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Does prospectus information matter in IPO pricing?

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Abstract
Purpose – The purpose of this study is to identify selected information from the prospectus that might signal the initial public offering (IPO) offer price.

Design/methodology/approach – This study uses cross-sectional data for a 14-year period from 2000 to 2014 in examining hypotheses relating to *Shariah*-compliant status, institutional investors, underwriter ranking and shareholder retention, with respect to their associations with the offer price of the IPOs. Further, this study uses ordinary least squares (OLS) for all models, including the models for both subsamples of *Shariah*- and non-*Shariah*-compliant IPOs. As for robustness, this study incorporates the quantile regression and quadratic model.

Findings – The results tend to provide support for the argument that firms with *Shariah*-compliant status reflect lower uncertainty and project better signalling of quality due to greater scrutiny by the government and thus are able to offer IPOs at higher prices. Similarly, firms with a higher proportion of shareholder retention indicate lower risks as insiders forego their options to diversify their portfolio, and hence could price their IPOs higher. Finally, the involvement of institutional investors and higher underwriter ranking could be used by firms to disregard information asymmetry, and therefore, the issuer might have to discount the IPO offer price.

Research limitations/implications – This study focuses solely on information in the prospectus that should not be disregarded by the investors in valuing the appropriateness of the IPO offer price. This study contributes in terms of providing a better understanding of the determinant factors of the IPO offer price of the firms which are *Shariah*-compliant.

Originality/value – This paper provides evidence for the determinants of the IPO offer price in a fixed pricing mechanism for both *Shariah*-and non-*Shariah*-compliant IPOs.

Keywords *Shariah*, Quantile, Fixed price, Malaysian IPOs, Offer price, Quadratic

Paper type Research paper

1. Introduction

The pricing of the initial public offerings (IPOs) is not only a science but also an art. The pricing mechanism in an IPO market determines the pricing of the IPO. In developed countries, the pricing of the IPOs are mostly based on book building mechanism where the price of an IPO is determined by the book of demand. In this case, underwriters acquire information from the market prior to deciding the offer price of the IPOs. In contrast, most of the Asian countries, specifically Malaysia, use the fixed price mechanism when issuing IPOs (Tajuddin *et al.*, 2015). In setting the IPO offer price under the fixed price mechanism, underwriters together with the issuer determine the price without obtaining information from potential investors. Ideally, to encourage aftermarket buying and ensure a steady increase in price, the IPO pricing should reflect its potential value.

Collectively, previous researchers indicate that IPOs offered through fixed price mechanism are underpriced at the offer price; thus, investors who received the IPO allocations would earn large initial returns. This creates dilemma, particularly to the underwriters. Although the issuer would want to set a high offer price to maximize the proceeds from the IPOs, the underwriters would have to set the IPO prices low enough such that it would be attractive to the investors and ensure the IPOs to be fully subscribed. Therefore, pricing the IPOs is the most critical stage in the IPO process, specifically for the fixed price mechanism markets in which the price is set prior to observing the actual demand from investors. For the investors, the attempt to understand what factors are taken into consideration in setting the IPO price presents a greater challenge but is an unavoidable process because they would not want to fall into the winner's curse trap (Kucukkocaoglu, 2008). That said, this study attempts to determine some of the factors that rationally would be relevant in pricing fixed price IPOs. Specifically, this study will shed light on the relevance of some information that is available prior to the IPO through its disclosure in the IPO prospectus.

Of the various factors found significant in influencing the IPO price, forecast of future cash flows, accounting numbers, discounted cash flows and price-earnings ratios of comparable firms are widely used for valuing IPOs. However, no systematic study has thus far been carried out on information in the prospectus that might be useful in signalling the IPO offer price. This paper addresses this gap. We further argue that firms also incorporate into their value the facts that they are *Shariah*-compliant, involve institutional investors and hire reputable investment bankers and retain a large proportion of their shares with the insiders. However, because the prices of IPOs are fixed by the issuers and underwriters whose motivation is driven by the market, their valuation might display a significant variation from that which is estimated based on the forecasted earnings and historical accounting numbers provided in the prospectus. Hence, this study examines if the use of prior information to value the IPO offer price is still accurate and therefore determines if the IPO price is justified.

We expand the body of knowledge and empirical findings by demonstrating that the information that is publicly available prior to the IPO listing is useful in the pricing of IPOs. Having a more accurate valuation of IPOs would attract more investors' demand. This is notwithstanding the fact that, there is a presumption that most IPOs are by young firms, and therefore, it is difficult to gauge if the price reflects their value. Thus, the main motivation of this paper is to include prior IPO information and extend the practice-oriented literature by discussing the informational frictions that signal the offer price of IPOs. Although issuers are fully aware of their business situation, they could misrepresent themselves by disclosing certain information to potential investors. The investors might be facing high risks or are asymmetrically informed of the status of the company. Due to such

an information asymmetry, this study argues that issuers would attempt to give signal about their quality and prospects (which forms their IPO price) through other mechanisms such as *Shariah* status, institutional investors, reputable underwriters and shareholder retention.

There are four kinds of informational frictions that affect the IPO pricing. First, *Shariah* status should carry certain value for securities listed in the Malaysian stock market because firms actually have the option of whether to be listed with a *Shariah* status. Assuming of the *Shariah* status means that the firm has been screened for elements of certainty, integrity, justice and accountability, which serve as a differentiation or certification in terms of the quality of the IPOs. This study also argues the need to examine the *Shariah*-compliant status in the IPO pricing in the light of the recent revision (effective from 29 November 2013) in the *Shariah* screening guidelines. Given that firms with *Shariah* status have to undergo more stringent regulatory checks, their IPOs would have lower risks, and accordingly, their IPOs can be offered at a higher price. To examine the impact of the new regulatory guidelines of *Shariah* status on the offer price, this study uses a dummy variable to control the regulatory change.

Second, we propose that the issuing firm chooses to allocate a portion of the shares to institutional investors because the IPO might be considered risky to attract interests from retail investors. Given their resources, institutional investors have superior information about an issuing firm such that the portion of shares allocated to them could convey the quality of issuers. We are of the view that firms considered to be risky must set a lower offer price to enable the institutional investors to obtain a profit margin. On the other hand, investors who bid for the IPO during the immediate aftermarket would have the incentive to make profits arising from additional investors' demand or if the aftermarket price adequately reflects the value of the IPO.

Third, we argue that underwriters have to manage the underwriting risk and, at the same time, reward investors for the IPOs that have a higher level of uncertainty. High-ranking underwriters could afford to compensate for high-risk IPOs by setting a lower offer price to attract more demand for the IPOs at the immediate aftermarket, which subsequently provides abnormal returns to the IPO investors. The greater the underpricing, the easier underwriters optimise sales in the aftermarket. This drives the underwriters' motivation in the face of price uncertainty. Therefore, firms facing high levels of uncertainty have a strong motive to select high-ranking underwriters to reduce their liquidity. Also, as investors' sentiments grow, firms with lower offer price resulting from the uncertainty would be anticipated to offer higher initial returns after listing. Importantly, investors should be aware of the penalties from excessive flipping following the IPO of low-quality companies. Therefore, in the determination of the offer price, underwriters mostly act in the best interests of the issuers.

Finally, we contend that the greater the proportion of shares that insiders of issuing firms hold, the higher the offer price. This argument is based on the prospect theory predictions, whereby firms with high shareholder retention reflect mostly good IPOs and the issuer benefits from the increase in wealth due to high prices, as well as there is a net increase in pre-issue shareholder wealth. Further, if outsiders believe that insiders' actions indicate high (or low) quality of the firms, they would accordingly adjust the prices of the respective firm's new shares once it is traded in the secondary market. Therefore, this paper maintains that firms with high insider retention of shares signal their commitment towards the firms, and subsequently, issuers can offer their IPOs at a higher price in line with the firm's prospects and growth. The rest of this paper is organised as follows. Section 1 provides literature review of studies undertaken in this area. Section 2 outlines the measurement of variables

and model specification. Section 3 presents the findings and explanation of the factors that influence the IPO offer price. Finally, Section 4 provides the summary, conclusion and implications of this study.

2. Literature review

Investors are in general asymmetrically informed about the price of the IPOs. Rock (1986) argued that the "lemons" problem is common in IPO market because investors tend to withdraw their bids when the IPO offer price appears to be high. However, it is usually the uninformed investors who are trapped into IPOs offered by small firms issuing a high price or by firms with a high level of uncertainty. Therefore, this study stresses that uninformed investors should acquire information from the publicly available documents such as prospectuses to avoid the "lemons" trap because they have an equal chance of using the information in making investment decisions. This study would be useful for investors to understand how certain publicly available information is able to serve as a signal of the IPO offer price prior to listing. It is natural for issuers to believe that offer prices must be set lower to attract investors, but the amount of compensation depends on the extent of information asymmetry involved. To help investors, especially uninformed investors, avoid being trapped in the lemon problem, the model developed in this paper is directed at reducing information asymmetry by identifying the potential signals of information in the prospectus in predicting the offer price. The findings should guide investors in making informed decisions by paying a close attention on those information in the prospectus prior to subscribing to the IPOs. The findings would also be helpful for regulators in approving the offer price for firms seeking listing to ensure the effectiveness of offer price in protecting shareholders' interests.

One of the critical information disclosed in the prospectus of firms seeking listing on Malaysian stock market is whether the firm holds the *Shariah*-compliant status. The firms that wish to issue *Shariah*-compliant IPOs must fulfil certain requirements outlined by the Shariah Advisory Council (SAC). The previous studies on the impact of *Shariah*-compliant status, specifically by Abdul-Rahim and Yong (2010) on Malaysian IPOs, however find that the *Shariah*-compliant status does not alter the pattern of initial returns. While their study applies screening criteria by the SAC, other studies use the Dow Jones Islamic Index screening criteria to examine *Shariah*-compliant issues (Derigs and Marzban, 2008; Khatkhatay and Nisar, 2007; Pok, 2012; Rahman *et al.*, 2010; Sadeghi, 2008). Given the extant literature on this issue and also as Malaysian firms are currently subjected to a revised *Shariah* guidelines, a separate study is considered necessary.

The Malaysian market adopts different quantitative and qualitative parameters for selection of *Shariah*-compliant companies. The main difference between Dow Jones Islamic Market (DJIM) and SAC guidelines is that the DJIM is silent on the qualitative screening criteria. In terms of the qualitative aspect, SAC focuses on the debt and liquidity levels based on the total assets of the company, while Dow Jones uses market capitalisation. The disparity is due to different Islamic rules prevailing across the Muslim countries, which does not allow investors to adopt the findings from a different market directly. Further, the lack of studies in this area calls for this study to focus on *Shariah*-compliant status. We are of the view that firms with *Shariah* status indicate lower risks as they have stringent monitoring process and have been scrutinised by the SAC. Hence, the firms have a low level of uncertainty and the IPO offer price might be higher compared to non-*Shariah* IPOs. In line with the above arguments, we propose the following hypothesis:

H1. There is a significant relationship between the *Shariah* status and IPO pricing.

In the US market, the study on institutional allocation showed that participation from institutional investors resulted in the offer prices deviating from the pre-market price range (Ritter and Welch, 2002; Che-Yahya *et al.*, 2014). To gauge the demand from institutional investors, any disclosure of information should reflect on the price of the IPO. We argue that as institutional investors are well informed, any uncertainty on certain issues should entail a low offer price to promote the IPO in the primary market. This argument is in line with Cornelli and Goldreich (2001), who agreed that institutional investors' involvement should be rewarded due to their superior knowledge on the issue. Institutional investors also are block holders who are able to influence the campaign for promoting the IPO and for controlling its activities and performance. Rock (1986) was also of the view that in the case of fixed price IPOs, the uninformed investors face the winner's curse if they managed to get all the allocations requested as the informed investors are not interested in the IPO allocation. In this case, uninformed investors face bias in IPO allocation. Therefore, the larger the participation of informed investors, the lower the offer price should be to provide higher initial returns and compensate the uninformed investors for the existence of winner's curse. On the other hand, Ljungqvist and Wilhelm (2002) argued that across countries, if the institutional investors favour the IPO based on superior information, then it would result in lesser underpricing (high offer price). Putting all the arguments together, we develop the following hypothesis:

H2. There is a significant relationship between the institutional investors' involvement and IPO pricing.

The role of an underwriter in deciding the offer price of the IPO cannot be eliminated as in fixed price mechanism, both the issuer and underwriters are involved in valuing and finalising the IPO offer price. The underwriters and the issuers are well informed about the market than the investors. Therefore, in most cases, the underwriters would use their superior information to generate the demand for the issues. The reputation of the underwriters provides credibility to the issue and persuades investors to subscribe to the IPO. Hence, the advice of the underwriter regarding the offer price to be set is very crucial. Baron (1982) and Ibbotson (1975) alluded that if issuers face a higher level of uncertainty, they would need a reputable underwriter to certify the issue. As argued by Ibbotson (1975), an underwriter's decisions on the offer price also involve the cost of promoting the IPO, effectiveness for future issues and possible loss of customer goodwill if the issue of low-quality IPO or greater uncertainty IPO is overpriced. Issuers with information asymmetry might wish to set a low offer price as the best solution to attract investors to fully subscribe the issue. The following hypothesis is then forwarded to test these predictions:

H3. Underwriter's reputation has a significant impact on IPO pricing.

The divergence of interests between managers and owners explains why corporate finance literature often focusses on firms after they go for listing rather than before listing. However, a few studies have expanded upon the existing literature concerning shareholder retention in private firms (Ang *et al.*, 2000; Bradley and Jordan, 2002; Leland and Pyle, 1977; Zheng *et al.*, 2005). Leland and Pyle (1977) suggest that the retention by pre-IPO owners signal the quality of the IPO. In the US market, Bradley and Jordan (2002) and Zheng *et al.* (2005) found that there is a positive relationship between shareholder retention and underpricing. Ang *et al.* (2000) indicated that in the USA, firms with low ownership concentration face high agency costs. On the contrary, Alavi *et al.* (2008) claimed that the proportion of pre-IPO retention might influence the reduction in the promotion cost but not the underpricing of the IPO. This study argues that shareholder retention could be used as an issuer certification

(voluntary commitments), whereby it denotes that insiders have confidence on the firm's future growth prospects. It also signals that the firm has lower uncertainty and accordingly could offer a high price. A low-quality firm would not be able to price the IPO higher by emulating the high-quality IPOs due to the extra risks involved. Based on the theoretical and empirical arguments, the present study develops the fourth hypothesis as follows:

H4. Shareholder retention has a significant influence on IPO pricing.

The model in the current study would help in understanding specific characteristics of the IPO's prior information that explains the offer price. This study would also be considered as an extension of existing financial literature due to distinct differences in the Malaysian market, specifically the fixed price mechanism. The uniqueness of *Shariah* compliance in certifying the pricing and the high information asymmetry in developing countries also provides additional evidence for comparison with other markets, especially the US market.

3. Measurement of variables and model specification
This section provides a brief discussion on the data sources and the measurement of the variables. This is followed by an outline of the regression model and the estimation methods. The data set for all the variables used in this study for the period 2000-2014 is sourced from the prospectus (for all pre-listing information including the offer price, underwriter's ranking, *Shariah* status, institutional investors involvements, shareholder retention, offer size, public issue and offer for sale issue), Data Stream (IPO prices from on listing date) and Bloomberg (underwriting's ranking). The data set covers all the firms listed on the main and ACE markets. It contains 374 IPOs listed on Bursa Malaysia during the period but excludes some firms considered as having extreme outliers and missing data and real estate investment trust (REITS) and financial firms that have different financial statement reporting format. This study determines the outliers using the studentised residuals for extreme residuals. This study also has considered the influence using DFITS and Cook's because it concerns more on prediction rather than estimation.

3.1 The variables
The dependent variable in this paper is the offer price (*PRICE*) of each IPO as stated in the prospectus. We argue that firms with lower offer price (high) are usually small sized (big) with greater uncertainty (lower), and therefore, investors perceive the signal of quality differently.

There are four main independent variables in this study. The first is *Shariah*-compliant status (*DSHARIAH*), which is to separate the IPOs offered by *Shariah*- and non-*Shariah*-compliant firms. If the coefficient is positively significant, it shows that *Shariah*-compliant firms have higher offer prices than non-*Shariah* IPOs. Second is the institutional investor's involvement (*PRIVATE*), which is the ratio of IPOs offered specifically to institutional investors to the total number of IPOs offered. This variable is considered to capture whether the variations in institutional investors' involvement in companies influence the offer prices. The value of positive (negative) coefficient as argued Yong (2011) indicates that the firms have higher (lower) information asymmetry, and accordingly, the prices have to be discounted to attract the investors. The third is underwriter ranking (*UNRW*), which is obtained from the Bloomberg and prospectus, whereby each year, the underwriter ranking will change based on the underwriting amount. Companies with reputable underwriters are associated with low level of information asymmetry. The underwriters are used to reduce the level of information asymmetry (Yung and Zender, 2010). The fourth independent variable is shareholder retention (*SHRTN*), that is, the proportion of shares that pre-IPO

owners continue to hold after the IPO issuance. A high level of shareholder retention indicates that the firms have a low level of uncertainty due to a commitment from the insiders. It also suggests insiders' confidence in the firms' future prospects or quality. This would, therefore, reduce the cost of promotion and would more likely be reflected in the higher pricing of the IPO (Bradley and Jordan, 2002; Mohd Rashid *et al.*, 2014).

3.2 Control variables

The control variables considered in this study include *RSHARIAH* that controls the effect of new regulatory changes on *Shariah*-compliant IPOs listed by the SC in November 2013. If the coefficient of the new rules does have a significant positive relationship with the offer price, it indicates that the stringent regulation influences the uncertainty and risks of the firms to be reduced, and accordingly, the firms signal their quality through high offer price.

To determine the influence of public portion (*PUBLIC*) on the offer price, we use the size of public trading. As Maksimovic and Pichler (2001) pointed out, a firm that uses a high offer price might find it difficult to compete to attract investors. Therefore, to assure the public offering benefits issuers in raising the funds required, the pricing of the offer price would be at a discount.

To be listed initially in the market, the firms might choose to do the offer for sale or public or a combination of both. Offer for sale (*OFFERSALE*) indicates that the existing shareholders sell their shares to the public, thereby, reducing the existing ownership amount. As mentioned, a large proportion of shares issued to insiders through offer for sale might indicate a high level of uncertainty, and thus, the firms might transfer this as discounts to share prices. Finally, we measure the firm size (*OFFSIZE*) by using the number of shares issued. As argued by Brav and Gompers (2003) and Yung and Zender (2010), big firms tend to issue a large number of shares and normally have lower information asymmetry problem and thus price the IPOs higher.

3.3 Model specification

The ordinary least squares (OLS) regression model is used to investigate factors that influence the IPO offer price in the Malaysian market in the following form:

$$PRICE_i = \gamma + \gamma_1 D(SHARIAH)_i + \gamma_2 R(SHARIAH)_i + \gamma_3 PRIVATE_i + \gamma_4 UNRW_i$$

$$+ \gamma_5 SHRTN_i + \gamma_6 PUBLIC_i + \gamma_7 OFFERSALE_i + \gamma_8 OFFSIZE_i + \cup_i \quad (1)$$

This study uses quantile regression for robustness using the basic model as proposed by Koenker and Bassett (1978). The bootstrap method is used as the data are subjected to conditional heteroscedasticity. The effect of the independent variable coefficient on the inequality of offer price is evaluated using right tails (i.e. 90th quantiles), median (i.e. 50th quantiles) and left tails (i.e. 10th quantiles). Further, a quadratic term is added to shareholder retention, offer for sale and public issue to accommodate the possibility of a nonlinear relationship.

The summary of the variables in equation (1) is provided as in Table I.

4. Findings and discussion

Figure 1 provides an overview of the offer price relationship with investors demand (OSR), initial returns using opening price (IROPEN) and initial returns using closing price (IRCLOSE). The graph shows that when the offer price is set lower, the market demand is higher and the higher initial underpricing is affected by the fixed offer price mechanism. The

| Variables	Definitions
PRICE	Offer price of the IPO
D(SHARIAH)	$D(SHARIAH) = \begin{vmatrix} 1 & \text{SHARIAH IPOs} \\ 0 & \text{NON} - \text{SHARIAH IPOs} \end{vmatrix}$
R(SHARIAH)	$R(SHARIAH) = \begin{vmatrix} 1 & \text{NEW REGULATION OF SHARIAH} - \\ & \text{(NOVEMBER 2013)} \\ 0 & \text{PRIOR REGULATION OF SHARIAH} \end{vmatrix}$
PRIVATE	$PRIVATE = PRIV/NOSI$ where PRIV = number of shares issued through private placement, and NOSI = number of shares issued at the IPO
UNRW	Ranking based on the total amount of underwriting for the listing year
SHRTN	$SHRTN = \dfrac{\text{PreIPO shares} - \text{Offer for Sale}}{\text{PreIPO shares} + \text{Public Issues}}$
PUBLIC	number of shares issued through public placement
OFFERSALE	number of shares issued through offer for sale
OFFSIZE	$\ln(NOSI \times P^{OFFER})$; P^{OFFER} = offer price of the IPO

Table I.
Summary of the
definitions of
variables
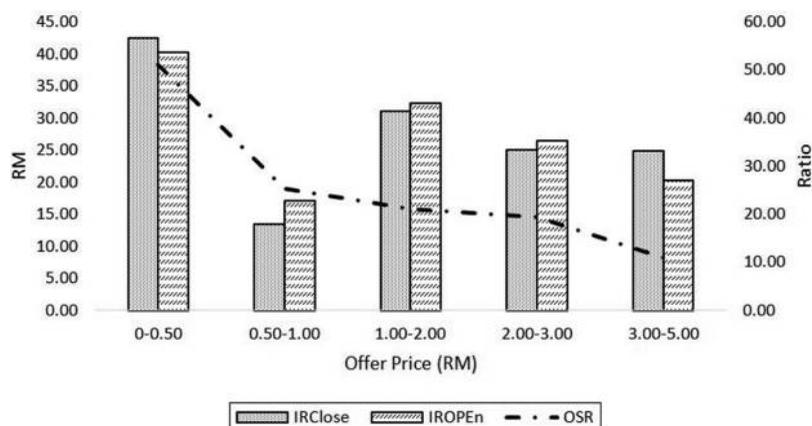
Figure 1.
Offer price, initial
returns and OSR
using IPOs issued
from January 2000 to
December 2014

discount of offer price signals either quality of IPO or uncertainty on IPO, which are more likely to be revealed as the stock is listed. In the Malaysian market, the offer price is fixed at an early stage without adequate information gathering from the market. Therefore, this study focused on understanding certain information that affects the setting of the offer price.

We noted earlier that in developed countries, especially in the USA, issuers and underwriters gather information from the market to determine the offer price. However, in Malaysia, the offer price is fixed by the issuer and underwriter without knowing the demand from the market. Therefore, if the offer price is higher than the potential value of the firm, it would diminish investors' demand. Further, in fixed offer price, the formal pre-selling activities and red herring prospectus are not allowed. Thus, the quality of IPO is only evident after the offer price is fixed. Despite that, there is an opportunity cost of capital for investors during share applications (advance payment method). By taking into account the features of the Malaysian IPO market as against the US market, this study endeavours to show that offer price based on IPO quality ensures that investors' net gain is adequate to recover the cost of subscriptions.

The descriptive statistics are shown in Table II. The finding shows that on an average, the IPO offer price is less than RM 1.00, and that about 87 per cent of the IPOs comply with the *Shariah* guideline. This shows that *Shariah*-compliant companies are significant in the Malaysian capital market. Only about 4 per cent of the sample is affected by the new more stringent *Shariah* regulation (effective from November 2013). The shareholder retention indicates that about 73 per cent of shares are retained by the insiders. Note that the public spread under the Listing Requirement of Bursa Malaysia requires that at least 25 per cent of the shares are owned by the public, which means that the highest retention should be 75 per cent. Based on Table II, most of the IPOs in Malaysia are done by offering completely new shares (public issue) to raise capital rather than offer for sale by selling part of the stakeholders' shares. On an average, the offer size of the IPOs is about RM 69m.

In terms of the main differences between *Shariah* IPOs and non-*Shariah* IPOs, Table II indicates that only 4 per cent of the IPOs listed from December 2013 onwards are issued after the effective date of the new *Shariah* guidelines compared to 10 per cent of non-*Shariah* IPOs. As firms have to go through the stringent process of fulfilling the new guidelines, it would take some time for the new firms to be listed as *Shariah*. Also, non-*Shariah* IPOs tend to offer a higher number of shares in the form of public issues and offer-for-sale. The notable size of issues that is larger for non-*Shariah* IPOs could signal that firms face strong agency problem and might experience loss of control. Table III presents the correlation matrix of all the variables. Based on the correlation matrix, there is no multicollinearity problem as all the correlation coefficients are less than 0.6. Further, Table III shows that all the variables have an expected sign, except shareholder retention, public issue and offer-for-sale. We postulate that this might be because the relationship is nonlinear. We intend to explore this hypothesis by performing quadratic analysis to affirm the non-monotonic association between the independent and dependent variables. If the variables are found to be significant determinants in the form of quadratic, then the finding would be reported.

Table IV specifically examines the OLS regression using the overall sample, *Shariah* IPOs and non-*Shariah* IPOs. The table provides the finding after adjusting the autocorrelation problem using the Newey-west test and the heteroscedasticity problem using the White-adjusted standard error. Further, for robustness of the model, we use the quantile regression. The adjusted R^2 for the overall model is 53.03 per cent, that is, collectively all the determinants explain the variation in the offer price to be about 53 per cent. The regression result shows that the *Shariah* status (*DSHARIAH*) does play its role in influencing the IPO offer price such that *H1* is supported. We argue that the high level of transparency for *Shariah*-compliant companies depicts them as firms with low uncertainty, and therefore, the issuers tend to signal their quality by setting higher offer prices. There is also a tendency that more investors (Muslims and non-Muslims) can invest and/or are more interested in *Shariah*-compliant shares as compared to conventional shares.

As for the negative effect of the new regulatory changes (*RSHARIAH*) on the offer price, the finding is somewhat surprising because the firms could not have offered their IPOs at lower offer prices after they have to go through more stringent checking procedures (i.e. quality IPO) in fulfilling the new guideline requirement. Instead, the more possible reason is that the IPOs are offered when the market is experiencing a cold time due to the recovering period after the global crisis in 2010. Therefore, investors' subscriptions in recent years are lower compared to the early period. Hence, the issuer tends to set the IPO at lower offer price to attract investors to take advantage of the discounted pricing.

In terms of the institutional investors' involvement (*PRIVATE*), the result in Table IV, using the overall sample, correctly reflects the significant effect on IPO prices as proposed in *H2*, but in a manner that contradicts the positive relationship suggested by Ljungqvist and

Variables	Mean overall (N = 374)	Mean Shariah (N = 327)	Mean non-Shariah (N = 47)	Mann–Whitney U (Shariah vs non-Shariah)	Mean price RM 0-0.50 (N = 112)	Mean price RM 0.50-1.00 (N = 115)	Mean price RM 1.00-2.00 (N = 113)	Mean price RM 2.00-3.00 (N = 26)	Mean price RM 3.00-5.00 (N = 8)
PRICE (RM)	0.98	0.977	1.03	−0.144	0.34	0.71	1.41	2.31	3.52
D(SHARIAH)	0.87	–	–	–	0.87	0.88	0.88	0.92	0.63
REG(SHARIAH)	0.04	0.04	0.10	−2.301**	0.04	0.04	0.06	0	0
PRIVATE (%)	45.31	45.84	41.83	−0.748	68	47	31	13	5
UNRW	8.34	8.24	9.04	−1.004	11	9	6	4	2
SHRTN (%)	73.04	73.13	72.69	−1.103	74	73	72	75	69
PUBLIC (RM Mill. unit)	47.61	45.07	64.07	−2.549***	43.83	30.26	39.65	119.72	228.01
OFFERSALE (RM Mill. unit)	20.17	14.42	52.74	−3.162***	8.27	12.31	21.22	34.32	223.00
OFFSIZE (RM Mill.)	69.93	63.64	111.00	−3.799***	17.45	30.28	86.10	426.49	1375.71

Notes: ***, ** indicate significance at 1% and 5% respectively

Variables	PRICE	D(SHARIAH)	REG(SHARIAH)	PRIVATE	UNRW	SHRTN	PUBLIC	OFFERSALE
PRICE	1							
D(SHARIAH)	0.025	1						
REG(SHARIAH)	−0.031	−0.119*	1					
PRIVATE	−0.526**	0.042	0.200**	1				
UNRW	−0.465**	−0.049	0.001	0.301**	1			
SHRTN	−0.052	0.024	−0.110*	0.035	0.012	1		
PUBLIC	0.238**	−0.055	0.060	0.001	−0.144**	−0.127*	1	
OFFERSALE	0.0273**	−0.181**	0.110*	−0.102	−0.148**	−0.162**	0.542**	1
OFFSIZE	0.515**	−0.172**	0.197**	−0.153**	−0.289**	−0.417**	0.637**	0.609**

Notes: **, * indicate significance at 5% and 10%, respectively

Table III.
Correlation matrix

Variables	OLS			Quantile regression (robust)		
	Overall	Shariah	Non-Shariah	10th Quantile	50th Quantile	90th Quantile
D(SHARIAH)	0.1443* (1.8680)	–	–	0.0300 (0.3427)	0.1723*** (2.5702)	0.2042** (1.9831)
REG(SHARIAH)	−0.1607** (−1.9396)	−0.1116 (−1.2976)	−0.2013 (−1.1111)	−0.0531 (−0.4324)	−0.1780 (−1.5083)	−0.4213** (2.0087)
PRIVATE	−0.0072*** (−7.2956)	−0.0081*** (−7.2172)	−0.0075*** (−3.4037)	−0.0006 (−0.4557)	−0.0055*** (−4.9582)	−0.0097*** (−7.0222)
UNRW	−0.0220*** (−4.6146)	−0.0235*** (−4.3971)	−0.0324*** (−2.4168)	−0.0053 (−1.1306)	−0.0154*** (−3.0092)	−0.0188*** (−2.5883)
SHRTN	0.0117*** (3.4560)	0.0155*** (4.6474)	0.0052 (0.4954)	0.0027 (1.1623)	0.0119*** (3.4483)	0.0214*** (4.9725)
PUBLIC	−6.4400 (−1.4325)	−1.1200** (−1.9686)	9.6400 (0.6509)	−4.8400 (−1.0051)	−1.4000 (−1.2582)	−9.0700*** (−6.9864)
OFFERSALE	−5.2400 (−0.7597)	1.6900 (1.2029)	−1.2900** (−1.9820)	−2.3200 (−1.4315)	7.9900** (2.1360)	−1.4000*** (−7.3005)
OFFSIZE	0.3787*** (8.1184)	0.3338*** (6.6008)	0.3839*** (3.4680)	0.3533*** (3.3138)	0.3349*** (4.9534)	0.5538*** (15.9304)
CONSTANT	−5.9133*** (6.3870)	−5.2199*** (−5.4128)	−5.4898*** (−2.2437)	−5.4126*** (−3.1429)	−5.4354*** (−4.1459)	−8.9226*** (−10.6440)
N	374	327	47	374	374	374
Adjusted R^2	53.03%	53.93%	58.51	25.76%	31.12%	44.88%

Notes: ***, ** and * indicate significance at 1%, 5% and 10%, respectively

Table IV.
Regression result of
OLS and quantile
regression

Wilhelm (2002). The coefficient of *PRIVATE* is consistently negative and highly significant in the overall sample and both subsamples, indicating that the larger the institutional investors' involvement in the IPOs, the lower is the offer price. Although these investors are normally considered to be better informed, the negative effect suggests that the issuing firms treat their presence as a promotion mechanism to signal that their IPOs have a lower level of uncertainty such that they fairly offer the IPOs at a lower price.

Similar to the result of institutional investors, the results with regard to underwriter ranking (*UNRW*) are also consistently negative and highly significant. The result indicates that firms with a greater level of uncertainty use high-ranking underwriter to attract investors. In other words, the high-ranking underwriter works as an endorsement that will attract active buying from the market to ensure the issuer on the proceeds to be raised successfully by taking into account the implications of unfavourable pricing. Therefore, the finding is consistent with *H3*. Table IV also reports the results which show that the coefficient of shareholder retention (*SHRTN*) is positive and significant such that the evidence is sufficient to accept *H4*. The finding indicates that as we predicted earlier, higher shareholder retention signals the confidence that the firm's insiders have on the good quality and future prospects, and accordingly, the issuer sets a higher offer price. Nonetheless, the positive effect of shareholder retention is not as strong among IPOs of non-*Shariah*-compliant firms.

We also control for public issue, where the coefficient signs for the public issue and offer-for-sale are consistent with the early argument put forward in this study. However, the coefficients are not significant as far as the association with the IPO offer price is concerned. We do find that the total offer size of the IPO is significantly positive in influencing the offer price. It implies that large supply of shares tends to be issued by big firms that are established and have a low level of uncertainty. Therefore, the IPOs are priced higher to signal their quality. The finding somehow contradicts the supply and demand argument, that is, firms that issue a great number of stocks *ceteris paribus* are more likely to reduce the offer price to get investors to fully subscribe to their shares.

In the second and third panel of columns in Table IV, we split the sample into *Shariah* IPOs and non-*Shariah* IPOs to look at the consistency and differences associated with the offer price. The main difference to highlight is shareholder's retention where *Shariah*-compliant firms appear to have a significant influence on the offer price of the IPOs compared to non-*Shariah*-compliant firms. This finding is consistent with the argument by Ritter (1998) that shareholders tend to hold a higher proportion of shares of firms with a higher valuation. The finding also supports Espenlaub and Tonks (1998), which states that high-quality firms signal their quality by retaining a greater proportion of shares in the IPO process as they intend to make wealth gains from the price increases. This finding is also consistent with our argument that if investors are optimistic of the firm's future cash flows (lower uncertainty), it would translate into higher shareholder retention. In other words, a firm's value is positively related to high shareholder retention. It is evident that firms listed based on *Shariah* principles are associated with good image in the context of quality, safety and efficiency.

Further, *Shariah*-compliant firms with public offerings are more significant with higher offer prices than non-*Shariah* firms. One of the reasons is that *Shariah* firms believe in their value and growth prospects. Thus, they are more confident in terms of their ability to raise funds from the capital market compared to non-*Shariah* IPOs offer-for-sale, where the existing stakeholders sell their shares to raise money.

From the fourth to the sixth column in Table IV, we examine the robustness of the results using the quantile regression, which is robust to outliers. We believe that the peculiarities of

the different stages of offer price might not be evident if they are lumped together. The advantage of using the quantile regression is that it shows the effects of independent variables on offer price in a pragmatic way.

The relationship between *Shariah* compliance and the IPO offer price is also positive for the higher offer price. Therefore, our research methodology uses sophisticated statistical methods for understanding the IPO offer prices in response to the hypotheses set in this study. Further, to confirm our hypothesis that the relationship between shareholder retention, public issue units and offer-for-sale is non-monotonic with the offer price, we use quadratic specification as shown in Table V. Based on the findings of Models 2 and 3 in Table V, the linear and quadratic interaction terms of the offer-for-sale and public units are statistically and negatively significant with the former and positive for the latter. Therefore, the offer-for-sale and size of the public issue could affect the stock prices through information asymmetry and adverse selection. In Model 1, the quadratic term of shareholder retention is not significant. However, it is still unclear whether other factors could have an influence on the offer price of the IPOs. Future studies could further explore this aspect.

5. Conclusion

Pricing the IPOs offer price is the most difficult process, both for underwriters and issuers to do and investors to understand, in a market which is generally characterised by information asymmetry and dynamism. It needs the issuers and underwriters to take into consideration all the available information that might also impact the offer price, in addition to the obvious fundamental values of the firms' existing assets and the less certain future growth opportunities. The lack of clarity as to which information is relevant and the uncertainties in the value of the firm's mean investors have to incur additional costs to examine its quality, and hence, underwriters have to compensate the investors accordingly. Investors should be aware and avoid falling into a trap due to asymmetrical information and "winner curse" and not become subject to bandwagon effect when subscribing to the IPOs. Thus, this motivates us to conduct the study particularly in determining the relevance of prior information disclosed in the prospectus that could influence the offer price of the IPOs. We use various econometric techniques to estimate the effect of selected information that signals the IPO

Variables	OLS Model 1	OLS Model 2	OLS Model 3
D(SHARIAH)	0.1457** (1.8859)	0.1332* (1.7309)	0.1546 (2.0463)**
REG(SHARIAH)	−0.1626* (−1.9358)	−0.1702** (−2.1522)	−0.1102 (−1.2647)
PRIVATE	−0.0071*** (−6.8585)	−0.0063*** (−6.7057)	−0.0072*** (−7.3466)
UNRW	−0.0215*** (−4.4498)	−0.0208*** (−4.4365)	−0.0214*** (−4.7551)
SHRTN	−0.0145 (−0.4365)	0.0129*** (3.6905)	0.0110*** (3.4648)
$SHRTN^2$	0.0001 (0.7869)	–	–
PUBLIC	−6.3100 (−1.4098)	−3.0800*** (−2.7813)	−5.2500 (−1.0615)
$PUBLIC^2$	–	1.5500*** (2.8265)	–
OFFERSALE	−5.5900 (−0.7915)	−5.5600 (−0.6006)	−2.7800* (−1.6201)
$OFFERSALE^2$	–	–	2.5400* (1.7786)
OFFSIZE	0.3822*** (8.1221)	0.4632*** (8.9403)	0.4076*** (7.9992)
CONSTANT	−5.0805*** (−3.6958)	−7.3908*** (−7.2778)	−6.3477*** (−6.6593)
N	374	374	374
Adjusted R^2	52.97%	55.47%	53.66%

Notes: ***; ** and * indicate significance at 1%, 5% and 10%, respectively

Table V. Robustness check with quadratic term

quality and/or risks. The first examination in this study uses OLS regression on overall IPOs listed from 2000 to 2014. The second is done on a subsample of the IPOs that are *Shariah*-compliant. The third is done on a subsample that consists of non-*Shariah* IPOs. Finally, a quantile regression and quadratic models are used to examine the robustness of the model at different levels of IPO offer prices. In general, we find that *Shariah*-compliant firms have a higher proportion of shareholder retention, and that big firms are associated positively with higher offer prices. With regard to institutional investors' participation, it is found that firms with low underwriter reputation are negatively associated with offer prices. Interestingly, we find that factors that explain offer price are similar regardless of *Shariah* or non-*Shariah* IPOs, with the exception of public issue.

In general, the implication of this study is that it provides new and additional evidence regarding the kind of information that investors should be concerned with when valuing IPOs and making decisions regarding investments in IPOs. Moreover, the present study calls for investors' attention to a new set of factors that signal quality of the IPO offer price in a fixed price mechanism.

Finally, this study provides avenues for future research to fill gaps within the existing literature on the determinants of the IPO offer price, specifically for countries that use the fixed price mechanism. This study does acknowledge that the model to determine the IPO offer price is not fully explained in this study. Therefore, this study calls for further development of the existing model by including certain omitted variables due to unavailability of data. Possible variables could include government policies, market condition and the operating risk of IPO firms computed by using the standard deviation of a firm's earnings before interest, taxes, depreciation, and amortization.

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