THE EFFECTS OF INSTITUTIONAL OWNERSHIP, LEVERAGE AND EARNINGS PER SHARE ON OFFER PRICE: AN EMPIRICAL STUDY OF IPO IN MALAYSIA

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UNIVERSITI UTARA MALAYSIA
JUNE 2016

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Thesis Submitted to
School of Economics, Finance and Banking (SEFB)
Universiti Utara Malaysia,
In Partial Fulfillment of the Requirement for the Master of Science (Finance)

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ABSTRAK

Kajian ini mengkaji kesan penglibatan institusi, penghutangan dan pendapatan sesaham terhadap harga tawaran pada 71 buah tawaran awam awal (TAA) di Malaysia dalam tempoh dari tahun 2011 hingga 2015. Kajian tersebut menguji hipotesis kajian dengan menggunakan kaedah regresi berganda keratan-rentas. Hasil kajian menunjukkan bahawa hubungan negatif antara penglibatan institusi dan harga tawaran IPO. Ini menunjukkan bahawa peratusan penglibatan pelabur institusi yang tinggi dalam pasaran TAA membawa risiko rendah kepada TAA, oleh itu harga tawaran yang rendah ditetapkan sejak pelabur yang kurang arif meminta pulangan awal yang tinggi daripada pelaburan, di mana menyokong Teori Sumpahan Pemenang. Selain itu, didapati bahawa pendapatan sesaham berhubungan secara positif terhadap harga tawaran TAA. Ini menunjukkan bahawa firma yang berkualiti dapat menjana keuntungan yang baik pada masa akan datang, di mana menyokong Teori Isyarat. Di sebaliknya, tiada hubungan antara penghutangan dan harga tawaran TAA daripada keputusan kajian tersebut.

Kata Kunci: Tawaran awam awal (TAA); Harga tawaran; Penglibatan institusi; Penghutangan; Pendapatan Sesaham; Teori Sumpahan Pemenang ; Teori Isyarat

ABSTRACT

This study examines the effects of institutional ownership, leverage and earnings per share on the offer price in 71 Malaysian IPOs within the periods from year 2011 to 2015. This research examines the hypotheses by employing cross-sectional multiple regression. The finding indicates that there is a negative relationship between institutional ownership and IPO offer price. This implies that high percentage of institutional investors involve into IPO markets lead to less uncertainty of IPOs, and hence low offer price is issued since uninformed investors require high initial returns from investing, which supports Rock's Winner's Curse Theory. Moreover, earnings per share is positively related to the IPO offer price. This indicates that a good quality firms able to generate favorable profits in future, in which support signaling theory. However, there is no relationship between leverage and IPO offer price is found from the results.

Keywords: IPO; Offer Price; Institutional Ownership; Leverage; Earnings per Share; Winner Curse Theory; Signaling Theory

ACKNOWLEDGEMENT

I would like to take this opportunity to express my sincere appreciation to all those who have rendered their assistance and encouragement to me to finish my research paper. First of all, I would like to thank my supervisor, Dr. Rasidah binti Mohd Rashid who has provided me the guidance, support, and encouragement to complete this research.

On top of that, I am grateful to lecturer, Dr Sabri bin Nayan, who has shared his knowledge regarding research methodology in which helpful for analysing the methodology that applied in research paper. This allows me to share his knowledge with other research students.

Last but not least, I am thankful to my beloved family and friends that gives the encouragement and support to me in completing research paper.

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LISTS OF ABBREVIATIONS

ACE Market	=	Access, Certainty, Efficiency Market
β_0	=	The regression intercept
β	=	The regression coefficients of respective variables
ε	=	Error term of regression
EPS	=	Earnings Per Share
Eq	=	Equation
H_1	=	First hypothesis
H_2	=	Second hypothesis
H_3	=	Third hypothesis
IPO	=	Initial Public Offering
LEV	=	Leverage
LR	=	Lock-up Ratio
MESDAQ	=	Malaysian Exchange of Securities Dealing and Automated Quotation
OFFER	=	IPO offer size
OFFSZ	=	Supply of IPOs
P/E	=	Price-to-earnings Ratio
PRIV	=	Institutional Ownership
SC	=	Securities Commission

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The definition of initial public offering (IPO) is the sale of securities to public that performed first time to the public by going through the primary market (Brealey et al., 2008), with the aim of raising capital (Boonchuaymetta and Chuanrommanee, 2013). The firm who is private hands will be transformed as public share after being traded equity capital market (Younesi et al., 2012). According to Costa et al. (2013), IPO provides opportunity to examine a critically important issue in the liveliness of a company, whereby typically large price movements or returns are observed over a very short event window. Normally, the issuing IPOs are normally done by small and younger companies that would like to expanse their capital.

Nowadays, IPOs have become more popular investment choices for both small and large investors. Unlike debt market, especially the bond market, IPO becomes more popular investment choices for institutional investors and retail investors (Abdul-Rahim and Yahya, 2015). This is due to the expectation of the group of potential investors and their diversity in which able to prompt companies to have chances to acquire the expected amount of capital. IPOs provides opportunities for investors to obtain more profit once the shares are issued and traded publicly, in which able to enhance liquidity in order to allow firm for raising capital on the favorable term (Ritter, 1998). According to Mello and Parsons (1998), the purpose of firms going to public in which to enlarge their borrowing power by virtue of a dispersed ownership.

Bursa Malaysia has two listing boards that are Main Market (formally known as the combination of main board and second board) and ACE Market (formally known as MESDAQ market). Firms listed in Main Market are mostly consists of the big and stable companies, whereas ACE market are consists of the small and technology companies (Yong, 2015). ACE markets are characterized by companies that lack information on track record and also have difficulty in securing conventional sources of financing rather than to those companies listed on the Main Market (Yong, 2015). The valuation of firms that listed on the ACE Market is harder in which may lead to greater valuation uncertainty rather than firms listed on the Main Market. The harder the valuation of IPOs causes the greater divergence of opinions among investors towards the actual value of firms. Graph 1.0 is showed about the statistics of the total number of companies listed on Main Market and Ace Market in Malaysia as from the year 2009 to 2015.

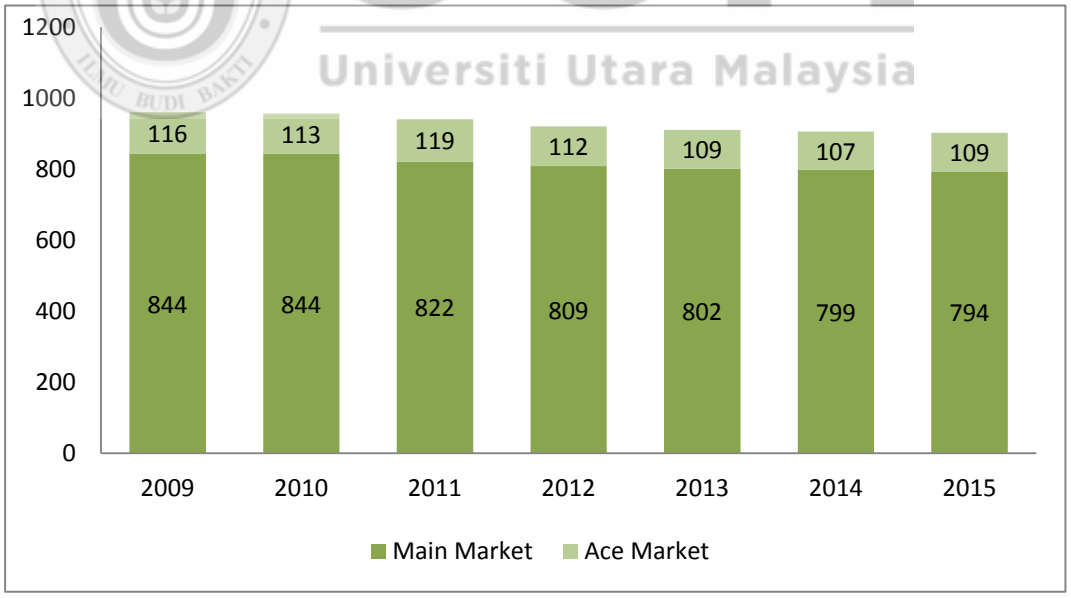

Figure 1.1
Statistics of the total number of companies listed on Main Market and Ace Market in Malaysia as from year 2009 to 2015.
Sources: Bursa Malaysia, 2016 (www.bursamalaysia.com)

The main problem for the issuance of an IPO is the determination of the appropriate IPO offer price. In the process the offering is filed, the initial price range is reported, after this the actual offer price is fixed by issuers after several weeks (Edelen and Kadlec, 2005). After the IPO listing, the fluctuation of stock prices can give significant contradicting to the offer prices (Lai & Lo, 2012). Therefore, in determining the appropriate offer price, may raise the problem of the perspectives of behavioral biases, divergence opinion and hence this will be evaluated through the involvement of asymmetry. The existing of information asymmetry will lead to difficulty for the issuers to communicate the information about their true value especially the quality of firms to the potential investors (Carey et al., 2016; Abdul-Rahim & Yahya, 2015). Hence, this will cause potential investors less able to evaluate the IPOs and the issuing companies fairly. Moreover, this will cause the possibility of the adverse selection and a moral hazard problem in which make an investment of IPO become riskier (Ritter and Welch, 2002). When the issuer and underwriter already agree to and set fixed-offer price, oversubscription cannot be outstretched and accordingly it may affect the underwriter's profit since the issuer's proceeds are guaranteed (Jones and Yeoman, 2014). Thus, the offer price of firms must be set correctly and fairly to reflect true value of the firms to ensure the issues are fully subscribed.

Generally, there are only a few countries carry out studies in examining factors that explain the IPO offer price. Booth and Chua (1996) have analysed the negative relationship between institutional ownership and IPO offer price. While Daily et al. (2005) have examined pre-listing characteristic such as the size of companies is positively related to IPO offer price in United Stated. Cotter et al. (2005) have analyzed the price-to-earnings ratio positively related to offer price, but insignificant for leverage in Australian IPO market. The findings by Cotter et al. (2005) are

consistent with Sahoo and Rajib (2012) in which they analyse Indian IPO market. Moreover, Lai and Lo (2012) have examined that the earnings-per-share is positively related to the IPO offer price, but a negative relationship for leverage in Hong Kong market. Based on the previous research which mainly focusing on the developed market found to have a contradict finding and there is very limited study taken to examine the determinants factors of IPO offer price specifically in fixed price mechanism. Therefore, this study examines the impact of pre-listing characteristics in explaining the IPO pricing which is still debated and discussed. The aim of this study is to bridge the gap the in existing literature through analyzing elements that embedded into information within in IPO prospectus in which have not much received attention in the past, especially institutional ownership, leverage and growth prospects (proxy using a year before issuing IPO of earnings per share) of the IPO. At this moment as the literature review concerned, there is still no conclusive evidence that exists that above information that explains the IPO pricing in Malaysia.

1.2 IPO Pricing Mechanism

The issuers must choose underwriter(s) for the purpose of IPO pricing. After selection, there are three steps in the pricing of an IPO (Hanley and Hoberg, 2010). The first step is the draft preparation of an initial prospectus is conducted by the underwriter and the issuing firm, and then the initial offer price is set. The initial IPO offer price is determined as the midpoint of the initial offer price range for the bookbuilding while for the fixed offer price the offer price is determined between the underwriter and issuers' agreement.

There are three different mechanisms for setting IPO offer price by issuers such as, book-building, auction and fixed-priced. Book-building mechanism is mostly employed in many countries, in which started from United State and Canada, and since the early nineties has spread to Europe and Asia countries (Busaba and Chang, 2010). Book building pricing mechanism helps in the valuation of firms to be more accurately. It increases the potential for issuers and underwriters for redistributive gain at the expense of other issuers (Kutsuna and Smith, 2004). Other than that, due to the efficiency of information gathered by this method, hence this will result in less underpricing in IPOs (Chen et al., 2011; Katsuna and Smith, 2004). Also, the total cost of issue for book-building, in which including fees and underpricing, may be less rather than the auctioning pricing mechanism, but expensive than fixed-offer method (Hanley, 1993).

The second method of IPO pricing is auctions method. Uniform price auctions are multi-unit sealed bid auctions that all winning bidders need to pay the same price (Jagannathan et al., 2015). The price paid for IPO may be the market-clearing price, with the meaning that the highest price that allows all shares to be sold to market. Besides, the price can be set below the clearing price, or other word classified as "Dirty Dutch'" auctions (Degeorge et al., 2010). The issuers have the right to decide the adjustment of the number of shares offered to the public and to increase rationing (Jagannathan et al., 2015). However, the disadvantage of auctions is issuers lead to either too much or too little underpricing for IPOs. Auction method still does not receive much more attention among countries.

The fixed-price offer is simple pricing method in which only requires less effort from the underwriter and the firm (Chen et al, 2011). The issuing firms will decide to go for

a lower fee and greater IPO underpricing as compared to book building offer, which demands a higher fee but smaller underpricing. The offer price is going to be set prior to IPO allocation, in which that investor do not have opportunities to place a bid (Yong, 2015). However, the offer price under fixed-price mechanism does not contain any information about the investors' valuations of IPOs. Thus, this may occur higher divergence of opinions among investors.

In Malaysia, fixed-price offering is used for pricing mechanism in IPO commonly. Because of the employment of this mechanism, there is the existence of high level of asymmetric information among IPO investors (Yong, 2015). This indicates that the difference opinions among investors towards the firm's value in Malaysia. However, there is still some Malaysia firms practice the book-building with the combination of fixed pricing mechanism. Theoretical and empirical evidence studies show that there might be significant differences in IPO underpricing across countries that caused from the differences in pricing mechanism.

1.3 Problem Statement

The present study examines how the offer price reflects its fundamental information significantly. Due to the existence of information asymmetry problems, previous studies (Khurshed et al., 2009; Ghosh, 2005) point out that the IPOs mispriced frequently, either there is higher or lower than the market price of equity shares. In Malaysian market, fixed-priced mechanism is applied in IPO pricing, in which underwriter will set the price without taking into account of the investor demand. The previous studies about the relationship between IPO offer price and its factors are more focussing in a developed market, but less on developing the market. Kim et al. (2008)

analyze the effect of leverage on IPO price on United Sated low-tech and high-tech firms in order to investigate whether leverage reflects the signaling effect of firm's quality, resulting in the positive relationship in high-tech firms. Lai and Lo (2012) investigate whether initial offer price of the IPO will reflect its fundamental information significantly, resulting in offer price is influenced by earnings per share and leverage significantly. For developing market, Sahoo and Rajib (2012) examine the determinants of the IPO pricing in the Indian market and focus on the impact of IPO valuation on the offer price, concluding that only P/E ratio and earning per shares are positively related to offering price. Collectively, most of the previous studies examine factors that explain the offer price in the book-building process but yet to be carried out in Malaysia specifically that widely using the fixed price mechanism. Thus, firms may affect by the degree of underpricing or overpricing based on decision and demand from the investors after the IPO being listed. One of the reasons for underpricing and overpricing in IPOs is that issuers and underwriter established the IPO price without soliciting investors' valuation on the new issue. Therefore, identifying factors that explain the offer price is the main motivation of this study. The present study argues that information such as institutional ownership, leverage and growth prospects of the IPO need to be incorporated into the pricing of the IPOs in reducing the information asymmetry problem.

Previous study by Rashid and Abdul Rahim (2012), states that issuers set the low offer price in which to attract uninformed investors into the market. This is because they are less successful in getting enough participation from informed investors. According to Yong (2011b), the percentage of IPO underpricing for uninformed investors is higher than informed investors, indicates that uninformed investors require high return from IPO by lowering offer price. However, there is an argument from Fernando et al. (2004)

shows that the positive relationship between the offer price and institutional investor ownership, with the reason of underpricing acts as the cost of compensating informed investors for disclosing the information they have and for future monitoring services. Hence, these contrast explanations lead us to have an opportunity to examine how is the involvement of institutional investors in IPO market impact the decision of underwriters to set the offer price in Malaysia, which is not previously been performed.

Moreover, the present study examines whether leverage ratio influences on the IPO offer price. There are some previous studies analyze the relationship between leverage and IPO offer price, the finding turn to be negative significant result (Reber and Vencappa, 2016; Lai and Lo, 2012; Peng and Wang, 2007). It documented that high leverage ratio is associated with increased financial risk in which lead to a discount in offer price. Other findings, regarding leverage indicate the insignificant negative relationship result (Sahoo and Rajib, 2012; Cotter et al. 2005). It is documented that high debt issued by companies does not affect the intrinsic value of the IPO offer price. Cotter et al. (2005) argue that industry factors influence the leverage ratio with the reason of the different capital expenditure requirements or volatile profits among some industries, and therefore some companies have lower gearing that contributes to the insignificant result. However, there is an argument stated by Sarkar and Sarkar (2005) the post-reformed debt has a positive effect on the firm value, in which lead to the high offer price. This result is consistent with Kim et al. (2008), in which have analysed that high leverage ratio of low-tech industries is negatively related to IPO price revisions, indicates high-ranked underwriters does not have difficulty to certify that high leverage since leverage tends to signal good quality of firms. This study argues if the leverage is signaling the uncertainty of the IPO, then issuer could attract investors to subscribe by discounting their offer price. However, yet the study to be carried out in examining the

direct influence of leverage on the IPO offer price. Therefore, this study extends the previous researcher argument in examining the influence of leverage on the IPO offer price.

Finally, growth prospect that used in this study is proxy using earnings per share (EPS). Previous studies in developed countries state the earnings per share is positively related to IPO offer price (Chen, 2015; Lai and Lo, 2012; Cotter et al., 2005; Kim et al., 1994). It is documented that huge increment of the incomes of companies year by year signals companies of high quality and growth prospect, in which support the signaling theory. Chen (2015) also explains the positive relationship indicate that investors only receive small investment risk if they invest into the companies that performs high profit. Companies with high earnings will have the potential growth opportunities in future, in which improve the valuation of the companies. However, this statement is argued by Aggarwal et al. (2009) in which state that the negative relationship between earnings per share and offer value, indicating the future growth opportunities as compared to current profitability. The reason is negative earnings that contributed by companies reflect strategic expenditures such as investment in intangibles asset, in which help to boost the value of companies (Hand, 2003). Hence, this states that negative earnings contributed by companies will have high IPO offer price. Lastly, although previous studies show the positive relationship between EPS and offer price, none of studies are carried out in Malaysia IPO market. Thus, the present study will extend the previous researcher argument in order to analyse the impact of EPS on the IPO offer price.

1.4 Research Questions

As referring to present study, there are three research questions are raised, such as

1. Does institutional investor ownership influence IPO offer price?
2. Does leverage ratio influence IPO offer price?
3. Do earnings per share affect the IPO pricing?

1.5 Objectives of Research

The main objective of this research is to analyse the role of three main explanatory variables (institutional ownership, leverage and earnings per share) that influence the IPO offer price. There are three objectives of this research specifically, such as,

1. To investigate the impact of institutional investor ownership on IPO offer price.
2. To assess the impact of leverage on IPO offer price.
3. To examine the effect of earnings per share on IPO offer price.

1.6 Scope of this Study

In this research, the sample of IPOs is extracted from those IPOs issued for listing on the Bursa Malaysia, in which the period is taken from January 2011 to December 2015. The analysed IPOs are listed on the Main Market and ACE Market. The data regarding IPOs are collected from the website of Bursa Malaysia and IPO prospectuses of companies.

The final sample excludes the IPOs in which includes restricted offer-to-sale to Bumiputra investors, restricted offer-to sale to eligible employees, tender offer, and special issues. This is consistent to Rashid et al. (2014) and Abdul-Rahim and Yong (2008). Also, IPOs from the industries such as Real Estate Investment Trust (REITS), ETF, SPAC and finance are excluded from this present study.

In order to explain the IPO offer price, the present study currently focuses on some pre-listing factors such as institutional ownership, leverage and earnings per share. Also, there are three variables are controlled in which have been documented to influence offer price in the past that are price-to-earnings ratio, supply of IPO and lock-up ratio.

1.7 Significance of Study

The present study describes the theoretical background, in which states that the hypotheses and empirical predictions are developed. This research is important as it bridges the research gap in existing IPO literature through analyzing the pre-listing characteristics, such as institutional ownership, leverage, and earnings per share, in explaining IPO pricing, in which have not been particularly done in developing the country, especially in Malaysia. The evidence provided regarding this research is mostly according to the developed countries, however, there is few are available in developing country.

As from the present study, the findings from the relationship between the offer price and pre-listing IPO characteristics able to help underwriters or brokers to make the decision for setting the offer price of Malaysian IPOs under the fixed-pricing

mechanism, in order to reduce the issues of the extreme overpricing or underpricing of firms. Other than that, this study able to add the pool of knowledge for researchers and academicians on the offer price setting of IPO, since there is no study regarding the impacts of pre-listing characteristics on offer price in Malaysia.

1.8 Organization of Study

As from this research, it comprised of five chapters. The first chapter presents the background of the study, problem statements, objectives, and scope of the study. The second chapter presents an empirical review of previous studies and literature with performance, the explaining of the key factors influence IPO offer price and theoretical review. The third chapter describes the data collection, a methodology that employed in the study, research framework and the mathematical specifications of the models. The fourth chapter discusses the data presentation and interpretation the findings. The last chapter summarizes the findings from the analysis, conclusion, limitation of study, and recommendations or suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter covers the previous literature related to the factors that affect initial offer price on the IPO. There are five sections are contained in this chapter. The first section discusses the theories related to the present study, such as winner's curse hypothesis and signaling theory. Second section illustrates about the dependent variable of the research. Third section defines and explains the key factors influence IPO offer price. The fourth section reviews the control variables of the present study. Next, the fifth section discusses the factors affecting the initial offer prices of firms. The last section is the conclusion of this chapter.

2.2 Theories Related to Literature

There are some theories in which related to the impact of the pre-listing IPO elements on offer price. The first theory related to this present study such as information asymmetry between the IPO offer price and institutional ownership. Other than that, the theories such as winner's curse hypothesis applied in the explanation in the relationship between the IPO offer price and institutional ownership while signaling theory is applied to the relationship between IPO offer price and leverage, and also earnings per share (EPS).

2.2.1 The Winner's Curse Hypothesis

One of the theories that apply in the present study is a winner's curse hypothesis. This theory was developed by Rock (1986) in which relies on the information asymmetry between both parties such as investors that are informed and uninformed. The winner curse hypothesis developed when there is a bias in IPO share allocation that faced by uninformed investors since there is a presence of informed outsiders (Chemmanur, 1993).

The winner curse hypothesis states that outside informed investors have obtained better knowledge regarding the future prospects of companies as compared to uninformed investors (Michaely and Shaw, 1994). Informed investors may know more about the attributes of a company's management, latest information disclosed by companies, a discount rate of this issuing company and company's competitors. Informed investors will request more shares of successful companies and then they will leave a disproportionate amount of shares of the less successful issues for uninformed investors that do not want those (Ritter, 2003). Hence, a "lemons problem" may be existed, since uninformed investors are a lack of knowledge about the future cash flow of companies (Michaely and Shaw, 1994). According to Beatty and Ritter (1986), they argue that since the valuation of the IPO offer price is affected by the different level of uncertainties, investors need to incur some costs in which to search for information to reduce the uncertainties.

To encourage investors to subscribe for shares and certify the offering accomplishment, issuing companies have to underprice their IPOs. Hence, the informed investors subscribe the offerings in which offer prices are underestimated market prices. To

maintain uninformed investors in the marketplace, they will require a high return on the underpricing of all the IPOs. The relatively uninformed investors are aware of the possibility that they would tend to receive a greater portion of the overpriced issues than the informed investors would. Therefore, to compensate uniformed investors, the IPO offer prices must be discounted or lowered on average, if the market is characterized by heterogeneously informed investors (Yung and Zender, 2010). Also, the discounted offer price will able to reduce the uncertainty or adverse selection bias (Su, 2004). By doing this, this will able to convince the uninformed investors into the market, if there is more underpricing of IPOs. Thus, IPOs must be underpriced in order to compensate uninformed investors due to the uncertainty or adverse selection bias. Generally, it is expected to have high underpricing if there is a high level of the ex-ante uncertainty on the value of an IPO.

There are some previous studies have been examined regarding a winner curse hypothesis (Yong, 2009; Fernando et al., 2004). Yong (2009) has found that there is a high level of initial return that required by uninformed investors rather than informed investors in Malaysia market, in which can be observed clearly that the demand of uninformed investors is higher than informed investors. Therefore, the offer price will tend to be lower. This finding is a bit contrast with Fernando et al. (2004), in which stress on the important role of the institutional investors in the IPO market, and hence resulting in high levels of IPO underpricing with the high-priced of the IPO, indicates that the high initial returns that informed investors rather than uninformed investors. Underpricing of IPO is a means of compensating institutional investors for truthfully revealing all value-relevant information in which useful in pricing shares in the IPO (Chemmanur et al., 2010).

2.2.2 Signaling Theory

Signaling theory is established by Allen and Faulhaber (1989), Grinblatt and Hwang (1989), and Welch (1989), which is based on the asymmetric information. This hypothesis is essentially concerned with reducing information asymmetry between two parties, which is between individuals and organizations (Spence, 2002; Connelly et al., 2011). However, Kirmani and Rao (2000) argue that although the firms know their own true quality of companies, but outsiders such as uninformed investors do not know, thus the existence of information asymmetry between insiders and investors. Therefore, firms will take the opportunities to signal its quality to investors. High quality of companies, signaling investors their quality to receive a high payoff. Therefore, the issuers will set the higher offer price with the purpose to signal high values of companies to the investors. This will attract the investors to buy higher offer price since they know the high quality of companies will boost the growth of companies.

As according to Brau and Fewcett (2006), referring to signaling theory, large companies are viewed as strong historical earnings they have and hence most positive signal in the IPO process. In the literature on earnings per share, there is an existing of information asymmetry in between management of IPO companies and potential investors. Chan et al. (1996) and Jeny and Jeanjean (2007) suggest that in order to improve the asymmetric information problem, companies must signal the project's value and disclose it in the form of earnings forecast so that can attract more investors. Referring back to the present study, the variable such as earnings per share that obtained from the prior year before issuing an IPO is used that applied in signalling theory that can help in explaining IPO offer price. Therefore, in the earnings per share

of IPOs firm's literature, the communication method of conveying private information which is the signal by the companies to the outsiders (Clarkson et al., 1992) must be shown in high earnings per shares in which indicates that the high quality of companies will be since the profits of the companies are keep increasing. Consequently, earnings per share is a signal to the investors in order to make investment decision wisely in the IPO companies by reviewing the prospectuses.

Other than that, information asymmetry is also one of the fundamental premises of previous research on the capital structure which exists between insiders and outside investors. Therefore, a signaling model of the capital structure is developed, that leverage conveys information to the market (Nachman and Noe, 1994; Heinkel and Zechner, 1990; Ross, 1977). When the insiders know more about the companies' qualities and its investment opportunities rather than uninformed investors, insiders will use debt to send a signal to the market about their superior prospect of companies (Kim et al., 2008; Su, 2004). The company consists of a high debt in its capital structure indicates the high leverage level that the company is considered to be. Large pre-IPO leverage acts as a credible signal of a firm's quality as the debt may limit company's management for controlling over company's cash flows and increase the firm's undiversified stock ownership risk. Hence, it predicts that large debts by companies will tend to lower the offer price by the underwriters while issuing into the market. This is because it acts as the proxy of financial risk when companies go public (Sahoo and Rajib, 2012). This will tend to increase the IPO underpricing level due to high information asymmetry in the market.

2.3 IPO Offer Price

The offer price is defined as the issued price of securities publicly, in which made available for purchase through the underwriting the IPO issue by the investment bank. The underwriter's fee and any management fees are charged to the IPO price issuing. The offer price is the alternative performance indicator for investment bankers, or other words serve as the basis of the underpricing. As an indicator of IPO performance, commissions are determined that paid by investment bankers and hence investment bankers' clients (initial investors) can benefit in the IPO process (Daily et al., 2005).

The setting of IPO offer prices is a challenge in the finance sector. The mispricing of offer price occurs when the setting of price as far as the market price. According to Yong (2014), an IPO has no historical prices that show the long run-up because investors can only see a sudden increase in the aftermarket price of an IPO over its offer price. There are two reasons explain the sudden increase in price during the early aftermarket trading. Firstly, it reflects the "perception" of investors towards the true value of IPO in which investors believe that the IPO concerned is excessively underpriced. Secondly, it can be due to speculative activities in the early trading that result in the sudden jump on in its price (Yong, 2014). Investors prefer relatively lower offer price in which enables them to obtain benefits from underpricing. Therefore, the high overpriced IPOs tend to less underprice in the premarket and perform better in the aftermarket rather than low-offer priced IPOs (Chang and Tang, 2007).

The valuation of IPO offer price begins for the following to set the offer price. According to Kim and Ritter (1999), they mention that forward price–earnings

multiples are performing better in valuation rather than all other multiples in valuation, and the earnings per share that forecast for next year dominates the use of current year earnings. They also find that an earnings forecast can enhance the power of valuation tests. Some of the researchers apply other valuation methods such as a Discounted Dividend Model (DDM) (Roosenboom, 2012) and Discounted Cash Flow (DCF) (Mills, 2005; Kaplan and Ruback, 1995).

After the valuation of IPOs, the shares need to be priced. It is begun after setting the preliminary offer price. There is a different way in pricing of the IPO in developed and developing markets. In America market, IPOs pricing is mostly employed by book-building or auction mechanism. The underwriters will start with canvassing investor demand for the shares during a road show (book-building) or an auction (Roosenboom, 2012). Underwriters will collect all the information that provided by investors. If there is positive information revealed by investors, it is used for upward adjustment of preliminary offer price so that final IPO offer price to be reached (Kim et al, 2008). On the other hand, to persuade investors to disclose their private demand schedules, the underwriter adjusts the offer price partially and hence the shares of IPOs are underpriced in order to reward investors that disclosing favorable private information (Benveniste and Spindt, 1989). This phenomenon has been widely documented in the United States (Hanley, 1993; Ritter and Welch, 2002). Therefore, the level of asymmetric information is perceived to a low level.

Ritter and Welch (2002) argue that firms whose go public, have fixed the price before formally inviting of investors to bid the price of the shares. Hence, IPO prospectuses must be published out even the offer price is set under fixed-pricing mechanism. This links to the fixed-price offerings in which adopted most in Malaysia market. In

Malaysia, since the IPOs are most commonly adopts fixed-price offering mechanism, this pricing method resulting in a high level of underpricing (Loughran et al., 1994). This can be explained that part or overall of the shares can be sold with the price less than the fixed price, however there are no shares can be sold at a high price than the offer price (Jones and Yeoman, 2014). However, high level of asymmetric information among IPO investors is perceived, indicating that there is a difference of opinions provided by investors according to the prospect and the value of a firm in Malaysia (Yong, 2015). According to the explanation by Miller (1977), the large divergence of opinion toward IPO issue cause short-run overvaluation of IPOs. In this case, the aim of discounting the offer price is to raise the quantity demanded, at the same time it could set off a self-defeating information cascade in which to lower demand (Welch, 1992). Thus, the underwriter will better prefer to issue lower offer price of companies.

As from the above explaining the process of IPO pricing in different market, there are few previous studies regarding to effect of pre-listing characteristics on IPO offer price such as institutional ownership (Fernando et al., 2004; Booth and Chua, 1997), leverage (Lai and Lo; 2012; Sahoo and Rajib, 2012; Cotter et al., 2005) and earnings per share (Chen, 2015; Ghicas, 2000; Kim et al., 1994). The findings regarding the pre-listing characteristics will be discussed in next section.

As a conclusion, there is still limited study that explores the explaination of the IPO pricing in fixed price mechanism specifically Malaysia on the determinants factors of the IPO offer price. The previous studies are mostly conducted in the book-building price mechanism, except Australia (Cotter et al., 2005), a country that the price is set by fixed price method. The present study examines this issue in the Malaysian fixed-

price setting where offer prices are less likely to be influenced by the canvassing of market demand.

2.4 The Key Factors of IPO Pricing and its Prior Studies

In the present study, there are three factors to be discussed as following section, such as institutional ownership, leverage and earnings-per-share. Also, previous studies regarding these three factors are illustrated. The literature provided by authors for factor of IPO pricing are useful for developing the hypotheses, in which will be explained further in Chapter Three.

2.4.1 Institutional Ownership

Institutional ownership is defined that the amount that a firm's stock in which owned by private institutions, investment firms, insurance companies, government institutions or other large entities in which manage funds on behalf of others. Mostly, the institutional investors are non-bank persons or organizations which carry out securities trading in a large amount of shares. However, institutional investors are less protected from the regulations, with the reason that they are assumed to have more knowledge on IPO market and have the ability to protect themselves, thus proxy for informed investors. Private placement is a proxy of the institutional ownership and refers to the sale of IPOs to institutional investors (Yong, 2011a; Yong, 2009). Non-private placement is stated that the IPO exercise without the direct presence of institutional investors but only just retail investors. Retail investors are referred as not knowledgeable investors and hence proxy for uninformed investors.

Companies prefer to choose private placements primarily due to the simplified issuance procedures and lower flotation costs, expedite issuance (Krishnamurthy et al., 2005). This will dilute the ownership of current non-participating shareholders. Hence, high institutional ownership will predict a low offer price of IPO. It is linked to previous studies by Booth and Chua (1996) have examined the high institutional ownership will lead to the lowering offer price. Companies choose the lowest offer price in which to promote diffuse ownership by attracting more outside investors into companies. However, Brennan and Frank (1997) have argued that companies choose low offer price by underpricing their shares and ration the share allocation in which to preserve private benefits of control. This will be more beneficial to small and diffuse investors.

Since only few studies to explain IPO offering by institutional ownership, it is found that previous studies such as Yong et al. (2009), Abdul-Rahim et al. (2012), Rashid and Abdul Rahim (2012) and Rashid et al. (2014) examining the relationship between IPO underpricing and institutional ownership in Malaysia market. They find out that the large percentages of IPOs shares that institutional investors hold lead to the high level of the underpricing. These findings are supported by the winner's curse hypothesis, in which informed investors demand a higher return from the IPO performance as compared to uninformed investors. The higher initial return will tend to lower the offer prices of firms in which to attract uninformed investors to purchase the shares since they are less successful in getting enough participation from informed investors (Rashid and Abdul Rahim, 2012). Hence, it is rational that uninformed investors require high premium or high returns in order to compensate the higher risks.

A theory, such as winner curse hypothesis is applied in the explanation of the institutional ownership affect the IPO offer price. The theory suggests that higher underpricing of IPO indicates that companies will offer lower prices of shares in order to attract uninformed investors to buy the shares. This explanation will contrast with Fernando et al. (2004), in which have examined that institutional ownership is positively related to IPO offer price after analysis sample of 5,619 IPOs in United States, from year 1981 to 1998. They explain that underpricing acts as the cost of compensating informed investors for disclosing the information and for future monitoring services. Plus, this also signals, high quality of companies in which tell uninformed investors worth to purchase high-priced of shares. As from the explanation above, this shows that the result does not support the winner curse hypothesis, but support the IPO book-building theory. This theory is explained that underwriters partially incorporate or obtain information from investors into the offer price, so that the compensation is made, or other words, leaving some money on the table for the disclosure of information (Benveniste and Spindt, 1989).

Based on the findings mostly support that the institutional ownership is negatively related to the IPO offer prices, with the reason to increase the underpricing level, or other words to attract investors into the market due to the high initial return. In Malaysia, most authors have analysed the positive relationship between private placement and IPO underpricing, but yet direct empirical studies to carry in examining the influence of institutional investors on oversubscription. Since Malaysia employs the fixed-price offering in IPO pricing mechanism, it is important to know that whether the presence of institutional investors will impact the decision of underwriters to set high or low price the offerings. Also, the present study will further investigate whether it is supported by the Rock's winner curse hypothesis.

2.4.2 Leverage

Leverage is considered as an important factor to determine the offer price in which signal financial strength of companies. It is defined that the total debt or liabilities of the companies with the total assets owned by companies (Lai and Lo, 2012). Besides, some leverage is determined by the book value of long-term debt to the paid up equity capital of companies (Sahoo and Rajib, 2012). The leverage ratio depends on how many debts or external financing that companies issue for raising capital. In the context of pricing IPO, higher debt issued by companies perceives ex-ante uncertainty in the market (Sahoo and Rajib, 2012). This will lead to increase in the risk of the companies. There are few types of research examine the relationship between leverage and IPO offer price.

The finding regarding the impact of leverage on IPO offer price provided by Lai and Lo (2012), showed the significant negative relationship from analysis of 50 IPOs in Hong Kong, start from the year 1998 until 2006. It is proved that IPO offer price should be discounted with higher debt ratios to the companies. The high leverage ratio is associated with increased financial risk in which lead to a discount in offer price. This result is also consistent with the recent study by Reber and Vencappa (2016) in which analyses 3131 IPOs in the United States between the year 1980 and 2012. They provide the explanation that lower valuations of IPOs indicate that a high probability of companies faces bankruptcy due to the greater financial risk. Another study such as Peng and Wang (2007) show the negative relationship between leverage and offer price in Taiwan market through analysing samples of 647 IPOs from the year 1996 to 2003.

However, previous studies by Cotter et al. (2005) have examined the relationship of leverage with offer price and they found an insignificant negative relationship between leverage and IPO offer price using of sample of 69 industrial IPO Australian firms in between period of year 1995 and 1998. Previously, they propose the explanation that higher leverage level is prompted to the increment of financial risk, in which expect to discount in offer price. This insignificant result indicates that high debt issued by companies does not affect the intrinsic value of the IPO offer price. This result following is consistent with Sahoo and Rajib (2012), have analysed that there is the insignificant negative relationship between leverage and IPO offer price after sample analysis of 172 Indian IPOs as started from year 2002 to 2007. They explain that although the high external or debt financing issued by companies, it does not really affect the intrinsic value of the companies. Investors tend to buy the valuable shares which are less risky.

Other than that, Kim et al. (2008) have analysed samples of 2,391 U.S. IPOs in between duration of January 1996 and December 2002, with the findings that leverage is positively related to the IPO price revisions in high-tech industries, but negatively related to low-tech industries. This reflects that the rise of leverage for high-tech IPOs will promote ex-ante information asymmetry and risk. Kim et al. (2008) propose the explanation that high leveraged of low-tech IPOs should not face any difficulty of being certified by underwriters because leverage tends to signal a good quality of companies. On the other hand, the highly leveraged of high-tech IPOs will face difficulty to be certified by highly-rank underwriters with the reason of the increment of risks and costs of financial distress. Therefore, this will result in the reputational penalties and/or litigation risks in which able to influence underwriters if they take a company into public in which can cause failure after IPO issuing.

The above literature by Kim et al. (2008) will further extend their findings of the relationship between leverage and IPO underpricing. The results report the positive relationship in high-tech industries, but a negative relationship in low-tech industries. This will be explained regarding the capital structure signaling theory. Owners of highly leveraged companies may suffer budget constraints and have less control over the firm's cash flows. Hence, high leverage ratio will increase the transparency and reduces the severity of agency conflicts between managers and outside investors. Other than that, the positive effect of leverage on IPO underpricing and leverage is consistent with Su (2005) and Akyol et al. (2014).

In contrast, Sarkar and Sarkar (2008) argue that post-reformed debt has positive effect on the firm value, in which lead to the high offer price in which from three year analysis (1996, 2000 and 2003). In line with that study Kim et al. (2008) states that the positive relationship between IPO price and leverage in low-tech companies. A positive impact is linked directly to the divestment of insiders, or other words stated that insiders reduce the investing activities of firms (Ross, 1977).

As from all the previous studies above, most findings show the negative relationship regardless of the significance of the result. Most studies focus on the development market, except for India market, but yet the different pricing mechanism and may not allow investors to adopt finding from another market. In a nutshell, the vague regarding the relationship of leverage and offer price in Malaysia Market, call this study to further investigate the consistency with the previous finding.

2.4.3 Earnings Per Share

Earnings-per-share (EPS) is served as the indicator of a companies' profitability, therefore, this study uses EPS to proxy the growth prospect of the firm. This study uses a year before issuing an IPO of EPS ratio. Common shareholders can enjoy the profit earned from companies, in which share's profit can be determined from net income of annual report, or take the companies' net loss through holding shares. EPS is used to reflect the operating results of the companies and also act as a measurement of common stock profit level or the investment risk (Chen, 2015). EPS is a proxy for the firm's expected future earnings per share, and it should be positively related to the market price (Kim et al., 1994).

IPO pricing reflects the investor's expectations of the company, and therefore, earnings per share will affect the IPO pricing. As referring back to the study by Lai and Lo (2012), they explore the finding of earnings per share is positively related to the IPO offer price. This indicates that the high EPS reflects the good performance of companies, in which result in signaling companies' quality. This result is consistent with the recent study by Chen (2015) also shows the positive relationship between earnings per share and IPO offer price from the analysis of 20 Chinese IPOs listed in the year 2014 and 2015. This can be seen that the higher profit of the investment in high-quality companies, the smaller investment risk the investors have.

However, few studies that are focused on developed markets, and examine the relationship between EPS and the offer price. Previous studies have done the research regarding the relationship between earnings forecast or future earnings per share and offer price. Earnings forecast is prepared by the management of the IPO firms in which

under the supervision of the underwriters (Firth, 1998). Thus, it is important for IPO firms to show their earnings forecast to potential shareholders about the ability and the strength of firms providing favourable profit to its shareholders. As according to Kim et al. (1994), they have examined that the expected future earnings per shares are positively related to offering price after the analysis of a sample with 260 Korean IPOs for the duration of June 1988 to March 1990. They suggest the explanation state that the concern by investors on the performances or profitability of the firm act as relevant factors in the pricing of IPOs. The huge increment of the incomes increase will signal a growth prospect and high quality of companies. Therefore, investors prefer to purchase the high-priced IPO shares since it is high-quality signaling effect of companies. This result is consistent with Ghicas et al. (2000) that examine 30 IPOs construction industries in Canada from the year 1990 to 1997.

Companies with high earnings will have the growth opportunities in the future, in which able to boost the value of companies. However, there is a contrast result as reported by Aggarwal et al. (2009), which argue that the negative relationship between earnings per share and offer value, indicating the future growth opportunities as compared to current profitability for examining the sample 1,655 Unites States IPOs from the year 1986 to 1990 and 1997 to 2001. They mention that companies with high negative earnings will tend to have higher valuations will appear as counter-institutive at first glance from a view of profitability point. According to Hand (2003), the reason is these losses contributed by internet companies reflect strategic expenditures that investment activities in intangibles asset, in which able to improve the value of companies. Thus, this indicates that negative earnings of companies will have high IPO offer price.

Lastly, it can be brief concluded that earnings per share are positively related to the offer price. This study employs a year before of EPS that company goes public. This study is expected that the growth prospect is positively related to IPO offer price.

2.5 Control Variables

To investigate the influences of the three factors or explanatory variables on IPO offer price, this research controls the three other variables in which have been found that there is significant affects the IPO offer price and underpricing. The control variables for this study are a price-to-earnings (P/E) ratio, the supply of IPOs and lock-up ratio. The following part will explain briefly regarding the relationship between each of control variable and IPO offer price.

2.5.1 Price-to-earnings (P/E) Ratio

Price-to-earnings ratio is defined that the ratio in which to measure the valuation of the company. In the present study, the price-to-earnings (P/E) ratio is applied because they are popular in IPO valuation. Some of the firms do not obtain positive earnings that limit the IPO sample size while using earnings. Book value multiples are not applied to this research with the reason that book values tend to be low for IPO firms before going public and also performs poorly in terms of valuation accuracy (Purnanandam and Swaminathan, 2004; Liu et al., 1999). There are some empirical evidences that explain the offer price after the effect of P/E ratio. As referring to Sahoo and Rajib (2012), they investigate that market P/E ratio was significant and positive impact on the IPO offer price and list price. This indicates that companies able to inflate the offer price if they issue IPOs during the time that the market exhibits the high P/E. There are

also some previous studies (Bateni and Asghari, 2014; Keasey and McGuinness, 2008; Shreiner, 2007; Cotter et al., 2005) showed the significant and positive relationship between IPO price and P/E ratio. However, the study from Chang and Tang (2007) interprets the results that the commonly used method of valuing IPOs with price-earnings (P/E) multiples of comparable firms performs poorly in Taiwan's IPOs market, but perform well if market values-to-sales and enterprise value-to-sales multiples are applied for valuation.

2.5.2 Supply of IPOs

Offer size of firm acts as a proxy of the supply of IPOs. It can be computed by the multiples of the number of new shares issued in IPO and offer price (Rashid et al., 2014). The previous studies have documented that larger firms are positively related to IPO offer price (Lai and Lo, 2012; Daily et al., 2005; Carter et al., 1998; Kim et al., 1995). Larger IPO firms will face less uncertainty for investors (Daily et al., 2005). Large IPOs are issued by firms will have better and longer operation. Therefore, investors only receive low risk from the investment in the IPO from larger firms. Also, some investors consider the IPO size as the indicator of the IPOs performance. There are many of past studies have investigated the relationship between the level of IPO underpricing and offer size of firms (Rashid et al., 2014; Yu and Tse, 2006; Hiau Abdullah and Taufil Hohd, 2004; Clarkson, 1994).

2.5.3 Lock-up Ratio

The term share lock-up is defined that the prohibition of issuer's insiders or pre-IPO shareholders from selling their shares for a specified period of time (Gao and Siddiqi,

2012). The term of share moratorium is used as the lock-up in Malaysia while term of the lock-in is used in the United Kingdom. Based on Malaysia, lock-ups are imposed by Securities Commission (SC) on certain firms in order to list on Bursa Malaysia (Wan Hussin, 2005). The lock-up ratio is one of the aspects of the lock-up provision, which specifies that the percentage of the shares must be locked up through lock-up period.

The past studies have indicated that the lock-up ratio is positively related to IPO underpricing (Wan Hussin, 2005). This result is explained that the high lock-up ratio will tend to have high uncertainty of the firms or other words this will cause a higher risk of firms. Therefore, the offer price will be lower in order to attract investors to buy shares. However, there is a contrasting opinion with Brav and Gomper (2003) in which states that the high lock-up ratio is a signal commitment in order to reduce moral hazard problems. Therefore, since the risk has been assumed by shareholders, investors are willing to pay higher prices for IPOs.

2.6 Summary of the Chapter

As from this chapter, it presents mainly the literature of the variables under study. Regarding to this topic of study, there are only a few studies regarding the relationship between relationship between pre-listing IPO characteristics (institutional ownership, leverage and earnings per shares) and IPO offer price (Chen et al., 2015; Lai and Lo, 2012; Sahoo and Rajib, 2012; Cotter et al., 2005; Fernando et al., 2004; Kim et al., 1994). None of the studies are carried out in Malaysia market. Moreover, this research also focuses that whether the findings of a relationship will be supported by the theories that proposed in this chapter. Thus, the present study bridges the literature gap

through providing an insight on how these factors such as institutional ownership, leverage and growth prospect impact the IPO offer price between the Malaysian IPOs companies.

CHAPTER THREE

DATA AND EMPIRICAL METHOD

3.1 Introduction

In this chapter, it illustrates the methodology that used for this present research. This chapter will discuss research design, sample description and its' techniques employed in sampling, measurement and definition of variables, hypotheses development and research framework. Besides, this chapter also discusses on the model framework together with the equation of the model, and also technique of data analysis.

3.2 Data

This research uses secondary data, in which are those of the initial public offerings (IPOs) that are listed on the Bursa Malaysia from January 2011 until December 2015. The total of the sample data for the present study is 90 IPOs that include all the sectors in Malaysia that employing fixed price mechanism. The contents of data consist of IPOs' offer price, private placement, the percentage of debt ratio (leverage), earnings per shares (EPS), price-to-earnings ratio (P/E ratio), the supply of IPOs (OFFSZ) and total percentage of lock-up shares (LR). These data are extracted from the websites of Bursa Malaysia and Securities of Commission and company's prospectus.

Table 3.1
The Number of IPOs List Regarding to the Category of Sector from Year 2011 to 2015.

Year / Sector	2011	2012	2013	2014	2015	Total
Trading / Service	10	8	6	5	4	33
Construction	2	1	0	1	2	6
Industrial	5	3	3	1	1	13
Consumer	2	1	2	2	1	8
Technology	5	0	0	1	2	8
Properties	3	1	2	2	0	8
Plantation	0	1	0	1	0	2
SPAC	0	0	2	1	1	4
REITS	1	1	0	0	1	2
ETF	0	0	0	1	2	3
Finance	0	1	1	0	0	2
Total Sample	28	17	16	15	14	**90**

3.3 Sample Description

The sample of this study consists of IPOs in which issued by companies that are listed on Bursa Malaysia from January 2011 to December 2015. A total number of 90 new issues are reviewed in this study. There are certain criteria are taken into account while collecting data. As the same condition with Rashid et al. (2014) and Abdul-Rahim and Yong (2008), IPOs which are offered as offer-to-sale, public issues, private placement, or a hybrid of any forms of these forms are selected and included in this research. This research does not include any special types of offers that are restricted offer-to-sale to Bumiputra investors, restricted offer-to sale to eligible employees, tender offer and special issues. Also, the industries such as Real Estate Investment Trust (REITS), ETF,SPAC and finance (for example, ELK-Desa Resources Berhad and Tune Insurance Berhad) are excluded from this present study, by reason of the different

presentation format of financial statements as compared to other industries (Rashid et al., 2014). Besides that, the present study also does not include those companies are unaffected by lock-up provisions, such as Sunway Berhad, Globaltec Formation Berhad and Sapura Kencana Petroleum Berhad. After the related data excluded, a total number of final samples for this present study are 72 IPOs, in which represents 80% of the total number IPOs listed within year 2011 to 2015.

Table 3.2
The Distribution of IPOs Sample from Year 2011 to 2015.

Year	Population	Final Sample
2011	28	24
2012	17	13
2013	16	13
2014	15	13
2015	14	9
	90	**72**

3.4 Dependent Variable – Offer Price

The dependent variable for this present study is the offer price of companies that reported on the IPO prospectus (Cotter et al, 2005). According to Li and Lo (2012), the offer price is the full amount that the potential investors pay in order to obtain one share in the company undertaking the offer. It provides a means for assessing investors; valuation of the companies (Daily et al., 2005). Hence, IPO offers price is taken as dependent variable at which investors are required to pay for the shares (Sahoo and Rajib, 2012).

3.5 Independent Variables

The research focuses on three factors that affect the IPO offer price, in which whether expected to give great impacts on offer price in Malaysian IPOs. The three main independent variables for this study are institutional ownership, leverage, and earnings per share (EPS).

3.5.1 Institutional Ownership

Private placement is a proxy of the institutional investor ownership in this research (Yong, 2011a). According to Rashid et al. (2012), they hypothesize a negative relationship between initial return and private placement. They suggest the explanation that issuers have set the offer price become lower, in which to attract uninformed investors into the market because they are less successful in getting enough participation from informed investors (Rashid and Rahim, 2012). Hence, this study argues that the higher percentage of involvement of institutional investor ownership in IPO shares, the lower of the IPO offer price. The value of the private placement is computed as in percentage with the formula as below:

$$\%\ of\ Institutional\ Ownership = \frac{Number\ of\ Shares\ Issued\ Through\ Private\ Placement}{Number\ of\ Shares\ Issued\ at\ IPO}$$

(Eq. 3.1)

3.5.2 Leverage

Leverage can be measured by the total liabilities to total assets. As referring to Lai and Lo (2012), the information for computing leverage can be determined by using the

amounts provided in the pro forma balance sheet from companies' prospectus. Leverage signals the financial strength of a firm, means that if a high level of leverage indicates the existing of the ex-ante uncertainty in the market (Sahoo and Rajib, 2012). Therefore, a firm issues more debt than equity to finance their firm will lead to reduce the value of the offer price. This study proposes that the high leverage can be translated into higher risk and more likely issuer will offer the IPO at lower offer price to allure the investors. The leverage of the companies is computed as below:

$$Leverage = \frac{Total\ Liabilities}{Total\ Assets}$$

(Eq. 3.2)

3.5.3 Earnings Per Share

Earnings per share (EPS) is the indicator of the portion of companies' earnings (Lai and Lo, 2012). It can be obtained from the IPO prospectus of the respective companies. In the present study, EPS is extracted from a year before issuing IPO into the market. There are some studies such as Bartov et al. (2002) and Sahoo and Rajib (2012) show that earnings per share are positively related to IPO offer price, indicates that the growth of firms signal the firm quality accordingly the IPO offer price is higher.

3.6 Control Variables

There are three control variables in this present study. These variables are a price-to-earnings ratio, supply of IPOs and lock-up ratio.

3.6.1 Price-to-Earnings (P/E) Ratio

Price-to-earnings (P/E) ratio is a measurement of the intrinsic values of IPO price (Cotter et al., 2005). It is calculated by the market value per share of firms to the earnings per shares. The value of the P/E Multiples can be determined from IPO prospectuses. This study proposed P/E ratio could be interpreted as an earnings growth, thus this study proxy the growth opportunity using P/E by proposing that firms with high P/E ratio would be a valued stock and accordingly indicate the risk of the firms is lower and expected to have higher offer price. The P/E ratio is calculated as follow:

$$Price - to - Earnings\ Ratio = \frac{Market\ Value\ per\ shares}{Earnings\ per\ Shares} \quad \text{(Eq. 3.3)}$$

3.6.2 Supply of IPOs

Offer size or size of IPOs is measured through the supply of IPOs (Rashid et al., 2014). The finding from Rashid et al., (2014) suggest that large firms tend to have a higher offer price due to their certainty of the IPOs compared to small firms that more speculative. In addition, Daily et al. (2005) argue larger IPO firms cause less uncertainty for investors buying the shares. The IPO offer size (OFFSZ) is computed as below equation:

$$OFFSZ = \ln(number\ of\ shares\ issued) \quad \text{(Eq. 3.4)}$$

3.6.3 Lock-up Ratio

The lock-up ratio is computed based on the percentage of shares lock-in, in other words, the shares that major shareholders of a firm are prohibited on selling, transferring or assigning activities during lock-up periods. The insiders of the companies will be more advantageous that they get information first to assess the prospects of their companies. Hence, it is rational for shareholders to hold the shares in companies since they know the companies will increase wealth. On the other hand, Rashid et al. (2014), insiders may hold higher ratio if the firms considered being risky in order to attract investors confident. This study argues the insiders hold higher lock-up ratio in firms with high asymmetric information to send a good signal about the quality of the IPOs and they further discount the offer price to mitigate the fear of lemon problem. Lock-up ratio can be determined from the share moratorium of IPO prospectus. Below is the equation of computing the lock-up ratio:

$$Percentage\ of\ Lock-up\ Ratio = \frac{Number\ of\ shares\ lock-in\ by\ insiders}{Number\ of\ shares\ of\ outstandings}$$

(Eq. 3.5)

3.7 Hypotheses Development

The hypotheses developed for this study are according to the research question and research objectives as discussed in Chapter 1. These hypotheses are supported by the literature from previous studies, in which measure the relationship of IPO offer price and some explanatory variables.

3.7.1 Institutional Ownership

The relationship between institutional ownership and IPO offer price has been subjected to empirical research (Booth and Chua, 1996; Brennan and Frank, 1997). Rashid and Abdul Rahim (2012) claims that large percentages of IPOs shares that institutional investors hold lead to the high level of the underpricing, in which lead to underwriters to discount the offer prices of companies. Lower the offer prices tend to attract more outsiders to invest into market. Since uninformed investors are not knowledgeable, they may request high premium or return from participating in firms with high information asymmetry than informed investors that support the winner's curse hypothesis. These findings are consistent with Rashid et al. (2014), Abdul-Rahim et al. (2012) and Yong et al. (2009). Krishnanmurthy et al. (2005) have investigated that issuance private placement to institutional investors able to help companies to save the floatation costs. This will dilute the ownership of existing shareholders' portions. Consequently, this research develops the hypothesis that:

$H_1 =$ There is a significant relationship between the offer price and institutional ownership.

3.7.2 Leverage

Leverage is one of the factors that established in prior literature that influence IPO offer price (Sahoo and Rajib, 2012; Lai and Lo, 2012; Peng and Wang, 2007; Cotter et al., 2005). Lai and Lo (2012) interprets that IPO offer price should be discounted with higher leverage ratios to the companies with the reason of increased financial risk. Firms with high leverage are expected to lower the value of companies, and facing a

high probability of companies to face bankruptcy (Reber and Vencappa, 2016). Furthermore, Kim et al. (2008) propose the reason that high leverage promotes ex-ante information asymmetry, in other words, say that it is difficult for underwriters to rank higher price of the IPO because of the increment of risks and costs of financial distress. Companies issued high leverage will suffer the constraints of budget and inability to control over the companies' cash flows. Such figures based on prior literature are reliable and lower offer price of IPO due to the low IPO value. Therefore, the following hypothesis is developed.

$H_2 =$ There is a significant relationship between the offer price and leverage.

3.7.3 Earnings Per Share

Previous study's findings show that high EPS reflects the good performance of companies in which signal a company with high quality (Lai and Lo, 2012). Further, it shows that there is a potential growth of the companies in which able to boost the wealth of shareholders. The result is consistent with recent studies by Chen (2015), which illustrates that the high earnings obtained from the investment in such high-growth and quality of companies, the small investment risks the investors have. As according to Kim et al. (1994), the huge increment of income indicates the signaling companies with high potential growth prospect. This would able help companies to boost its value. Investors prefer to invest in high-quality companies that, therefore they intend to purchase high-priced shares. Besides that, a firm with high growth does not have to discount their offer price to attract the investors to subscribe since they are confidence for the future prospect of the firms. Based on the previous findings, the present study hypothesizes that:

H_3 = There is a significant relationship between the offer price and earnings per share.

3.8 Research Framework

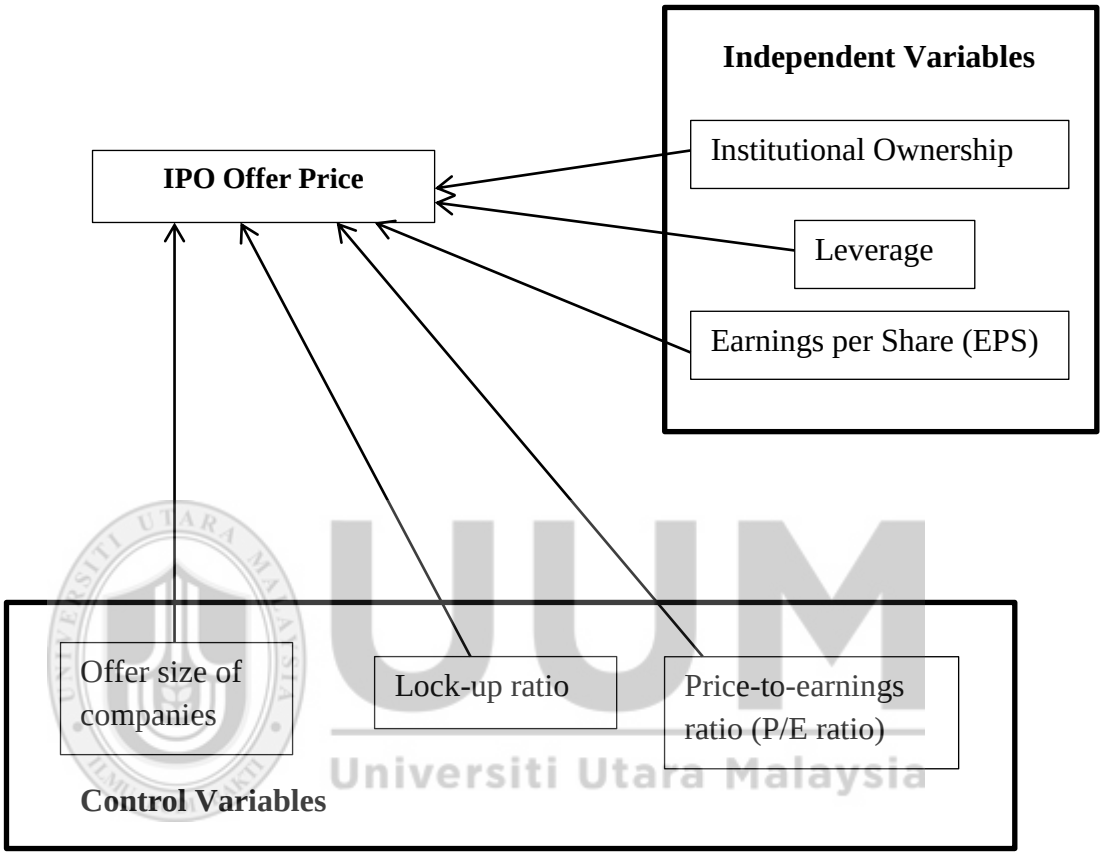

Figure 3.1
The Relationships between the Dependent Variable and Independent Variables

3.9 Model Specification of Research

Multiple regression modeling is used for the coefficient estimation for each of the independent variables. Also, it is used for examining hypotheses of study and evaluating the importance of each of the independent variable (Ramasamy and Abar, 2015). The equation of regression model contains three independent variables and three control variables. Below is the model of the equation:

$$OFFER = \beta_0 + \beta_1 PRIV + \beta_2 LEV + \beta_3 EPS + \beta_4 PE + \beta_5 OFFSZ + \beta_6 LR + \varepsilon$$

(Eq. 3.6)

Where:

β_0	=	The regression intercept,
β	=	The regression coefficients of respective variables,
OFFER	=	IPOs' offer size,
PRIV	=	Institutional Ownership,
LEV	=	Leverage,
EPS	=	Earnings per share,
PE	=	Price-to-earnings ratio,
OFFSZ	=	Natural log of size of offer of IPOs,
LR	=	Lock-up Ratio,
ε	=	Error term of regression

3.10 Techniques of Data Analysis

In this part, there are some pre-steps that need to be taken into account before going to analyze and test the hypotheses. Data cleaning process is performed through checking whether there are any extreme values on univariate or multivariate, in other words, called outliers. According to Meyer et al. (2006), outliers will give a new pattern in a data set, however, it can signal anomalies in a data set in which should be removed before performing the statistical tests. As refer to the present study, there is one company (Eversendai Corporation Berhad) to be removed from a data set due to its extremely high value of earnings per share. Therefore, the total sample for this study is concluded as 71 Malaysian IPOs.

After the data cleaning process, there are several data analysis techniques that perform in this present study, such as Normality Test, Autocorrelation issue, Multicollinearity Test and Heteroscedasticity issue. All of these analyses are analysed by using Eviews Version 8.0.

3.10.1 Normality Test

Normality test is examined and its result is determined through descriptive statistics of the data set of present study, including the Jarque-Bera statistics and the graph of the histogram. The Jarque-Bera statistics is not significant (more than 0.05) if the data are normally distributed and the bell-shaped graph is shown. However, the data are not normally distributed if the p-value of Jarque-Bera statistics is less than 0.05.

3.10.2 Correlation Coefficient Analysis

Correlation coefficient analysis is a statistical technique in which to identify the dependency of two or more variables. The correlation coefficient is vital to determine the correlation between a dependent variable such as offer price of IPOs, independent variables such as institutional ownership, leverage and earnings per share, and constant variables such as price-to-earnings ratio, supply of IPOs and lock-up ratio. The correlation coefficient value lies between +1 and -1. It is interpreted as if any values regardless negative or positive values that more than 0.7 shows a strong correlation, whereas a value that within 0.31 to 0.69 shows medium correlation and the value less than 0.3 indicates that there is a weak correlation.

3.10.3 Multicollinearity Test

Multicollinearity is defined as a linear relationship between two or more independent variables in a regression model (Gujarati, 2003). Multicollinearity problems cause the bias in coefficient estimation (Yoo et al., 2014; Hair et al., 1998), in which describes that a variable explains about the response is overlapped by other variables are a set of other variables explain. If multicollinearity problems increase, it is a difficult to discover the impact of any single variable, and hence produces biased estimation in coefficients for variables due to having more interrelationships. Moreover, the large value of standard errors is detected if collinearity increases.

According to Ringim et al. (2012), the general rule of thumb for the correlation is the correlation value should not be more than 0.75, the otherwise multicollinearity problem exists. Therefore, detecting the multicollinearity problems can be performed through applying variance inflation factor (VIF). It is an indicator to determine whether there is a strong linear relationship between two or more variables. Generally, if the value of VIF exceeds 10, indicating a problem of multicollinearity in regression (Hair et al., 2010). In order to solve multicollinearity problems, a variable should be removed or employment of alternative to ordinary least squares regression.

3.10.4 Autocorrelation Issue

Sometimes ordinary least squares (OLS) is not the best estimation method. This is because regression may cause the underestimation of the true variance, due to not pairwise independent among the residuals of the regression (Wang & Akabay, 1995). Autocorrelation is one of the indicative of aspects of the faulty model specification.

Durbin-Watson (DW) is the indicator of the autocorrelation problem. The problem occurs when the value of DW is lower than 2 from the result of OLS regression. In order to resolve the autocorrelation problems, Newey-West covariance estimator is employed after the computing of the ordinary least squares (OLS) through adjusting the autocorrelation problems.

3.10.5 Heteroscedasticity Issue

Heteroscedasticity is a meant of the circumstance that the variability of a variable is not equal across to the range of values of a second variable that predicts it (Taylor, 2013). The error term, ε is an important assumption in regression analysis in which determine whether it is homoscedastic or heteroscedastic in regression function. If the result shows homoscedasticity, this means that there are same variances. Otherwise, it is heteroscedasticity if there are different variances. Thus, heteroscedasticity can be indicated and corrected by using White Test. This test is employed after the computing of the OLS through adjusting the heteroscedasticity problems.

3.11 Summary of Chapter

This chapter discussed the research design, data description, research framework, hypotheses development, data collection, model specification and multiple regression, technique of data analysis and the measurement explanation of the dependent, independent and control variables. Therefore, Eview 8.0 statistical package is applied in the method of data analysis.

CHAPTER FOUR

DATA ANALYSIS AND EMPIRICAL FINDINGS

4.1 Introduction

This chapter discusses about the findings after computing the analysis of the relationship between factors (institutional ownership, leverage and earnings per share) and IPO offer price. The first section of the chapter illustrates preliminary results from the descriptive statistics of each of the dependent, independent and control variables. The second section explains the correlation between pre-listing IPO characteristics and IPO offer price. The third section analyzes the data whether its distribution is normal, and also examines whether there is multicollinearity, autocorrelation and heteroscedasticity problems existed before analysing the regression model. The fourth section interprets the findings of the regression analysis in order to investigate whether the results are consistent with hypotheses that developed in Chapter Three. For convenience, the hypotheses are restated as follows:

$H_1 =$ There is significant relationship between offer price and institutional ownership

$H_2 =$ There is significant relationship between offer price and leverage.

$H_3 =$ There is significant relationship between offer price and earnings per share.

4.2 Descriptive Statistics

The analysis of descriptive statistics is important for us to understand the basic characteristics of the data. Below Table 4.1 shows the results of all variables from

descriptive statistics in the term of mean, median, maximum value, minimum value and standard deviation (s.d.). Since there is one company (Eversendai Corporation Berhad) to be removed from a data set due to its extremely high value of earnings per share, therefore the total sample for this study is concluded as 71 Malaysian IPOs. For the below-mentioned date our total no of samples are 71 Malaysian IPOs listed in 2011 to 2015.

Table 4.1
Results of Descriptive Statistics of Each Variables For 71 Malaysian IPOs Listed in 2011- 2015.

Variables	Mean	Median	Maximum	Minimum	Standard Deviation
Offer Price (RM)	1.0835	0.7500	4.5500	0.1200	0.9224
Private Placement (%)	54.5051	68.6275	96.2963	0.0000	32.0892
Leverage (Ratio)	0.4683	0.4600	1.2400	0.0200	0.2590
Earnings Per Share (sen)	9.8113	8.0000	34.5000	0.6300	7.5686
P/E Ratio	11.4572	9.2700	51.1100	0.8900	8.1811
Supply of IPO (unit 000000')	289000000	90310000	2234650000	17360000	505000000
Lock-up Ratio (%)	60.7070	61.6600	75.0000	37.8000	9.8060

As reported in Table 4.1, the average of the offer price is about RM1.08 together with a standard deviation of about RM0.92. This indicates that there is a higher dispersion in offer price that offered by Malaysian listed companies. In deep observation at the individual IPOs, the maximum value of offer price is RM4.55, which is reported for Felda Global Ventures Holdings Berhad as listing on the year 2012, shows that high price of shares offered to investors. Meanwhile, the lowest offer price is RM0.12 that reported for Pasukhas Group Berhad as listing on the year 2012, indicates the low price of shares offered to investors.

For an independent variable, the average percentage for private placement is 54.51%. Through the further investigation, the maximum percentage of private placement in IPO is about 96.30% that is reported by Hiap Huat Holdings Berhad, indicates the proportion of investment in IPO listed firm consists of a high percentage of institutional investors. However, the minimum percentage of the private placement is 0%, in which to be found that there are some Malaysian IPOs does not issue new shares or offer shares to institutional investors. The second explanatory variable that is leverage ratio shows the average value of around 0.47 times. As we investigate that the highest debt ratio achieves 1.24 times, in which reports for XOX Berhad. This firm may more dependent on the debt financing for capital structure. On the other hand, the lowest value leverage ratio is 0.02 times (Smartag Solutions Berhad), in which states that this firm is mostly equity financing rather than debt financing for their capital structure. The third independent variable is earnings per share (EPS), in which shows the average value achieves about 9.81 sen. The maximum value of EPS that a firm performs is 34.5 sen, in which signal the profitability of firm, while the minimum value of EPS is 0.63 sen indicates the poor performance of firm.

There are three control variables to be discussed into this statistical analysis such as price-to-earnings ratio, lock-up ratio and offer size by firms (supply of IPO). For price-to-earnings ratio, the mean value is about 11.46 times together with a standard deviation of 8.18 times. The highest value of P/E ratio is 51.11 times while for the lowest one is 0.89 times. High P/E ratio reflects the high valuation of IPO listed firm or vice versus. For lock-up ratio, the average value is achieved about 60.71 percent. As according to Securities Commission (SC) regulation, the minimum of percentage shares lock-up for IPO listed firms is 45 percent. However, the minimum percentage of shares lock-up as above Table 4.1 is about 37.8 percent as reported by Malakoff

Corporation Berhad, in which listed in 2015. It is noted that the entire shareholdings are to be locked in for minimum period of six months after 3 August 2009. Meanwhile, the maximum percentage of shares to be lock-up into the market is 75 percent that reported by APFT Berhad that listed in 2011. The last control variable that is offer size for IPO shows the average value of 289 million shares. The maximum shares to be offered to the market are 2,234 million shares and minimum shares offered are 17 million shares.

4.3 Correlation Analysis

Table 4.2 shows the correlation matrix between the variables. The results show that there is medium negative correlation between offer price and private placement is observed (-0.429254). It can be explained that high percentage of institutional investors hold in IPOs reflects to the lowering IPO offer prices. Also, it has medium positive relationship between offer price and leverage, which shows the value of 0.309626. This result contrasts with previous studies by Cotter et al. (2005), Lai and Lo (2012) and Sahoo and Rajib (2012), in which states that higher debt ratio causes the ex-ante uncertainty in the market. However, the positive correlation is linked to the boosting on the returns of firms rather than equity-issued firms, and hence the positive impact on the firm value and profitability (Sarkar et al., 2008). This evidence can be determined from Table 4.2, shows that the positive correlation between price-to-earnings ratio and leverage (0.471791). Other than that, earnings per share are analysed to be strong positively related to offering price, as its value shows 0.712707. This result is consistent with previous study by Lai and Lo (2012) and Chen (2015), in which reflects good performance of firms, in which result in signaling firm's quality and rise offer price.

For independent variables, there is a medium positive correlation between price-to-earnings ratio and offer price (0.356780). This positive correlation indicates that the boosted IPO's value reflects the high offer price to market. Furthermore, the strong positive relationship to be found between offer size by IPO firms and offer price, in which explains that the largest shares are offered by firms will increase the IPO offer price. Lastly, it is found that lock-up ratio is weak negatively correlated to the offer price. This illustrates that if the firms hold more shares will signal uncertainty of the firms and hence discount the offer price of IPO firms.

However, it is noticed that the strong positive correlation between IPO offer price and earnings per share, and also a supply of IPO, may indicate the multicollinearity problems. Therefore, variance inflation factor (VIF) is applied in next section, in which to examine whether there is existing of multicollinearity problems.

4.4 Results of Diagnostic Testing

Prior to regression analysis, this study will report the diagnostic tests that have been carrying out to ensure the models are valid and could be interpreted in a great confidence. The techniques to be discussed are normality of distribution, multicollinearity, autocorrelation and heteroscedasticity.

Table 4.2
The Coefficient Correlation of Variables

	Offer Price	Private Placement	Leverage	Earnings per Share	Price-to-Earnings Ratio	Supply of IPO	Lock-up Ratio
Offer Price	1.000000						
Private Placement	-0.429254	1.000000					
Leverage	0.309626	-0.115872	1.000000				
Earnings per Share	0.712707	-0.370708	0.015416	1.000000			
Price-to Earnings Ratio	0.356780	0.061910	0.471791	-0.143683	1.000000		
Supply of IPO	0.691874	-0.252486	0.353917	0.309105	0.439764	1.000000	
Lock-up Ratio	-0.207438	-0.062395	-0.018169	-0.039854	-0.107909	-0.304398	1.000000

4.4.1 Normality of Distributions

As referring to Figure 4.0, it shows that the regression residuals are not normally distributed. This is because p-value of Jarque-Bera statistics is less than 0.05, in which indicates the significant results. Although it finds out that the distribution is not normal, but yet the violation of non-normality should not be the main concern since in finance using the secondary data normally provide extreme value and it often to provide a great deviate from other residuals.

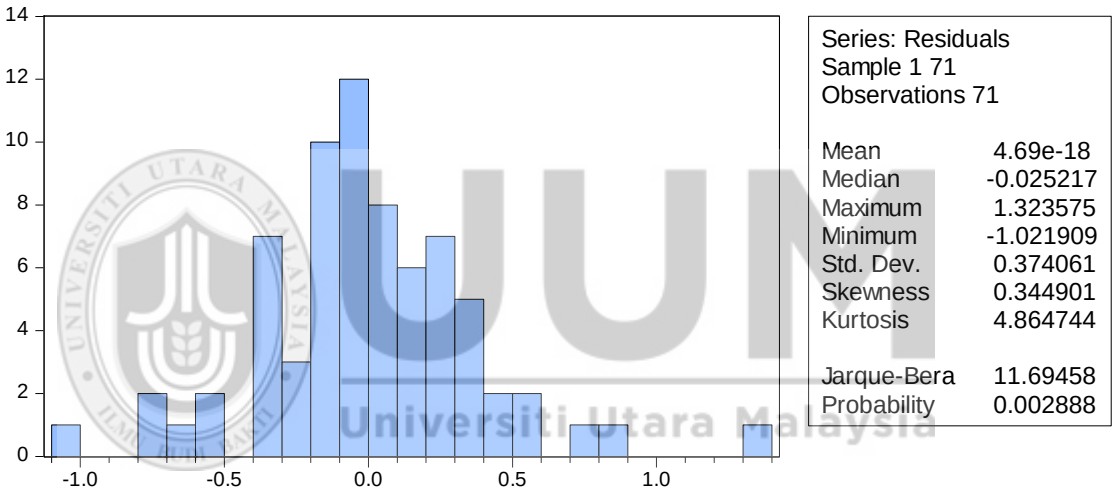

Figure 4.1
Results of Normality Test

4.4.2 Multicollinearity

The general rule of thumb for correlation is not more than 0.75 (Ringim et al., 2012). Referring to Table 4.1, all the correlation value between independent variables are less than 0.75. Muliticollinearity problem can be detected by variance inflation factor (VIF), through determining whether there is a strong linear relationship between two or more variables. According to Hair et al. (2010), VIF value more than 10 indicates that a potential problem of multicollinearity in regression. As referring to the Appendix C, the VIF values of all variables are less than 10, in which indicates that there is no

multicollinearity problems exist in regression model. This means that it does not cause any bias while estimating coefficients for variables. Therefore, it does not include any removal of variables from regression model.

4.4.3 Autocorrelation

Autocorrelation is an issue that normally arise from the computing the regression analysis on model. This problem may affect regression that will underestimate the true variance in which not pairwise independent among the residuals of regression (Wang and Akabay, 1995). Durbin-Watson (DW) is the indicator of identifying autocorrelation problem, in which the value must be around 2.0. As referring to Table 4.2, it shows the value of Durbin-Watson is around 2.07, in which indicates that there is no autocorrelation issue after the correction is performed by the Newey-West method.

4.4.4 Heteroscedasticity Test

In order to examine the variance of errors are constant, White's test is applied to analyze the heteroscedasticity problems in regression model. According to the results in Appendix D, the value of F-statistic indicates heteroscedasticity problem, as it can be proved from p-value less than 0.05. In order to solve the heteroscedasticity problem, "Heteroscedasticity consistent covariance" is applied in the present study in which to estimate regression model and meanwhile to correct the standard error for heteroscedasticity.

4.5 Results from Regression Analysis

The present study uses cross-sectional multiple regression in order to address the hypotheses that developed on Chapter Three. Also, this research estimates model specification in order to observe the effect of independent variables on the IPO offer price. Table 4.3 shows the findings from the offer price model that has been corrected for autocorrelation problem by applying Newey-West and for heteroscedasticity problem by applying "Heteroscedasticity consistent covariance" method.

Table 4.3
Results of Cross-Sectional Regression to Explain Offer Price

Variables	**Dependent Variable : Offer Price**	
	Coefficient	**t-statistics**
Constant	-3.752053	-2.479571
Private Placement (PRIV)	-0.004245	-2.257195**
Leverage (LEV)	0.217855	0.577464
Earnings per Share (EPS)	0.008770	8.361458***
Price-to-Earnings Ratio (P/E)	0.011916	2.768825***
Supply of IPO (LNOFFSZ)	0.094848	2.467355**
Lock-up Ratio (LR)	-0.004717	-1.535570
Adjusted R-squared	0.820126	
F-statistic	54.19345	
Number of Observations	71	
Durbin-Watson stat	2.066982	

A superscript *, ** or *** indicates significance at the 90%, 95% or 99% confidence levels, respectively.

Above Table 4.2, the adjusted R-squared value for this regression is about 82 percent. It explains that the model incorporates with three independent variables and three control variables that mention on Equation 3.6, the regression model explains about 82

percent of the variations in offer price and may indicate that the there is a strong relationship between offer price and the independent variables The F-statistics value of this regression is significant and confirms the goodness-of-fits of models ($p<0.01$). In term of the sign of coefficient, there is a significant linear relationship between the offer price and independent variables. Hence, the model regression can be written as below:

$$y = -3.752053 - 0.004245x_1 + 0.217855x_2 + 0.008770x_3 + 0.011916x_4 - 0.094848\,x_5 - 0.004717x_6 \quad \text{(Eq. 3.7)}$$

The following section will discuss the regression result on the influence of the main variables on the offer price.

4.5.1 Effect of Independent Variables on Offer Price

Results in Table 4.3 show three independent variables (institutional ownership, leverage and earnings per shares) are analysed in order to explain offer price (OFFER) and provide findings for H_1, H_2 and H_3. In this section, each one of these variables will be discussed separately.

A. Institutional Ownership

Institutional ownership in this study is proxy by computing the percentage of the private placement that involve into IPO market. As according to the results from Table 4.2, it shows that the private placement (PRIV) is negatively related to offer price at the significance level of 0.05. Such that the first hypothesis (H_1 = There is significant

relationship between offer price and institutional ownership.) is supported. The finding is consistent accordingly to Rashid and Abdul Rahim (2012), the higher percentage of institutional investors involve into IPO markets, lead to less risk of IPOs, and hence the initial return from IPOs is lower in order to attract uninformed investors into markets. The knowledgeable institutional investors have obtained information about the future prospects of the firms that contributes profitability to them rather than uninformed investors (Michaely and Shaw, 1994). The involvement of institutional investors seems to signal the quality of companies. Because of uninformed investors require high initial return from investing, hence providing the low offer price to investors for buying IPO shares, in order to reduce any asymmetrical information, and even also the ex-ante uncertainty or adverse selection bias (Su, 2004). This finding is supported with the winner's curse hypothesis (Rock, 1986).

B. Leverage

Leverage is measured as the ratio of total liabilities to total assets. From Table 4.3, it is unexpected that there is insignificance positive relationship between leverage and offer price. Therefore, the present study could not support H_2, in which originally states that there is significant relationship between offer price and leverage. These results are contradicting with the previous findings by and Reber and Vencappa (2016), Lai and Lo (2012) and Peng and Wang (2007) in which analyse that the significant negative relationship between leverage and offer price, associating with increased financial risk lead to the discounting the IPO offer price in order to compensate for high financial risk. Supposing the high leverage firms may suffer the probability of bankruptcy phenomenon because of greater uncertainty. However, the positive relationship is explained that the high debt issuing firms will expect to increase the returns from the

investment activities, and so to push up the IPO offer price. Some firms prefer to issue debt rather than equity for capital financing, in which favor the trade-off theory. High leverage level of firms has possibility to have huge profit of firms. This can be seen from the positive correlation between leverage and earnings per share, although it is weak correlation (0.015416). The other reason of positive relationship is supported by Sarkar and Sarkar (2008), mentions that it may linked directly to the reducing investment activities of firms by insiders. However, the insignificant result is computed means that even high or low debt is issued by firms, it does not affect IPO offer price. As referring to data, half of the Malaysian IPOs issue less than 50 percent of debt, indicating that the illiquidity condition occurs in Malaysia. As referring to Cotter et al. (2005), industry factor can influence the leverage because of different capital expenditure requirements or volatile profits among industries, and hence it is prudent for these companies have lower gearing.

C. Earnings Per Share

As from Table 4.3, the regression analyses indicate a significant positive relationship between the offer price and earnings per share, at the significance level of 0.01. The hypothesis, H_3 regarding to the significant relationship between offer price and earnings per share is supported. This result is consistent with Lai and Lo (2012) and Chen (2015) who states that the positive relationship indicates that the great performances of IPO firms signal quality of firms, in which able to boost the offer price of IPO. Investors prefer to purchase the high-priced shares from the high-quality of firms, because good quality firms able to generate favorable profits in future. Hence, the significant positive relationship result is supported with signaling theory. Clarkson (1992) states that the communication method of conveying private information

important to signal the quality of firms. This illustrates that the information obtained from informed investors should reflects the growth opportunities of firms, in which EPS of firms should be showed in high values. According to Chen (2015), he explains that high earnings per share of firms indicate that the investment risk of firms are less, therefore investors receive high payoff.

4.5.2 Effect of Control Variables on Offer Price

Results in Table 4.2 show three control variables (price-to-earnings ratio, supply of IPO and lock-up ratio) are analyzed in order to explain offer price (OFFER). For price-to-earnings ratio, there is a significant positive relationship between offer price and price-to-earnings ratio, at the significance level of 0.01. This result is similar to the previous studies by Cotter et al. (2005) and Sahoo and Rajib (2012). According to Kim and Ritter (1999), high price-to-earnings ratio reflects that a rapid growth of firm will have. The rapid-growth IPO firms may be viewed by the market have a higher transitory component in their earnings. Thus, low quality of earnings will partly offset differences in growth rates. Therefore, positive result between price-to-earnings ratio and offer price reflects the valuable of firms.

Moreover, the supply of IPOs, which is proxy by offer size of firm, is reported to have positive and significant coefficient on the offer price, at the significance level of 0.05. This result is supported by previous study from Lai and Lo, (2012), Daily et al., (2005), Carter et al., (1998), and Kim et al., (1995). Daily et al. (2005) states that large IPO shares offered indicates that there is less risk faced by IPO firms, and hence the high offer price is offered by high-ranked underwriters. Besides, Abdul-Rahim and Yong (2010) explains that even more investors demand in market does not affect much on

the IPO price when a large supply of IPOs issued. Therefore, less uncertainty firms will tend to provide a low initial return to investors (Jain and Kini, 1994).

Besides that, it is found that lock-up ratio is insignificantly negatively related to offer price. The suggested explanation for a negative relationship is high lock-up tend to have high uncertainty or risky to the firms, the offer price will be discounted in order to attract investors to buy shares (Wan Hussin, 2005). However, the insignificant result explains lock-ups ratio does not influence the decision of underwriters to set the IPO price, even there is high asymmetrical information exists during lock-up periods.

4.6 Summary of the Chapter

Overall, the descriptive statistics shows that the mean value of IPO offer price is RM1.08 together with standard deviation of about RM0.92, indicating that the high dispersion in offer price that offered by Malaysian listed companies to investors between 2011 and 2015 periods. For correlation analysis, the relationship between offer price and earnings per share, also the supply of IPOs show the high correlation value. Furthermore, diagnostic tests such as normality test and multicollinearity test are performed on data, resulting in a not normally distribution of data and no multicollinearity problems respectively. Moreover, autocorrelation test is carried out, shows the value of Durbin-Watson is around 2.07, indicating no autocorrelation issue after the correction that performed by the Newey-West method. Besides, heteroscedasticity test is performed before regression analysis, indicating that value of F-statistic indicates heteroscedasticity problem, in which after this is solved by "Heteroscedasticity consistent covariance".

From the regression result, this study finds that institutional ownership is negatively significant related to IPO offer price in which fulfills the hypothesis, H_1. However, there is insignificant positive relationship between leverage and offer price. This result does not support the hypothesis, H_2, in which supposes that leverage is significantly related to the IPO offer price. Besides, earnings per share (EPS) is positively significant related to IPO offer price in which support the hypothesis, H_3.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter illustrates about the overall summary of the present study. First section provides the summary of the study that includes the empirical findings of the results. Second section explains about the implication of the present study according to the computed results. Third section relates to the limitation of the present study. The last section provides the recommendations of the future research.

5.2 Summary of the Study

This chapter summarizes the key contribution of the present study and its empirical findings. The purpose of the present study is to provide the empirical evidence on the impact of the institutional ownership, leverage and earnings per share on IPO offer price in Malaysia market. Besides, other variables in which act as control such as price-to-earnings ratio, supply of IPOs and lock-up ratio are applied in this research. To carry out study, 71 Malaysian IPOs over the period of 2011 until 2015 is examined. The empirical findings of the research, state that institutional ownership and earnings per share do have a significant relationship with IPO offer price. For control variables, only price-to-earnings ratio and supply of IPOs are significantly impacted on IPO offer price.

The negative relationship between institutional ownership and offer price concludes that the high percentage of shares hold by institutional investors tend to discount the IPO offer price, indicates that the higher percentage of institutional investors involve into IPO firms, lead to less risk of IPOs, and hence the initial return from IPOs is lower in order to attract uninformed investors into markets (Rashid and Abdul-Rahim, 2010). Low initial return will turn to discounted offer price, in which able to reduce the ex-ante uncertainty or adverse selection bias (Su, 2004). Hence, this result is supported by Rock's winner curse hypothesis. However, the insignificant positive relationship between leverage and offer price implies indicating that the illiquidity condition occurs in Malaysia. The next independent variable that is earnings per share (EPS), with the result states that EPS is positively significantly related to the offer price. This can be explained that the private information that is conveyed by investors reflects the growth opportunities to the firms (Clarkson, 1992), in which support signaling theory. Hence, the high offer price of IPO is set by underwriters due to the quality signaling.

Control variable such as price-to-earnings ratio is positively related to the offer price, in which indicates that the rapid growth of firms is due to the high price-to-earnings ratio (Kim and Ritter, 1999). Thus, the high offer price is set by underwriters. Furthermore, significant positive relationship between supply of IPOs and IPO offer price explains that large shares offered by firms tend to have less uncertainty in which provides a low initial return (Jain and Kini, 1994). Therefore, high offer price is set due to the less risk of IPO firms. On the other hand, lock-up ratio is insignificant negative related to offer price, implies that lock-ups ratio does not influence the decision of underwriters to set the IPO price, even there is high asymmetrical information exists during lock-up periods.

5.3 Limitation of Study

The present study is examined the relationship between IPO offer price and its explanatory variables (institutional ownership, leverage and earnings per share). There is one limitation pointed out from this study. The limitation of this study is the lack of literature studies regarding the determinant of offer price. The reason of lack of literature due to in developed market, the IPO price in determining by knowing the investors demand on particular shares, therefore the need to carry on the studies on the determinant of offer price are not that urgent. In contrast, Malaysia has uniquely setting such as fixed price mechanism (unknown demand from the market) that call for this study to zoom in factors that influence issuers and underwriter in determining the IPO offer price. Therefore, few literature studies will lead to the difficulty to support the detail and the findings after the computing the analysis of the relationship between offer price and its pre-listing IPO characteristics.

5.4 Recommendations of the Future Research

Potentially, the future study regarding topic can incorporate the oversubscription ratio effect into consideration. As according to study by Low and Yong (2011) has analyzed the effect of IPO offer price on oversubscription ratio in fixed-priced Malaysian IPOs, in which reports that the negative relationship indicates that lowering the offer price has the advantage of increasing investor demand and hence this will reduce the probability of issue failure. Thus, future study will like to investigate whether the effect of investor demand impact on the decision of underwriters to set the IPO offer price.

Other than that, factor such as shareholder retention can be considered into the future study. Referring to the Rashid and Abdul Rahim (2012), they have analysed that the impact of the shareholder retention on IPO performance in Malaysian IPOs market, resulting in negative relationship as high retention of shares signal the high risk of firms that supports the signaling theory. Other researchers such as Jain and Kini (1994) and Zheng and Stangeland (2007) have examined as such study. Since high risk of firms tends to have high level of asymmetrical information, there is an opportunity for future study to investigate whether the impact of retention of shares will influence the decision of IPO price-setting by underwriters.

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