DETERMINANTS OF EXECUTIVE DIRECTORS' REMUNERATION IN MALAYSIA

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A research project submitted in partial fulfilment of the requirement for degree of

BACHELOR OF FINANCE (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
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AUGUST 2015

DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

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ACKNOWLEDGEMENT

First of all, we would like to express our gratitude towards our supervisor, Encik Aminuddin bin Ahmad for guiding us throughout the preparation of this research project. Besides, we would like to extend our appreciation to our second examiner, Mr. Heng Zin Yau for providing us with his comments and suggestions to enhance the research report quality.

Besides that, we also appreciate the help from Mr. Lee Chin Yu and Mr. Thurai Murugan A/L Nathan for spending their time and knowledge to guide us in this thesis. We appreciate their patience, friendliness, as well as the valuable comments and suggestions that they has given to us in order to improve our work.

Furthermore, we would like to thank Universiti Tunku Abdul Rahman (UTAR) for providing us sufficient facility in order to carry out our research. The database provided by the university enables us to obtain relevant materials while preparing this research project.

Lastly, we would like to thank all of the members for giving their best effort in completing this thesis. Without the contribution of each member, our research project would not be successfully completed.

DEDICATION

We would like to dedicate this final year project to:

En. Aminuddin bin Ahmad
Our supervisor who has provided us with useful guidance, valuable supports, constructive feedbacks and precious encouragement to us.

Team Members
All the members who have played different roles while completing this research project and the full cooperation given at all times.

Thank You.

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LIST OF ABBREVIATION

AR	Autoregressive
BLUE	Best Linear Unbiased Estimator
BPLM	Breusch-Pagan and Lagrangian Multiplier
CEO	Chief Executive Officer
FEM	Fixed Effect Model
FRS	Financial Reporting Standard
IPO	Initial Public Offering
JB	Jarque- Bera
MCCG	Malaysia Code on Corporate Governance
REM	Random Effect Model
ROA	Return On Asset
UTAR	Universiti Tunku Abdul Rahman
VIF	Variance Inflating Factor

PREFACE

Many overpaid remuneration for executive directors cases had been reported around the world, so does Malaysia. Attention of academics, regulators, and media were highly attracted on this controversial issue. Remuneration in the forms of base salary, stock options, pension, bonus and other incentives (healthcare, car, etc.) lead to criticism occurs. Their criticisms took many forms of concerns relating the level of executive pay, its relationship with company performance and the failure of executive pay setting (e.g. board of directors, compensation committees) to stop this managerial excess.

As such, this issue become a popular research topic due to the variety of criteria given in the context. Besides that, curiosity was raised about the top executives pay packages around the world. Also, it is considered as a channel for those who held the same position level but received lower remuneration to voice out their dissatisfactions.

In this research, the researchers will examine the relationship between the executive directors' remuneration in Malaysia and the independent variables, namely firm size, leverage, firm performance and firm age. All independent variables are expected to have significant relationship towards the executive directors' remuneration.

ABSTRACT

This paper examines the possible factors that will influence the executive remunerations in Malaysia from 2009 to 2013 which consist of annually data of 100 observations. This paper uses the Pooled Ordinary Least Square (OLS) method to capture the effect of independent variables, which are the Firm Size, Firm Age, Firm Performance and Leverage on the dependent variable, which is the Executives Directors' Remuneration. The data of the variables in this study are obtained through secondary sources. A panel data analysis is conducted to acquire the results. The results obtained found that the Firm Size, Firm Performance and the Leverage exhibit a significant relationship towards the Executive Directors' Remuneration. Whereas, Firm Age is found to be insignificant towards the dependent variable in the model which is Executive Directors' Remuneration.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

This research focuses on filling the issues on the remuneration which omitted by other researchers. Remuneration which includes the salaries, bonuses and profits earn from sales which causes executives' being overly paid in rewards. Therefore, this paper aims in determining the factors that affect the executive directors' remuneration. This research uses remuneration as dependent variable and firm size, firm performance, leverage and firm age as independent variables. This chapter includes several parts which are research background, research questions, hypothesis of study, significance of study, and chapter layout.

1.1 Research Background

Public's attentions from developed and developing countries were alerted with the issues of company executives' remuneration. It happened because of these issues had been frequently reported especially after the global financial crisis. Although not every company has outstanding performance, executive directors' still will be able to get sizeable remuneration. Shareholders and publics therefore started to realize that the executives might receive excess remuneration compare to what they deserve to receive. Besides that, the unavailability of obtaining the actual amount of executive directors' remuneration has become one of the trigger factors to public (Yu, 2014).

According to Haron and Akhtaruddin (2013), similar cases did happen in Malaysia. Even though some of the firms experienced financial losses, the company still paying

ridiculous remunerations which considered overpaid. One of the examples was Mycom's case, for last few years, this company was facing financial losses. Besides that, it was also in PN4 status, defined as companies that suffering financial problems. However, executive directors' remuneration of this company increased by RM2.62 million in between the year of 2002 to 2003. Some other examples of corporate that facing the same condition as Mycom included Kemayan Corporation, Aokam Perdana, Sriwani Holdings and etc. (Haron & Akhtaruddin, 2013).

Malaysia government had made some frameworks and regulatory laws to increase the public confidence. Malak (2015) provided that the introduction of Malaysian Code on Corporate Governance (MCCG) 2000 suggested corporate should disclose the details of director remuneration especially to catch the attention of corporate governance in Malaysia after the financial crisis of 1997-1998. The remuneration policies such as statement of the principal should be included in the principal. It was then followed by another accounting standard to regulate the disclosure. In 2005, 'Share based payment' of Financial Reporting Standard (FRS) 2 required business to disclose the details of remuneration to executive in the form of share as well. Malak (2015) again gave that the mandatory rules for listed companies to disclose executive directors' remuneration were amended by Bursa Malaysia Listing Rules. In 2012, MCCG was reform to increase the transparency of the remuneration policy of a business.

In MCCG 2000, the policy of company executive directors' remuneration should be established in a formal and transparent way when the company fixes the individual director's remuneration. The annual report should consist of the details of remuneration of each director. When it comes to MCCG 2012, other than retaining the formal and transparent remuneration policies, it is also emphasized that appropriate level of remuneration should be provided to attract and retain directors. It should be parallel with the company's business strategy as well as business long-term goal.

1.2 Problem Statement

Main purpose of this research is carried out due to scholars are finding that there have been a spectacular increase in the executives remuneration to a normal worker pay. Besides, due to lack of executive skills available, competition is gaining harder to search for a well-equipped executives (Hussain, Obaid & Khan, 2014).

Furthermore, there are evidences showing that globalisation is the cause of remuneration problems to rise. Globalisation involved the changes to the surrounding relative to time such as the improvement of social thinking. This has caused the gap between the rich and poor to be large apart. Based on the view of corporate, inequality happens when greed is accompanied in the remuneration to executive (Shin, Kang, Hyun & Kim, 2015).

In the world of business, due to greediness, executives somehow spent the profits they earned improperly to gained fame from the people around the world. Thus, businesses are moving to inappropriate direction. Similar things happened in the level of management. When the relationship are good among the management and workers, the pay-out would be different compared to other workers due to the "relationship" they having on each other. In addition, due to the changes in the political state in the country, executives able to start determine and control on their remuneration (Hussain et al., 2014).

Due to globalization, conflict of interest between the management and shareholders which refer to agency problem started to occur where remunerations are hard to predict and unsure whether the pay-out are correctly specified (Malak, 2015; Fong, Misangyi & Tosi, 2010). On the other hand, there are debate on whether companies should held in separate ownership. It is argue that, separate ownership are more easily to handle especially top management as the agency problem are less likely to occur.

However, most of the company ownership is not separated (Lin, Kuo, & Wang, 2013).

According to the problem mentioned above, scholars had suggested that shareholders should request to the company to design a strategy that pay out should be given out similar to shareholder wealth (Haron & Akhtaruddin, 2013). Therefore, according to Lin et al. (2013), managerial power hypothesis was developed to determine the power between the executives and the directors to set appropriate remuneration. However, there are insufficient of evidence to prove that there is an increased in the executives pay-out according to sources obtained in US (Gabaix, Landier & Sauvagnat, 2014). Therefore, this study is to determine how the independent variables influence the executive directors' remuneration.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this research is to determine the factors that affect the remuneration of executive directors' at the same time compare the remuneration of different company within Malaysia.

1.3.2 Specific Objectives

a) To investigate the relationship between executive directors' remuneration and firm size

b) To investigate the relationship between executive directors' remuneration and firm performance

c) To investigate the relationship between executive directors' remuneration and leverage

d) To investigate the relationship between executive directors' remuneration and firm age

1.4 Research Question

The research questions are:

(a) Is there a significant relationship between executive directors' remuneration and firm size?

(b) Is there a significant relationship between executive directors' remuneration and firm performance?

(c) Is there a significant relationship between executive directors' remuneration and firm's leverage?

(d) Is there a significant relationship between executive directors' remuneration and firm age?

1.5 Hypothesis of the study

This study examine the relationship between executive directors' remuneration and factors like firm size, firm performance, leverage and firm age in all services other than financial sectors.

First Hypothesis

H_0: There is no significant relationship between firm size and executive directors' remuneration

H_1: There is significant relationship between firm size and executive directors' remuneration

Second Hypothesis

H_0: There is no significant relationship between firm performance and executive directors' remuneration

H_1: There is significant relationship between firm performance and executive directors' remuneration

Third Hypothesis

H_0: There is no significant relationship between firm leverage and executive directors' remuneration

H_1: There is significant relationship between firm leverage and executive directors' remuneration

Fourth Hypothesis

H_0: There is no significant relationship between firm age and executive directors' remuneration

H_1: There is significant relationship between firm age and executive directors' remuneration

1.6 Significant of the Study

The significance of this study is to find the factors that will be considered in determining an appropriate level to compensate their directors, since there are arguments on overpay or underpay issues among directors.

According to the shareholder maximization model, the company should maximize the return to shareholders (Moffett, Stonehill, & Eiteman, 2009) in order to attract more capital inflows to their company. Furthermore, the result of this is useful for shareholders to review whether there is overpay or underpay problem in the company they invest. It can be used for the potential investor to decide whether to invest in that company based on the resulted benchmark.

In the company, employee is more motivated if they found that their director is receiving the reasonable salary according to their work. Therefore, it enable those employees to move forward since they knew they might have the opportunity to be promoted. On the other hand, a company not overpaying remuneration to directors may have higher capability to conduct training program for the improvement of employee quality.

Policymakers are able to use this research to act as reference to formulate policies to avoid potential problems happen among the firms in Malaysia.

1.7 Chapter Layout

Chapter 1 will consists of the introduction of the background of the study as well as the research question and objectives. This will follow by the significance and the hypothesis of the study and conclusion of the chapter.

In chapter 2 will covers the relevant theoretical models and conceptual frameworks. Besides that, it also covers the hypotheses development of each of the variable in this study and follow by the conclusion of the chapter.

Chapter 3 will further develop on the methodologies that examine the independent variables towards the dependent variable. E-Views 6 will be the main tool to carry out the research. In chapter 4, the paper will elaborate on the analysis which relates to the hypotheses in the research.

Chapter 5 will reflect on the discussion, conclusion and implications towards the research carried out. This includes the limitations of study and recommendations for future research.

1.8 Conclusion

This chapter covers the background of the research, problem statements, research objectives, research questions, hypothesis of the study, and significance of the study and chapter layout. In chapter 2, there will be further discussions on the literature review on the variables including firm size, firm performance, leverage and firm age.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

The beginning of this chapter reviews the journals that are related to the research topic. After that, a review of relevant theoretical models would be developed. This would be the basic to develop the proposed conceptual framework. The proposed conceptual framework would be presented in a diagram to identify the relationship between the endogenous and exogenous variables. Next, this chapter proceed with the hypotheses development are formulated. Lastly, a conclusion will be presented as a summary of this chapter.

2.1 Review of the literature

In this section of the research will further explain of the variables which are divided into dependent variable and four independent variables. The first review of previous research papers and thus will provide a better understanding towards the variables.

2.1.1 Executive Directors' Remuneration

According to Guo (2013), economic-related and uneconomic-related are major components of remuneration scheme. For economic-related, it includes basic salaries, pay-for-skill, pay-for-performance, welfares as well as bonus. Meanwhile, uneconomic- related may be other potential pay that difficult to be measured in monetary form, therefore, the remuneration pay is limited to economic-related pay only. On the other hand, Jaafar and James (2014) provided that remuneration structure composed of salary, basic pays, and benefits offered to next of kin. When all of these components are included into the remuneration policy, it may be able to motivate the directors to work harder for the company. Directors may put their best effort such as creative and high return ideas to enhance the business's performance.

Again, Jaafar and James (2014) claimed that director may see salaries and bonuses as significant part of cash remuneration. It is because of director's wealth status could be measure by cash remuneration. Therefore, remuneration in terms of cash package is welcomed by directors for a few reasons. Firstly, directors may prove their wealth position by purchasing luxurious houses and cars, dining in exclusive places or travelling around the world. This is because of income from cash package may be withdrawn at any point of time. Other than that, a good societal status enables directors to gain respect and positive reputation from others.

Researcher reviewed that when the agents (directors) of a business do not act in the best interest on behalf of the shareholders (principals), it is known as agency problem, therefore the conflict of interest arise (Jaafar & James, 2014).

However, other studies conducted were able to come out with similar solution, which is switching executive directors' remuneration from cash-based to equity-based. When the interest of agents and principals move parallel, the problem of conflict of interest thereby declined. Directors may devote the best effort as now they are sharing

the same return and risk as shareholders (Wang et al., 2013; Matolcsy, Shan & Seethamraju, 2012).

2.1.2 Firm Size

Based on our objectives, firm size is present as a significant variable towards executive directors' remuneration. According to Kato and Kubo (2006), it is known as the remuneration is based on the relationship between directors and shareholder value. A research carried out in Japan using 10 years panel data that involves 51 Japanese firms. The remuneration is due to the negative relationship with the remuneration and firm size. They concluded that small firms will have more responsiveness on the remuneration.

In another research said that the pay is based on the company characteristics carried out by Haron and Akhtaruddin (2013) using 120 companies in Malaysia. Company characteristics include the operation state of the company determine the remuneration of the directors. The research said that manager will gain more access to capital market when the firm expand and thus earn more remuneration (Fong, Misangyi, & Tosi, 2010). Due to inequality happens in remuneration, directors are more motivated to maintain the relationship with the shareholders by comparing with each other and take relevant actions to rectify it.

However, in another research using Geometric Brownian Motion as research tools and set firm size to follow it. It is known as company will engage in less agency problems when the firms are large. This is due to the time varying that changes the link between the remuneration and the firm size (He, 2009).

Another research by Firth, Tam and Tang (1999) in Hong Kong given that the firm size is insignificant towards remuneration as determinants. However, after reviewing from other research, they have come out a few observations that large companies have positively related relationship due to the absolute profits earned and they may have shareholders that consists of different perspectives and consists of different skills too. They use listed company in Hong Kong and excluded the banking corporation since they have different financial statement.

Hussain et al. (2014) using 2008 to 2010 to carried out the determinants in executive directors' remuneration in Pakistan. They found out that the executive directors' remuneration is directly proportional to firm size. They carried out using panel data and found out that firm size is the main factor that determinants the executive directors' remuneration.

2.1.3 Leverage

According to Haron and Akhtaruddin (2013), a firm leverage level determined by firm's cash flow and capability to meet contractual obligation. Thus, the higher the leverage, the lower will be the executive directors' remuneration. From the study of Haron and Akhtaruddin (2013), they agreed the fact that a firm with high leverage level has to tie up its capital for the long term debt, therefore the cash flow for investments, dividend distributions, and firm's operational expenditures will be reduced. Consequently, the firm will apply the cost reducing strategy to have spare fund to make sure the firm's operation is going smooth.

This research choose leverage as an independent variable due to it is an external corporate governance factor. For example, if a firm's debt holders are actively involved in monitoring firm operation activities which indicated that the firm has a

high leverage capital structure, this may cause debt holders suffer losses from the investment. Ning, Hu and Garza-Gomez (2012), have the same view to high leveraged firm is increasing the debt holders more aware and monitor to the firm's operation, they may request the firm to provide incentives with long-term equity-based options and stocks to avoid losses from investment in the firm.

From some theoretical studies in corporate finance indicated that leverage of a firm will have a positive relationship with the firm executive directors' remuneration (Shin et al., 2015). It could be justified that companies should compensate executive directors' higher due to the probability of bankruptcy. When firm engage higher debt level, it will cause the company in a risky position. As the company leaders, executive directors are required to dedicate to their performance thus compensation by the company should be higher (Chemmanur, Cheng & Zhang, 2013).

2.1.4 Firm Performance

Different company will have different measure of firm performance due to different industries, which includes accounting-based and marketing-based (Duru & Reeb, 2002). Accounting-based measure of performance use financial ratio to determine the firm performance. However, if it is not reliable, the company might choose to use marketing-based measures of performance instead. Generally, accounting-based is more popular. Both are positively related to the remuneration of executive directors. Moreover, according to Wang, Venezia and Lou (2013) studied on determinants of Chief Executive Officer (CEO) remuneration of 2,448 executive directors from 1997 through 2002. They found that accounting-based measure is more preferable and reliable. Also, the result showed that it moves in the same direction with remuneration (Wang et al., 2013).

According to Vroom (1964), the higher the remuneration of executives; the higher the firm performance will be based on the expectancy theory. Furthermore, the previous studies reported that there is positive relationship between firm performance and executive directors' remuneration. Other than this, a research of beyond pay for performance has been conducted using cross-sectional regression analysis using OLS model. The firm performance of this research used accounting-based measures, return on asset (ROA) to measure their performance and data collected from COMPUSTAT with 222 Fortune 1000 firms from 1992 to 1995 continuously. In addition to this, the result of this research revealed that the existence of governance and ownership variables with risk and diversity add extra benefits to the firm performance. Similarly, Cordeiro and Veliyath (2003) also concluded that the better the performance it is, the greater the executive remuneration will be. They are using ROA as the measurement of firm performance. (Cordeiro & Veliyath, 2003).

In contrast, another research has concluded the different result with those authors. The purpose of that research is to examine the remuneration of outside directors based on 734 directors from 500 Board of Fortune firms between 1994 and 1996. In addition to this, the estimated logit model showed that there is significant and negative relationship between remuneration of outside directors and firm performance (Yermack, 2004).

2.1.5 Firm age

Firm age is the natural logarithm of the number of year since the firm was established (Amzaleg & Mehrez, 2004). It can be measured by the difference between the first year of company Initial Public Offering (IPO) and the current year (Jaafar, Wahab & James, 2012). Jaafar et al. (2012) showed that after public listed firms have gone public, it will announce IPO for public for the sales of company stock in order to raise company capital. Hence, company starts to further develop the business after the

capital from the first sales of stock was obtained (Jaafar et al., 2012). Furthermore, firms are necessary to submit and disclose the periodical report of the business activity after company incorporation, which is known as public supervision (Amzaleg & Mehrez, 2004).

Besides that, Albert (2003) stated that number of years that firm goes public may have an impact on the company to access to the debt market due to age is positively correlated to the executive directors' decision to the firm leverage. However, a variety of executive directors' and firm characteristics may be diverse among company and different ages. For example, the growth potential of firm, firm's size, executive directors' age and experiences may systematically be different based on the age of firm. Therefore, firm age is an important variable that must be included in the research in order to control such factors (Chung & Pruitt, 1996).

In addition, an inverse relationship between executive directors' remuneration and the age of firm were found (Chung & Pruitt, 1996; Ghosh, 2003; Abed, Suwaudan & Slimani, 2014). According to Abed et al. (2014), they claimed that the remuneration of executive directors' in new incorporated firms will be much better than in mature ones. Additionally, Abed et al. (2014) explained that the new incorporate firms tend to attract capable and experienced executive manager by paying high remuneration for the firm's future development. In addition, Amzaleg and Mehrez (2004) also mention that there is an inverse correlation between firm age and the executive directors' remuneration because of newly founded companies usually compensate higher to their executive directors'.

On the other hand, Liu (2009) examine that firm age has different impact towards the component of the new executive directors' remuneration package, namely salary and incentive component. Liu (2009) found that firm age is positively correlated with salary, however negatively correlated with stock- based remuneration. It can be justified that firms with different year of incorporation will have different preferences in deciding the mixture of the component in the remuneration package. Hence, Liu (2009) stated that the 10 years younger firms are more preferable to pay 4% higher in

stock-based incentives. In contrast, the 10 years older firms will tend to pay 3% more salary to compensate the executive directors'.

2.2 Review of Relevant Theoretical Models

2.2.1 Agency Theory

Jensen and Meckling (1976) defined agency relationship as a contract which involve one or more persons - the principal(s) and another person - the agent to perform tasks or services on their behalf. Agency theory emphasizes on the contract between the agent and the principal also determine the ways which is efficient for the principal. Furthermore, it makes assumptions about information, organizations, and people to find out the most efficient contract. One of the assumptions is that both parties are acting for their own interest to maximize self-welfare, thus the agents are more likely not to act in the best of the principal's interests (Jensen & Meckling, 1976). Therefore, two limitations are encountered in agency theory: moral hazard and adverse selection. Agency cost minimization is the nature of the contract, it seeks low monitoring costs, motivating and ensuring the agent's commitment (Nilakant & Rao, 1994).

Again, Nilakant and Rao (1994) provide that an organization may encounter agency problem due to the ability and time constraint of agents. Hence, the principals are entitled to work on behalf of the agents. It may provide chances for agents to distort and misuse the information and resources. Therefore, principals have the responsibility to oversee agents or establish an effective incentive schemes to motivate them.

There are two sub-theories under agency theory: positivist agency theory and principal-agent research. Positivist agency theory focuses on the issues related the separation of ownership from control and pay attention on how managers disciplined by incentive schemes, external labour markets, and capital market. The principal-agent research modifies ex-ante employment contracts and information systems by using existing ownership and allocation of the firms. Most of the organizations more emphasize on positivist agency theory due to non-mathematical formulation (Nilakant & Rao, 1994).

Jensen and Meckling (1976) suggest that the rewards to directors should be based on their work performance so that can avoid agency conflict. However, previous researches showed that the linkage between performance and pay is weak because of the poorness in corporate governance structure. The directors' overpaid issues have raised the consent of shareholders and investors, they requested the company to increase the transparency of the company financial reporting including directors' remunerations (Li, Moshirian, Nguyen & Tan, 2007).

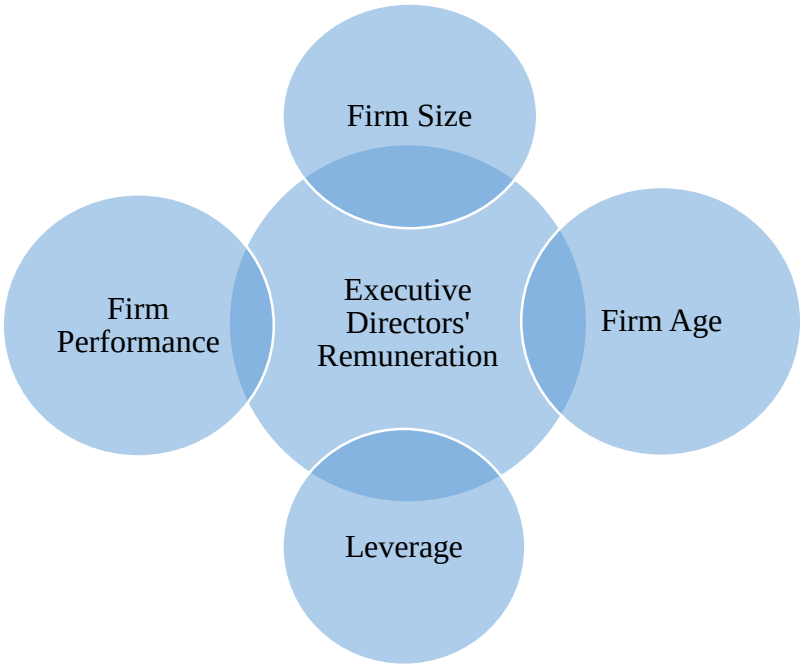
2.2.2 Tournament Theory

In review of theoretical models, it is known that the tournament theory plays important roles in developing the conceptual framework. Tournament theory defines as the competition among the employees to race to the top and achieve higher pay. According to Shin et al. (2015) employees are competing for the incentives thus this has bring opportunity to junior employees to obtain the promotion by working harder. Besides that, using this theory can help company to keep sustainable employees without any problems occur and can bring benefit to the company. Other than that, size of the incentives would encourage the number of job levels increase. However, Ghosh and Aggarwal (2011) found that large gap would exists in the executive directors' salary. Disparity happens because employees are competing with each other

due to the ranking order and most of the prizes gave are fixed. Therefore, it has a higher chances of people to work even harder to achieve the price.

2.3 Proposed Theoretical/Conceptual Framework

Figure 2.1: Relationship between Dependent Variable and Independent Variables



Source: Developed for the research

2.4 Hypotheses Development

2.4.1 Firm Size

H_0: Firm size will not influence executive directors' remuneration

H_1: Firm size will influence executive directors' remuneration

Based on Hussain et al. (2014) it is stated that firm size is a major determinant for Pakistan and thus it has positive relationship with the executive directors' remuneration and this is further supported by Haron and Akhtaruddin (2013) too.

2.4.2 Leverage

H_0: Leverage will not influence executive directors' remuneration

H_1: Leverage will influence executive directors' remuneration

Haron and Akhtaruddin (2013) discovered that leverage has relatively significant impact towards executive directors' remuneration. Furthermore, Shin et al. (2015) have signified that the relationship between leverage and executive directors' remuneration is positive.

2.4.3 Firm Performance

H_0: Firm performance will not influence executive directors' remuneration

H_1: Firm performance will influence executive directors' remuneration

According to Lin et al. (2013), it has concluded that there is positive relationship between firm performance and executive directors' remuneration. Besides that, Cordeiro and Veliyath (2003) showed that firm performance has significant relationship towards executive directors' remuneration.

2.4.4 Firm Age

H_0: Firm age will not influence executive directors' remuneration

H_1: Firm age will influence executive directors' remuneration

According to Abed et al. (2014), it was stated that there is a negative relationship between the firm age and the remuneration of executive directors'. Besides that, Liu (2009) claim that firm age and executive directors' remuneration are significantly correlated.

2.5 Conclusion

In chapter 2 gives a broader view of the research by reviewing of past researchers towards the research done. In addition, the research also highlights the models, concepts and theories used and thus a proposed framework is out which serves as main purpose of the study. Besides that, the research also conduct hypotheses development in each of the variable based on the literature that obtained. Thus, chapter 3 will further discuss the method and data collection to conduct this research.

CHAPTER 3: METHODOLOGY

3.0 Introduction

In this chapter, the methodology that occupied in this research will be presented under this section. The executive directors' remuneration will be investigated by using four independent variables including firm performance, firm size, leverage and firm age. All observations are in the form of annual data which are collected from 2009 to 2013 and the total observations are 100. The data are collected from Datastream and company's annual report in Bursa Malaysia. The statistical results of this research are obtained from E-View 6 and Stata 11. Lastly, research design, data collection methods, data processing and selected methodology will be discussed under this section as the sub-topics.

3.1 Research Design

Quantitative research has been adopted to examine the effect of independent variables towards executive directors' remuneration in the forms of numerical. This research is to use statistical method to identify relationship between the regressor and regressand. In this research, Pooled OLS model is chosen to be the model to investigate the relationship between firm size, firm performance, leverage and firm age towards executive directors' remuneration due to the error terms and independent variable is correlated. Stata 11 and E-View 6 are selected to examine and assist in this quantitative research.

3.2 Data Collection Method

The data is collected primarily from one source which is the company annual report in Bursa Malaysia. Secondary data has been employed to be the panel data of this research in order to obtain more accurate result based on previous studies. By using secondary data, the process of conducting this research is more efficient and less complicated compare to primary data. These variables involved total of 100 observations. The data of independent variables are manually collected from the annual report of company in Bursa Malaysia official website and also Datastream.

Table 3.1 List of Independent Variable and Dependent Variable

Independent Variables	**Proxy**	**Explanation**	**Units of Measurement**	**Source**
Firm Size	SIZE	Sum of total assets	Percent %	Annual Report
Firm Performance	PERF	Net profit after taxes divided by total assets	Percent %	Annual Report & Datastream
Leverage	LEV	Total debt	Percent %	Annual Report
Firm Age	Age	Number of year the company listed	Year	Annual Report
Dependent Variables	**Proxy**	**Explanation**	**Units of Measurement**	**Source**
Executive Directors' Remuneration	ER	Total remuneration divide by number of executive directors'	Log (Ringgit)	Annual Report

Source: Developed for the research

3.3 Sample Design

3.3.1 Target Population

The target population in this research is in Malaysia while the samples are randomly choose from Bursa Malaysia public listed firm. The total assets, return on assets, total debts and number of year the company being listed are used to investigate the relationship between firm size, firm performance, leverage and firm age towards executive directors' remuneration. The public listed firm in Bursa Malaysia consists of large number of company and it has been classified based on industry. By using this classification in this research, banking and financial service industry is excluded because the financial disclosure and structure for this industry are different from others.

Public listed company is financially stable and its development was subsequently big. The disclosure of information on this type of companies are more accessible compare to non-listed companies, since it is regulated by Bursa Malaysia, so that they had to comply certain regulations. By using the annual report to be the sources of data, it is less likely to obtain inaccurate information. The information that wishes to be obtained is available in annual report as well as Datastream for every company such as total asset, total debt and net profit after taxes and number of year listed in Bursa Malaysia. As a conclusion, it enables this research to be run efficiently and accurately.

3.3.2 Sampling Size

This research is using the annual report from 2009 to 2013 and also Datastream. There are a total of 100 observations. The chosen public listed companies to be conducted in this research are shown in Appendix 3.1.

3.4 Data Processing

First, the data is abstracted from two sources which are Datastream and annual report of public listed companies in Bursa Malaysia. There are four independent variables to be investigated which including firm size, firm performance, leverage and firm age are calculated and computed manually based on the data available in the annual report and Datastream. Next, the data are to be presented in the form of panel data. In addition, banking and financial industries has been filtered. The filtration system has filtered down companies that yet to be listed in year 2009. After obtaining the comprehensive data, this research used Stata 11 and E-Views 6 to run the filtered data. The generated result will soon be discussed in the following section.

3.5 Data Analysis

The purpose to conduct this study is to investigate the responsiveness of those regressor includes firm size, firm performance, leverage and firm age towards the executive directors' remuneration from 2009 to 2013. Stata 11 and E-Views 6 have been adopted to run the estimated panel data regression model and examine the diagnostic checking for econometric problems. This panel data regression model is as shown as below:

$$REM_{it} = B_0 + B_1 SIZE_{it} + B_2 PERF_{it} + B_3 LEV_{it} + B_4 AGE_{IT} + \mu_{it}$$

Panel data set in the behaviour of entities are observed across time. These entities could be states, companies, individuals, countries, etc. Panel data enables to detect and measure effects that unable to be observed in pure cross-section or pure time series data. There are three main techniques under panel data: Pooled OLS, Fixed Effects and Random Effects.

Pooled OLS model assumes that the regression coefficients are constant for all of the variables which is no distinction between variables. Moreover, the independent

variables are assumed non-stochastic. The slope and intercept are constant in the model. It is assumed that the characteristics between companies are same and no time invariant.

Fixed Effects model assumes that intercept within the individual may impact or bias the independent variable or outcome variables, and need to control for this. This is the rationale behind the assumption of the correlation between entity's error term and predictor variables. Fixed effects model removes the effect of those time-invariant characteristics so researchers can assess the net effect of the independent variable on the outcome variable.

Random Effects assumes that the entity's error term is not correlated with the independent variables which allows for time-invariant variables to play a role as explanatory variables. The variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model.

3.5.1 Scale of Measurement

3.5.1.1 Normality Test

Normality test was carried out to find out if the regression model is a best fit model. The assumption of normality is that the sample means distribution among the independent sample is normal. Jarque-Bera (JB) test is used to test if the error term of estimated model is normally distributed so that the model used in the research was best-fitted.

3.5.1.2 Hausman Test

As mentioned earlier, there are fixed effects model (FEM) and random effects model (REM) of panel data. In order to test which panel regression model should be used, the Hausman test has been carried out. Hausman test is a test for model

misspecification based on the comparison of two different estimators of model parameters. There are two properties should be included in the estimators comparison that (1) the null hypothesis is the model specification is correct and estimators are consistent and efficient (REM), whereas (2) the model is wrongly specified and the estimators are inconsistent and inefficient (FEM).

3.5.1.3 Multicollinearity

Multicollinearity is to test whether independent variables of the model are correlated with each other. If those independent variables are highly correlated with each other, high degree of multicollinearity will exist. In this case, there will be trouble for the regression model in examining the explained variable is affected by which explanatory variable. If the independent variables are correlated, the effect of one variable may duplicate. Therefore, the coefficients of variables are wrongly estimated. This problem may in fact affect the actual standard error smaller than the standard error. As a result, the conclusion draw for the model will also be wrong.

Even though the estimators still Best Linear Unbiased Estimator (BLUE), but the confidence interval will be larger and t ratio for coefficients will become insignificant. There are three ways to detect this problem, namely variance-inflating factor (VIF), wider confidence intervals, insignificant t ratios and high R^2but few significant t ratios. In this research, variance-inflating factor is adopted to test for the multicollinearity. As a result, Variance-inflation factor has been applied to test for multicollinearity problem. When VIF is more than 10 meaning that there is serious multicollinearity problem, if less than 10 means there is not serious case and if equal to 1 means there is no multicollinearity problem.

3.5.1.4 Heteroscedasticity

Heteroscedasticity happens where the disturbances for population is not constant. In other words, when the variance of error term is not constant in the regression model,

then it might suffer from this problem. If the heteroscedasticity problem is exist in the regression model, then the result may provide misleading information. Therefore, the t test and F test ends up become not reliable since the variance of model is not the minimum and the estimator is bias.

In other to detect whether the regression model occurs heteroscedasticity, two methods have been promoted to use which are formal method and informal method. Formal method is also refer to the graphical method, applicable to small sample size, not more than 30, because it can gives an accurate detection regarding this problem. In addition to this, informal method can be classified into Park Test, Glejser Test, Spearman's Rank Correlation Test, Goldfeld-Quandt Test, Breusch-Pagan-Godfrey Test and White's Heteroscedasticity Test. When the White Test is used, the normality assumption is not necessary to be relied on, therefore it is more easy to use. Therefore, Breusch-Pagan-Godfrey Test is applied in this research for detecting the heteroscedasticity.

3.5.1.5 Autocorrelation

Autocorrelation is to test whether the error terms of the model is correlated. In other words, it can be refer as the correlation between members of series of observation ordered in time. However, if the model suffers from this problem, the estimators will still unbiased, linear and normally distributed, but it might not have the minimum variance. Therefore, it could resulted the *t*, *F* and σ^2 become invalid and unreliable. When the autocorrelation problem is being ignored, the residual variance will underestimate the true variance (O^2) and also overestimate the R^2. As a result, the t test and F test will be invalid for the estimation of statistical significance of the model and each estimator.

There are several ways to estimate this problem which consists of graphical method, the runs test, Durbin-Watson d test, Durbin-Watson h test and Breusch-Godfrey. Normally, graphical method applies when the sample size is less than 30 since it may provide more concise result than the others method, while Durbin-Watson h test only can detect the lower autoregressive (AR) schemes. Whereas, Breusch-Godfrey LM

test can be take into account of higher series of autocorrelation. In this research Breusch-Godfrey LM test was also used for the detection of autocorrelation problem due to the inconclusive outcomes provided by Durbin-Watson test.

3.7 Conclusion

This chapter highlights the research design and several other items includes how the data is being collected. This study mainly uses secondary data and includes the description on the sampling data which covers the area of studies. In data processing, the studies describes how the data is being obtained from various sources, extracting the right information using respective companies' annual reports. Meanwhile, several diagnostic checking methods were briefly discussed in the data analysis part.

Appropriate method was being used to identify the econometrics problem presents in the research model. In chapter 4, the research would further discuss the results obtained from the test using different software to show better understanding on the exact result. Besides that, it will use several diagnostic checking tests to identify the errors in the results.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

This chapter presents the panel data analysis on the model of 20 listed companies on Main Board Bursa Malaysia across a period of 5 years from year 2009 to year 2013. This study was carried out by using Pooled OLS model to analyse the relationship of independent variables and dependent variable. Also, the research focuses on discussion of diagnostic checking of the model. To ensure the study exempt from econometric problem, E-Views 6 was used to identify whether the model encounters Multicollinearity, Heteroscedasticity and Serial-correlation. Moreover, Hausman test, Breusch-Pagan and Lagrangian Multiplier (BPLM) test and Normality test were conducted to make sure this research are carried out appropriately. The data will be presented in table and graph form followed by explanation.

4.1 Descriptive Analysis

Table 4.1 Summary Descriptive Statistics of All Variables

Sample Firms : N=20 No. of Obs. =100	Mean	Standard Deviation	Min	Max
REM	5.592182	0.4047483	4.687529	6.734677
PERFORM	0.1019974	0.088989	-0.694862	0.3366986
LEVERAGE	7.59426	1.934209	0	10.47643
SIZE	9.075316	0.7046509	7.97499	10.72932
AGE	1.315508	0.2243642	0.7782	1.6902

Source: Developed for the research

Notes: 1. the sample firms' panel data for five years period result, from year 2009 to year 2013, N= 20 companies, number of observation for 5 years= 100 2. REM= Remuneration;

PERFORM= Firm Performance; LEVERAGE= Firm Leverage; SIZE= Firm Size; AGE= Firm Age

Table 4.1 shows a summary of the statistics of the dependent and independent variables after conduct the testing using 20 companies across 5 years. Descriptive statistics are to show how the variables react to each other based on the data collected from each sources. It provides a clear view of how the variables perform in the model.

4.2 Scale Measurements

The research was carried out using secondary data which collected from Datastream and companies' annual report. Besides that, it also uses annual reports of 20 companies from year 2009 to 2013 mainly from Bursa Malaysia and respective companies' website.

4.2.1 Normality Test

Table 4.2 Normality test

Jarque-Bera Statistics	**Decision**
1.680014	Normally Distributed

Normality test of the model in this research was carried out using E-Views 6 instead of Stata 11. The reason is that Stata 11 only able to provide data in the form of table. Whereas, E-Views 6 able to provide in diagram as it provides a clearer and better understanding to readers. The result of normality test present in table form is show in Appendix 4.2. The p-value in this test is 0.431707, which is more than the significant level. Therefore, this model is normally distributed. Below are the null (H_0) and alternative (H_1) hypothesis and steps that will guide to the decision making:

H_0: The error terms are normally distributed.

H_1: The error terms are not normally distributed.

Significance level, $\alpha = 0.10$

Decision Rule: Reject H_0 if probability value is less than significance level, otherwise do not reject H_0.

P-value: 0.431707

Decision making: Do not reject H_0 as the probability value (0.431707) is greater than the significance level (0.10).

Conclusion: There is no sufficient evidence to conclude that the errors term is not normally distributed.

Based on the diagnostics checking using the JB test, it provides a conclusion stating that the model is normally distributed. According to Gujarati and Porter (2009), diagnostic checking only can be carried out when the model must fulfil the eight requirements in the multiple linear regression model and normality is one of the eight requirements.

4.2.2 Breusch and Pagan Lagrange Multiplier Test and Hausman Test

Table 4.3 Result of Panel Data Analysis

Dependent Variable: Remuneration

	Pooled OLS	Random Effect	Fixed Effect
Constant	3.466796 (0.000)	3.466796 (0.000)	3.51554 (0.000)
Firm Age	0.0085196 (0.964)	0.0085196 (0.964)	-0.0088603 (0.964)
Firm Size	0.1774376 (0.011)	0.1774376 (0.010)	0.1749516 (0.014)

Leverage	0.655226 (0.055)	0.544115 (0.052)	0.0544599 (0.061)
Firm Performance	0.8888021 (0.099)	0.8888021 (0.096)	0.8526469 (0.122)
Breusch-Pagan LM test	1.91 (0.1671)		-
Hausman Test	-	0.32 (0.9884)	
Observation	100	100	100

Source: Developed for the research

Gujarati and Porter (2009) stated that BPLM test is a test for the regression model to determine it is a random effects model or pooled model. Under the null hypothesis, BPLM uses chi-square distribution with zero variance to indicate whether there are significant towards the variables present in the model.

In the following section, Hausman test will be used to determine whether to choose Random Effect Model or Fixed Effect Model on the unique errors are correlated with independent variables. The following table conclude the summary of each panel model.

By using BPLM Test with 10% significant level, the result is to compare whether to use Pooled OLS or Random Effect model. By using p-value to measure if the model is significant based on the result constructed earlier. It shows that the value standing at 0.1671. In decision making, the null hypothesis should not reject when the p-value is more than the significant level. In this case, the result stated that, Pooled OLS must be used for the panel data model.

4.2.3 Multicollinearity

Table 4.4: VIF in all variables

Variable	VIF	1/VIF
PERFORM	1.63	0.614904
LEVERAGE	2.12	0.471152
SIZE	1.68	0.595134
AGE	1.31	0.760830
Mean VIF	1.69	

Adapted from: STATA 11 Result

Based on table 4.4, it shows that the VIF among all variables are less than 10. It is consider that there are no serious multicollinearity problems present in this model. According to Gujarati and Porter (2009), a serious multicollinearity present only when VIF is equal to or more than 10. Thus, the results conclude that the independent variables are not interrelated with each other.

4.2.4 Heteroscedasticity

According to chapter 3, heteroscedasticity is use to identify if the error term is equally spread. This research can be carried out by using White's General Heteroscedasticity Test. Based on appendix 4.3, using the p-value would be much easier to illustrate by comparing with the significant level. The p-value from the result is 0.0000. When p-value is smaller than the significant level, result will reject the null hypothesis stating that the model suffer from heteroscedasticity.

When one model faces heteroscedasticity, the OLS estimators would assume to be remained unbiased and consistent. However, the estimators of OLS would not be efficient. Thus, this would cause variance and standard error to be underestimated.

4.2.5 Autocorrelation

Autocorrelation can be defined as the error term of the model is correlated with other error term and between time intervals. It can be identified using Breusch-Godfrey Serial Correlation Lagrangian Multiplier test. The reason of using this because it allowed the present of lagged dependent variable in the regression. Besides that, the advantage of using this method is that it able to detect a higher order of AR outline. According to appendix 4.5, this research would use the p-value value as it provides clearer understanding. The research has Chi-Square value of 0.0000. It stated that the p-value is less than the significant level. Therefore, this model is suffering from autocorrelation.

Newey-West method can be used to overcome both autocorrelation and heteroscedasticity problem since this research consists of large observations. After running the test, the model no longer suffer from both autocorrelation and heteroscedasticity problem where the standard error of OLS estimator are being corrected, namely Newey-West standard errors.

4.3 Inferential Analyses

4.3.1 R-Square, Adjusted R-Square and F-test

In the model, the R-square value stated at 0.1956. R-square can be explained as how strong the independent variables able to explained the dependent variables. Therefore, there is only 19.56% of the dependent variable able to be explained by the independent variables. Although one model that has a high R-square indicates that the dependent variable would well explained by the independent variable, however, in panel data, R-square value is not convincing. It is due to the characteristics of diversity of cross-sectional units in panel data. Therefore, low R-square is this model did not provide a good implications toward the study. The same situation goes for

adjusted R-Square. The adjusted R-square is 0.1617. It could be interpreted as 16.71% of executive directors' remuneration could be explained by firm size, firm performance, leverage and firm age after degree of freedom was taken into account.

Due to the limitations of R-square and adjusted R-square in panel data, F-test is more reliable to identify the overall significance of the regression model. In this study, the overall regression is significant because of the p-value of the F-statistics (0.0003) is lower that the significant level at 10%. Hence, the regression model in the study is significant although it has low R-square and adjusted R-square.

F-test can be used to identify the overall significance of a model. In this study, the overall regression is significant because of the p-value of the F-statistics (0.0003) is lower than significant level. Therefore, the overall regression is significant although the R-squares is low due to the diversity of the cross-sectional units.

4.3.2 Hypotheses Testing

REM_{it}	C	$+PERFORM_{it}$	$+AGE_{it}$	$+LEVERAGE_{it}$	$+SIZE_{it}$	$+\varepsilon_{it}$
Coef	3.466796	0.8888021*	0.0085196	0.0544115*	0.1774376**	
SE	(0.5490729)	(0.5337336)	(0.1903124)	(0.0280531)	(0.0685146)	
t	1.67	0.04	1.94	2.59	6.31	
P-Value		0.099	0.964	0.055	0.011	

Notes: *** significant at 1%; **significant at 5%; * significant at 10%

REM_{it} : Executive Directors' Remuneration
$PERFORM_{it}$: Firm Performance
AGE_{it} : Firm Age
$LEVERAGE_{it}$: Firm Leverage
$SIZE_{it}$: Firm Size
ε_{it} : Error Term
Coef : Coefficient
SE : Standard Error
T : T-statistics
P : Probability Value

The value above are extracted from Appendix 4.6. This section will show the relationship of independent variables towards the dependent variable. P-value would be used. Decision rule would be reject the null hypothesis (H_0) when the p-value is less than the significance level.

4.3.2.1 Firm Performance

For firm performance (PERFORM) variable, the coefficient is 0.8888021. This means that when there a 1% increase in the firm performance, the remuneration will increase 88.88% by holding other variables constant. Based on the decision rule, (H_0) is rejected because the p-value (0.099) is less than α (0.10). It means that firm performance is significant in determine the remuneration of the executive directors' in Malaysia at 10% significance level.

4.3.2.2 Firm Age

For firm age (AGE) variable, the coefficient is 0.0085196. This means that when there is an increase of 1 year in the firm age, the remuneration will increase 0.85196% by holding other variables constant. Based on the decision rule, (H_0) is rejected because the p-value (0.964) is more than α (0.10). It means that firm performance is insignificant in determine the remuneration of the executive directors' in Malaysia at 10% significance level.

4.3.2.3 Leverage

For leverage (LEVERAGE) variable, the coefficient is 0.655226. This means that when there an increase of 1% in firm debt, the remuneration will increase 65.55% by holding other variables constant. Based on the decision rule, (H_0) is rejected because the p-value (0.055) is less than α (0.10). It means that firm performance is significant

in determine the remuneration of the executive directors' in Malaysia at 10% significance level.

4.3.2.4 Firm Size

For firm size (SIZE) variable, the coefficient is 0.1774376. This means that when there an increase of 1% of in firm size, the remuneration will increase 17.74376% by holding other variables constant. Based on the decision rule, (H_0) is rejected because the p-value (0.011) is less than α (0.05). It means that firm performance is significant in determine the remuneration of the executive directors' in Malaysia at 5% significance level.

4.4 Conclusion

In this section, this study shows the results based on the data obtained from different sources. Besides that, it also carries out the method to identify the model for the research such as econometric problems in the model itself and the method to solve the problem. Next chapter will reflect the limitations faced while the research has been carried out and a discussion on the major findings will be further elaborate. In addition, future research would be recommended to different areas of the studies.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATION

5.0 Introduction

In this research, the relationship between executive directors' remuneration and firm size, firm leverage, firm performance, and firm age is investigated and empirically tested in order to determine the independent variables significance result. Moreover, a summary and discussion of the major findings, the implications of this research will also be discussed, as well as the limitations of the study. Lastly, some recommendations for future research will be suggested.

5.1 Summary of Statistical Analysis

Table 5.1 Summary of Diagnostic Checking

Test for Econometric Problem	Explanation for the Results Obtained
Normality	Absent. The regression model does not have normality problem.
Multicollinearity	Absent. There is no serious multicollinearity problem occurred among each of the independent variables.
Heteroscedasticity	Absent. The regression model does not consists of heteroscedasticity problem.

Autocorrelation	Absent. The regression model does not consists of autocorrelation problem.

The table 5.1 summarizes all the diagnostic checking results and it shown that the regression model was normally distributed and did not consist of multicollinearity problem. In other words, the model was the best fit and correctly specifies also it is normally distributed in terms of error terms. Besides, there are no highly correlation between all the independent variables. Both heteroscedasticity and autocorrelation problems were discovered and solved in the model by using Newey-West Standard error. This indicated that the error terms in the regression model was not correlated with different variances in every error terms.

5.2 Discussion of Major Findings

Table 5.2 Summary of Independent Variables towards Dependent Variable

Independent Variable	Hypotheses Testing	Conclusion
Firm Size	H_0: Firm size will not influence executive directors' remuneration H_1: Firm size will influence executive directors' remuneration	Reject H_0: Firm size will influence executive directors' remuneration
Leverage	H_0: Leverage will not influence executive directors' remuneration H_1: Leverage will influence executive	Reject H_0: Leverage will influence executive directors'

	directors' remuneration	remuneration
Firm Performance	H_0: Firm performance will not influence executive directors' remuneration H_1: Firm performance will influence executive directors' remuneration	Reject H_0: Firm performance will influence executive directors' remuneration
Firm age	H_0: Firm age will not influence executive directors' remuneration H_1: Firm age will influence executive directors' remuneration	Do not reject H_0: Firm age will not influence the executive directors' remuneration.

Source: Developed for the research

The table above shows summary of the hypothesis testing results which all the independent variables include firm size, firm age, leverage and firm performance.

5.2.1 Firm Size

The first independent variable which is firm size exhibit a positively sign and shows significant relationship with the remuneration. The result obtained is consistent with Hussain et al. (2014) and Haron and Akhtaruddin (2013). The reason behind is companies pay more remuneration because an executive directors' perform well in the company sales and bring good reputation for the companies. Besides, searching for an experience executive directors' to maintain the company's performance and help in the growth of the company is difficult.

5.2.2 Leverage

Leverage pose a positively sign and significant towards the remuneration of the executive directors'. Based on Shin et al. (2015) and Chemmanur et al. (2013), the result obtain is consistent with the authors. Reason leverage affect the remuneration is due to company expose to risk more frequently as it engage more financial obligation. Therefore, this would cause company to have high risk to go on default thus lead to company liquidation.

5.2.3 Firm Performance

The result in the table shows that firm performance has a significant positive relationship with executive directors' remuneration. In other words, this could be interpreted as the performance of a company may critically affect the executive directors' remuneration. The better the firms perform, the higher the remunerations executive directors receive. This result was consistent to the findings of studies conducted by Cordeiro and Veliyath (2003) and Vroom (1964). The probably reason for such findings is that when the firm has good performance and outstanding profit is achieved, it is expected that the executive directors will receive higher remuneration. This is because a firm should appreciate the dedication and leadership of executive directors.

However, this research obtained a contrary result compared to the study carried out by Ozkan (2007) that based on a sample of UK large companies throughout the year of 2003 to 2004. Unlike the findings in this research project, Ozkan's study found that there is no significant relationship between firm performance and executive directors' remuneration.

5.2.4 Firm Age

As shown in the table above, firm age is found to be an insignificant variable to determine executive directors' remuneration. This result is align with the research carried out by Ghosh (2006) that used panel data and based on a sample of 462 manufacturing companies from year 1997 to 2002. In Ghosh's research, it was found that firm age was an insignificant variable.

However, this result isn't align with the findings from the studies conducted by Abed et al (2014) and Lee and Chen (2011). Both of this studies found that firm age is significant and negatively correlated with executive directors' remuneration.

5.3 Implications of the Study

This study is very beneficial to several parties, namely investors or public society corporate, as well as the government.

5.3.1 Investors or Public Society

This research may act as guidance for investors to make investment decisions. Upon they are searching for potential company to invest, some studies of companies should be thoroughly done. One of the independent variable in this research, firm performance, which is measured by ROA, is found to be significantly related to executive directors' remuneration. Investors should have made a comparison with the leading company of certain industry. By making ROA as a benchmark, investors may take the return of company as an indicator to determine the appropriate level of executive directors' remuneration. With given level of profit, if abnormal amount of remuneration paid to executive is found, investors should carry out a deep research of the company. According to Haron and Akhtaruddin (2013), executive directors' receive over pay although the company isn't making any profit.

Besides that, public society able to use this information to serve as the latest news to the public. This could help public to get latest news regarding the company engage in operations management, financial problems. Positive news may increase investors' confidence. When investors have high confidence towards the company, it is more likely that the company will perform well in the future.

5.3.2 Corporate management

The implication of this study towards the corporate management is act as a reference to the corporate management to decide the appropriate amount for remuneration. Without this implication, corporate management may misuse the remuneration by misjudging the skills of the executive directors' compensation. This is due to executive directors' may not perform the exact skills to the company performance.

Besides, it may act as guidelines for the company operation. Independent variables in this research able to act as an indicator to determine the influential level of executive directors' remuneration in the practical world. Other than that, by using the variable intercepts also able to assist companies to understand thoroughly the factors that determine the executive directors' remuneration.

5.3.3 Regulator

This research may provide some useful guidelines to the regulator as well. Regulators such as Bursa Malaysia must enforce the rules and regulations of disclosure especially those factors that are found to be significantly affect the executive directors' remuneration. To handle the case of executive directors' are being overpaid efficiently, regulator should further enforce the disclosure of firms' profits, total assets, debt which were found to be closely related executive directors' remuneration. As such, publics, investors and employees are well protected if executive directors' remuneration is disclosed thoroughly.

Also, regulator should investigate the remuneration received by executive directors. If abnormally high remuneration was being paid, regulator may take appropriate action towards the executive directors. As the overpaid cases were frequently reported, heavier actions should be taken if any overpaid case is found in the future. This is because every stakeholder of our company should be treated equally.

5.4 Limitation of the Study

While completing this study, some of the limitations have been encountered. This study uses 10 companies' annual reports as main sources and sample size. In order to increase the accuracy of overall research, more sample size is required. Therefore, 20 companies and 5 years of annual reports are being used instead of 10 companies and 10 years. The reason behind is the computation of the ratios and data extraction would be very complicated. Other than that, this study used the total of directors' remuneration rather than splitting into executive and non-executive directors' due to lack of data.

According to Tavakolian (2012), researcher found that even though the women remuneration is gradually increased in recent years, but it is still proved that women remuneration is lower than men remuneration. However, this research doesn't take this into account.

Furthermore, this study focuses on Malaysian context. According to Guest (2008), this research found that the board structure is different between countries due to the institutional settings. Therefore, it is not suitable for comparison purposes between companies that located in other countries as they contain different legal system for companies. Besides that, due to the individual characteristics of different industry, banking and financial service are excluded in this research.

E-Views 6 has been used in this study for the model testing and also diagnostic checking purposes. In the model testing, the better way to solve autocorrelation problem is robust standard errors method provided by STATA 11 software. However, E-Views 6 only provides Newey-West method to get the standard errors that are corrected for the problem.

Type I error defined as where the chances of rejecting a true hypothesis whereas Type II error is where the chances of not rejecting the false hypothesis. According to Gujarati and Porter (2009), when a research carried out tries to lower the Type I error, simultaneously increases the Type II error, vice versa. In this research are more emphasize on minimizing the Type I error, therefore the probability of encounter Type II error is higher.

5.5 Recommendations for Future Research

This research uses different software to obtain the result for the model. However, the software used in this research are incapable of performing some of the econometric functions to solve the problem encountered in this research. Due to the limitations for E-Views 6 software, the model can be re-run by using upgraded software to obtain more accurate result. In addition, to ensure the reliability and efficiency of the future study, it is encourage the future researchers to expand the sample size of the data by increasing the number of company or extending the period of study.

Besides, since study is only focus on Malaysia context, therefore it is unable to compare with other multinational company. So, this study recommends future researcher to study the executive directors' remuneration within Asian countries. Thus, the result computed can act as a benchmark as comparison among Asian companies when comes to decision making on the remuneration of the executive directors'.

The independent variables used for this study included firm size, leverage, firm age and firm performance. Therefore, future researcher may focus more study on factors that influence the director remunerations of the company such as risk factors, volatility of company stock price and characteristics of executive directors'. In addition, the studies on the characteristics of executive directors' are gender, background, education level and age of the executive directors.

5.6 Conclusion

This study main focus is on how firm age, firm performance, firm size and leverage affect the executive directors' remuneration on listed companies in Malaysia. After running the diagnostic checking on the variables, firm performance, firm size and leverage are appear to be significant with the previous studies. However, the firm age is insignificant in the study.

The study uses panel data analysis which includes both cross-sectional and time-series data. Therefore, the study use pooled OLS as regression in the model since it is the most significant regression selected through test between Random Effect Model and Fixed Effect Model.

Due to this the study have proposed several future research ideas includes enlarge the location of the studies to larger areas and the studies includes the characteristics of the executive directors in a company.

As a conclusion, some of the limitations have been discovered which does not include banking and finance sectors. Although the software able to solve the problems, however due to incapability of the software, this study was unable to proceed deeply into other prospects.

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Appendices

Appendix 3.1: List of Public Listed Companies

A & M Realty Bhd

Amway (Malaysia) Holding Berhad

Carlsberg Brewery Malaysia Berhad

Dutch Lady Milk Industries Berhad

Furniweb Industrial Products Berhad

Hup Seng Industries Berhad

JobStreet Corporation Berhad

KPJ Healthcare Berhad

Kulim (Malaysia) Berhad

Lay Hong Berhad

Magnum Berhad

Oriental Holding Berhad

Padini Holdings Berhad

Petronas Dagangan Berhad

Shangri-La Hotels (Malaysia) Berhad

Spritzer Berhad

SP Setia Berhad

TDM Berhad

Unisem Berhad

YTL Corporation Berhad

Appendix 4.1: Description statistics of All Variables

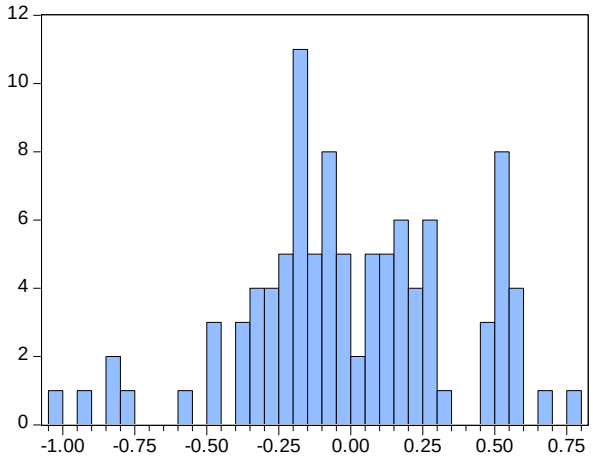
```
. tsset year code

       panel variable:  year (strongly balanced)
        time variable:  code, 1 to 20
                delta:  1 unit


. xtsum  rem perform age leverage size

Variable         |      Mean   Std. Dev.       Min     Max |    Observations
-----------------+--------------------------------------------+-------------
rem      overall |  5.592182   .4047483   4.687529   6.734677 |  N =     100
         between |              .052785   5.508449   5.637198 |  n =       5
         within  |             .4019573   4.771261   6.697511 |  T =      20
                 |                                          |
perform  overall |  .1019974    .088989  -.0694862   .3366986 |  N =     100
         between |               .00945   .0856691   .1089824 |  n =       5
         within  |             .0885826  -.0708564   .3306278 |  T =      20
                 |                                          |
age      overall |  1.315508   .2243642      .7782     1.6902 |  N =     100
         between |             .0376434    1.26626    1.36152 |  n =       5
         within  |             .2217977    .827448   1.702448 |  T =      20
                 |                                          |
leverage overall |   7.59436   1.934209          0   10.47643 |  N =     100
         between |             .1052775   7.531541   7.781614 |  n =       5
         within  |             1.931892   .0319427   10.53924 |  T =      20
                 |                                          |
size     overall |  9.075316   .7046509    7.97499   10.72932 |  N =     100
         between |             .0458365   9.012077   9.121968 |  n =       5
         within  |             .7034452    7.93803   10.72043 | T =      20
```

Appendix 4.2 Normality Test



Series: Standardized Residuals
Sample 2009 2013
Observations 100

Mean	-1.94e-16
Median	-0.040807
Maximum	0.751132
Minimum	-1.048669
Std. Dev.	0.363016
Skewness	-0.303754
Kurtosis	3.184765
Jarque-Bera	1.680014
Probability	0.431707

Appendix 4.3 Heteroscedasticity Test

Heteroskedasticity Test: White

F-statistic	13.81889	Prob. F(14,85)	0.0000
Obs*R-squared	69.47545	Prob. Chi-Square(14)	0.0000
Scaled explained SS	68.49413	Prob. Chi-Square(14)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 07/06/15 Time: 14:40
Sample: 1 100
Included observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.577348	2.951629	3.244766	0.0017
AGE	3.594580	1.124035	3.197925	0.0019
AGE^2	0.101236	0.384795	0.263091	0.7931
AGE*LEVERAGE	0.334694	0.113883	2.938932	0.0042
AGE*PERFORM	1.699844	1.613108	1.053769	0.2950
AGE*SIZE	-0.789054	0.162160	-4.865905	0.0000
LEVERAGE	2.376607	0.523127	4.543078	0.0000
LEVERAGE^2	-0.002120	0.007801	-0.271795	0.7864
LEVERAGE*PERF ORM	-0.564605	0.280753	-2.011035	0.0475
LEVERAGE*SIZE	-0.305066	0.067549	-4.516209	0.0000
PERFORM	0.460847	5.951380	0.077435	0.9385
PERFORM^2	-2.452740	2.640170	-0.929008	0.3555

PERFORM*SIZE	0.280544	0.663722	0.422683	0.6736
SIZE	-4.855609	0.881238	-5.509987	0.0000
SIZE^2	0.471150	0.076047	6.195500	0.0000

R-squared	0.694755	Mean dependent var	0.130463
Adjusted R-squared	0.644479	S.D. dependent var	0.193808
S.E. of regression	0.115559	Akaike info criterion	-1.340585
Sum squared resid	1.135086	Schwarz criterion	-0.949809
Log likelihood	82.02923	Hannan-Quinn criter.	-1.182431
F-statistic	13.81889	Durbin-Watson stat	1.076576
Prob(F-statistic)	0.000000		

Appendix 4.4 Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	45.22517	Prob. F(2,93)	0.0000
Obs*R-squared	49.30508	Prob. Chi-Square(2)	0.0000

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 08/06/15 Time: 14:41
Sample: 1 100
Included observations: 100
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGE	-0.065762	0.137605	-0.477903	0.6338
LEVERAGE	-0.007734	0.020204	-0.382795	0.7027
PERFORM	-0.098233	0.385184	-0.255029	0.7993
SIZE	-0.006389	0.049374	-0.129401	0.8973
C	0.214896	0.397947	0.540013	0.5905
RESID(-1)	0.716404	0.103385	6.929465	0.0000
RESID(-2)	-0.013256	0.104616	-0.126709	0.8994

R-squared	0.493051	Mean dependent var	-1.55E-15
Adjusted R-squared	0.460344	S.D. dependent var	0.363016
S.E. of regression	0.266676	Akaike info criterion	0.261867
Sum squared resid	6.613812	Schwarz criterion	0.444229
Log likelihood	-6.093352	Hannan-Quinn criter.	0.335672
F-statistic	15.07506	Durbin-Watson stat	1.960773
Prob(F-statistic)	0.000000		

Appendix 4.5: Solving of Autocorrelation Test using Newey-West Method

Dependent Variable: REM
Method: Least Squares
Date: 08/06/15 Time: 14:42
Sample: 1 100
Included observations: 100
Newey-West HAC Standard Errors & Covariance (lag truncation=4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AGE	0.008520	0.271910	0.031333	0.9751
LEVERAGE	0.054411	0.025570	2.127929	0.0359
PERFORM	0.888802	0.486298	1.827690	0.0707
SIZE	0.177438	0.156219	1.135826	0.2589
C	3.466796	1.198791	2.891910	0.0047

R-squared	0.195581	Mean dependent var	5.592182
Adjusted R-squared	0.161711	S.D. dependent var	0.404748
S.E. of regression	0.370580	Akaike info criterion	0.901212
Sum squared resid	13.04630	Schwarz criterion	1.031470
Log likelihood	-40.06058	Hannan-Quinn criter.	0.953930
F-statistic	5.774430	Durbin-Watson stat	0.574783
Prob(F-statistic)	0.000333		

Appendix 4.6: Inferential Analyses

```
. reg  rem perform age leverage size


      Source |       SS       df       MS              Number of obs =     100
-------------+------------------------------           F(  4,    95) =    5.77
       Model |  3.17199767     4  .792999417           Prob > F      =  0.0003
    Residual |   13.046303    95  .137329505           R-squared     =  0.1956
-------------+------------------------------           Adj R-squared =  0.1617
       Total |  16.2183007    99  .163821219           Root MSE      =  .37058


------------------------------------------------------------------------------
         rem |      Coef.   Std. Err.      t    P>|t|   [95% Conf. Interval]
-------------+----------------------------------------------------------------
```

```
     perform |   .8888021   .5337336     1.67   0.099  -.1707931    1.948397
         age |   .0085196   .1903124     0.04 0.964    -.3692983    .3863375
    leverage |   .0544115   .0280531     1.94 0.055    -.0012809    .1101039
        size |   .1774376   .0685146     2.59 0.011     .0414189    .3134562
       _cons |   3.466796   .5490729     6.31   0.000   2.376749    4.556844
------------------------------------------------------------------------------
```

Appendix 4.7: Proved for Pooled OLS

```
. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

        rem[year,t] = Xb + u[year] + e[year,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                 ---------+-----------------------------
                      rem |   .1638212       .4047483
                        e |   .1422711       .3771884
                        u |          0              0

        Test:   Var(u) = 0
                                 chi2(1) =     1.91
                               Prob > chi2 =     0.1671
```