



## UNDERPINNING THEORIES OF IPO UNDERPRICING: EVIDENCE FROM MALAYSIA



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### ABSTRACT

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Using the initial returns (offer-to-close and offer-to-open), we investigate the influence of winner's curse, bandwagon effect, IPO lockup, size effect, and underwriters' reputation on Initial Public Offering (IPO) underpricing in Malaysia. Based on the sample size of 114 IPO firms listed on Bursa Malaysia from January 2010 to December 2017, the finding shows that the influence of size effect is significant on both types of initial returns, that the smaller the size of the firm, the higher the mean initial return gets. We interpret it as investors' demand for a more appealing initial return as compensation for the greater risk exposure when investing in a smaller firm. On the other hand, we found an insignificant result in terms of the relationship between the types of offer and the IPO initial returns. Thus our findings do not support the winner's curse theory which suggests that non-private placement is associated with a higher initial return due to the adverse selection problem. We also do not find any significant relationship between IPO lockup and underpricing. Nonetheless, underwriters' reputation is found to be negatively associated with the initial returns. This finding somehow agrees with the hypotheses made in the previous studies—where some claimed that underwriters with high reputation are able to reduce first-day initial return. Overall, the results indicate that investors keen on IPOs are still able to centre their decisions around the theories above in the quest for greater investment returns.

**Contribution/ Originality:** This paper contributes to the existing literature by offering IPO issuers some key insights into the pros and cons of the IPO underpricing phenomenon. By measuring and analysing the initial returns, this paper gives shareholders a glimpse of what to expect on the very first day of trading.

## 1. INTRODUCTION

### 1.1. Background of Study

The phenomenon of mispricing, either an underpricing (as shown by a positive initial return) or an overpricing (as shown by a negative initial return), of an Initial Public Offering (IPO) exists in both developed and developing markets. The degree of IPO underpricing in Asia though, is somehow greater than in developed markets (see (How, Jelic, Saadouni, & Verhoeven, 2007; Jelic, Saadouni, & Briston, 2001; Loughran., Ritter, & Rydqvist, 1994; Ritter, 2003; Yatim, 2008; Yong, Yatim, & Sapian, 2001)). Take the situation in Malaysia, for example, Jelic et al. (2001) have found that Malaysian IPOs are underpriced by 99% on average—a remarkable statistic that illustrates the

sheer extent of IPO underpricing in developing markets. But despite knowing how underpriced an IPO could potentially be, reaching a general consensus on what actually causes such extreme to occur regularly has been a challenge to financial community over the years. Since 2000, a number of papers have attempted to explain this usual occurrence by attributing it to asymmetric information (see (Baron & Holmström, 1980; Beatty, & Ritter, 1986; Rock, 1986)) behavioural theory (see (Ljungqvist, 2005; Loughran & Ritter, 2002)) winner's curse (see (Yong, 2011, 2013)) bandwagon effect (see (Yong, 2011, 2013)) and size effect (see Yong (2013)).

To determine the driving force behind the substantial IPO underpricing observed in Malaysia, researchers have initially centred their scrutiny on variables such as underwriters' reputation (see Jelic et al. (2001)) management earnings forecast (see Jelic et al. (2001)) firm size (see (Jelic et al., 2001; Wan-Hussin, 2005; Yatim, 2008)) owners' participation (see Wan-Hussin (2005)) share lockup (see Wan-Hussin (2005)) oversubscription ratio (see Wan-Hussin (2005)) and board independence (see Yatim (2008)). But in recent years the emphasis has shifted to the types of IPOs (see (Yong, 2011, 2013)) the listing board (see Yong (2013)) the number of shares issued (see Yong (2016)) and the offer price (see Yong (2016)). In an effort to dissect why Malaysian IPOs tend to be underpriced, this paper revolves around four factors that are commonly linked to this widespread phenomenon: types of IPOs, firm size, IPO lockup and underwriters' reputation. Based on whom the shares are allotted to, IPOs can be divided into two types. When shares are allotted to institutional investors such as pension funds and insurance companies, a private placement is said to have occurred. Conversely, it is deemed a non-private placement when shares are allotted to individual retail investors. The knowledge disparity between the two groups of investors can indirectly lead to two potential scenarios. Individual retail investors—or uninformed investors—may bid more than the fair value for each IPO, but institutional investors—or informed investors—may only subscribe to an IPO if the issue price is lower than the fair value. When institutional investors choose not to subscribe, most of the shares are then allotted to individual retail investors at a price that may be significantly higher than the fair value—essentially putting the winner's curse on the individual retail investors. Researchers have therefore deduced that IPOs are intentionally underpriced to attract the interest of individual retail investors. Whether the winner's curse hypothesis has an actual pronounced impact on IPO underpricing is ascertainable by comparing the average initial returns that both private placement and non-private placement IPOs eventually register.

And because of the above-mentioned knowledge disparity as well, the portion of IPO that the institutional investors have subscribed to via private placement is a convenient barometer for individual retail investors to use in deciding whether to invest or not. Researchers have observed that even in the absence of relevant information the subsequent interest to subscribe to an IPO improves considerably once institutional investors have subscribed to it. In order to draw the first group of investors to the IPO to initiate this bandwagon effect, issuing firms tends to underprice their offerings. As for the size of the firm, where the board of listing in Bursa Malaysia is used as a proxy, the idea is to test out the determinants of underpricing pertaining to the firm's size effect. The Main Market is a combination of the former Main Board and Second Board listed firms. Based on the Listing Requirement (LR), each firm listed on the Main Market is obligated to possess a market capitalisation of greater than RM500 million after listing. On top of that, one full year of revenue must be generated. In contrast, the ACE Market, or formerly known as the MESDAQ market, is the listing board for technology stocks and start-up firms. The listing regulation for this market is less stringent, making the listing process less complicated. However, the perceived risk of investing in those firms is generally higher. IPO lockup, widely known in Malaysia as share moratorium, is triggered right after the issuance of an IPO as the major shareholders of the issuing firm are not permitted to sell a certain allocation of their shares within the stipulated time. Imposed by the Securities Commission on certain firms as a prerequisite for listing on Bursa Malaysia, the Malaysia stock exchange, IPO lockup is a telling indicator of the ex-ante uncertainty surrounding the issuing firm—making it a potential contributory cause of IPO underpricing. A study has indeed discovered that the bigger the number of directors' shares that are held under moratorium, the greater the underpricing becomes (see Wan-Hussin (2005)). Since the imposition of lockup suggests additional risk

associated with the IPO, investors need more information to mitigate the uncertainty. But when the issuing firm fails to disclose all the information the investors are searching for, they start looking for it elsewhere—incurring extra costs along the way. Ultimately, the issuing firm has to underprice the IPO to compensate the investors.

As for underwriters' reputation, the potential to influence IPO pricing is there due to a possibly lesser degree of information asymmetry. However, the actual link between underwriters' reputation and IPO underpricing is ambiguous. Some have argued that good reputation corresponds to lower IPO underpricing levels (Carter, Dark, & Singh, 1998; Hou & Gao, 2017; Jelic et al., 2001; Yong, 2013) yet some have also asserted that good reputation only makes IPO underpricing worse (Beatty & Welch, 1996; Beck, 2017; Loughran & Ritter, 2004). Since the previous findings are inconclusive, this paper aims to investigate further the effect that underwriters' reputation possibly has on IPO underpricing. This paper aims to complement the previous works of other scholars and researchers, and create a foundation for more advanced research in the future. By discussing the potential reasons why firms tend to underprice their IPOs and the implications, this paper offers IPO issuers some key insights into the pros and cons of the IPO underpricing phenomenon. The remainder of this paper is organized as follows. Section 2 discusses the literature review about the past researches done by various authors. In the meantime, the data and methodology used are presented in Section 3. Section 4 demonstrates the analysis and findings. Section 5 discusses and concludes.

### 1.2. Research Questions

The several potential causes of IPO underpricing in Malaysia that this paper intends to explore are the winner's curse effect, bandwagon effect, size effect and information asymmetry. Thus, the main research question (RQ) of this study is: How do the winner's curse effect, bandwagon effect, size effect and information asymmetry influence IPO mispricing in Malaysia? The question can be further broken down into a few specific research questions (RQs):

*RQ1: How do the types of offer (private placement and non-private placement) influence IPO mispricing in Malaysia?*

*RQ2: Do the types of listing boards (Main Market or ACE Market) affect the extent of IPO mispricing in Malaysia?*

*RQ3: Does IPO lockup affect its mispricing in Malaysia?*

*RQ4: Is there a relationship between underwriters' reputation and IPO mispricing in Malaysia?*

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1. Literature Review

Over the years IPO underpricing has been theoretically attributed to asymmetric information (Beatty. & Ritter, 1986; Hou & Gao, 2017; Ljungqvist, 2005; Rock, 1986) behavioural theory (Ljungqvist, 2005; Loughran & Ritter, 2002) winner's curse (Yong, 2011, 2013) bandwagon effect (Yong, 2011, 2013) size effect (Yong, 2013) investor sentiment (Hou & Gao, 2017) corporate governance (Hou & Gao, 2017; Ng, 2014) underwriters' reputation (Beck, 2017; Jelic et al., 2001; Vong & Trigueiros, 2017) and underwriters' monopsony power (Chang, Chiang, Qian, & Ritter, 2017). Yatim (2008) noticed that the extent of IPO underpricing in Asia is greater than in more developed economies (Loughran. et al., 1994; Ritter, 2003). Her interpretations of IPO underpricing range from asymmetric information (Beatty. & Ritter, 1986; Rock, 1986) to behavioural theory (Loughran & Ritter, 2002). According to her study, the issues of adverse selection (Akerlof, 1970) and information asymmetry can be solved if the issuing firms are able to convince each potential investor of their financial strength. Her study also suggested that future research should include factors such as types of offers, types of ownership, growth opportunities, existence of venture capital and share allocations. By analysing 370 fixed-price IPOs from January 2001 to December 2009, Yong (2011) identified a potential impact of the winner's curse effect and the bandwagon effect on IPO underpricing in Malaysia. With the average initial return of 28.87% for non-private placement IPOs being notably greater than the average initial return of 18.51% for private placement IPOs, retail investors seemed to have demanded a bigger initial return when informed investors were not involved. This finding implies that the winner's curse effect has quite an

influence on IPO underpricing in Malaysia. As for the greater distribution of initial returns that signified greater diversity in investors' trading activity, he attributed the positive change to the presence of a substantial number of informed investors which created the bandwagon effect.

In a separate study [Yong \(2013\)](#) found a similar relationship between the winner's curse and IPO mispricing in Malaysia. With the average initial return of 30.57% for the 206 non-private placement IPOs being noticeably better than the average initial return of 22.05% for the 151 private placement IPOs, this finding has also shown a probable influence the winner's curse effect has on the occurrence of IPO mispricing. Likewise, with the greatest average initial returns being made by the group featuring the highest ratio of private placement IPO to total IPO issued, it is once again evident that the inclusion of a sizeable number of informed investors improves demand for the IPO, thereby triggering the bandwagon effect. Perhaps more importantly though, with the listing board serving as a proxy for firm size, his research identified an apparent link between size effect and IPO underpricing. With the Main Board recording the least average initial return in his findings, he proclaimed that the average initial return varies inversely with firm size—lending credence to the idea that size effect matters to the pricing of IPOs as investors generally demand a better initial return for smaller firms' IPOs due to the greater amount of risk they see themselves being exposed to. In addition, [Yong \(2013\)](#) also discussed the effect of underwriters' reputation on the levels of initial returns—suggesting that firms may not have to underprice their IPOs as much if the underwriters have a better reputation (see [Johnson and Miller \(1988\)](#) and [Carter et al. \(1998\)](#)). [Paudyal, Saadouni, and Briston \(1998\)](#) reached a similar conclusion with respect to the influence of underwriters' reputation on IPO underpricing.

[Chang et al. \(2017\)](#) studied the pre-market trading and IPO pricing, discovering that the IPO offer price greatly relies on the pre-market price. By centring their discussion around the positive impact of underwriters' incentive to underprice and underwriters' bargaining powers on the extent of underpricing, they argued that agency problems do contribute towards IPO underpricing since underwriters' income—whether income earned directly from IPO investors or income earned indirectly from brokerage business—grows along with the extent of underpricing. The findings highlight the importance of imposing regulations that govern the bargaining powers of various IPO stakeholders. [Wan-Hussin \(2005\)](#) studied the effects of owners' participation and lockup on IPO underpricing in Malaysia. He subsequently found a negative relationship between owners' participation and IPO underpricing, but discovered a positive link between share lockups and IPO underpricing. His findings also highlighted the influence of other factors like IPO offer price and IPO first day market price on IPO underpricing.

[Chorruk and Worthington \(2010\)](#) examined the pricing and performance of IPOs on the Main Board of Stock Exchange of Thailand (SET). Their findings have since revealed the following. Thai IPOs are generally underpriced, but the extent is quite close to what is usually observed in developed markets. The degree of underpricing seen in financial services IPOs is relatively greater than the rest.

[Low and Yong \(2013\)](#) evaluated the potential factors influencing investors' heterogeneous beliefs in Malaysian IPOs. Due to the fixed-pricing mechanism being implemented, the researchers concurred that the distribution of investors' beliefs is relatively widespread—because investors have limited opportunities to reveal their valuations of the IPOs. Using first-day price spread and first-day turnover as the two proxies for investor heterogeneity, the research found the following. With the large price spread suggesting a substantial investor disagreement on valuations of the true aftermarket price of those IPOs, both the issue size and choice of the listing board are significant in determining the heterogeneous beliefs of investors. The initial return and over-subscription ratios seem to be irrelevant. [Che-Yahya, Abdul-Rahim, and Mohd-Rashid \(2015\)](#) investigated the impact of lockup provision on two IPO anomalies: initial returns, measured using the price changes (open price versus offer price), and flipping activity, estimated using the IPO trading volume. The IPO anomalies can be seen from three perspectives: demand, offer size and firm size ([Yong & Isa, 2003](#)). Lockup provision or share moratorium, which has been mandatory for all IPO issuers in Malaysia since 3 May 1999, forbids the sale of a specific percentage of shares held by major shareholders. Although the compulsory lockup ratio was set at 45 percent, the research found that

the voluntary lockup ratio increased to 83 percent of total shares. This finding suggests that lockup provision signals the quality of the issuing firm to the public and the greater portion of shares locked up for a longer duration reflects well on the firm too. Basically, the greater the number of shares that are locked up and the longer these shares are locked up, the higher the initial returns. The larger the portion of shares being locked up, the greater the ex-ante uncertainty potential investors have towards the firm (asymmetric information argument). For flipping activity though, the reverse is true. Yong (2016) discovered that cheaply priced IPOs tend to attract greater interest from individual retail investors—leading to increased speculative trading. As a consequence, the initial return and price spread are usually higher. On the contrary, institutional investors generally refrain from subscribing to cheaply priced IPOs due to greater transaction costs and pessimism (Falkenstein, 1996). The findings have also shown that cheaply priced IPOs and IPOs listed on the ACE Market provide better initial returns and price spreads than the costlier IPOs and IPOs listed on the Main Market. Zameni and Yong (2016) studied the lockup expiry and the trading volume behaviour of Malaysian IPOs, noting a considerable increase in trading volume in nearly all boards, sectors and IPO markets with the lockup expiry just around the corner. Beck (2017) analysed firms in the tech industry in the United States to see whether they face a greater extent of IPO underpricing as compared with firms outside the tech industry. The result obtained for the coefficient of the tech industry was not statistically significant. A possible reason for this is the maturation of the tech industry. Nevertheless, the other independent variables such as offer price, underwriters' reputation, and firm size were found to be significant.

Beck (2017) found that reputable underwriters are often able to reduce short-term underpricing. Cliff and Denis (2004) discovered that issuers are less probable to switch underwriters for future issues if their IPO is underpriced to a greater extent. Thus, underwriters might underprice the issue intentionally to secure future business. However, Loughran and Ritter (2004) found that reputable underwriters are associated with higher levels of underpricing.

Both Mazouz, Mohamed, Saadouni, and Yin (2017) and Vong and Trigueiros (2017) investigated the effect of 'Claw-Back' provisions on IPO share allocation and underpricing in Hong Kong. According to Mohamed-Arshad, Taufil-Mohd, and Ahmad-Zaluki (2016) the mandatory clawback provision requires the underwriters to redistribute the shares to retail investors instead of institutional investors and to openly reveal the allocation of shares made to different parties. Meanwhile, Vong and Trigueiros (2017) discussed the clawback mechanism as a transfer of shares from institutional investors to the public. Prior to this clawback provision, retail investors had been subscribing to more overpriced IPOs than underpriced ones. Thanks to the introduction of this clawback provision though, the trend has since been reversed (Mohamed-Arshad et al., 2016) and Vong and Trigueiros (2017). The researchers also observed an increase in the adjusted initial returns for the retail investors after the imposition of the provision. This finding suggests that the initiation of clawback has effectively curbed the winner's curse problem encountered by uninformed investors, incorporating an element of fairness into the IPO. Apart from that, Vong and Trigueiros (2017) also contended that the Rock's adverse selection model itself is incapable of justifying the underpricing phenomenon in Hong Kong. Instead, both the demand from informed investors and underwriters' reputation should be the bases for the explanation of the underpricing. Finally, Yong and Albada (2018) evaluated the role of underpricing and listing board in explaining heterogeneity of opinion regarding values of Malaysian IPOs. The first-day price spread was used as the proxy for heterogeneity of opinion. It was especially high in the case of fixed-price mechanism, due to the lack of information on the IPO and behavioral finance. The offer price was already locked at a certain level before the issuance of IPO so it would not carry any information about the IPO shares. This is against the book-building and auction approaches where potential investors have a chance to uncover their valuations (Chahine, 2007; Derrien & Womack, 2003).

## 2.2. Hypothesis Formation

Based on the research questions and the above literature review, the following four hypotheses related to the influence of types of offer, firm size, lockup period and underwriter reputation on the underpricing level in Malaysia are established:

*H1: The level of IPO underpricing is significantly negative against the amount of private placement.*

*H2: The level of IPO underpricing is significantly negative to the IPO firms listed on the Main Market.*

*H3: The greater the extent of IPO lockup, the greater will the level of IPO underpricing be.*

*H4: There is a negative relationship between the level of IPO underpricing and the underwriters' reputation of IPO firms.*

## 3. DATA & METHODOLOGY

### 3.1. Sample Selection and Data Source

The samples employed in this study comprise 114 out of the total 145 IPO firms listed on Bursa Malaysia from January 2010 to December 2017. January 2010 was chosen as the starting point to allow sufficient time for recovery to take place following the global financial crisis of 2008. Classification of the listing board on Bursa Malaysia has also been changed from Main Board, Second Board and MESDAQ to Main Market and ACE Market since 2009.

In selecting the final sample of 114 IPO firms, the IPO firms listed under REITs (Li, Zheng, & Melancon, 2005; Mohamed-Arshad et al., 2016; Zheng & Li, 2008) Closed-End Funds (Booth & Chua, 1996; Ellul & Pagano, 2006; Li et al., 2005; Mohamed-Arshad et al., 2016) Finance sector, Trust sector, LEAP market, as well as IPOs that have been delisted or do not have complete data were all excluded, as per the previous research by Sapian, Rahim, and Yong (2013); Mohamed-Arshad et al. (2016) and Hou and Gao (2017). The IPO offer price, IPO first-day opening price, IPO first-day closing price, types of offer, types of board listing, underwriters' reputation, lockup ratio, operating history, and offer size are compiled from corresponding IPO prospectuses, Bursa Malaysia's website (<http://www.bursamalaysia.com>) and Yahoo Finance (<https://finance.yahoo.com>).

### 3.2. The Calculation of IPO Underpricing (Dependent Variable)

The main concern of this study is to measure the level of IPO underpricing. Positive initial returns can be defined using two approaches. Firstly, the initial return (offer-to-close) or IRC is calculated as the percentage change in price from the offer price to the closing price in the first day of trading. This approach was applied in previous studies in Malaysia and developed markets in the West, including the previous research by Wan-Hussin (2005); Yatim (2008); Yong (2011); Yong (2016); Beck (2017). The formula used to compute the IRC:

$$\text{Initial Returns (offer-to-close)} = \frac{(\text{First-Day Close Price} - \text{Offer Price})}{\text{Offer Price}} \times 100\%$$

Secondly, the initial return (offer-to-open) or IRO is calculated as the percentage change in price from the offer price to the opening price in the first day of trading. This approach was used by Yong (2011); Yong (2013). The formula used to compute the IRO:

$$\text{Initial Returns (offer-to-open)} = \frac{(\text{First-Day Open Price} - \text{Offer Price})}{\text{Offer Price}} \times 100\%$$

Although the initial return (offer-to-close) approach has been commonly used in various studies, the initial return (offer-to open) approach may have the advantage due to the presence of some "aftermarket" elements in the former approach. Therefore, both approaches are used in most cases throughout this paper.

### 3.3. Independent Variables

The independent variables employed in this study consist of four main independent variables: Types of offer, listing board, IPO lockup ratio and underwriters' reputation.

### 3.3.1. Types of Offer (OFFER)

The variable OFFER consists of private placement and non-private placement (i.e. public issue and offer for sale). It is a dummy variable which gives the value of one if the private placement is greater than the non-private placement. Otherwise, the value is zero. offer is expected to have a negative (-) correlation with IPO initial return.

### 3.3.2. Listing Board (BOARD)

The listing board (board) is used as a proxy for the firm size. The variable board is categorised as either Main Market or ACE Market in accordance with Bursa Malaysia. Thus, the IPOs listed on the Main Market represent large-sized quality firms while IPOs listed on the ACE Market represent small-sized speculative firms. It is also a dummy variable that carries the value of one if the firm is listed on the Main Market. Otherwise, the value is zero. Board is predicted to have an inverse (-) relationship with IPO underpricing.

### 3.3.3. IPO Lockup Ratio (LOCKUP)

The duration of the IPO lockup in Malaysia is usually 6 months, set in accordance with the listing requirements of the Main Market or the ACE Market. The larger the portion of shares being locked up, the greater the ex-ante uncertainty potential investors have towards the firm. Hence, Lockup stands for the percentage of shares being held under moratorium in the first six months of the lockup period and is anticipated to have a positive (+) association with IPO initial returns.

### 3.3.4. Underwriters Reputation (REPU)

The number of issues that are issued by the lead underwriters during the eight-year period is specified. It is believed that the greater the number of issues by an underwriter, the better the underwriter's reputation is and the lower the level of IPO underpricing becomes. The variable REPU takes the natural logarithm of the amount of issues by the lead underwriter(s) from each of the IPO firm. Hence, REPU is anticipated to have a negative (-) association with IPO underpricing.

## 3.4. Control Variable

Two other variables, operating history and offer size, which are expected to influence the IPO firm's initial return, are used as the control variables.

### 3.4.1. Operating History (FIRMAGE)

Operating history (FIRMAGE) represents the number of years the firm has been incorporated prior to listing on Bursa Malaysia. The longer the firm has existed before listing, the greater the stability of the firm is and the greater the level of underpricing becomes. As observed in the research conducted by Jelic et al. (2001); Yatim (2008) and Che-Yahya et al. (2015) the higher the FIRMAGE, the larger the positive initial returns. FIRMAGE is computed by taking the natural logarithm of the number of years specified. The value is expected to be positive (+).

### 3.4.2. Offer Size (OFSIZE)

Offer size (OFSIZE) represents the product of the total number of shares issued for an IPO and its offer price. It is hypothesised that smaller offerings are, in average, subject to greater speculative forces than larger ones. Thus, their initial return on the first-day of trading may be higher. Strictly speaking, the larger the offer size, the lower the initial return is. This outcome is in line with suggestions made by Ritter. (1984); Vong (2006); Low and Yong (2011); Che-Yahya et al. (2015); Yong (2016). Therefore, a negative (-) sign is assigned to this variable. OFSIZE is computed by taking the natural logarithm of the total number of shares issued multiplied by its offer price.

### 3.5. Models

Two regression models are developed to examine the relationship between these variables:

Model 1:  $IRC = \text{CONSTANT} + \beta_1 \text{OFFER} + \beta_2 \text{BOARD} + \beta_3 \text{LOCKUP} + \beta_4 \text{REPU} + \beta_5 \text{FIRMAGE} + \beta_6 \text{OFSIZE} + \epsilon_i$

Model 2:  $IRO = \text{CONSTANT} + \beta_1 \text{OFFER} + \beta_2 \text{BOARD} + \beta_3 \text{LOCKUP} + \beta_4 \text{REPU} + \beta_5 \text{FIRMAGE} + \beta_6 \text{OFSIZE} + \epsilon_i$

where:

IRC = Initial Return (Offer-to-Close).

IRO = Initial Return (Offer-to-Open).

OFFER = Types of Offer.

BOARD = Listing Board.

LOCKUP = IPO Lockup Ratio.

REPU = Underwriters' Reputation.

FIRMAGE = Operating History.

OFSIZE = Offer Size.

## 4. ANALYSIS & FINDINGS

### 4.1. Correlations and Descriptive Statistics

**Table-1.** Pearson correlation coefficient.

	Offer	Board	Lockup	Repu	Firmage	OFSIZE
Offer	1					
Board	-0.104	1				
Lockup	0.292	0.004	1			
Repu	0.013	0.293	-0.075	1		
Firmage	0.057	0.099	0.103	0.023	1	
OFSIZE	-0.034	0.315	0.137	0.174	0.253	1

Table 1 shows the results of the multicollinearity test of the independent variables using the Pearson Correlation. This test is important in identifying whether there is a disruption in the data. The data may not be reliable if multicollinearity is present. The results show that all outcomes have absolute values of lesser than 0.5, which are far below the *0.90 cut-off point* (Asteriou & Hall, 2007). According to Table 1, the types of offer is negatively correlated with the listing board with the magnitude of the relationship between these variables being -0.104, which indicates a weak relationship. Besides that, the listing board is positively correlated with the offer size and the strength of relationship between them is 0.315, which still denotes a weak relationship.

The results of the White's test of heterogeneity show that the values of probability of Chi-Square (25), i.e. 0.9854 and 0.5831, are higher than the significance level of 0.05 for both models I and II, indicating that problem of heteroscedasticity does not exist in the data.

**Table-2.** Descriptive statistics.

Variables	Mean	Median	Std. Dev.	Min.	Max.
Initial Return (Offer-to-Close) (%)	1.735	0	61.130	-93	390.323
Initial Return (Offer-to-Open) (%)	9.736	5.085	61.239	-92.35	383.87
OFFER	0.868	1	0.340	0	1
BOARD	0.675	1	0.470	0	1
LOCKUP	60.942	62	13.980	10.3	100
REPU	2.244	2.303	0.719	0	3.738
FIRMAGE	2.374	2.740	1.170	0	4.466
OFSIZE	18.240	17.637	1.778	15.806	23.251



Table 2 presents some summary statistics of all the independent and dependent variables involved in the study. For the dependent variables, the mean IRC and mean IRO are 1.735 percent and 9.736 percent respectively. The former ranges from a minimum of -93 percent to a maximum of 390.323 percent while the latter varies between -92.35 percent and 383.87 percent. The average initial return reported in this study is relatively much lower than the figures reported in previous research—such as the mean initial return (offer-to-open) of 29.23 percent in Che-Yahya et al. (2015) the mean underpricing (offer-to-open) of 39 percent and the mean underpricing (offer-to-close) of 44 percent in Sapian et al. (2013).

The substantial difference with these studies lies in the sample employed. Both underpriced and overpriced IPOs are covered in this research while the sole focus in the other studies is underpriced IPOs. Notwithstanding the considerable low mean initial returns mentioned, the maximum values reported in both IRO and IRC imply that there are still chances to acquire extremely high initial returns from IPO investment.

As for the explanatory variable of types of offer (OFFER), the mean is 0.868, which ranges from a minimum of 0 to a maximum of 1 since it is a dummy variable. The value of 1 stands for private placement while the value of zero represents non-private placement. Since the mean is closer to 1, this finding suggests private placement is more common for IPO firms.

As for the explanatory variable of the listing board (BOARD), the mean is 0.675, Since the mean is not as close to 1, this finding indicates that slightly more IPO firms are listed on the Main Market. As for the explanatory variable of IPO lockup ratio (LOCKUP), the mean IPO lockup ratio is 60.942 percent, which ranges from a minimum of 10.3 percent to a maximum of 100 percent. The mean and the maximum figure of this IPO lockup ratio suggests that most of the IPO issuers voluntarily hold up larger percentages of their shares, even though they are legally required to lock up 45 percent of their shares only based on regulation.

The explanatory variable of underwriters' reputation (REPU) has a mean of 2.244 with a minimum of 0 and a maximum of 3.738. The majority of the leading underwriters of an IPO firm have issued natural logarithms of 2.244 times out of the greatest amount of 3.738 times in natural logarithm.

Table-3. Breakdown of the average initial return for the dummy variables.

Variables	Model 1	Model 2
A. Dummy Variable 1: OFFER	Mean (in percent)	Mean (in percent)
Private Placement	4.1471	11.9235
Non-Private Placement	-14.1816	-4.6993
B. Dummy Variable 2: BOARD	Mean (in percent)	Mean (in percent)
Main Market	-9.5113	-4.2362
ACE Market	25.1409	38.8141

Table 3 shows the simple analysis of the performance of each dummy variable concerned in this study. Panel A shows the computation of the mean initial return for the private placement and non-private placement. Findings indicate that the private placement registered a higher average initial return as opposed to the non-private placement, regardless of the models. Meanwhile, Panel B shows the outcome for the Main Market and the ACE Market. The ACE Market seems to have a much higher mean initial return than the Main Market for both of the models as well.

#### 4.2. Regression

The main results for both Models 1 and 2 are presented in Table 4. The adjusted R-squared generated by Model II is almost twice as in Model I. The p-values of F-statistics in both models are below the 10% and 5% significance level respectively, indicating an overall sufficient fitness of data in the models. In both of the models, BOARD (the listing board) has been proven to be a significant coefficient at 5 percent level with t-statistics greater than the critical value of 1.660.

Table-4. Regression results.

Variables	Model 1		Model 2	
	Coefficient	t-statistics	Coefficient	t-statistics
Independent Variables				
OFFER	16.332	0.933688	15.957	0.932909
BOARD	-30.059	-2.295434**	-35.911	-2.804429***
LOCKUP	-0.185	-0.433279	-0.302	-0.721069
REPU	-3.132	-1.379067*	-4.579	-1.766719**
Control Variables				
FIRMAGE	-3.790	-0.760829	-5.662	-1.162284
OFSIZE	-3.209	-0.922837	-2.074	-0.609914
Intercept	79.661	1.259	100.085	1.617176*
Result				
R <sup>2</sup>	0.096901		0.139500	
Adjusted R <sup>2</sup>	0.046260		0.091247	
F-statistics	1.913481		2.891046	
p-value (F-stats)	0.085137*		0.011897**	
Durbin Watson	2.115651		2.020217	

Note: Asteriks \*, \*\* and \*\*\* signify significant at 10%, 5%, and 1% respectively. Critical value for 10% = 1.290; 5% = 1.660; 1% = 2.364.

In respect to the outcome in Table 4, the two regression equations below can be derived:

$$\text{IRC} = 16.332 (\text{OFFER}) - 30.059 (\text{BOARD}) - 0.185 (\text{LOCKUP}) - 3.132 (\text{REPU}) - 3.790 (\text{FIRMAGE}) - 3.209 (\text{OFSIZE}) + 79.661 \quad 1$$

$$\text{IRO} = 15.957 (\text{OFFER}) - 35.911 (\text{BOARD}) - 0.302 (\text{LOCKUP}) - 4.579 (\text{REPU}) - 5.662 (\text{FIRMAGE}) - 2.074 (\text{OFSIZE}) + 100.085 \quad 2$$

Using these equations, the coefficient sign for each of the main independent variable is analysed. Positive coefficient signs for OFFER (the types of offer) are shown in both models. This is inconsistent with the prediction made during the hypothesis formation. This finding shows that the private placement offer seems to require a higher initial return than a non-private placement offer. Thus, it does not support the winner's curse effect and the bandwagon effect arguments.

On the other hand, BOARD (the listing board) is found to have negative coefficient signs in both models. This result is consistent with the forecast as well as the size effect theory, which suggests that the ACE Market is expected to compensate investors with a higher premium or initial return, due to its speculative nature.

The negative coefficient of -0.185 and -0.302 for LOCKUP (the IPO lockup ratio) implies that the initial return drops by 0.185 percent and 0.302 percent when the IPO lockup ratio increases by 1 percent. This finding somewhat contradicts initial expectations as discussed in the literature. Nonetheless, the LOCKUP coefficient is found to be insignificant in both models. A negative coefficient sign for REPU (the underwriters' reputation) is shown in both Model I and II which is consistent with our initial expectations. This suggests that underwriters with a better reputation are capable of reducing the initial underpricing.

Moreover, with respect to the coefficient sign for control variables, the FIRMAGE (operating history) looks as if it affects both models negatively. To put it differently, as the firm age increases, the initial return for IPO decreases. The OFSIZE (offer size) also appears to negatively influence both types of initial return. The outcome implies that the bigger the offer size issued, the greater the subscription, the lower the demand for the IPOs, and the lower the price of IPO. This observation is consistent with the demand-supply theory.

Based on all the analyses that have been carried out, a summary of the findings is presented in Table 5 below whereas a summary of the results of the hypotheses and the theories supporting them is given in Table 6.

Table-5. Summary of Findings.

	Model 1	Model 2
Regression	IRC	IRO
OFFER	+	+
BOARD	- **	- ***
LOCKUP	-	-
REPU	-*	-**
FIRMAGE	-	-
OFSIZE	-	-

Table-6. Summary of Hypotheses.

	Hypothesis	Hypothesis supported	Underpinning theory
H1	The level of IPO underpricing is significantly negative to the amount of private placement.	No	Winner's Curse, Bandwagon Effect
H2	The level of IPO underpricing is significantly negative to the IPO firms listed on Main Market.	Yes	Size Effect
H3	The greater the extent of IPO lockup, the greater will the level of IPO underpricing be.	No	Asymmetric Information
H4	There is a negative relationship between the level of IPO underpricing and the underwriters' reputation.	Yes	Underwriters' Reputation

## 5. CONCLUSION

The data about private placement IPO has facilitated the examination of the winner's curse hypothesis. The performance of IPOs assigned to institutional investors (measured using the private placement data) has been evaluated and compared with the performance of IPOs designated to individual investors (quantified via the non-private placement). The winner's curse hypothesis suggests that the level of IPO underpricing will increase if the proportion of IPOs allocated to retail investors is larger than the proportion of IPOs subscribed by the institutional investors. Judging by the test results, the average initial returns (offer-to-close) and the average initial returns (offer-to-open) for the Malaysian private placement IPOs are higher than that of non-private placement IPOs. Though statistically insignificant, the higher mean initial return for the private-placement IPOs suggests that the winner's curse hypothesis is not valid in the case of Malaysian IPOs. This may hint that the presence of those informed investors is widely known to the public prior to the first day of IPO trading, leading to a subsequent increase in their initial returns. Thus, the results differ from previous studies such as [Yong \(2011\)](#) and [Yong \(2013\)](#) and against the winner's curse hypothesis. In addition, the information about the private placement IPOs also allowed us to test for the bandwagon effect. The statistically insignificant result suggests the lack of bandwagon effect in our sample during the period of study. Despite that, the positive coefficient that it produces can be deduced that the larger the proportion of IPOs subscribed by the institutional investors in relative to the proportion of IPOs subscribed by the retail investors, the greater the price movement on the first day of trading gets—thanks to an increase in the demand for that specific issue. The possible reason for this could be the presence of the informed investors, as indicated by the private placement, being widely known to the public prior to the first day of IPO trading—providing a boost to the initial returns. There is a significantly negative relationship between the board listing and the initial return (both offer-to-close and offer-to-open). The ACE Market, being a market for smaller firms registered an average initial return (offer-to-close) (IRC) of 25.1409 percent and average initial return (offer-to-open) (IRO) of 38.8141 percent. Meanwhile, the Main Market recorded a mean IRC of -9.5113 percent and mean IRO of -4.2362 percent. This finding is consistent with the rationale of size effect and with the previous research performed by [Jelic et al. \(2001\)](#); [Wan-Hussin \(2005\)](#); [Yatim \(2008\)](#); [Yong \(2013\)](#) and [Beck \(2017\)](#). In short, the smaller the size of a firm, or if the IPO firm is listed on the ACE Market, the higher the initial return is, as affirmed by the size effect. The IPO lockup ratio is found to be an insignificant factor in influencing both types of initial return (offer-to-close and offer-to-open). Our result therefore does not support the previous research by [Wan-Hussin \(2005\)](#) and [Mohamed-Arshad et al. \(2016\)](#). A possible explanation for this could be the weakening of the

signalling role played by the IPO issuers with respect to the quality of their shares. Therefore, the lower the demand for their shares, the lower the price on the first day of trading is and the lower the initial return turns out to be. Under the underwriters' reputation theory, there are two different viewpoints. On one hand, a reputable underwriter could signal that the issuing firm has a favourable condition. As a result, more investors would demand that particular stock and that would increase the initial returns. On the other hand, a prestigious underwriter is likely to cut down on the initial underpricing. Our results have shown that the underwriters' reputation is negatively linked with the initial returns. This finding does not support the positive relationship between underwriters' reputation and initial return found in Beatty and Welch (1996); Cliff and Denis (2004); Loughran and Ritter (2004) and Beck (2017). They claimed that IPO issuers are less likely to change underwriters if their IPO is underpriced to a greater extent. Thus, these top-tier underwriters might purposely underprice the issue to secure future business. On the contrary, our finding complies with the previous studies such as Carter et al. (1998); Paudyal et al. (1998); Jelic et al. (2001); Yong (2013). They stated that highly reputable underwriters are capable of reducing short-term underpricing.

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## REFERENCES

- Akerlof, G. A. (1970). The market for "lemon": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488-500.
- Asteriou, D., & Hall, S. G. (2007). *Applied econometrics: A modern approach using eviews and microfit* (Revised ed.). Hampshire, UK: Palgrave Macmillan.
- Baron, D. P., & Holmström, B. (1980). The investment banking contract for new issues under asymmetric information: Delegation and the incentive problem. *The Journal of Finance*, 35(5), 1115-1138. Available at: <https://doi.org/10.1111/j.1540-6261.1980.tb02199.x>.
- Beatty, R. P., & Welch, I. (1996). Issuer expenses and legal liability in initial public offerings. *The Journal of Law and Economics*, 39(2), 545-602. Available at: <https://doi.org/10.1086/467359>.
- Beatty, R. P., & Ritter, J. R. (1986). Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15(1-2), 213-232. Available at: [https://doi.org/10.1016/0304-405x\(86\)90055-3](https://doi.org/10.1016/0304-405x(86)90055-3).
- Beck, J. (2017). Determinants of IPO underpricing: Tech vs non-tech industries. *Major Themes in Economics*, 19(1), 39-55.
- Booth, J. R., & Chua, L. (1996). Ownership dispersion, costly information, and IPO underpricing. *Journal of Financial Economics*, 41(2), 291-310. Available at: [https://doi.org/10.1016/0304-405x\(95\)00862-9](https://doi.org/10.1016/0304-405x(95)00862-9).
- Carter, R. B., Dark, F. H., & Singh, A. K. (1998). Underwriter reputation, initial returns, and the long-run performance of IPO stocks. *The Journal of Finance*, 53(1), 285-311. Available at: <https://doi.org/10.1111/0022-1082.104624>.
- Chahine, S. (2007). Investor interest, trading volume, and the choice of IPO mechanism in France. *International Review of Financial Analysis*, 16(2), 116-135. Available at: <https://doi.org/10.1016/j.irfa.2005.10.002>.
- Chang, C., Chiang, Y.-M., Qian, Y., & Ritter, J. R. (2017). Pre-market trading and IPO pricing. *The Review of Financial Studies*, 30(3), 835-865. Available at: <https://doi.org/10.1093/rfs/hhw032>.
- Che-Yahya, N., Abdul-Rahim, R., & Mohd-Rashid, R. (2015). Impact of lock-up provision on two IPO anomalies in the immediate after market. *Capital Markets Review*, 23(1&2), 25-39.
- Chorruk, J., & Worthington, A. C. (2010). New evidence on the pricing and performance of initial public offerings in Thailand, 1997-2008. *Emerging Markets Review*, 11(3), 285-299. Available at: <https://doi.org/10.1016/j.ememar.2010.04.001>.
- Cliff, M. T., & Denis, D. J. (2004). Do initial public offering firms purchase analyst coverage with underpricing? *The Journal of Finance*, 59(6), 2871-2901. Available at: <https://doi.org/10.1111/j.1540-6261.2004.00719.x>.

- Derrien, F., & Womack, K. L. (2003). Auctions vs. bookbuilding and the control of underpricing in hot IPO markets. *The Review of Financial Studies*, 16(1), 31-61. Available at: <https://doi.org/10.1093/rfs/16.1.0031>.
- Ellul, A., & Pagano, M. (2006). IPO underpricing and after-market liquidity. *The Review of Financial Studies*, 19(2), 381-421. Available at: <https://doi.org/10.1093/rfs/hhj018>.
- Falkenstein, E. G. (1996). Preferences for stock characteristics as revealed by mutual fund portfolio holdings. *The Journal of Finance*, 51(1), 111-135. Available at: <https://doi.org/10.1111/j.1540-6261.1996.tb05204.x>.
- Hou, T. C.-T., & Gao, S. (2017). An empirical examination of IPO underpricing between high-technology and non-high-technology firms in Taiwan. *Journal of Emerging Market Finance*, 18(1), 23-51.
- How, J., Jelic, R., Saadouni, B., & Verhoeven, P. (2007). Share allocations and performance of KLSE second board IPOs. *Pacific-Basin Finance Journal*, 15(3), 292-314. Available at: <https://doi.org/10.1016/j.pacfin.2006.09.002>.
- Jelic, R., Saadouni, B., & Briston, R. (2001). Performance of Malaysian IPOs: Underwriters reputation and management earnings forecasts. *Pacific-Basin Finance Journal*, 9(5), 457-486. Available at: [https://doi.org/10.1016/s0927-538x\(01\)00013-0](https://doi.org/10.1016/s0927-538x(01)00013-0).
- Johnson, J. M., & Miller, R. E. (1988). Investment banker prestige and the underpricing of initial public offerings. *Financial Management*, 17(1), 19-29.
- Li, M., Zheng, S. X., & Melancon, M. V. (2005). Underpricing, share retention, and the IPO aftermarket liquidity. *International Journal of Managerial Finance*, 1(2), 76-94. Available at: <https://doi.org/10.1108/17439130510600802>.
- Ljungqvist, A. (2005). IPO underpricing. In *Handbook of Empirical Corporate Finance* (Vol. 1, pp. 375-422): Elsevier.
- Loughran, T., & Ritter, J. (2004). Why has IPO underpricing changed over time? *Financial Management*, 33(3), 5-37. Available at: <https://doi.org/10.2139/ssrn.331780>.
- Loughran, T., & Ritter, J. R. (2002). Why don't issuers get upset about leaving money on the table in IPOs? *The Review of Financial Studies*, 15(2), 413-444. Available at: <https://doi.org/10.1093/rfs/15.2.445>.
- Loughran, T., Ritter, J. R., & Rydqvist, K. (1994). Initial public offerings: International insights. *Pacific-Basin Finance Journal*, 2(2-3), 165-199.
- Low, S.-W., & Yong, O. (2011). Explaining over-subscription in fixed-price IPOs—Evidence from the Malaysian stock market. *Emerging Markets Review*, 12(3), 205-216. Available at: <https://doi.org/10.1016/j.ememar.2011.03.003>.
- Low, S.-W., & Yong, O. (2013). Initial public offerings and investor heterogeneity: Evidence from Malaysia. *American Journal of Finance and Accounting*, 3(1), 41-56. Available at: <https://doi.org/10.1504/ajfa.2013.057176>.
- Mazouz, K., Mohamed, A., Saadouni, B., & Yin, S. (2017). Underwriters' allocation with and without discretionary power: Evidence from the Hong Kong IPO market. *International Review of Financial Analysis*, 49(2017), 128-137. Available at: <https://doi.org/10.1016/j.irfa.2016.12.006>.
- Mohamed-Arshad, S. B., Taufil-Mohd, K. N., & Ahmad-Zaluki, N. A. (2016). IPO lockup expiration and share price effect in Malaysian market. *International Journal of Business and Social Science*, 7(4), 108-113.
- Ng, S. H. (2014). How does group affiliation affect the diversification performance of family-controlled firms in Malaysia?—A governance perspective. *Asian Academy of Management Journal of Accounting and Finance*, 10(2), 81-115.
- Paudyal, K., Saadouni, B., & Briston, R. J. (1998). Privatisation initial public offerings in Malaysia: Initial premium and long-term performance. *Pacific-Basin Finance Journal*, 6(5), 427-451. Available at: [https://doi.org/10.1016/s0927-538x\(98\)00018-3](https://doi.org/10.1016/s0927-538x(98)00018-3).
- Ritter, J. R. (2003). Differences between European and American IPO markets. *European Financial Management*, 9(4), 421-434. Available at: <https://doi.org/10.1111/1468-036x.00230>.
- Ritter, J. (1984). The "hot issue" market of 1980. *The Journal of Business*, 57(2), 215-240. Available at: <https://doi.org/10.1086/296260>.
- Rock, K. (1986). Why new issues are underpriced. *Journal of Financial Economics*, 15(1-2), 187-212. Available at: [https://doi.org/10.1016/0304-405x\(86\)90054-1](https://doi.org/10.1016/0304-405x(86)90054-1).
- Sapian, R. Z. Z., Rahim, R. A., & Yong, O. (2013). IPO underpricing and aftermarket liquidity: Evidence from Malaysia. *International Journal of Business and Society*, 14(2), 299 – 318.

- Vong, A. P. (2006). Rate of subscription and after-market volatility in Hong Kong IPOs. *Applied Financial Economics*, 16(16), 1217-1224. Available at: <https://doi.org/10.1080/09603100500447545>.
- Yong, A. P., & Trigueiros, D. (2017). Evidence on the effect of 'Claw-Back' provisions on IPO share allocation and underpricing in Hong Kong. *Applied Economics*, 49(51), 5231-5244. Available at: <https://doi.org/10.1080/00036846.2017.1302067>.
- Wan-Hussin, W. N. (2005). The effects of owners' participation and lockup on IPO underpricing in Malaysia. *Asian Academy of Management Journal*, 10(1), 19-36.
- Yatim, P. (2008). *Underpricing and board structures: An investigation of Malaysian IPOs*. Paper presented at the ECMLG2008- Proceedings of the 4th European Conference on Management Leadership and Governance: ECMLG. Academic Conferences Limited.
- Yong, O. (2011). Winner's curse and bandwagon effect in Malaysian IPOs: Evidence from 2001-2009. *UKM Journal of Management*, 32, 21 - 26. Available at: <https://doi.org/10.17576/pengurusan-2011-32-03>.
- Yong, O. (2013). Winner's curse, size effect and bandwagon effect in explaining the under-pricing phenomenon of Malaysian Ipos. *Current Research in Malaysia*, 2(1), 101-120.
- Yong, O. (2016). Cheap IPO: Does it matter? *The Journal of Developing Areas*, 50(5), 453-460. Available at: <https://doi.org/10.1353/jda.2016.0069>.
- Yong, O., & Albada, A. Z. (2018). Under-pricing and listing board in explaining heterogeneity of opinion regarding values of Malaysian IPOs. *UKM Journal of Management*, 52(2018), 63-72.
- Yong, O., & Isa, Z. (2003). Initial performance of new issues of shares in Malaysia. *Applied Economics*, 35(8), 919-930. Available at: <https://doi.org/10.1080/0003684022000020869>.
- Yong, O., Yatim, P., & Sopian, R. (2001). Initial and long-run performance of new issues on the Malaysian stock market. *Corporate Finance Review*, 5(6), 28-41.
- Zameni, A., & Yong, O. (2016). Lock-up expiry and trading volume behaviour of Malaysian initial public offering's. *International Journal of Economics and Financial Issues*, 6(S3), 12-21.
- Zheng, S. X., & Li, M. (2008). Underpricing, ownership dispersion, and aftermarket liquidity of IPO stocks. *Journal of Empirical Finance*, 15(3), 436-454. Available at: <https://doi.org/10.1016/j.jempfin.2007.08.001>.

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