

Growth Opportunity and IPO Value: An Empirical Study of Malaysian IPOs (Peluang Pertumbuhan dan Nilai IPO: Kajian Empirikal IPOs di Malaysia)

Chui Zi Ong
Rasidah Mohd-Rashid
Kamarun Nisham Taufil-Mohd
(School of Economics, Finance and Banking, Universiti Utara Malaysia)

ABSTRACT

The offer price of Malaysian initial public offerings (IPOs) is mostly determined by fixed-price mechanism, indicating that information for investors regarding the actual value of an IPO is not being fully reflected in the offer price. The investors' opinion in fact triggers IPO value on the first trading day in the market. This study aims to investigate the effect of growth opportunity on the pricing of Malaysian IPOs upon being listed on Bursa Malaysia. The sample of the study consists of 126 IPOs listed from January 2009 to December 2017. Through the analysis of cross-sectional and quantile regression in median and high quantiles, the study found a significant positive relationship between growth opportunity and total market value of IPOs. The findings suggest that IPOs which allocate a greater proportion of proceeds for firms' future growth signal the firms' quality, leading investors to trigger IPO value upwards during first-trading day. The findings have implications for the regulators, specifically the Securities Commission and Bursa Malaysia, to ensure that the information on the uses of proceeds revealed in IPO prospectuses is in line with the "Equity Guidelines" because this information gives impact on the investors' decisions towards IPO subscription.

Keywords: Growth opportunity; IPO; market value; quantile; signalling theory

ABSTRAK

Kebanyakan harga tawaran pada tawaran awam awal (IPOs) di Malaysia adalah ditentukan oleh mekanisme harga tetap, menunjukkan bahawa maklumat untuk pelabur tentang nilai sebenar sesuatu IPO adalah tidak sepenuhnya mencerminkan harga tawaran. Pendapat pelabur mempengaruhi nilai IPO pada hari dagangan pertama di pasaran. Kajian ini bertujuan mengkaji kesan peluang pertumbuhan pada harga IPO di Malaysia apabila disenaraikan di Bursa Malaysia. Sampel kajian ini mengandungi 126 saham IPO yang disenaraikan dari Januari 2009 hingga Disember 2017. Melalui analisis regresi keratan-rentas dan kuantil "median" dan kuantil tinggi, kajian ini mendapati hubungan positif yang ketara antara peluang pertumbuhan dan jumlah nilai pasaran IPO. Hasil kajian mencadangkan bahawa IPO yang mengagihkan sebahagian besar daripada dana syarikat untuk pertumbuhan masa depan syarikat mengisytiharkan tahap kualiti syarikat yang baik, seterusnya mendorong para pelabur meningkatkan nilai IPO ke tahap yang tinggi pada hari dagangan pertama. Keputusan kajian memberikan implikasi kepada Suruhanjaya Sekuriti dan Bursa Malaysia dalam memastikan maklumat berkaitan kegunaan dana syarikat yang dinyatakan dalam prospektus IPO adalah sejajar dengan "Garis Panduan Ekuiti" kerana maklumat tersebut memberi kesan kepada keputusan pelabur terhadap langganan IPO.

Kata kunci: Peluang pertumbuhan; IPOs; nilai pasaran; kuantil; teori isyarat

INTRODUCTION

Initial public offering (IPO) refers to the undertakings of a firm selling shares to the public for the first time (Brealey, Myers & Allen 2006). Prior to a firm going public, underwriters must correctly determine its offer price so that the issues could be fully subscribed by potential shareholders. The type of pricing mechanism determines the pricing of IPOs. In the Malaysian market, most IPOs adopt a fixed-price mechanism for pricing, indicating that underwriters and issuers undertake the role of determining the offer price. Moreover, the book-building pricing mechanism was only introduced in Malaysia since year 2002. The final offer price of Malaysian IPOs is subject to the approval of the Securities Commission

(SC) in ensuring the IPO price is determined on a fair value basis (Abdul-Rahim & Yong 2010). Indeed, the offer price is set below the share prices of IPOs (Mohd-Rashid et al. 2018; Yong 2015). This is due to the existence of information asymmetry problem between issuers and potential investors as the private information on actual values of firms are not incorporated into the offer prices. The investors' perception towards the IPO market values varies as the heterogeneity of investors' opinions will exhibit different behavioral tendencies when the IPO firms go public (Miller 1977). Further, Yong and Albada (2018) stated that high level of underpricing could influence the heterogeneity of investors' opinions on the firm's intrinsic value among fixed-price IPOs in Malaysia. The high level of underpricing is triggered

by the disagreement among investors on the ex-ante information that available prior to the IPO listing. In this study, high degree of underpricing correspond to the IPO offer prices are set lower than the firms' prices during the first-day of trading (Certo et al. 2001; Rock 1986).

Potential investors have the opportunity to obtain information and make subscription decisions on new issues. Investors' opinions then will trigger IPO values on the first trading day in the secondary market. Investors act as the value indicator for IPOs which is based on several factors including accounting information, firm characteristics, market condition, corporate governance and non-financial characteristics such as auditor or underwriters' reputations (Aggarwal, Bhagat & Rangan 2009; Firth & Liao-Tan 1998; Leland & Pyle 1977; Xu & Xu 2012). However, there are no studies on how investors' interest influence the values on the first trading day of Malaysian IPOs. Therefore, the motivation of the present study is to determine the factors which influence IPO values in the emerging market, specifically in Malaysia.

This paper aims to examine how investors react towards IPO value during the first trading day in light of growth opportunity in the Malaysian market. Generally, investors would prefer to invest in a firm with growth potential, which leads to higher chances of profitability (Bhabra & Pettway 2003). A firm with greater growth potential indicates that it is increasing its market share. Thus, growth becomes a vital criterion for a firm when issuing an IPO. To issue IPOs in the Malaysian market, firms must disclose the information on the utilisation of proceeds in the prospectuses, which is regulated under Chapter 3.14 of the Malaysian SC Guidelines (2019). Firms go public to raise funds for debt repayment and growth activities investment, such as capital expenditure, business expansion, working capital and research and development (R&D) expenditure. This information disclosure in IPO prospectuses reduces the information asymmetry problem between firms' issuers and investors (Hanley & Hoberg 2012). Furthermore, it is vital for investors and financial analysts in evaluating the firms in terms of their worthiness to invest.

Focussing on the firms' growth opportunity, the present study argues that the proceeds allocated for the firms' growth might signal IPO's quality and influence investor perception on the fair value of IPO. Based on signalling theory, issuers signal good prospects of firms to the potential investors through triggering market value of firms (Leland & Pyle 1977; Trueman, 1986) and underpricing (Allen & Faulhaber 1989; Grinblatt & Hwang 1989; Welch 1989). This is further supported by Abdul-Rahim and Che-Embi (2013), Chung, Li and Yu (2005), McGuinness (2019) and Vong (2006), that mentioned investors are likely to subscribe to IPOs with greater proceeds allocation to growth activities, which allow investors to gain initial profits during the intermediate market. This indicates that high-quality IPOs are under-priced greatly as it signals firms with

prospects. In contrast, Tajuddin, Abdullah, and Taufil-Mohd (2016) argued that Malaysian IPOs with greater growth opportunities are less preferred among investors because these IPOs are characterised as large and less ex-ante uncertainties firms at which they are predicted to compensate low returns to investors. In Malaysia, IPOs are characterised as greater information asymmetries given the majority of them are priced by fixed-price mechanism (Mohd-Rashid, Abdul-Rahim & Yong 2014; Yong 2011). In this regard, the severe uncertainties of Malaysian IPOs have allowed this study to investigate the usefulness of proceeds raised for growth opportunities in pricing IPOs.

The present study is expected to shed light on how investors perceive the growth opportunities of IPO value during first IPO trading day. However, studies that examine the growth opportunity on IPO values are still in the preliminary stage. The present study contributes to the literatures by examining the association between IPO proceeds raised for growth activities and firm values, where some of the previous studies examined the signalling role of the growth opportunity on the underpricing phenomenon and the concept of asymmetric information. The present study is triggered by the arguments provided by Trueman (1986) and Krinsky and Rotenberg (1989), stating that one of the reasons for boosting the values of IPOs is the firms' growth opportunities. This behaviour indicates that information on the prospects of growth is more inclined to promote investors to subscribe to an IPO and ultimately impact the IPO values during first trading day. Thereby, the present study extends the work of Abdul-Rahim and Che-Embi (2013) by examining the impact of the firms' growth opportunities on the IPO values during the first trading day in Malaysia.

The rest of the present study is structured as follows. The next section illustrates the literatures regarding IPO pricing, growth opportunity and control variables used in examining an IPO's true value as perceived by investors. This is followed by sections describing the data and methodology used, as well as interpreting the results of the analysis in the present study. The last two sections provide managerial implications and conclude the present study.

LITERATURE REVIEW

According to Modigliani and Miller (1958), their proposition suggested that in a perfect capital market, the capital market does not give any impact on the firms' values. Thus, the firms' growth or investment activities do not rely upon the financing activities. Nevertheless, due to the existence of market imperfections resulting from the severe uncertainties, the capital structure theory has advanced to acknowledge that proceeds raised from investors do influence the firms' values. For instance, Myers and Majluf (1984) justified that the phenomenon

of greater information asymmetries between the internal and external funding may create the cost for raising the capital. Thus, in this imperfect market, the information related to the growth prospects are expected to create value to firms issuing IPOs.

Given the importance of IPO values, extensive studies regarding IPO values are being undertaken globally. Many factors were considered in explaining IPO values, such as firms' characteristics (Aggarwal et al. 2009), retained ownership (Leland & Pyle 1977), auditor's reputation (Beatty 1989; Firth 1998), underwriters' characteristics (Carter & Manaster 1990), accounting information (Ducharme, Malatesta & Sefcik 2001), investor demand (Jiang & Li 2013) and corporate governance (Bertoni, Meoli & Vismara 2014; Chahine & Filatotchev 2011). Trueman (1986) tested the signalling role of proceeds raised for investment activities in the valuation model. IPO proceeds which were allocated more for capital expenditures convey positive information to potential investors about the firms' high qualities. Trueman (1986)'s signalling arguments are further applied in studies by Krinsky and Rotenberg (1989), McGuinness (1993) and Hull, Walker and Kwak (2013). As for the present study, we focus on the influence of growth opportunity on IPO pricing, which is closely linked to the signalling theory explanation by Trueman (1986). As mentioned, the more proceeds allocated for investment activities such as capital expenditure and R&D expenditure, the better the conveying of information on the projects which signal the future returns for potential investors. The present study suggests the use of signalling theory to explain the influence of proceeds used for investment activities on IPO values.

In the IPO literature, it has been established that the signalling role of the disclosure of proceeds raised for financing growth or investment activities has a significant relationship with IPO anomalies. For instance, Chung et al. (2005) and Abdul-Rahim and Che-Embi (2013) noted that IPOs with greater proceeds allocation for funding investment activities generated more initial returns to investors. The signals of the disclosure of proceeds raised for investment activities are perceived by investors and create demands on shares at which aftermarket prices would be propelled at the first trading day of IPOs. Firms having growth potential and high competitiveness levels attract investors' interest due to the secure investment and profits to be obtained by firms (Bhabra & Pettaway 2003; McGuinness 2019; Vong 2006). However, Leone, Rock and Willenborg (2007) and Komenkul, Sherif and Xu (2016) found out that IPOs with information on the usage of proceeds for funding investment activities in prospectuses generate less return to investors. Further, Tajuddin et al. (2016) were of the view that investors are not interested to subscribe to IPOs with greater growth opportunities in Malaysia. This is because these IPOs are large and mature firms that are characterised as less information asymmetry, which in turn compensate investors with low initial returns.

As mentioned earlier, most Malaysian IPOs are priced based on fixed-price mechanism, implying that investors' opinions are not reflected into price setting, hence the IPO value during first-day trading acts as an indicator of investor perceptions. This study uses Trueman's (1986) signalling model to conjecture that the disclosure of the use of proceeds for investment activities may influence IPO aftermarket price and market value on first trading day of IPOs in Malaysia. The elements in the uses of proceeds, for example, capital expenditure, R&D expenditure and working capital, are beneficial to the IPO as these items improve the firms' operational activities which signal the firms' future prospects. Yet, the present study cannot ignore arguments by Ljungvist and Wilhelm (2003) and Wyatt (2014), who were of the view that proceeds for working capital lead to high ex-ante uncertainty in future cash flow, as working capital acts as an operating risk that can affect the firm's performance. Thus, this paper intends to further examine the influence of a firm's growth opportunity on IPO market value and aftermarket price of firms during the first trading day of IPOs.

Apart from examining the influence of growth opportunity on IPO pricing, the present study acknowledges that six other variables also influence IPO pricing on first-day trading. Those six variables are namely; underwriter reputation, net tangible assets, retained ownership by a shareholder, IPO pricing mechanism, investors' demand and market condition. Firstly, prior studies found that the more prestigious the underwriters employed in issuing IPOs, the greater the positive association with the market value of IPO, indicating that investors are influenced by the positive effects of prestigious underwriters in obtaining superior information (Aggarwal et al. 2009; Bertoni et al. 2014; Daily, Certo & Dalton 2005). Secondly, the larger the size of asset available for shareholders, the more the potential investors are confident of the IPO value due the financial stability of firms (Aggarwal et al. 2009; Cotter, Goyen & Hegarty 2005; Firth & Liao-Tan 1998).

Next, a high proportion of shares retained by a firm's insiders may increase the firm's market value, demonstrating that more shares are held by issuers signal the high qualities of firms (Leland & Pyle 1977; Bradley & Jordan 2002; Mohd-Rashid & Abdul Rahim 2012). Apart from this, IPOs are more valued if issued through the book-building mechanism, given the views of institutional investors are incorporated into IPO pricing and hence, transmitting the signal of less-risk profile of firms to investors (Kutsana & Smith 2004). Furthermore, the more the investors' subscription demands, the greater the value of IPOs. Lin, Lee, and Liu (2007) mentioned that institutional investors prefer to subscribe to IPO shares that are more valued, as the informed investors obtain valuable information about the IPOs' qualities compared to retail investors. As for the last variable that is market condition, the IPO's value in the initial secondary market is boosted during bullish market conditions (Che-Yahya, Abdul-Rahim & Yong 2014; Mohd-Rashid et al. 2014).

DATA

In this paper, the sample data consists of 157 IPOs listed on the Main Market and ACE Market of Bursa Malaysia from January 2009 to December 2017. This period allowed the Malaysian market sufficient time to recover from the sub-prime crisis of year 2008. The data contents consist of variables such as IPO value (market value and aftermarket price of first trading day of IPOs), growth opportunity, underwriter's reputation, net tangible assets, retained ownership, IPO pricing mechanism, investor demand and market condition. All the data, excluding market condition, investor demand, market value and price during first trading day of IPO, are extracted manually from firms' prospectuses. The data on market condition and first-day prices are collected from Thomson Reuter Datastream. As for investors' demands, the information is compiled from various reports of newspapers available from The Star websites. The distribution of IPOs sample is shown in Table 1.

Before the hypothesis testing analysis, the criteria for collecting data is highlighted in this paper. IPO with special types of offers, such as restricted offer-to-sale to eligible employees and indigenous (Bumiputra) investors, tender offers and special issues are excluded from the sample (Mohd-Rashid et al. 2014). Meanwhile, IPOs from selected industries sector such as finance, Real Estate Investment Trust (REITs), Exchange Traded Funds (ETF) and Special Purpose Acquisition Companies (SPAC) are also excluded due to the presentation format of financial statements. Besides, IPOs with negative value net tangible asset is removed as it is meaningless for regression analysis. Before proceeding with further empirical analysis, data cleaning process is performed to remove the outliers of IPO samples. After the exclusion of data related as mentioned, the final total samples for this paper is 126 IPOs, which represents 80.25% of the total number of IPOs listed from 2009 to 2017.

METHODOLOGY

To explain the relationship between growth opportunity and IPO pricing, cross-section regression models are employed in this study, as proposed by Trueman (1986). The cross-section regression models are constructed as below:

$$PRICE_i = \beta_0 + \beta_1 GROWTH_i + \beta_2 UNDREP_i + \beta_3 LNNTA_i + \beta_4 SHARERTN_i + \beta_5 DBOOK_i + \beta_6 OSR_i + \beta_7 MKTCON_i + \varepsilon \quad (1)$$

$$LNMV_i = \beta_0 + \beta_1 GROWTH_i + \beta_2 UNDREP_i + \beta_3 LNNTA_i + \beta_4 SHARERTN_i + \beta_5 DBOOK_i + \beta_6 OSR_i + \beta_7 MKTCON_i + \varepsilon \quad (2)$$

and are denoted by the IPO price and natural logarithm of market value during first trading day of IPO, respectively. This is followed by *GROWTH* (growth opportunity of IPOs), *UNDREP* (underwriter reputation), *LNNTA* (natural logarithm of net tangible asset), *SHARERTN* (retained ownership), *DBOOK* (dummy variable of book-building method issue), *OSR* (investor demand) and *MKTCON* (market condition). Several data analysis techniques; namely, multi-collinearity, auto-correlation, and heteroskedasticity are undertaken before reporting the results of regressions. These data analysis techniques are tested and corrected to ensure the reliability of estimated coefficients in providing a meaningful interpretation of regression results.

Additionally, the present study checked the robustness of the regression results by employing the quantile regression approach. The quantile regression provides an inclusive description of the conditional distribution rather than just a conditional mean analysis. According to Koenker and Bassett (1978), quantile regression investigates how a host of independent and control variables affect the dependent variables at the level of median, minimum or maximum percentile. The

TABLE 1. Selection process of IPOs sample from January 2009 to December 2017

Description	Number of IPOs
Number of IPOs before exclusion	157
(-) Total number of IPOs issue through restricted offer-to-sale, tender offer and special issues	6
(-) Total number of IPOs from finance sector	2
(-) Total number of IPOs from REITs sector	5
(-) Total number of IPOs from ETF sector	3
(-) Total number of IPOs from SPAC sector	6
(-) Total number of IPOs with negative values of net tangible assets	5
(-) Total number of outliers	4
Total number of Final IPO samples	126

present study uses 25th quantile, 50th quantile and 75th quantile to compare the effects of growth opportunity on IPO pricing. This study employs a bootstrap method in estimating standard errors since the data are conditioned on heteroscedasticity. Therefore, based on Tajuddin et al. (2019), the simultaneous quantile regression models are constructed as below:

$$Q_{0.25}PRICE_i = \beta_{0.25} + \beta_{0.25,1}GROWTH_i + \beta_{0.25,2}UNDREP_i + \beta_{0.25,3}LNNTA_i + \beta_{0.25,4}SHARERTN_i + \beta_{0.25,5}DBOOK_i + \beta_{0.25,6}OSR_i + \beta_{0.25,7}MKTCON_i + \varepsilon \quad (3)$$

$$Q_{0.50}PRICE_i = \beta_{0.50} + \beta_{0.50,1}GROWTH_i + \beta_{0.50,2}UNDREP_i + \beta_{0.50,3}LNNTA_i + \beta_{0.50,4}SHARERTN_i + \beta_{0.50,5}DBOOK_i + \beta_{0.50,6}OSR_i + \beta_{0.50,7}MKTCON_i + \varepsilon \quad (4)$$

$$Q_{0.75}PRICE_i = \beta_{0.75} + \beta_{0.75,1}GROWTH_i + \beta_{0.75,2}UNDREP_i + \beta_{0.75,3}LNNTA_i + \beta_{0.75,4}SHARERTN_i + \beta_{0.75,5}DBOOK_i + \beta_{0.75,6}OSR_i + \beta_{0.75,7}MKTCON_i + \varepsilon \quad (5)$$

$$Q_{0.25}LNMV_i = \beta_{0.25} + \beta_{0.25,1}GROWTH_i + \beta_{0.25,2}UNDREP_i + \beta_{0.25,3}LNNTA_i + \beta_{0.25,4}SHARERTN_i + \beta_{0.25,5}DBOOK_i + \beta_{0.25,6}OSR_i + \beta_{0.25,7}MKTCON_i + \varepsilon \quad (6)$$

$$Q_{0.50}LNMV_i = \beta_{0.50} + \beta_{0.50,1}GROWTH_i + \beta_{0.50,2}UNDREP_i + \beta_{0.50,3}LNNTA_i + \beta_{0.50,4}SHARERTN_i + \beta_{0.50,5}DBOOK_i + \beta_{0.50,6}OSR_i + \beta_{0.50,7}MKTCON_i + \varepsilon \quad (7)$$

$$Q_{0.75}LNMV_i = \beta_{0.75} + \beta_{0.75,1}GROWTH_i + \beta_{0.75,2}UNDREP_i + \beta_{0.75,3}LNNTA_i + \beta_{0.75,4}SHARERTN_i + \beta_{0.75,5}DBOOK_i + \beta_{0.75,6}OSR_i + \beta_{0.75,7}MKTCON_i + \varepsilon \quad (8)$$

The initial secondary prices in IPO likely provide a more meaningful guide to the true value of firms rather than the initial offering price. Thus, the dependent variable for this paper is the IPO value during first-day trading market. We employ two types of measures for IPO value. The first measure is based on the closing price during the firm's listing day, in consistency with Sahoo (2012). For the second measure, this study adopts the same proxy employed in prior studies (Aggarwal et al. 2009; Firth & Liao-Tan 1998; Krinsky & Rotenburg 1989; McGuinness 1993), which used the market capitalisation of IPO firms on the first day of trading closing price. The formula for market value (*MV*) is as below:

$$MV = \text{total number of outstanding shareholdings after issues} \times \text{IPO price at first trading day} \quad (9)$$

Growth opportunity is the main predictor variable in the present study. In line with Abdul-Rahim and Che-Embi (2013) and Tajuddin et al. (2016), the measurement of growth opportunities in this study is formulated as the ratio of proceeds used for investment activities to total proceeds raised by IPO, including working capital, capital expenditure and research and development (R&D) expenditure. The formula of growth opportunity (*GROWTH*) is as below:

$$GROWTH = \frac{\text{Proceeds used for investment activities}}{\text{Total Proceeds}} \quad (10)$$

In this study, we also employ six control variables to explain IPO pricing. The first variable is the underwriter's reputation (*UNDREP*) which is determined based on the method used by Ammer and Ahmad-Zaluki (2016); that is the percentage of the total Ringgit value of IPO underwritten by the underwriter over the total Ringgit value of IPO underwritten in a sample per year. Secondly, net tangibles asset (*NTA*) is determined based on the fiscal year IPO before taking into account the utilisation proceeds. Thirdly, retained ownership (*SHARERTN*) is the ratio of the proportion of shares the pre-IPO shareholders continue to hold to the total number of outstanding shares (Mohd-Rashid & Abdul Rahim 2012). The next variable is IPO pricing methods (*DBOOK*) which is computed as a dummy variable, where 1 is an IPO issued under book-building method, and 0 is an IPO issued under fixed-price method. Moreover, investor demand is a proxy for oversubscription ratio (*OSR*) which is extracted from newspaper reports. The last variable is market condition (*MKTCON*) which adopts the measurement according to Mohd-Rashid et al. (2014), taking market returns at the time of IPO listing, that is, the percentage of difference in terms of price indexes between listing date and offer date, over the price index on listing date. EMAS index is the indicator for computing market returns.

RESULTS

The result of descriptive statistics on all variables is displayed in Table 2. The average of IPO price on a first trading day is RM 1.14, together with a standard deviation of RM 1.04. It implies a high dispersion in initial secondary prices. The mean value of IPO aftermarket price on a first trading day is slightly lower than the RM1.42 reported by Abdul-Rahim and Che-Embi (2013) from 1999 to 2008. The highest IPO aftermarket price reached RM6.38, as represented by Lotte Chemical Titan Holdings Berhad listed in 2017. On the other hand, the lowest closing price achieved is RM 0.14 as represented by Matang Berhad listed in 2017. The market value has a mean value of RM 1200 million, with a standard deviation of RM 3400 million. It implies a high dispersion in the initial market value. As for the explanatory variable, zero minimum value was found for total IPO proceeds and growth opportunity from the descriptive results. There were six firms that did not use proceeds from IPO in compliance with growth opportunity, namely Maxis Berhad (2009), Berjaya Retail Berhad (2010), JCY International Berhad (2010), Berjaya Food Berhad (2011), Gas Malaysia Berhad (2012), Westports Holdings Berhad (2013) and Sunway Construction Group Berhad (2015). Moreover, growth opportunity has a mean value of 70.96 percent, which is slightly lower than 77.37 per cent as reported by Tajuddin et al. (2016) for the 10-year period from 2005

TABLE 2. Descriptive statistics

Variable	Mean	Median	Min	Max	s.d
IPO Price on First Trading Day (RM)	1.14	0.81	0.14	6.38	1.05
Market Value (RM million)	1200.00	180.00	17.48	24900.00	3400.00
Growth (%)	70.96	79.39	0	97.95	25.30
Proceeds (RM million)	235.00	25.84	0	5920.00	831.00
Underwriter Reputation (%)	13.35	0.03	0.0004	94.83	21.92
Net Tangibles Asset (RM million)	266.00	66.44	3.29	7950.00	799.00
Shareholder Retention (%)	69.95	71.47	21.67	93.20	10.66
Investor Demand (times)	18.43	11.71	-0.78	92.84	18.77
Market Condition (%)	0.60	0.70	-8.13	8.56	2.47

Notes: IPO sample size (N) = 126, starting from January 2009 to December 2017. Min = Minimum value; Maximum= Maximum value; s.d = Standard deviation

TABLE 3. Pearson's correlation matrix results between variables

	PRICE	LNMV	GROWTH	UNDREP	LNNTA	SHARERTN	DBOOK	OSR
GROWTH	0.041	-0.107						
UNDREP	0.593	0.614	-0.179					
LNNTA	0.661	0.845	-0.137	0.455				
SHARERTN	-0.246	-0.152	-0.158	-0.229	-0.130			
DBOOK	0.676	0.776	-0.180	0.643	0.645	-0.300		
OSR	-0.247	-0.308	0.023	-0.219	-0.386	0.195	-0.245	
MKTCON	0.014	0.097	0.04	0.012	0.091	-0.025	0.093	-0.136

Notes: PRICE = First-day IPO closing price; LNMV= Natural logarithm of IPO market value on first-day trading; UNDREP= Underwriter reputation; LNNTA= Natural logarithm of net tangible assets; SHARERTN= Shareholder retention; DBOOK= Dummy variable of book-building method issue; OSR= Investor demand; MKTCON= Market condition.

to 2014, yet higher than 56.98 per cent noted by Abdul-Rahim and Che-Embi (2013). The maximum value of 97.95 per cent is reported by MSM Malaysia Holdings Berhad (2011), implying that this firm raised proceeds mainly for investment rather than for financing activity.

In terms of the of control variables, the average value for net tangibles asset of RM 266 million is obtained, which is higher than the RM119.44 million reported for the period August 1996 to June 2000 by Wan Hussin (2005). Table 1 indicates that the average value of the underwriters' market share is 13.35 per cent, with a minimum market share of 0.0004 per cent and maximum market share of 94.83 per cent. This mean value is slightly higher than the 11 per cent as reported by Ammer and Ahmad-Zaluki (2016). Next, investor demand has a mean value of 18.43 times, with the minimum and maximum values of - 0.89 and 92.84 times respectively. The average value is significantly lower than the 32.23 times reported by Mohd Rashid et al. (2014) and the 26.56 times recently reported by Tajuddin et al. (2019). Finally, market returns as reflected by EMAS index during IPO listing had a mean value of 0.60 per cent, together with the highest return of 8.56 per cent and the lowest return of -8.13 per cent. This average value is slightly higher than that mentioned by Mohd Rashid et al. (2014) of only 0.52 per cent.

Furthermore, the Pearson correlation analysis between variables and IPO pricing was conducted in this study. As shown in Table 3, it is found that most of the explanatory variables obtained a correlation of less than 0.7, excluding two pairs of relationship: *LNMV* and *LNNTA*, *LNMV* and *DBOOK*, which show the positive significant relationship of 0.845 and of 0.776 respectively. Further analysis of both variables using VIF (variance inflation factors) was carried out prior to the regression analysis, resulting in no multi-collinearity problem. The VIF values for variables are consistently lesser than 4.71, which are below the 10.00 cut-off points (Gujarati 2003; Hair et al. 2010). To ensure the regression models and their results are reliable, diagnostic tests such as determination of auto-correlation issue (Durbin-Watson test) and the heteroskedasticity test (White's test) were performed.

Table 4 represents the cross-sectional regression results reflecting the estimation of IPO pricing by growth opportunity that has been corrected for auto-correlation problem by Newey-West and heteroskedasticity problem as by "Heteroskedasticity consistent covariance". There is no auto-correlation problem after correction by Newey-West method as the Durbin-Watson is shown to be within the range of 1.99 to 2.36. The adjusted R-squared value for the first model of regression is 56.09 per cent, which

is lower than the second model (81.88 per cent). These two figures imply that all explanatory variables tested in the present study justify at least 56.09 per cent and 81.88 per cent of the variations in IPO price and market value on first trading day, respectively. The F-statistics values for both regression models are significant and the goodness-of-fits of models ($p < 0.01$) are confirmed.

TABLE 4. OLS Regression results of the IPO pricing models

Variables	Predicted Sign	Model 1	Model 2
		<i>PRICE</i>	<i>LNMV</i>
GROWTH	Positive	0.634** (0.268)	0.457** (0.224)
UNDREP	Positive	1.159** (0.526)	1.170** (0.487)
LNNTA	Positive	0.238*** (0.063)	0.635*** (0.073)
SHARERTN	Positive	-0.358 (0.776)	1.050* (0.576)
DBOOK	Positive	0.809** (0.365)	1.256*** (0.337)
OSR	Positive	-0.0002 (0.003)	0.0003 (0.002)
MKTCON	Positive	-0.010 (0.019)	0.006 (0.023)
C		-3.719*** (1.132)	6.416*** (1.366)
Observation		126	126
Adjusted		0.561	0.808
F-Statistics		23.806***	76.170***
Durbin-Watson		1.989	2.359
VIF Range		1.31-4.71	1.10-4.27

Notes: Autocorrelation and heteroskedasticity problems are determined by conducting Durbin-Watson test and White test, respectively followed with the correction by Newey-West Covariance Estimator. The highlighted adjusted values with the symbols: *, ** and *** represent significance at levels of 0.1, 0.05, and 0.01, respectively.

Focusing on the main variable, growth opportunity has a significantly positive relationship with aftermarket prices and market values on the first trading day of IPOs as shown in Table 4. The positive relationship indicates that IPO proceeds raised to finance investment activities triggers the market prices and market values upwards on first trading day of IPOs. The results could be linked to signalling explanation of firms' qualities (Trueman 1986). The disclosure of proceeds used for growth activities acts as an informative signal which can inform potential investors on the high qualities of firms. Potential investors scrutinize the information on the usage of proceeds in IPO prospectuses and then make investment decisions before the closing date of shares subscription application.

In the context of the Malaysian IPO market that is riddled with severe uncertainties, underwriters and issuers always set lower fixed-price IPOs offer prices to allure investors for shares subscription (Mohd-Rashid et al. 2018). The credible signals of IPOs with greater growth opportunities drive investors' demands on shares (Vong 2006; McGuinness 2019) and the demands propel aftermarket prices during the first trading of IPOs. This will ultimately increase the IPO values. The positive result is further consistent with the findings of Abdul-Rahim and Che-Embi (2013), Aggarwal et al. (2009) and Chung et al. (2005), investors who bid for the IPOs with greater growth potentials during the immediate aftermarket could have the incentives to gain returns arising from additional investors' demand. Accordingly, IPOs with greater proceeds allocation for growth or investment activities could enhance the firms' values.

This study also documents the significant results between three control variables and aftermarket prices on first trading day, and even between four control variables and IPO market value. First, the underwriter's reputation (*UNDREP*) is positively related to both IPO price and market values during the IPO's first trading day, with a confidence level of 5 per cent. This finding is consistent with earlier studies by Aggarwal et al. (2009) and Hull et al. (2013) who found that investors trigger IPOs' value upwards when prestigious underwriters are involved in IPO issuance. Issuers use prestigious underwriters as signalling mechanism to investors to convey their high qualities of firms, as these underwriters obtain superior information of firms. Secondly, the net tangible asset (*LNNTA*) has a significant positive association with IPO pricing. As a proxy of the value of equity book, the findings indicate that the larger size of net total asset available for shareholders induce potential investors to be more optimistic of the future value of IPO due to the financial stability of firms. The findings are in line with those of earlier studies on IPO pricing (Aggarwal et al. 2009; Cotter et al 2005; Neill, Pourciau & Schaefer 1998).

The variable indicating retained ownership (*SHARERTN*), shows a weak positive relationship with IPO market value, and an insignificant negative relationship with IPO price. The positive findings support the signalling theory by Leland and Pyle (1977), stating that larger shares held by firms' insiders signal the firms prospects to investors, and eventually boosting firms' values during intermediate aftermarket. The positive result is further supported by prior studies (Aerts & Cheng 2012; Aggarwal et al. 2009; Bédard, Coulombe & Courteau 2008; Hull et al. 2013). However, the insignificant negative impact of *SHARERTN* on aftermarket prices possibly explains the greater shares retained by issuers, which is the cause of the agency problem between minority and majority shareholders, and in return could increase uncertainties in IPO market. Thus, the aftermarket prices are reduced. The next variable is the book-building pricing mechanism

(*DBOOK*), which is found to have a significant positive association with IPO price and market value during the first trading day (Kutsana & Smith 2004). Book-built IPOs in Malaysia are characterized by large and mature firms, in which investors are confident about the firms' future cash flow.

Moreover, the result on investor demands (*OSR*) indicates the positive association with IPO market value, yet, an insignificant negative association with the aftermarket price. The demands on shares increase when IPOs offer prices are offered at discount, which induce the greater information asymmetries and in turns to increase initial returns of IPOs (Tajuddin et al. 2019). Thus, the values of IPOs are increased. However, greater demands on shares on lesser uncertain IPOs could offset the initial return of IPOs, in other words, the offer prices of IPOs are set closer to the firms' intrinsic values. Thus, negative signs of *OSR* on aftermarket prices are obtained. Finally, positive sign of market condition (*MKTCON*) on IPO market value demonstrates that investors are likely to subscribe to IPOs with lower risk profiles and trigger market values in the aftermarket. Nevertheless, the insignificant negative coefficient of *MKTCON* on aftermarket prices indicates that issuers may not consider the market condition during the IPO valuation.

The next analysis we used in this study is the quantile regression to examine the robustness of the results on the effect of growth opportunity on aftermarket price and market value during the first trading day of IPOs as shown in Table 5. Focussing on growth opportunity, the results show significant positive coefficients in the 75th quantile while estimating IPO price on the first

trading day. These findings interpret that firms allocating proceeds for growth activities seem to influence on IPO aftermarket prices positively, specifically for firms with high aftermarket prices. Further, it is found that when estimating the total market value of IPOs, the coefficients of growth opportunity are positive and significant in the 50th and 75th quantiles, that is, better than the IPO price model. The results analysis of IPO market value model shows that greater proceeds allocation for investment activities has a significant positive impact on IPO market values, specifically for firms with average and high market values. In other words, greater growth opportunities of firms transmit signals of high qualities of firms to investors, and ultimately boosts firms' values to an average and higher levels.

CONCLUSION

This study examines the IPO pricing, proxied as the IPO prices and market values on the first trading day by using a sample of 126 IPOs listed on Bursa Malaysia. The study period is from year 2009 to 2017, a period after the sub-prime crisis of year 2008. As reported, the OLS regression analysis reveals a significant positive relationship between growth opportunity and IPO pricing. The findings indicate that firms with greater growth opportunity see investors boosting the Malaysian IPO values upwards during the first trading day of IPOs. That is to say, firms raising proceeds for financing more investment activities serve as signals of high qualities of firms to the investors. Moreover,

TABLE 5. Quantile regression results of the IPO pricing models

Variables	PRICE			LNMV		
	Q25	Q50	Q75	Q25	Q50	Q75
C	-1.720 (1.095)	-1.789 (1.291)	-3.185 (1.983)	5.209** (2.287)	5.478** (2.092)	7.644*** (2.028)
GROWTH	0.222 (0.176)	0.066 (0.244)	0.662** (0.283)	0.195 (0.381)	0.598* (0.324)	0.798** (0.344)
UNDREP	0.643 (0.544)	1.036 (0.677)	0.958 (1.031)	0.464 (0.781)	1.410** (0.566)	1.354* (0.763)
LNNTA	0.140** (0.061)	0.174** (0.073)	0.231** (0.111)	0.721*** (0.134)	0.694*** (0.108)	0.598*** (0.114)
SHARERTN	-0.536 (0.6171)	-0.882 (0.736)	-0.663 (0.974)	0.378 (1.304)	0.725 (0.754)	0.466 (0.702)
DBOOK	0.539** (0.237)	0.547 (0.406)	1.478* (0.871)	1.165** (0.505)	0.908*** (0.340)	1.435*** (0.373)
OSR	-0.003* (0.002)	-0.004 (0.003)	0.001 (0.005)	-0.001 (0.003)	0.001 (0.004)	0.001 (0.005)
MKTCON	-0.011 (0.015)	-0.007 (0.019)	-0.012 (0.035)	-0.019 (0.034)	0.022 (0.034)	0.010 (0.036)
Pseudo R-squared	0.257	0.298	0.397	0.492	0.551	0.638
Observations	126	126	126	126	126	126

Notes: The estimation of quantile regression is using alternative Epanechnikov kernel function and Hall-Sheather's bandwidth. The highlighted adjusted values with the symbols: *, ** and *** represent significant at levels of 0.1, 0.05, and 0.01 respectively.

in the quantile regression, the growth opportunity is positively significant on median (50th quantile) and large (75th quantile) total market value of IPOs on the first trading day, which is better than IPO price on first trading day model. This indicates that investors boost the firms' values at an average and high levels during IPO listing, given that a large proportion of the proceeds is allocated for investment activities. In summary, both regression results support the signalling theory that firms with greater growth opportunities send credible signals to investors about the superior qualities of firms.

The study contributes to the existing theory on the signalling hypothesis concerning the IPO values in the aspects of the application of Trueman's (1986) signalling model in emerging market, specifically in Malaysia. The findings of this study justify the significant and signalling effect of growth opportunities that propel the aftermarket prices and firms market values, and eventually increase initial returns, which gives support on the positive relationship between growth opportunity and IPO underpricing that provided by Abdul-Rahim and Che-Embi (2013).

The findings of this study have important implications for issuers, investors and regulators. Proceeds used for financing growth activities convey signals of firms' qualities; however, the manner that issuers and investors want to use this signalling tool very much relies upon their desire in the IPO market. Undoubtedly, greater proceeds allocation for investment activities enhance credibility to firms' qualities. Issuers should plan their firms' development activities wisely through allocating proceeds more on investment activities rather than debt repayment activities while proposing IPO prospectuses in light of enhancing firms' values. Moreover, the findings assist investors in identifying stocks with better post-issue prospects or greater growth prospects. In choosing the firms to invest, investors have the abilities to distinguish the IPOs based on the usage of proceeds they propose in the prospectuses because each of the specificity of proceeds has different uncertainties level. To ensure returns from IPO investment, investors should consider firms with greater proceeds allocation for growth activities. Finally, regulators, specifically the SC and Bursa Malaysia, are responsible to ensure information on the uses of proceeds revealed in IPO prospectuses is in line with "Equity Guidelines" because this information gives impact on the investors' decisions based on IPO subscription. In reference to Chapter 3.14 of SC Prospectus Guideline (2019), it requires issuers to include the amount of proceeds and explains on how the proceeds raised are used for any activities in IPO prospectuses. In such cases, firms with detailed information on the use of proceeds in IPO prospectuses inform investors about the firms' qualities once transparency increase when go listing.

Nonetheless, the results derived in this paper have its limitations. Although the regression results determine that the proceeds raised for financing investment activities

have effects on the IPO values, other signalling variables are ignored which could have impacts on IPO signalling models. Thus, this study proposes future research for further developing the signalling model by considering other information disclosure of IPO prospectuses, such as auditor reputations.

ACKNOWLEDGEMENT

The authors would like to thank anonymous reviewers for their constructive comments and also the editors and reviewers of the "International Social Science Conference and Innovation Challenge (ISSCIC) 2018" who provided comments of manuscript. The authors also would like to acknowledge their gratitude for funding from the Fundamental Research Grant Scheme (FRGS/1/2018/SS01/UUM/02/7) (S/O Code: 14203) provided by the Ministry of Higher Education, Malaysia.

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- Chui Zi Ong (corresponding author)
School of Economics, Finance and Banking
Universiti Utara Malaysia
06010 UUM Sintok, Kedah, MALAYSIA.
E-Mail: cztracy.1012@gmail.com
- Rasidah Mohd-Rashid
School of Economics, Finance and Banking
Universiti Utara Malaysia
06010 UUM Sintok, Kedah, MALAYSIA.
E-Mail: m.rasidah@uum.edu.my
- Kamarun Nisham Taufil-Mohd
School of Economics, Finance and Banking
Universiti Utara Malaysia
06010 UUM Sintok, Kedah, MALAYSIA.
E-Mail: kamarun@uum.edu.my