounting profitability are significantly related to remuneration. Stock return (performance) is not significant. Corporate governance variables has little association with change in pay
Dogan and	Malaysia	Regression	Range from	Total board	Firm performance, sector	Positive relationship

Author/Year	Country	Methodology	Sample	Dependent Variable	Independent Variables	Results
Smyth (2002)			45 to 222 comapnies for 1989 to 2000	remuneration	performance, firm size (Sales turnover), ownership concentration (% of shares owned by largest stockholder	between directors remuneration and sales turnover & negative relationship between directors' remuneration and ownership concentration

APPENDIX 3

Factor analysis results

This analysis was carried out in order to establish an index that take into account different measurement of performance. An index is needed as the variables measuring performance are highly correlated 9see correlation results below.

	roa	lag_roa	roe	lag_roe	ros
roa	1.0000				
lag_roa	0.8533	1.0000			
roe	0.7636	0.6564	1.0000		
lag_roe	0.3255	0.4964	0.3122	1.0000	
ros	0.4327	0.5068	0.3872	0.2342	1.0000

In this analysis, five different types of performance measurement were used; ROA, one-year lag ROA, ROE, one-year lag ROE and ROS. The principal component analysis extraction method was used.

(principal component factors; 1 factor retained)

Factor	Eigenvalue	Difference	Proportion	Cumulative
1	3.07293	2.27343	0.6146	0.6146
2	0.79950	0.10723	0.1599	0.7745
3	0.69228	0.36237	0.1385	0.9129
4	0.32990	0.22451	0.0660	0.9789
5	0.10539	.	0.0211	1.0000

Variable	Factor Loadings 1	Uniqueness
roa	0.90537	0.18030
lag_roa	0.92372	0.14674
roe	0.82848	0.31362
lag_roe	0.55963	0.68682
ros	0.63277	0.59960

The result of KMO and Bartlett's test is significance, indicating suitability of factor analysis as a method of data reduction.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.711
Bartlett's Test of Sphericity	Approx. Chi-Square	3205.448
	df	10
	Sig.	.000

APPENDIX 4

Regression results for Total Cash remuneration model (Model 1-4)

Model 1

```
      Source |       SS       df       MS              Number of obs =    1137
-------------+------------------------------           F( 11,  1125) =   21.63
       Model |  66434.0202    11  6039.45638           Prob > F      =  0.0000
    Residual |  314084.662  1125  279.186367           R-squared     =  0.1746
-------------+------------------------------           Adj R-squared =  0.1665
       Total |  380518.683  1136  334.963629           Root MSE      =  16.709

------------------------------------------------------------------------------
sqrt_tcash~m |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   .0505363   .5308034     0.10   0.924    -.9909398    1.092012
 ln_mktvalue |   4.874506   .3884101    12.55   0.000     4.112416    5.636596
 ln_leverage |   2.067691   .4670488     4.43   0.000     1.151307    2.984076
   industry2 |  -.4003868   1.530669    -0.26   0.794    -3.403673      2.6029
   industry3 |   -4.10767   1.669221    -2.46   0.014    -7.382806   -.8325335
   industry4 |   6.220608   2.350617     2.65   0.008     1.608522    10.83269
   industry5 |   -4.65371   1.702303    -2.73   0.006    -7.993756   -1.313664
   location2 |   .6495949    1.09735     0.59   0.554    -1.503488    2.802678
   yr_dummy2 |   .9498769   1.215424     0.78   0.435    -1.434876     3.33463
   yr_dummy3 |   .8279751    1.21559     0.68   0.496    -1.557104    3.213054
   diversify |   .5691297   .2998232     1.90   0.058     -.019146    1.157405
       _cons |  -20.17556   4.689463    -4.30   0.000    -29.37663   -10.97448
------------------------------------------------------------------------------
```

Model 2

Source	SS	df	MS	Number of obs =	1132
Model	79318.9223	14	5665.63731	F(14, 1117) =	21.14
Residual	299432.065	1117	268.068098	Prob > F =	0.0000
Total	378750.988	1131	334.88151	R-squared =	0.2094
				Adj R-squared =	0.1995
				Root MSE =	16.373

sqrt_tcash~m	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Performance	.1526336	.5205832	0.29	0.769	-.8687974	1.174065
ln_mktvalue	4.74391	.3869047	12.26	0.000	3.984769	5.503052
ln_leverage	2.003953	.4586353	4.37	0.000	1.10407	2.903837
industry2	-.1858851	1.50577	-0.12	0.902	-3.140342	2.768572
industry3	-3.807662	1.647787	-2.31	0.021	-7.040769	-.5745556
industry4	5.330472	2.313925	2.30	0.021	.7903435	9.870601
industry5	-4.084741	1.688597	-2.42	0.016	-7.397919	-.7715619
location2	1.141985	1.098281	1.04	0.299	-1.012941	3.296912
yr_dummy2	.8080247	1.195891	0.68	0.499	-1.538421	3.15447
yr_dummy3	.3637522	1.199697	0.30	0.762	-1.990161	2.717666
diversify	.4707072	.2960799	1.59	0.112	-.1102282	1.051643
age	-.2208295	.0819819	-2.69	0.007	-.3816853	-.0599737
sqrt_tenure	3.823078	.5396059	7.08	0.000	2.764323	4.881833
qualify	.8344034	1.163365	0.72	0.473	-1.448224	3.117031
_cons	-18.74901	5.770662	-3.25	0.001	-30.07157	-7.426455

Model 3

Source	SS	df	MS		
Model	93493.0453	27	3462.70538	Number of obs =	610
Residual	109334.567	582	187.860081	F(27, 582) =	18.43
Total	202827.613	609	333.050267	Prob > F =	0.0000
				R-squared =	0.4609
				Adj R-squared =	0.4359
				Root MSE =	13.706

sqrt_tcash~m	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Performance	-.081463	.576278	-0.14	0.888	-1.213301	1.050375
ln_mktvalue	3.753838	.4815676	7.80	0.000	2.808016	4.69966
ln_leverage	1.278693	.5309094	2.41	0.016	.2359615	2.321425
industry2	2.687826	1.874067	1.43	0.152	-.992932	6.368585
industry3	-1.660973	2.045435	-0.81	0.417	-5.678306	2.35636
industry4	4.493681	2.71684	1.65	0.099	-.8423237	9.829686
industry5	2.167425	2.081788	1.04	0.298	-1.921307	6.256157
location2	.9234872	1.329699	0.69	0.488	-1.688106	3.53508
yr_dummy2	.829877	1.371133	0.61	0.545	-1.863095	3.522849
yr_dummy3	.8923513	1.389097	0.64	0.521	-1.835901	3.620604
diversify	.5587717	.3631754	1.54	0.124	-.1545223	1.272066
age	-.1790532	.1014668	-1.76	0.078	-.3783389	.0202325
sqrt_tenure	2.609023	.7123997	3.66	0.000	1.209836	4.008211
qualify	.7054733	1.482349	0.48	0.634	-2.205932	3.616878
sqrt_board~e	16.69896	1.85308	9.01	0.000	13.05942	20.3385
ceo_dual1	4.089378	2.037733	2.01	0.045	.087171	8.091585
ln_bmeeting	-1.127828	1.949669	-0.58	0.563	-4.957072	2.701415
indpt_board	15.3686	6.124276	2.51	0.012	3.340221	27.39697
indpt_audit	-9.082413	6.275623	-1.45	0.148	-21.40804	3.243215
indpt_rem	-.7757386	3.312061	-0.23	0.815	-7.280787	5.72931
nexecdir	-45.93401	4.167496	-11.02	0.000	-54.11917	-37.74884
pinterlock	10.9361	5.531949	1.98	0.049	.0710799	21.80111
pold	-3.058083	4.342798	-0.70	0.482	-11.58755	5.471382
pbusy	3.035223	2.665666	1.14	0.255	-2.200273	8.270719

```
indirects~re |  -.1338802   .0367839    -3.64   0.000    -.2061255   -.0616349
 directshare |  -.0575624   .0538278    -1.07   0.285    -.1632829    .0481581
ln_blocksh~e |  -2.033825   .8842911    -2.30   0.022    -3.770616   -.2970347
       _cons |  -20.73185    9.77648    -2.12   0.034    -39.93333   -1.530371
------------------------------------------------------------------------------
```

Model 4

```
      Source |       SS       df       MS              Number of obs =     610
-------------+------------------------------           F( 38,   571) =   13.82
       Model |  97158.4134    38  2556.80035           Prob > F      =  0.0000
    Residual |  105669.199   571  185.059894           R-squared     =  0.4790
-------------+------------------------------           Adj R-squared =  0.4443
       Total |  202827.613   609  333.050267           Root MSE      =  13.604

------------------------------------------------------------------------------
sqrt_tcash~m |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   1.536044   .8771278     1.75   0.080    -.1867468    3.258835
 ln_mktvalue |   3.619297   .4979756     7.27   0.000      2.64121    4.597385
 ln_leverage |   .9541591   .5418421     1.76   0.079    -.1100876    2.018406
   industry2 |    2.70171   1.881152     1.44   0.151    -.9931119    6.396532
   industry3 |  -1.115366   2.070325    -0.54   0.590    -5.181748    2.951016
   industry4 |   4.535622   2.763884     1.64   0.101    -.8929982    9.964243
   industry5 |   2.439328    2.09613     1.16   0.245    -1.677739    6.556394
   location2 |   .8898401    1.34778     0.66   0.509    -1.757371    3.537052
   yr_dummy2 |   .6139275   1.369446     0.45   0.654    -2.075838    3.303693
   yr_dummy3 |   .5594029   1.388863     0.40   0.687      -2.1685    3.287306
   diversify |   .7448193   .3646634     2.04   0.042     .0285739    1.461065
         age |  -.1478595   .1024917    -1.44   0.150    -.3491663    .0534473
 sqrt_tenure |    2.48061    .711319     3.49   0.001     1.083489    3.877731
     qualify |   .4161137   1.495439     0.28   0.781    -2.521119    3.353346
sqrt_board~e |   16.82889   1.866321     9.02   0.000      13.1632    20.49458
   ceo_dual1 |   3.738789    2.07957     1.80   0.073    -.3457513    7.823329
```

```
 ln_bmeeting |  -1.346369   1.963218    -0.69   0.493     -5.20238    2.509642
 indpt_board |   17.20928   6.277122     2.74   0.006     4.880215    29.53835
 indpt_audit |  -9.864401   6.312382    -1.56   0.119    -22.26272    2.533921
   indpt_rem |  -1.864358   3.313721    -0.56   0.574    -8.372927    4.644211
    nexecdir |  -46.25226   4.267213   -10.84   0.000    -54.63361   -37.87091
  pinterlock |   11.76238   6.665066     1.76   0.078    -1.328662    24.85341
        pold |   -5.12002   4.365444    -1.17   0.241    -13.69431    3.454267
       pbusy |   4.347503   2.756214     1.58   0.115    -1.066053    9.761059
indirects~re |  -.1383546   .0368246    -3.76   0.000    -.2106828   -.0660263
 directshare |  -.0563882   .0542388    -1.04   0.299    -.1629202    .0501437
ln_blocksh~e |  -2.117107   .8857933    -2.39   0.017    -3.856917    -.377296
perfXboars~e |   2.810934   2.404348     1.17   0.243    -1.911512     7.53338
perfXindpt~d |   6.760215   5.430993     1.24   0.214    -3.906947    17.42738
perfXnexec~r |  -6.940543   5.420361    -1.28   0.201    -17.58682    3.705737
perfXpinte~k |  -9.183159   7.427255    -1.24   0.217    -23.77123    5.404914
   perfXpold |   7.195317   3.860963     1.86   0.063    -.3881064    14.77874
  perfXpbusy |   5.420029   3.043365     1.78   0.075    -.5575276    11.39759
perfXindir~e |   .1010468   .0466261     2.17   0.031     .0094672    .1926263
perfXdirec~e |   .0685048   .0640849     1.07   0.286    -.0573661    .1943757
perfXblock~e |    1.16781   1.266849     0.92   0.357    -1.320443    3.656063
perfXceodual |  -.7029436   2.437135    -0.29   0.773    -5.489787      4.0839
perfXbmeet~g |   4.146064   2.124319     1.95   0.051    -.0263687    8.318497
       _cons |  -20.77062   9.853339    -2.11   0.035    -40.12383   -1.417405
------------------------------------------------------------------------------
```

Model 4 is the best model to use. See r square change result below:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.431(a)	.186	.171	16.62076	.186	12.384	11	598	.000
2	.470(b)	.221	.202	16.30023	.035	8.917	3	595	.000
3	.677(c)	.458	.433	13.74425	.237	19.606	13	582	.000
4	.694(d)	.482	.446	13.58176	.024	2.167	12	570	.012

a Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2

b Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age

c Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age, pinterlo, indpt_re, ceo_dual, indpt_au, pold, directsh, indpt_bo, ln_bmeet, blocksha, pbusy, sqrt_boa, nexecdir, indirect

d Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age, pinterlo, indpt_re, ceo_dual, indpt_au, pold, directsh, indpt_bo, ln_bmeet, blocksha, pbusy, sqrt_boa, nexecdir, indirect, perfxbmeeting, perfxpbusy, perfxdirectshare, perfxpold, perfxblockshare, perfxpinterlock, perfxnexedir, perfxboardsize, perfxceodual, perfxindirecshare, perfxindptboard, ln_block

Regression Diagnostics For Model 4 (final version)

Multicollinearity

Variable	VIF	1/VIF
perfXindpt~d	4.27	0.234253
perfXceodual	3.80	0.262995
perfXindir~e	3.66	0.273166
perfXnexec~r	3.19	0.313629
perfXpold	3.01	0.331855
perfXboars~e	2.85	0.351077
industry3	2.80	0.357334
Performance	2.78	0.359378
perfXblock~e	2.57	0.389510
industry2	2.47	0.404497
industry5	2.33	0.428915
perfXbmeet~g	2.21	0.452732
perfXpinte~k	2.21	0.452937
industry4	1.96	0.509290
ln_mktvalue	1.96	0.510057
perfXdirec~e	1.93	0.516864
indirects~re	1.80	0.554589
nexecdir	1.74	0.573852
pinterlock	1.71	0.584905
directshare	1.69	0.592657
ln_blocksh~e	1.64	0.610842
perfXpbusy	1.63	0.613125
indpt_board	1.58	0.632049
sqrt_tenure	1.52	0.659944
sqrt_board~e	1.51	0.660714
pbusy	1.48	0.674788
age	1.45	0.690875
yr_dummy3	1.41	0.710088
yr_dummy2	1.38	0.723276
location2	1.36	0.734910
qualify	1.32	0.759575
ln_bmeeting	1.31	0.761655
pold	1.28	0.784175
diversify	1.27	0.789588
indpt_rem	1.26	0.795712
indpt_audit	1.25	0.800924
ln_leverage	1.22	0.816427
ceo_dual1	1.21	0.828124
Mean VIF	2.00	

```
Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
         Ho: Constant variance
         Variables: fitted values of sqrt_tcashrem

         chi2(1)      =    73.83
         Prob > chi2  =   0.0000

Running HC3 correctiom:

Regression with robust standard errors                Number of obs =     610
                                                      F( 38,   571) =    9.86
                                                      Prob > F      =  0.0000
                                                      R-squared     =  0.4790
                                                      Root MSE      =  13.604

------------------------------------------------------------------------------
             |             Robust HC3
sqrt_tcash~m |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   1.536044   1.008486     1.52   0.128     -.444751    3.516839
 ln_mktvalue |   3.619297   .8225238     4.40   0.000     2.003756    5.234839
 ln_leverage |   .9541591   .6349533     1.50   0.133      -.29297    2.201288
   industry2 |    2.70171   1.833561     1.47   0.141    -.8996378    6.303058
   industry3 |  -1.115366    2.06201    -0.54   0.589    -5.165415    2.934684
   industry4 |   4.535622   3.228055     1.41   0.161    -1.804688    10.87593
   industry5 |   2.439328   2.142562     1.14   0.255    -1.768936    6.647591
   location2 |   .8898401   1.218265     0.73   0.465    -1.502987    3.282667
   yr_dummy2 |   .6139275   1.333381     0.46   0.645    -2.005002    3.232857
   yr_dummy3 |   .5594029   1.408935     0.40   0.691    -2.207924     3.32673
   diversify |   .7448193   .4928634     1.51   0.131    -.2232272    1.712866
         age |  -.1478595   .1018321    -1.45   0.147    -.3478707    .0521517
 sqrt_tenure |    2.48061   .8547139     2.90   0.004      .801843    4.159377
     qualify |   .4161137   1.299019     0.32   0.749    -2.135325    2.967552
```

```
sqrt_board~e |   16.82889   2.448877     6.87   0.000     12.01899     21.6388
   ceo_dual1 |   3.738789   2.257877     1.66   0.098    -.6959695    8.173547
 ln_bmeeting |  -1.346369   2.321308    -0.58   0.562    -5.905714    3.212975
 indpt_board |   17.20928   6.248356     2.75   0.006     4.936714    29.48185
 indpt_audit |  -9.864401   6.784191    -1.45   0.146    -23.18942    3.460614
   indpt_rem |  -1.864358   3.292591    -0.57   0.571    -8.331426    4.602711
    nexecdir |  -46.25226   4.646173    -9.95   0.000    -55.37793   -37.12659
  pinterlock |   11.76238   14.02094     0.84   0.402    -15.77653    39.30128
        pold |   -5.12002   5.157709    -0.99   0.321    -15.25042    5.010376
       pbusy |   4.347503   2.741339     1.59   0.113    -1.036836    9.731842
indirects~re |  -.1383546   .0407732    -3.39   0.001    -.2184383   -.0582708
 directshare |  -.0563882   .0498895    -1.13   0.259    -.1543775     .041601
ln_blocksh~e |  -2.117107   .9125864    -2.32   0.021    -3.909542   -.3246709
perfXboars~e |   2.810934   3.574674     0.79   0.432    -4.210181    9.832048
perfXindpt~d |   6.760215   5.235493     1.29   0.197     -3.52296    17.04339
perfXnexec~r |  -6.940543   6.449547    -1.08   0.282    -19.60827    5.727188
perfXpinte~k |  -9.183159   11.63388    -0.79   0.430    -32.03359    13.66727
   perfXpold |   7.195317   5.010482     1.44   0.152    -2.645908    17.03654
  perfXpbusy |   5.420029   3.312294     1.64   0.102    -1.085738     11.9258
perfXindir~e |   .1010468   .0604391     1.67   0.095    -.0176634    .2197569
perfXdirec~e |   .0685048   .0772779     0.89   0.376    -.0832789    .2202885
perfXblock~e |    1.16781   1.492388     0.78   0.434    -1.763429    4.099049
perfXceodual |  -.7029436   2.269975    -0.31   0.757    -5.161463    3.755576
perfXbmeet~g |   4.146064   3.155648     1.31   0.189    -2.052031    10.34416
       _cons |  -20.77062   11.81628    -1.76   0.079     -43.9793    2.438067
------------------------------------------------------------------------------
```

Normality of residuals:

Variable	Obs	W	V	z	Prob>z
		Shapiro-Wilk W test for normal data			
e3	610	0.95440	18.356	7.057	0.00000

Based on corrections using robust regression, no difference is found on the Shapiro wilk test

Variable	Obs	W	V	z	Prob>z
		Shapiro-Wilk W test for normal data			
e4	610	0.95440	18.356	7.057	0.00000

linktest

Source	SS	df	MS		
				Number of obs =	610
				F(2, 607) =	308.69
Model	102274.179	2	51137.0897	Prob > F =	0.4130
Residual	100553.433	607	165.656397	R-squared =	0.5042
				Adj R-squared =	0.5026
Total	202827.613	609	333.050267	Root MSE =	12.871

sqrt_tcash~m	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	.2094972	.1481218	1.41	0.658	-.0813962	.5003906
_hatsq	.0102438	.0018434	5.56	0.427	.0066237	.013864
_cons	13.14223	2.754016	4.77	0.000	7.733671	18.55078

```
Ovtest

Ramsey RESET test using powers of the fitted values of sqrt_tcashrem
       Ho:  model has no omitted variables
                  F(3, 568) =     12.72
                   Prob > F =      0.3203
```

```
Panel data analysis

Fixed-effects (within) regression               Number of obs      =       610
Group variable (i): id_company                  Number of groups   =       228

R-sq:  within  = 0.1063                         Obs per group: min =         1
       between = 0.0309                                        avg =       2.7
       overall = 0.0252                                        max =         4

                                                F(34,348)          =      1.22
corr(u_i, Xb)  = -0.1883                        Prob > F           =    0.1936

------------------------------------------------------------------------------
sqrt_tcash~m |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   1.285824    .697877     1.84   0.066    -.0867637    2.658411
 ln_mktvalue |   .6886097   .5950074     1.16   0.248    -.4816533    1.858873
 ln_leverage |   -.839559   .5059315    -1.66   0.098    -1.834627    .1555092
   industry2 |  -.0549635   33.57347    -0.00   0.999    -66.08741    65.97748
   industry3 |  (dropped)
   industry4 |  (dropped)
   industry5 |  (dropped)
   location2 |  (dropped)
   yr_dummy2 |   1.125311   .6210861     1.81   0.071    -.0962439    2.346866
   yr_dummy3 |   .9783453   .6818723     1.43   0.152     -.362764    2.319455
   diversify |  -2.021808   8.135693    -0.25   0.804    -18.02312    13.97951
         age |  -.0198051   .1542928    -0.13   0.898    -.3232689    .2836587
 sqrt_tenure |  -.0134283   1.054283    -0.01   0.990    -2.086997    2.060141
     qualify |   1.407231   2.433291     0.58   0.563    -3.378576    6.193037
sqrt_board~e |   1.232571   2.659712     0.46   0.643    -3.998561    6.463702
   ceo_dual1 |  -3.487564   4.544311    -0.77   0.443    -12.42533    5.450206
 ln_bmeeting |   1.215516   1.824453     0.67   0.506    -2.372825    4.803857
 indpt_board |   .2437664   7.203213     0.03   0.973    -13.92354    14.41108
 indpt_audit |  -5.399336   6.422995    -0.84   0.401    -18.03211    7.233438
   indpt_rem |   -10.3518   7.442276    -1.39   0.165     -24.9893    4.285705
    nexecdir |  -7.681661   6.265421    -1.23   0.221    -20.00452    4.641195
```

```
  pinterlock |   30.90489   12.69346     2.43   0.015     5.939338    55.87045
        pold |   .6722659   7.629967     0.09   0.930    -14.33439    15.67892
       pbusy |  -2.224401   5.575543    -0.40   0.690     -13.1904    8.741601
indirects~re |  -.0019166    .061938    -0.03   0.975    -.1237365    .1199033
 directshare |  -.1357408   .1538486    -0.88   0.378    -.4383309    .1668493
ln_blocksh~e |  -.0780553    1.22285    -0.06   0.949    -2.483161    2.327051
perfXboars~e |   3.529282   1.741264     2.03   0.043     .1045566    6.954007
perfXindpt~d |   2.075141   4.005434     0.52   0.605    -5.802763    9.953045
perfXnexec~r |  -7.248848   4.044705    -1.79   0.074    -15.20399    .7062956
perfXpinte~k |  -4.455131   10.27214    -0.43   0.665    -24.65842    15.74816
   perfXpold |    8.64301   4.468654     1.93   0.054     -.145957    17.43198
  perfXpbusy |  -.8375467   2.226049    -0.38   0.707     -5.21575    3.540657
perfXindir~e |   .0201749   .0337178     0.60   0.550    -.0461413    .0864911
perfXdirec~e |   .0883079   .0513573     1.72   0.086    -.0127018    .1893176
perfXblock~e |   .9227046   .8857032     1.04   0.298    -.8193002    2.664709
perfXceodual |  -3.410138   1.647649    -2.07   0.039    -6.650742   -.1695347
perfXbmeet~g |   2.715449   1.474686     1.84   0.066    -.1849691    5.615867
       _cons |   40.25856   36.28647     1.11   0.268    -31.10982    111.6269
-------------+----------------------------------------------------------------
     sigma_u |   18.25852
     sigma_e |  5.6669228
         rho |  .91213377   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(227, 348) =    12.96                 Prob > F = 0.0000


Random-effects GLS regression                   Number of obs      =       610
Group variable (i): id_company                  Number of groups   =       228

R-sq:  within  = 0.0580                         Obs per group: min =         1
       between = 0.4751                                        avg =       2.7
       overall = 0.4266                                        max =         4

Random effects u_i ~ Gaussian                   Wald chi2(38)      =    178.78
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000
```

sqrt_tcash~m	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Performance	1.886733	.6382928	2.96	0.003	.6357019	3.137764
ln_mktvalue	2.086592	.4767763	4.38	0.000	1.152127	3.021056
ln_leverage	-.2284453	.4530021	-0.50	0.614	-1.116313	.6594226
industry2	2.218275	2.892976	0.77	0.443	-3.451854	7.888404
industry3	-.9512388	3.193977	-0.30	0.766	-7.211319	5.308841
industry4	8.240515	4.344791	1.90	0.058	-.2751188	16.75615
industry5	3.674173	3.271678	1.12	0.261	-2.738198	10.08654
location2	1.356941	2.122036	0.64	0.523	-2.802173	5.516056
yr_dummy2	.6831365	.6272085	1.09	0.276	-.5461696	1.912443
yr_dummy3	.5228718	.6655536	0.79	0.432	-.7815893	1.827333
diversify	.9831744	.5656947	1.74	0.082	-.1255668	2.091916
age	-.1110408	.1134015	-0.98	0.327	-.3333036	.111222
sqrt_tenure	2.008144	.7932318	2.53	0.011	.4534386	3.56285
qualify	.3076437	1.73678	0.18	0.859	-3.096383	3.71167
sqrt_board~e	9.283431	1.966864	4.72	0.000	5.428449	13.13841
ceo_dual1	1.070022	2.623508	0.41	0.683	-4.071959	6.212003
ln_bmeeting	.9202582	1.671748	0.55	0.582	-2.356308	4.196824
indpt_board	5.786125	5.91034	0.98	0.328	-5.797929	17.37018
indpt_audit	-1.120633	5.614593	-0.20	0.842	-12.12503	9.883768
indpt_rem	-3.978606	4.364759	-0.91	0.362	-12.53338	4.576165
nexecdir	-27.25064	4.447308	-6.13	0.000	-35.96721	-18.53408
pinterlock	23.1156	7.616153	3.04	0.002	8.188213	38.04298
pold	-2.473546	5.003518	-0.49	0.621	-12.28026	7.333169
pbusy	2.794565	3.406117	0.82	0.412	-3.881303	9.470432
indirects~re	-.0796849	.0423876	-1.88	0.060	-.162763	.0033933
directshare	-.0210055	.0736665	-0.29	0.776	-.1653893	.1233783
ln_blocksh~e	-1.581245	.9418829	-1.68	0.093	-3.427302	.2648116
perfXboars~e	4.664206	1.601337	2.91	0.004	1.525642	7.80277
perfXindpt~d	4.320552	3.648658	1.18	0.236	-2.830685	11.47179
perfXnexec~r	-11.34624	3.744965	-3.03	0.002	-18.68624	-4.006245
perfXpinte~k	-9.899984	7.218776	-1.37	0.170	-24.04853	4.248558
perfXpold	9.146422	2.913909	3.14	0.002	3.435265	14.85758
perfXpbusy	.3711693	2.056682	0.18	0.857	-3.659854	4.402192

```
perfXindir~e |   .0435601   .0316889     1.37   0.169    -.0185489    .1056692
perfXdirec~e |   .1059926   .0465751     2.28   0.023      .014707    .1972781
perfXblock~e |   1.010787   .8365138     1.21   0.227    -.6287501    2.650324
perfXceodual |  -3.567663   1.577072    -2.26   0.024    -6.658667   -.4766596
perfXbmeet~g |   3.461346   1.357095     2.55   0.011     .8014882    6.121203
       _cons |  -4.010732   11.36406    -0.35   0.724    -26.28388    18.26242
-------------+----------------------------------------------------------------
     sigma_u |  12.599049
     sigma_e |  5.6669228
         rho |  .83173168   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```

Hausman test

```
               ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |     fixed2         .          Difference          S.E.
-------------+----------------------------------------------------------------
 Performance |    1.285824     1.886733       -.6009089        .2821607
 ln_mktvalue |    .6886097     2.086592       -1.397982        .3559749
 ln_leverage |    -.839559    -.2284453       -.6111138        .2252904
   industry2 |   -.0549635     2.218275       -2.273239         33.4486
   yr_dummy2 |    1.125311     .6831365        .4421743               .
   yr_dummy3 |    .9783453     .5228718        .4554735        .1482842
   diversify |   -2.021808     .9831744       -3.004983        8.116003
         age |   -.0198051    -.1110408        .0912357        .1046249
 sqrt_tenure |   -.0134283     2.008144       -2.021573         .694476
     qualify |    1.407231     .3076437        1.099587        1.704259
sqrt_board~e |    1.232571     9.283431       -8.050861        1.790394
   ceo_dual1 |   -3.487564     1.070022       -4.557586        3.710521
 ln_bmeeting |    1.215516     .9202582        .2952583        .7306748
 indpt_board |    .2437664     5.786125       -5.542358        4.117543
 indpt_audit |   -5.399336    -1.120633       -4.278703        3.119489
   indpt_rem |    -10.3518    -3.978606        -6.37319        6.027964
    nexecdir |   -7.681661    -27.25064        19.56898         4.41327
  pinterlock |    30.90489      23.1156        7.789297        10.15471
```

```
        pold |    .6722659    -2.473546        3.145812        5.760313
       pbusy |   -2.224401     2.794565       -5.018966        4.414187
indirects~re |   -.0019166    -.0796849        .0777683         .045162
 directshare |   -.1357408    -.0210055       -.1147353        .1350653
ln_blocksh~e |   -.0780553    -1.581245         1.50319        .7798833
perfXboars~e |    3.529282     4.664206       -1.134924        .6838991
perfXindpt~d |    2.075141     4.320552       -2.245411        1.652513
perfXnexec~r |   -7.248848    -11.34624        4.097393        1.528031
perfXpinte~k |   -4.455131    -9.899984        5.444853        7.307953
   perfXpold |     8.64301     9.146422       -.5034123         3.38792
  perfXpbusy |   -.8375467     .3711693       -1.208716        .8516777
perfXindir~e |    .0201749     .0435601       -.0233852        .0115197
perfXdirec~e |    .0883079     .1059926       -.0176847        .0216409
perfXblock~e |    .9227046     1.010787       -.0880823        .2910581
perfXceodual |   -3.410138    -3.567663        .1575251         .477067
perfXbmeet~g |    2.715449     3.461346       -.7458966        .5770537
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                 chi2(33) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       95.88
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)

.
```

Regression results for Total Remuneration Model (Model 1-4)

Model 1: performance, mkt value, leverage, industry, location, year and diversification

```
      Source |       SS       df       MS              Number of obs =    1137
-------------+------------------------------           F( 11,  1125) =   17.64
       Model |  156.034065    11   14.184915           Prob > F      =  0.0000
    Residual |  904.805367  1125  .804271437           R-squared     =  0.1471
-------------+------------------------------           Adj R-squared =  0.1387
       Total |  1060.83943  1136  .933837528           Root MSE      =  .89681

------------------------------------------------------------------------------
 ln_totalrem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |  -.0081089   .0284897    -0.28   0.776    -.0640078      .04779
 ln_mktvalue |   .2362001   .0208471    11.33   0.000     .1952966    .2771036
 ln_leverage |   .1318112   .0250678     5.26   0.000     .0826263    .1809962
   industry2 |  -.0511948   .0821553    -0.62   0.533    -.2123896         .11
   industry3 |  -.1775169   .0895917    -1.98   0.048    -.3533026   -.0017312
   industry4 |   .2377531   .1261642     1.88   0.060    -.0097904    .4852967
   industry5 |  -.3231039   .0913674    -3.54   0.000    -.5023736   -.1438343
   location2 |  -.0345696   .0588978    -0.59   0.557    -.1501316    .0809924
   yr_dummy2 |   .0836392   .0652352     1.28   0.200    -.0443572    .2116356
   yr_dummy3 |   .1227976   .0652441     1.88   0.060    -.0052163    .2508114
   diversify |   .0256048   .0160924     1.59   0.112    -.0059696    .0571792
       _cons |   4.563487   .2516966    18.13   0.000     4.069639    5.057334
------------------------------------------------------------------------------
```

Model 2: Model 1 + human capital attributes

```
      Source |       SS       df       MS              Number of obs =    1132
-------------+------------------------------           F( 14,  1117) =   19.07
       Model |  200.882065    14  14.3487189           Prob > F      =  0.0000
    Residual |  840.635989  1117  .752583696           R-squared     =  0.1929
-------------+------------------------------           Adj R-squared =  0.1828
       Total |  1041.51805  1131  .920882452           Root MSE      =  .86752

------------------------------------------------------------------------------
 ln_totalrem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |  -.0029451   .0275832    -0.11   0.915    -.0570659    .0511757
 ln_mktvalue |   .2297367   .0205002    11.21   0.000     .1895134      .26996
 ln_leverage |   .1283067   .0243009     5.28   0.000     .0806262    .1759873
   industry2 |  -.0280808   .0797836    -0.35   0.725    -.1846234    .1284618
   industry3 |  -.1585689   .0873084    -1.82   0.070    -.3298758     .012738
   industry4 |   .1866704   .1226038     1.52   0.128    -.0538894    .4272302
   industry5 |   -.283785   .0894707    -3.17   0.002    -.4593345   -.1082355
   location2 |   .0056592   .0581927     0.10   0.923    -.1085201    .1198385
   yr_dummy2 |   .0834857   .0633645     1.32   0.188    -.0408413    .2078126
   yr_dummy3 |    .096836   .0635662     1.52   0.128    -.0278866    .2215587
   diversify |   .0226011   .0156879     1.44   0.150    -.0081799    .0533821
         age |  -.0145513   .0043438    -3.35   0.001    -.0230743   -.0060283
 sqrt_tenure |   .2243819   .0285911     7.85   0.000     .1682836    .2804803
     qualify |   .0107282   .0616412     0.17   0.862    -.1102174    .1316737
       _cons |   4.720786   .3057599    15.44   0.000     4.120857    5.320714
------------------------------------------------------------------------------
```

Model 3: Model 2 + corporate governance variables

Source	SS	df	MS	Number of obs =	610
Model	254.291065	27	9.41818759	F(27, 582) =	17.16
Residual	319.405788	582	.548807195	Prob > F =	0.0000
Total	573.696852	609	.942030956	R-squared =	0.4432
				Adj R-squared =	0.4174
				Root MSE =	.74082

ln_totalrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Performance	-.0632453	.0311476	-2.03	0.043	-.1244207	-.0020699
ln_mktvalue	.1840274	.0260285	7.07	0.000	.132906	.2351487
ln_leverage	.0802143	.0286955	2.80	0.005	.023855	.1365735
industry2	.0548574	.1012926	0.54	0.588	-.1440862	.253801
industry3	.0783359	.110555	0.71	0.479	-.1387994	.2954713
industry4	.0482697	.1468442	0.33	0.742	-.2401393	.3366788
industry5	.0098386	.1125198	0.09	0.930	-.2111559	.230833
location2	-.0206362	.0718697	-0.29	0.774	-.1617918	.1205194
yr_dummy2	.0541426	.0741092	0.73	0.465	-.0914115	.1996967
yr_dummy3	.0683227	.0750801	0.91	0.363	-.0791384	.2157837
diversify	.0066422	.0196295	0.34	0.735	-.0319111	.0451955
age	-.0179548	.0054842	-3.27	0.001	-.0287261	-.0071835
sqrt_tenure	.1861888	.0385049	4.84	0.000	.1105633	.2618144
qualify	.0464016	.0801204	0.58	0.563	-.1109587	.2037619
sqrt_board~e	.8566594	.1001583	8.55	0.000	.6599436	1.053375
ceo_dual1	.2159839	.1101387	1.96	0.050	-.0003339	.4323016
ln_bmeeting	.0875735	.1053788	0.83	0.406	-.1193956	.2945427
indpt_board	.3478597	.3310148	1.05	0.294	-.3022694	.9979887
indpt_audit	-.2864418	.3391951	-0.84	0.399	-.9526373	.3797537
indpt_rem	-.0687455	.1790157	-0.38	0.701	-.4203409	.2828499
nexecdir	-2.519582	.2252516	-11.19	0.000	-2.961987	-2.077177
pinterlock	.5149867	.2989997	1.72	0.086	-.0722633	1.102237
pold	.1983122	.2347266	0.84	0.399	-.2627021	.6593265
pbusy	-.0813811	.1440782	-0.56	0.572	-.3643576	.2015955

```
indirects~re |  -.0017842   .0019882    -0.90   0.370     -.005689    .0021207
 directshare |   .0029068   .0029094     1.00   0.318    -.0028073     .008621
ln_blocksh~e |  -.0080898   .0477956    -0.17   0.866    -.1019627    .0857831
       _cons |   4.354116    .528415     8.24   0.000     3.316283    5.391949
------------------------------------------------------------------------------
```

Model 4: model 3 + interactions

```
      Source |       SS       df       MS              Number of obs =     610
-------------+------------------------------           F( 38,   571) =   13.27
       Model |  268.996761    38  7.07886213           Prob > F      =  0.0000
    Residual |  304.700092   571  .533625379           R-squared     =  0.4689
-------------+------------------------------           Adj R-squared =  0.4335
       Total |  573.696852   609  .942030956           Root MSE      =   .7305

------------------------------------------------------------------------------
 ln_totalrem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   .0488265   .0471004     1.04   0.300    -.0436848    .1413378
 ln_mktvalue |   .1649522   .0267405     6.17   0.000     .1124304     .217474
 ln_leverage |   .0626044   .0290961     2.15   0.032     .0054559    .1197528
   industry2 |   .0452146    .101015     0.45   0.655    -.1531918     .243621
   industry3 |   .1036604   .1111733     0.93   0.352    -.1146982     .322019
   industry4 |   .0900654   .1484164     0.61   0.544    -.2014433    .3815741
   industry5 |   .0137633    .112559     0.12   0.903     -.207317    .2348436
   location2 |  -.0159034   .0723738    -0.22   0.826    -.1580547    .1262478
   yr_dummy2 |   .0450347   .0735372     0.61   0.541    -.0994017    .1894711
   yr_dummy3 |   .0527797   .0745798     0.71   0.479    -.0937046     .199264
   diversify |   .0193941   .0195819     0.99   0.322    -.0190672    .0578554
         age |  -.0162134   .0055037    -2.95   0.003    -.0270233   -.0054035
 sqrt_tenure |   .1827105   .0381968     4.78   0.000     .1076872    .2577338
     qualify |   .0437486   .0803028     0.54   0.586    -.1139763    .2014736
sqrt_board~e |   .8586108   .1002186     8.57   0.000     .6617687    1.055453
   ceo_dual1 |   .1588216   .1116698     1.42   0.156    -.0605121    .3781552
 ln_bmeeting |   .0534985   .1054219     0.51   0.612    -.1535635    .2605604
```

indpt_board	.4483193	.337072	1.33	0.184	-.2137329	1.110372
indpt_audit	-.2262536	.3389654	-0.67	0.505	-.8920248	.4395176
indpt_rem	-.0942936	.1779418	-0.53	0.596	-.4437939	.2552068
nexecdir	-2.404453	.2291429	-10.49	0.000	-2.854518	-1.954387
pinterlock	.4572922	.357904	1.28	0.202	-.2456768	1.160261
pold	.0930222	.2344177	0.40	0.692	-.3674041	.5534485
pbusy	-.018657	.1480046	-0.13	0.900	-.3093568	.2720428
indirects~re	-.0020474	.0019774	-1.04	0.301	-.0059313	.0018365
directshare	.0030741	.0029125	1.06	0.292	-.0026465	.0087947
ln_blocksh~e	-.0046167	.0475658	-0.10	0.923	-.0980419	.0888085
perfXboars~e	.2272081	.1291099	1.76	0.079	-.0263802	.4807963
perfXindpt~d	.317569	.2916361	1.09	0.277	-.2552415	.8903795
perfXnexec~r	-.626259	.2910652	-2.15	0.032	-1.197948	-.0545699
perfXpinte~k	-.3116088	.3988324	-0.78	0.435	-1.094966	.4717487
perfXpold	.5939944	.2073279	2.86	0.004	.186776	1.001213
perfXpbusy	-.0285999	.1634241	-0.18	0.861	-.3495857	.2923859
perfXindir~e	.0041964	.0025038	1.68	0.094	-.0007213	.009114
perfXdirec~e	.0038259	.0034413	1.11	0.267	-.0029332	.010585
perfXblock~e	.0178235	.0680279	0.26	0.793	-.115792	.1514389
perfXceodual	.0545585	.1308705	0.42	0.677	-.2024878	.3116048
perfXbmeet~g	.165209	.1140727	1.45	0.148	-.0588444	.3892623
_cons	4.338544	.5291094	8.20	0.000	3.299305	5.377782

Note: two interactions, perfXindptrem and perfXindptaudit were dropped form the regression as it shows high degree of collinearity. Other interactions variables had been mean-centered in order to reduce the multicollinearity between the independent variables.

Based on the result presented below, it is found that model 4 is the best model (r square change is significant).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.360(a)	.130	.114	.91365	.130	8.115	11	598	.000
2	.445(b)	.198	.179	.87930	.068	16.875	3	595	.000
3	.666(c)	.443	.417	.74082	.245	19.712	13	582	.000
4	.685(d)	.469	.433	.73114	.026	2.293	12	570	.007

a Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2

b Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age

c Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age, pinterlo, indpt_re, ceo_dual, indpt_au, pold, directsh, indpt_bo, ln_bmeet, blocksha, pbusy, sqrt_boa, nexecdir, indirect

d Predictors: (Constant), diversif, yr_dumm1, industr3, performa, ln_lever, industr4, locatio1, industr5, ln_mktva, yr_dumm2, industr2, sqrt_ten, qualify, age, pinterlo, indpt_re, ceo_dual, indpt_au, pold, directsh, indpt_bo, ln_bmeet, blocksha, pbusy, sqrt_boa, nexecdir, indirect, perfxbmeeting, perfxpbusy, perfxdirectshare, perfxpold, perfxblockshare, perfxpinterlock, perfxnexedir, perfxboardsize, perfxceodual, perfxindirecshare, perfxindptboard, ln_block

Multicollinearity test

Variable	VIF	1/VIF
perfXindpt~d	4.27	0.234253
perfXceodual	3.80	0.262995
perfXindir~e	3.66	0.273166
perfXnexec~r	3.19	0.313629
perfXpold	3.01	0.331855
perfXboars~e	2.85	0.351077
industry3	2.80	0.357334
Performance	2.78	0.359378
perfXblock~e	2.57	0.389510
industry2	2.47	0.404497
industry5	2.33	0.428915
perfXbmeet~g	2.21	0.452732
perfXpinte~k	2.21	0.452937
industry4	1.96	0.509290
ln_mktvalue	1.96	0.510057
perfXdirec~e	1.93	0.516864
indirects~re	1.80	0.554589
nexecdir	1.74	0.573852
pinterlock	1.71	0.584905
directshare	1.69	0.592657
ln_blocksh~e	1.64	0.610842
perfXpbusy	1.63	0.613125
indpt_board	1.58	0.632049
sqrt_tenure	1.52	0.659944
sqrt_board~e	1.51	0.660714
pbusy	1.48	0.674788
age	1.45	0.690875
yr_dummy3	1.41	0.710088
yr_dummy2	1.38	0.723276
location2	1.36	0.734910
qualify	1.32	0.759575
ln_bmeeting	1.31	0.761655
pold	1.28	0.784175
diversify	1.27	0.789588
indpt_rem	1.26	0.795712
indpt_audit	1.25	0.800924
ln_leverage	1.22	0.816427
ceo_dual1	1.21	0.828124
Mean VIF	2.00	

Heteroscedasticity

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
         Ho: Constant variance
         Variables: fitted values of ln_totalrem

         chi2(1)   =   7.76
         Prob > chi2 =   0.0053

Although no evidence of heteracesdasticity, the HC3 correction was made in order to improve the model.

Regression with robust standard errors

Number of obs	= 610
F(38, 571)	= 23.55
Prob > F	= 0.0000
R-squared	= 0.4689
Root MSE	= .7305

ln_totalrem	Robust HC3 Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Performance	.0488265	.061696	0.79	0.429	-.0723522	.1700052
ln_mktvalue	.1649522	.0449652	3.67	0.000	.0766348	.2532695
ln_leverage	.0626044	.0351361	1.78	0.075	-.0064073	.1316161
industry2	.0452146	.102475	0.44	0.659	-.1560593	.2464885
industry3	.1036604	.1144299	0.91	0.365	-.1210944	.3284152
industry4	.0900654	.1765791	0.51	0.610	-.2567584	.4368892
industry5	.0137633	.1211975	0.11	0.910	-.2242839	.2518105
location2	-.0159034	.0716877	-0.22	0.825	-.1567073	.1249004
yr_dummy2	.0450347	.0740746	0.61	0.543	-.1004572	.1905266
yr_dummy3	.0527797	.0759024	0.70	0.487	-.0963023	.2018616
diversify	.0193941	.0248705	0.78	0.436	-.0294547	.068243
age	-.0162134	.0061837	-2.62	0.009	-.028359	-.0040678
sqrt_tenure	.1827105	.0455775	4.01	0.000	.0931905	.2722305
qualify	.0437486	.0734096	0.60	0.551	-.1004371	.1879344
sqrt_board~e	.8586108	.1257286	6.83	0.000	.6116638	1.105558

```
   ceo_dual1 |   .1588216   .1392997     1.14   0.255    -.1147807    .4324238
 ln_bmeeting |   .0534985   .1399261     0.38   0.702    -.2213341    .3283311
 indpt_board |   .4483193    .466758     0.96   0.337    -.4684527    1.365091
 indpt_audit |  -.2262536    .359693    -0.63   0.530    -.9327364    .4802292
   indpt_rem |  -.0942936   .1560899    -0.60   0.546     -.400874    .2122869
    nexecdir |  -2.404453   .2440816    -9.85   0.000     -2.88386   -1.925045
  pinterlock |   .4572922   .5621152     0.81   0.416    -.6467736    1.561358
        pold |   .0930222   .2866801     0.32   0.746    -.4700539    .6560983
       pbusy |   -.018657   .1436137    -0.13   0.897    -.3007325    .2634185
indirects~re |  -.0020474   .0023259    -0.88   0.379    -.0066159     .002521
 directshare |   .0030741   .0030738     1.00   0.318    -.0029632    .0091114
ln_blocksh~e |  -.0046167   .0512567    -0.09   0.928    -.1052914    .0960581
perfXboars~e |   .2272081   .1885028     1.21   0.229    -.1430354    .5974516
perfXindpt~d |    .317569    .735702     0.43   0.666    -1.127443    1.762581
perfXnexec~r |   -.626259   .4426665    -1.41   0.158    -1.495712    .2431942
perfXpinte~k |  -.3116088   .4742325    -0.66   0.511    -1.243062    .6198442
   perfXpold |   .5939944   .3027677     1.96   0.050      -.00068    1.188669
  perfXpbusy |  -.0285999   .1624017    -0.18   0.860    -.3475774    .2903777
perfXindir~e |   .0041964   .0040427     1.04   0.300    -.0037439    .0121367
perfXdirec~e |   .0038259   .0057617     0.66   0.507    -.0074909    .0151427
perfXblock~e |   .0178235   .0942862     0.19   0.850    -.1673666    .2030135
perfXceodual |   .0545585   .2178354     0.25   0.802     -.373298     .482415
perfXbmeet~g |    .165209   .1662664     0.99   0.321    -.1613593    .4917773
       _cons |   4.338544   .6749277     6.43   0.000       3.0129    5.664188
------------------------------------------------------------------------------
```

Normality of residuals

Variable	Obs	W	V	z	Prob>z
		Shapiro-Wilk W test for normal data			
e	610	0.95607	17.686	6.967	0.00000

A robust regression was carried out in order to reduce the outliers effect on the regression. However, no difference was found using the Shapiro wilk test on the residuals of robust regression below:

Variable	Obs	W	V	z	Prob>z
		Shapiro-Wilk W test for normal data			
e2	610	0.95607	17.686	6.967	0.00000

linktest

Source	SS	df	MS		
				Number of obs =	610
				F(2, 607) =	269.11
Model	269.618798	2	134.809399	Prob > F =	0.8321
Residual	304.078055	607	.500952314	R-squared =	0.4700
				Adj R-squared =	0.4682
Total	573.696852	609	.942030956	Root MSE =	.70778

ln_totalrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_hat	1.457137	.4125032	3.53	0.765	.6470304	2.267244
_hatsq	-.0319951	.0287127	-1.11	0.804	-.0883835	.0243933
_cons	-1.617482	1.482438	-1.09	0.276	-4.528812	1.293847

```
Ovtest

Ramsey RESET test using powers of the fitted values of ln_totalrem
       Ho:  model has no omitted variables
                 F(3, 568) =      1.94
                  Prob > F =      0.1218



Panel data analysis

Fixed-effects (within) regression               Number of obs      =       610
Group variable (i): id_company                  Number of groups   =       228

R-sq:  within  = 0.1514                         Obs per group: min =         1
       between = 0.0517                                        avg =       2.7
       overall = 0.0344                                        max =         4

                                                F(34,348)          =      1.83
corr(u_i, Xb)  = -0.3158                        Prob > F           =    0.0042

------------------------------------------------------------------------------
 ln_totalrem |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |    .033869   .0361178     0.94   0.349    -.0371677    .1049056
 ln_mktvalue |  -.0085372   .0307939    -0.28   0.782    -.0691028    .0520284
 ln_leverage |  -.0185374   .0261839    -0.71   0.479     -.070036    .0329613
   industry2 |  -.2923202   1.737556    -0.17   0.866    -3.709753    3.125113
   industry3 |  (dropped)
   industry4 |  (dropped)
   industry5 |  (dropped)
   location2 |  (dropped)
   yr_dummy2 |   .0611343   .0321436     1.90   0.058    -.0020858    .1243545
   yr_dummy3 |   .0523084   .0352895     1.48   0.139    -.0170992     .121716
   diversify |  -.0779661   .4210534    -0.19   0.853    -.9060957    .7501636
```

```
         age |    .007686   .0079852     0.96   0.336    -.0080194    .0233914
 sqrt_tenure |   .0592913   .0545632     1.09   0.278    -.0480238    .1666065
     qualify |   .1699933   .1259321     1.35   0.178    -.0776906    .4176772
sqrt_board~e |   .1734044   .1376503     1.26   0.209    -.0973268    .4441356
   ceo_dual1 |  -1.025367   .2351856    -4.36   0.000    -1.487931   -.5628028
 ln_bmeeting |  -.0336366   .0944224    -0.36   0.722     -.219347    .1520739
 indpt_board |  -.2739887    .372794    -0.73   0.463    -1.007202    .4592241
 indpt_audit |  -.2644232   .3324147    -0.80   0.427    -.9182178    .3893715
   indpt_rem |  -.1487155   .3851664    -0.39   0.700    -.9062624    .6088314
    nexecdir |  -1.156282   .3242596    -3.57   0.000    -1.794037   -.5185271
  pinterlock |   1.275133   .6569355     1.94   0.053     -.016931    2.567196
        pold |    .094757   .3948801     0.24   0.810     -.681895    .8714089
       pbusy |  -.3656619   .2885558    -1.27   0.206    -.9331946    .2018709
indirects~re |  -.0056338   .0032055    -1.76   0.080    -.0119385    .0006708
 directshare |  -.0015881   .0079623    -0.20   0.842    -.0172483    .0140721
ln_blocksh~e |  -.0332611   .0632872    -0.53   0.600    -.1577346    .0912123
perfXboars~e |   .0982359   .0901171     1.09   0.276    -.0790068    .2754786
perfXindpt~d |   .3000504   .2072966     1.45   0.149    -.1076614    .7077623
perfXnexec~r |  -.2623089    .209329    -1.25   0.211    -.6740182    .1494003
perfXpinte~k |     .66562   .5316229     1.25   0.211    -.3799781    1.711218
   perfXpold |  -.0688184     .23127    -0.30   0.766    -.5236812    .3860444
  perfXpbusy |  -.0958916   .1152066    -0.83   0.406    -.3224804    .1306973
perfXindir~e |   .0020422    .001745     1.17   0.243    -.0013899    .0054744
perfXdirec~e |   .0017658   .0026579     0.66   0.507    -.0034619    .0069934
perfXblock~e |    .010381   .0458385     0.23   0.821    -.0797745    .1005364
perfXceodual |  -.0252224   .0852722    -0.30   0.768    -.1929361    .1424913
perfXbmeet~g |   .1411779   .0763207     1.85   0.065    -.0089299    .2912857
       _cons |   8.514004   1.877964     4.53   0.000     4.820416    12.20759
-------------+----------------------------------------------------------------
     sigma_u |  .99109617
     sigma_e |  .29328504
         rho |  .91948226   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(227, 348) =    14.07                 Prob > F = 0.0000
```

```
Random-effects GLS regression                   Number of obs      =       610
Group variable (i): id_company                  Number of groups   =       228

R-sq:  within  = 0.0728                         Obs per group: min =         1
       between = 0.4390                                        avg =       2.7
       overall = 0.4011                                        max =         4


Random effects u_i ~ Gaussian                   Wald chi2(38)      =    169.42
corr(u_i, X)       = 0 (assumed)                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
 ln_totalrem |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 Performance |   .0824677   .0338527     2.44   0.015     .0161176    .1488178
 ln_mktvalue |    .079759   .0254183     3.14   0.002       .02994    .1295779
 ln_leverage |   .0122064   .0240621     0.51   0.612    -.0349544    .0593673
   industry2 |  -.0157233   .1565759    -0.10   0.920    -.3226065    .2911599
   industry3 |   .1003021   .1730088     0.58   0.562    -.2387889    .4393932
   industry4 |   .3038024   .2355191     1.29   0.197    -.1578066    .7654114
   industry5 |   .0881313    .177236     0.50   0.619    -.2592449    .4355074
   location2 |  -.0043878   .1151222    -0.04   0.970    -.2300233    .2212476
   yr_dummy2 |   .0544834   .0331199     1.65   0.100    -.0104305    .1193972
   yr_dummy3 |   .0534115   .0351767     1.52   0.129    -.0155335    .1223566
   diversify |   .0247762    .030648     0.81   0.419    -.0352928    .0848452
```

```
         age |   -.006199   .0060601    -1.02   0.306    -.0180765    .0056786
 sqrt_tenure |   .1299242   .0423875     3.07   0.002     .0468463    .2130022
     qualify |   .0374626    .092917     0.40   0.687    -.1446514    .2195766
sqrt_board~e |   .4890748   .1050565     4.66   0.000     .2831679    .6949817
   ceo_dual1 |  -.1630094   .1409901    -1.16   0.248    -.4393449    .1133261
 ln_bmeeting |   .0471777   .0887347     0.53   0.595    -.1267391    .2210946
 indpt_board |  -.2020324   .3147235    -0.64   0.521    -.8188791    .4148142
 indpt_audit |   .0135201   .2984874     0.05   0.964    -.5715044    .5985447
   indpt_rem |  -.1235162   .2345447    -0.53   0.598    -.5832154     .336183
    nexecdir |  -1.648434   .2375316    -6.94   0.000    -2.113987   -1.182881
  pinterlock |    .884836    .407759     2.17   0.030      .085643    1.684029
        pold |   .0394245   .2680057     0.15   0.883    -.4858571    .5647061
       pbusy |   .0056548   .1828346     0.03   0.975    -.3526945    .3640041
indirects~re |  -.0037594   .0022689    -1.66   0.098    -.0082063    .0006875
 directshare |   .0036653   .0039676     0.92   0.356    -.0041112    .0114417
ln_blocksh~e |  -.0401508   .0502821    -0.80   0.425    -.1387019    .0584002
perfXboars~e |   .1684753   .0848238     1.99   0.047     .0022237    .3347269
perfXindpt~d |   .2106642    .193337     1.09   0.276    -.1682693    .5895978
perfXnexec~r |  -.4128292   .1984055    -2.08   0.037    -.8016968   -.0239615
perfXpinte~k |   .0911416     .38508     0.24   0.813    -.6636014    .8458846
   perfXpold |   .2044588   .1551186     1.32   0.187    -.0995681    .5084857
  perfXpbusy |  -.0973694    .108941    -0.89   0.371    -.3108898     .116151
perfXindir~e |   .0026208   .0016792     1.56   0.119    -.0006703    .0059119
perfXdirec~e |   .0025237   .0024689     1.02   0.307    -.0023152    .0073626
perfXblock~e |   .0160944   .0442897     0.36   0.716    -.0707117    .1029005
perfXceodual |  -.0600312    .083513    -0.72   0.472    -.2237137    .1036512
perfXbmeet~g |    .147741   .0718825     2.06   0.040     .0068539    .2886281
       _cons |   5.867963   .6083247     9.65   0.000     4.675669    7.060258
-------------+----------------------------------------------------------------
     sigma_u |  .67270004
     sigma_e |  .29328504
         rho |  .84027949   (fraction of variance due to u_i)
------------------------------------------------------------------------------

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```

Hausman test#

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	.	Difference	S.E.
Performance	.033869	.0824677	-.0485987	.0125893
ln_mktvalue	-.0085372	.079759	-.0882962	.0173832
ln_leverage	-.0185374	.0122064	-.0307438	.0103253
industry2	-.2923202	-.0157233	-.2765969	1.730487
yr_dummy2	.0611343	.0544834	.006651	.
yr_dummy3	.0523084	.0534115	-.0011031	.0028194
diversify	-.0779661	.0247762	-.1027422	.4199365
age	.007686	-.006199	.0138849	.0052
sqrt_tenure	.0592913	.1299242	-.0706329	.0343576
qualify	.1699933	.0374626	.1325307	.085002
sqrt_board~e	.1734044	.4890748	-.3156704	.0889424
ceo_dual1	-1.025367	-.1630094	-.8623574	.1882393
ln_bmeeting	-.0336366	.0471777	-.0808143	.0322761
indpt_board	-.2739887	-.2020324	-.0719563	.1998112
indpt_audit	-.2644232	.0135201	-.2779433	.1463038
indpt_rem	-.1487155	-.1235162	-.0251993	.3055191
nexecdir	-1.156282	-1.648434	.4921518	.220733
pinterlock	1.275133	.884836	.3902965	.5150697
pold	.094757	.0394245	.0553324	.2900056
pbusy	-.3656619	.0056548	-.3713167	.2232397
indirects~re	-.0056338	-.0037594	-.0018744	.0022644
directshare	-.0015881	.0036653	-.0052534	.0069033
ln_blocksh~e	-.0332611	-.0401508	.0068897	.0384315
perfXboars~e	.0982359	.1684753	-.0702394	.0304305
perfXindpt~d	.3000504	.2106642	.0893862	.0747842
perfXnexec~r	-.2623089	-.4128292	.1505202	.0667375
perfXpinte~k	.66562	.0911416	.5744784	.3665191
perfXpold	-.0688184	.2044588	-.2732772	.1715344
perfXpbusy	-.0958916	-.0973694	.0014778	.0374757

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perfXindir~e |    .0020422     .0026208       -.0005786        .0004749
perfXdirec~e |    .0017658     .0025237       -.0007579        .0009845
perfXblock~e |     .010381     .0160944       -.0057134        .0118152
perfXceodual |   -.0252224    -.0600312        .0348088        .0172315
perfXbmeet~g |    .1411779      .147741       -.0065631        .0256467
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                 chi2(33) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =      108.12
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)

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