The current issue and full text archive of this journal is available on Emerald Insight at:
https://www.emerald.com/insight/1759-0817.htm

Shariah vs non-shariah IPO underpricing: evidence from Indonesia Stock Exchange

Syafiq Mahmadah Hanafi
Faculty of Islamic Economics and Business, State Islamic University Sunan Kalijaga, Yogyakarta, Indonesia, and

Mamduh M. Hanafi
Faculty of Economics and Business, Universitas Gadjah Mada, Yogyakarta, Indonesia

Received 13 February 2021
Revised 6 September 2021
14 January 2022
5 April 2022
Accepted 4 May 2022

Abstract

Purpose – This study aims to investigate the effect of shariah status on initial public offering (IPO) underpricing, long-term performance and relationship between short-term and long-term IPO performance, and attempt to gain an insight into the nature of shariah IPO underpricing: a signal or an overreaction.

Design/methodology/approach – This study uses IPOs during 1990–2018 from Indonesia. This study uses clustered regressions to address clustering phenomenon in IPO. To investigate long-term performance, this study uses cumulative returns, cumulative abnormal returns and Fama–French three factor regressions. This study also runs cross-sectional regressions on the relationship between short and long-term performances.

Findings – This study finds that shariah status reduces lowers non-trading returns (return from offer to open prices), suggesting that shariah status may reduce information asymmetry and compensation. This study finds that both shariah and non-shariah IPOs underperform the benchmarks, with shariah IPOs underperform more. Further analysis shows a negative relationship between initial return and long-term performance for both shariah and non-shariah IPOs, whereas the negative relationship is stronger for shariah IPOs. The results indicate that shariah compliance help reduce information asymmetry; however, shariah compliance does not necessarily signal quality. Instead, shariah compliance seems to induce investor sentiment, resulting in underperformance and reversal patterns in the long run.

Research limitations/implications – The results have various implications. Issuers may use shariah screening to lower underpricing. Investors may manage their investment horizons to mitigate IPO underperformance. Future research is needed to understand the nature of short and long-term performance of shariah IPO across countries. The use of ex-ante shariah definition becomes our limitation. This study also does not use buy and hold return to investigate long-term performance.

Practical implications – The results have various implications. Issuers may use shariah screening to lower underpricing. The results show that sharia certification may play an important role in the IPO process. However, sharia status induces individual investors, leading to more overreaction in the long term. Thus, companies need to balance between sharia certification and overreaction in the long term. Investors may manage their investment horizons to mitigate IPO underperformance.

Originality/value – This paper extends studies on the effect of shariah status on IPO performance using Indonesia data. Using non-trading returns, this study provides sharper analysis on the underpricing study. This study shows that shariah status leads to an overreaction, instead of a signal for quality.

Keywords Shariah, IPO underpricing, Indonesia, Emerging market, IPO performance

Paper type Research paper

JEL classification – G15, G41

Journal of Islamic Accounting and Business Research
© Emerald Publishing Limited
1759-0817
DOI 10.1108/JIABR-02-2021-0060

1. Introduction

Initial public offering (IPO) underpricing is a universal phenomenon, although the degree of underpricing varies across time and countries. The mean of underpricing in the USA was around 21% in the 1960s, 12% in the 1970s, 16% in the 1980s, 21% in the 1990s and 40% in the early 2000s, while across countries, underpricing varies from 5% in Luxembourg, 5.9% in New Zealand, 25% in Indonesia and 60% in the Polish market, and around 90% in Malaysia, 256% in China and 315% in Gulf Cooperation Council (Ljungqvist, 2008; Al-Hassan *et al.*, 2010; Chi and Padgett, 2005; Hanafi, 2021). IPO underpricing does not show a decreasing or disappearing trend. Even in some countries, IPO underpricing tends to increase (Loughran and Ritter, 2004; Hanafi, 2021; Mehmood *et al.*, 2021).[1]

With this persistent phenomenon, several theories have been advanced to explain IPO underpricing. Several theories to explain this phenomenon can be classified into four groups: the asymmetric model, institutional theory, ownership and control and behavior finance (Ljungqvist, 2008). However, none of these theories is successful in providing a comprehensive explanation of IPO underpricing. The asymmetric information-based theories, which are the dominant theories for IPO underpricing (Ljungqvist, 2008; Fohlin, 2010), can explain only around 2%–3% of the underpricing, much lower than around 30% or more of typical IPO underpricing (Ritter, 2011). Ritter and Welch (2002) argue that non-rational and agency issues may have a better potential to explain IPO underpricing.

IPOs are very difficult to evaluate. Information asymmetry abounds. The debate on the best IPO methods –fixed price, auction, book-building – still continues as regulators grapple to find optimal IPO methods. Book-building can be expected to help price discovery in the IPO process and lower underpricing in the process. However, empirical evidence seems to provide mixed results. Agency issues may complicate this result, as long-term relationships between informed investors and underwriters may grow at the expense of issuers' interest. Thus, book-building may reduce information asymmetry problem with information productions; however, agency problem may exacerbate the conflict.

Shariah offers potential contribution to the debate on optimal IPO methods and IPO underpricing issues in general. Shariah can be expected to reduce information and agency problems. Stricter shariah screening can be expected to help reduce information asymmetry, while issuers that pass the screening tend to be good and healthy companies that have less agency problems. Shariah compliance can be expected to reduce IPO underpricing.

Despite the potential contribution of shariah on IPO pricing, the effect of shariah on IPO underpricing has been relatively less explored (Khan *et al.*, 2020). Few empirical findings provide mixed results: the negative impact of shariah on IPO underpricing (Mayes and Alqahtani, 2015; Mehmood *et al.*, 2021); positive impact (Yakub and Sherif, 2019); and insignificant impact (Rahim and Yong, 2010; Boulanouar and Alqahtani, 2016). Moreover, the extant literature on this issue is still limited to Malaysia, Pakistan, Saudi Arabia and Gulf countries.

Previous studies on shariah IPO underpricing mostly focus on short-term performance and pay less attention to the long-term performance of shariah IPOs. An analysis of the long-term performance of IPOs and their relationship with short-term performance is important, as it may provide insights into the nature of shariah vs non-shariah IPOs, whether shariah IPOs provide signals of quality or induce overreaction. This study attempts to address these issues.

Indonesia is an interesting setting for shariah studies. Indonesia is the largest Muslim country in the world in terms of its population, followed by Pakistan and India. The number of Muslims in Indonesia is around 229 million, which is approximately 87% of the total population of 273 million.[2] The percentage of Muslims in Indonesia is between that of

Saudi Arabia and Malaysia. In Saudi Arabia, practically the entire population is Muslim (97%), while in Malaysia, the percentage is 61%. Religion environment may matter. Investors seek larger underpricing in Saudi Arabia, in which Muslims are the majority (Mehmood *et al.*, 2021). The Indonesia market is also relatively less studied, although Indonesia is a member of G20 countries currently and predicted to be 8th largest economy by 2035 (Centre for Economics and Business Research, 2021).

We use samples of Indonesia IPO from 1990 to 2018, which practically cover almost a full cycle of IPOs until the most recent data. Using clustered regressions to account for the clustering effect in the IPO phenomenon, we find that shariah IPOs tend to have lower non-trading returns than non-shariah stocks. Using the Fama–French benchmark to investigate long-term performance, we find that both shariah and non-shariah IPOs underperform the benchmark; underperformance of shariah IPOs tends to be deeper than that of non-shariah IPOs. Our analysis shows a larger reversal pattern for shariah IPO as shown by negative relationships between the initial return (underpricing) and long-term performance of shariah IPOs.

We contribute to studies on shariah IPOs in several ways. First, consistent with previous findings, we show that shariah compliance reduces information asymmetry, leading to lower compensation to investors (Barry and Jennings, 1993; Mohd-Rashid *et al.*, 2018; Setya *et al.*, 2020). Second, we find that shariah IPOs underperform benchmark and non-shariah IPOs in the long run. Third, we relate short- and long-term performances and show negative relationship between short- and long-term performances for shariah IPOs. We interpret that shariah status induces investor sentiment, leading to a reversal pattern in the long run (Alqahtani and Boulanouar, 2017; Almansour, 2019; Tajuddin *et al.*, 2018).

The remainder of this paper is organized as follows. Section 2 discusses the literature review, followed by a discussion on shariah stocks presented in Section 3. Section 4 discusses the data and methodology that were used. Section 5 discusses the empirical findings, followed by the robustness tests in Section 6. The final section concludes the paper.

2. Literature review

Growing literature suggests that religion affects economic behavior (Hilary and Hui, 2009; Khan *et al.*, 2020; Chen *et al.*, 2016; Kanagaretnam *et al.*, 2015). Similarly, literature also suggests that shariah compliance affect IPO underpricing (Mayes and Alqahtani, 2015; Mehmood *et al.*, 2021; Yakub and Sherif, 2019; Rahim and Yong, 2010; Boulanouar and Alqahtani, 2016). Shariah may affect IPO underpricing through corporate and investors levels.

From corporate level, shariah may affect IPO underpricing through information asymmetry and agency cost channels. Previous literature on the effect of shariah on IPO underpricing mostly uses the information asymmetry framework (Mayes and Alqahtani, 2015; Tajuddin *et al.*, 2019). Shariah may have two competing effects. On the one hand, shariah screening may help investors assess IPOs, thereby lowering information asymmetry. This line of reasoning predicts that shariah IPOs will have lower underpricing. On the other hand, shariah stocks are more difficult to evaluate because they are more complex as they have to comply with shariah requirements. This argument may lead to a prediction that shariah IPOs are more underpriced than non-shariah IPOs. The central argument for this prediction is that underpricing compensates investors for taking risky endeavors in the IPO market.

Religiosity is positively related to higher ethical standards and can help reduce agency problems (Weaver and Agle, 2002; McGuire *et al.*, 2012). Firms in more religious areas tend to have lower agency costs in executive compensation, engage less in financial reporting

irregularities and fraudulent activities that endanger the wealth of investors (Chen *et al.*, 2016). Using this line of arguments, we can expect that shariah IPOs have lower agency problems, hence, lower uncertainty, leading to a lower underpricing. However, there is a possible contrary argument. Low-quality companies attempt to obtain shariah status or sell shares in good market conditions to take advantage of positive market sentiment (Ljungqvist *et al.*, 2006; Godlewski *et al.*, 2013 for sukuk offering). Markets react negatively to these events, and underprice more for shariah IPOs.

From investors level, shariah stocks may attract certain segments of investors, especially individual investors. Shariah compliance status significantly alters the demand for new issues (Alqahtani and Boulanouar, 2017; Tajuddin *et al.*, 2018; Tajuddin *et al.*, 2019; Almansour, 2019). For Saudi Arabia, shariah status increases individual investor demand, while profit objectives (higher degree of underpricing in this case) affect institutional investors' demand for IPOs (Alqahtani and Boulanouar, 2017). In Almansour (2019), if scholars agree to reject the shariah compliance status of an IPO, then the number of individual subscribers drops by 60%.

Individual reactions to the IPO market are affected by sentiments. Sentiments lead to investors' over-optimism, which will translate into higher demand and drives up IPO underpricing (Yong and Isa, 2003; Low and Yong, 2011). For shariah IPOs, shariah compliance affects investor sentiment, increases demand for shariah IPOs and pushes up prices on the first trading day, resulting in IPO underpricing (Mayes and Alqahtani, 2015).

The empirical results seem to provide mixed results. Mayes and Alqahtani (2015) find that shariah compliance lowers IPO underpricing in Saudi Arabia. However, using Malaysia data, Rahim and Yong (2010) show that there is no significant difference in IPO underpricing between shariah and non-shariah IPOs, while Mohd-Rashid (2018) show that shariah status increases offer prices. The underlying factors that drive shariah and non-shariah IPOs are different. The initial return (underpricing) for shariah-compliant firms was mainly explained by company size and type of offer, and the initial return for non-shariah-compliant firms was driven by risks (Rahim and Yong, 2010). However, Setya *et al.* (2020) show that same fundamental factors, underwriter's and auditor's reputation, affect both shariah and non-shariah IPO underpricing in Indonesia setting. Overall, the evidence on the effect of shariah on IPO underpricing is still limited and tends to point toward inconsistent conclusions.

Existing literature has documented long-term IPO underperformance (Swaminathan and Purnanandam, 2011; Loughran and Ritter, 1995). There are several reasons for this underperformance, such as windows of opportunity hypothesis, agency theory and irrational behavior (Shiller, 1990). These hypotheses predict short–term over and long-term under-performance. Agency theory in IPOs argues that managers may misdirect cash flows from IPOs to invest in less optimum projects, manage earnings during the IPO process (Cai and Loughran, 1998).

Shariah may provide contribution to understanding of IPO long-term performance. Shariah may provide good signals to the market (Allen and Faulhaber, 1989), resulting in better long-term performance. On the other hand, shariah may induce sentiment, especially from individual investors, resulting in a reversal pattern; short-term over-performance which is followed by long-term under-performance (Shiller, 1990; Agarwal *et al.*, 2008). Empirical evidence for long-term performance of shariah is limited. We attempt to address this void.

3. Shariah stocks

Shariah finance bases its operations on Islamic teaching. The basic foundation lies with several principles: avoid gharar, avoid maysir and do not allow for *riba*. Such prescriptions

are then institutionalized into Islamic financial products and institutions such as Islamic or shariah banks, shariah bonds, shariah stocks and so on. Shariah stocks are part of ethical investments that base their evaluations on Islamic values. The evaluation uses qualitative and quantitative criteria (Alam *et al.*, 2017; Mahfooz and Ahmed, 2014). The qualitative criteria evaluate the core business of the issuing company. Companies that conduct business of alcohol, tobacco, weapons, pork, gambling and interest (such as banks) will be considered non-shariah companies. Most Muslim scholars consider interest to be a *riba*. Thus, conventional banks that use interest in their business will be automatically excluded from the list of shariah stocks. Similarly, tobacco, pork and gambling companies will also be excluded from the list because these products or activities are forbidden in Islam. Quantitative criteria evaluate financial ratios that are related to shariah teaching, such as restrictions on interest-bearing debt and tolerated non-halal income. For example, if the debt ratio of a listed company exceeds a certain threshold, then its share will be excluded from the list of shariah shares.

Shariah compliance in Indonesia is relatively new. The first formal shariah institution was introduced in 1992 with the establishment of Bank Muamalat Indonesia, the first shariah bank in Indonesia. Shariah development spreads to the stock market, with the introduction of the shariah mutual fund in 1997. The Indonesia Stock Exchange introduced the Jakarta Islamic Index (JII) in 2000. The index consists of the 30 most liquid shariah stocks. The composition of the index is evaluated semiannually. In 2007, the Indonesia Stock Exchange and Financial Institutions Supervisory Agency (Bapepam-LK) introduced the List of Shariah Stocks, which consists of listed stocks that meet shariah criteria. This list is intended as a guide for shariah mutual funds. The list consists of approximately 300 stocks. The list was evaluated semiannually. In 2011, IDX issued another shariah index called the Islamic Shariah Stock Index (ISSI). The ISSI consists of all shariah stocks in the IDX and is evaluated semiannually.

In 2011, the Financial Institutions Supervisory Agency (Bapepam-LK) was transformed into the Indonesia Financial Services Authority (Otoritas Jasa Keuangan [OJK]) Bapepam was under the Ministry of Finance, while OJK is an independent body. OJK supervises the financial industry, which includes banking, the stock market, insurance and other financial institutions. OJK determines the list of shariah stocks in accordance with regulation number 35/POJK.04/2017 on the criteria and the issuance of List of Shariah Securities and regulation number 17/POJK.04/2015 on the criteria for listed stocks. According to the regulation, shariah stocks comply with Islamic shariah, as defined by the Shariah National Board – Indonesian Ulema Council. OJK conducts the review twice a year and issues the list twice a year. In each year, the first review is conducted five days before the end of May, and the list becomes effective as of June first. The second review is conducted five days before the end of November, and the list becomes effective as of December 1. Shariah stocks are divided into two categories. The first category consists of stocks that inherently comply with shariah since its founding, such as shariah banks and shariah insurance companies. The second category consists of stocks in which their compliance is evaluated using screening criteria.

4. Data and methodology

4.1 Data

We collect offer, open and closing prices from around 450 Indonesia IPOs from 1990 to 2018 [3]. We also collect information on fundamentals such as total assets, percentage of IPOs, return on assets, IPO size and shariah status. The data are collected from various sources such as the Indonesia Stock Exchange, Stock market database of the Faculty of Economics and Business,

Universitas Gadjah Mada, Investment gallery of State Islamic University Sunan Kalijaga, Indonesia Capital Market Directory and Reuters database. Shariah status is collected from a list of shariah stocks issued by the OJK.

4.2 Methodology

4.2.1 Short-term and long-term performances. To evaluate short-term performance, we calculate offer to open (non-trading), open to close (trading) and offer to close (underpricing) returns using the following formulas:

$$\text{Offer to open return}_{(i)} = \text{Natural logarithm}\left(\text{Open Price}_{(i)}/\text{Offer Price}_{(i)}\right), \tag{1}$$

$$\text{Open to close return}_{(i)} = \text{Natural logarithm}\left(\text{Close Price}_{(i)}/\text{Open Price}_{(i)}\right) \tag{2}$$

$$\text{Offer to close return}_{(i)} = \text{Natural logarithm}\left(\text{Close Price}_{(i)}/\text{Offer Price}_{(i)}\right) \tag{3}$$

Subscript $_{(i)}$ refers to IPO (i). Underpricing is measured by the offer to close returns. To investigate long-term performance, we calculate the cumulative abnormal return (CAR) and perform a Fama–French regression analysis [4]. CAR is calculated using a simple market-adjusted return as follows:

$$\text{CAR}_{(i,t)} = \text{Return}_{(i,t)} - \text{Market Return}_{(t)} \tag{4}$$

Subscript $_{(i,t)}$ refers to stock i on day t. We use the Jakarta Composite Stock Index (JCSI) as a proxy for the market. JCSI is a value weighted index, calculated from closing prices of all listed companies in Indonesia stock exchange, using regular board. Regular board is a typical market for marginal investors; the board conducts trading using continuous auction. To further investigate the long-term performance of shariah and non-shariah IPOs, we run Fama–French three-factor regressions, as follows:

$$\text{R}_{it} - \text{Rf}_t = \gamma 0 + \gamma 1\,(\text{Rm}_t - \text{Rf}_t) + \gamma 2\,\text{SMB}_t + \gamma 3\,\text{HML}_t + \eta_t \tag{5}$$

Barber and Lyon (1997) argue that this approach can control the problems of skewed long-horizon returns for drawing inferences and the non-independence of the effect of returns over time, size and book-to-market. For risk-free assets, we use the Bank Indonesia (Indonesia Central Bank) certificate before the year 2000 and 10-year government bond after the year 2000. For small minus big (SMB), we perform the following procedure. Each year, stocks are sorted based on market capitalization. We assign the largest 40% as a portfolio of bid stocks and the smallest 40% as a portfolio for small stocks. We calculate the daily return for each stock and then calculate the arithmetic mean for small and large portfolios. Daily SMB return is calculated as the daily small portfolio return minus the daily large portfolio return. We perform a similar procedure for high minus low (HML) book-to-market values, in which high consists of stocks with 40% highest book-to-market values and Low consists of stocks with the lowest book-to-market values of 40%. We exclude the return for day +1, which is underpricing or the initial return.

We also investigate the relationship between short-term and long-term performance using the following cross-sectional regressions.

$$CR_{(i)} = a0 + a1\,InRet_{(i)} + a2\,LnRp_{(i)} + a3\,IPO_perc_{(i)} + a4\,LnTA_{(i)} + a5\,UndRep_{(i)} + a6\,MarkRet_{(i)} + e_{(i)} \tag{6}$$

$$CAR_{(i)} = b0 + b1\,InRet_{(i)} + b2\,LnRp_{(i)} + b3\,IPO_perc_{(i)} + b4\,LnTA_{(i)} + b5\,UndRep_{(i)} + b6\,MarkRet_{(i)} + e_{(i)} \tag{7}$$

where CR represents cumulative returns, and CAR is the cumulative abnormal return.

4.2.2 Shariah definition. The definition of shariah in this study is as follows. We classify stocks as shariah using a list of shariah stocks issued by OJK. OJK issued the list twice per year. Stocks that enter the list at least once during our observation will be included as shariah stocks. Stocks that never make the list are included as non-shariah stocks. Unlike Saudi Arabia and Malaysia, Indonesia does not assign a shariah status at the time of the IPO. Thus, our methodology to define shariah status is an ex-ante definition of shariah stocks.

4.2.3 Control variables. We use the following control variables: IPO size, IPO percentage, Ln of Total Asset, underwriter's reputation and market return. Ln(total asset) is the natural logarithm of total assets in Rupiah (Indonesia currency). For underwriter reputation, we follow Carter and Manaster (1990). IPO percentage is the percentage of shares offered to the public to the total outstanding shares. Market return is the Indonesia Stock Composite Index return in the same month as the month of IPO offering. Table 1 summarizes the definitions of the variables used in this study.

5. Empirical findings

5.1 Development of shariah and non-shariah stock market in Indonesia

Figure 1 shows the development of the JCSI, JII and ISSI index from to 2000–2019. Note that the ISSI started in 2011.

These three indices showed similar movements. On average, JCSI grows at 1.27% per month during this period, while JII and ISSI grow at 1.17% and 0.46% per month, respectively.

Figure 2 shows the development of non-shariah and shariah mutual funds on the Indonesia Stock Exchange. The mutual funds experienced significant growth from 2002 to2019. Annual growth for shariah mutual funds is significantly higher than that for non-shariah mutual funds (90% vs 20.6%).

5.2 Underpricing of shariah vs non-shariah IPOs

Table 2 shows descriptive statistics for the underpricing and fundamentals of shariah and non-shariah IPOs.

Table 2 shows that shariah IPOs record mean of underpricing of around 19%, lower than those of non-shariah IPOs (21%). However, the difference is not significant statistically.[5] We then decompose underpricing into two components: open to offer return (non-trading return) and close to open return (trading return). The table shows that non-trading returns make up a large proportion of IPO underpricing, around 80%–90% of IPO initial returns, suggesting that underpricing mostly is a compensation for initial investors for bearing risk associated with IPO (Barry and Jennings, 1993). Non-trading return of shariah is less than

Table 1. Definition of variables

Variables	Definition
Shariah status	Shariah status follows list of shariah stocks issued by Indonesia Financial Services Authority (Otoritas Jasa Keuangan, or OJK). Shariah status is a dummy variable. Stocks that are included in the list has a value of 1, while stocks that are not in the list has a value of zero.
Initial Return (underpricing)	((Closing price – Offering price)/Offering Price) × 100%
Non-trading returns	((Open price – Offering price)/Offering Price) × 100%
Trading returns	((Closing price – Opening price)/Opening Price) × 100%
IPO size in Rupiah	Amount of IPO size in local currency (Rupiah)
IPO percentage	Number of shares offered in IPO/Number of total outstanding shares
Total Asset	Total asset of issuer in Rupiah in IPO year
Underwriter's Reputation	We accumulate IPO issuance during our observation for each underwriter. We then create quartile of total issuance for each underwriter, and assign value from 0 to 9 (Carter and Manaster, 1990), from smallest to largest underwriters based on amount issued.
Market return	Return from Jakarta Composite Stock Index (JCSI) in the same month as IPO month, calculated as (JCSIt-JCSI(t-1))/(JCSI(t-1)), where *t* refers to month 1

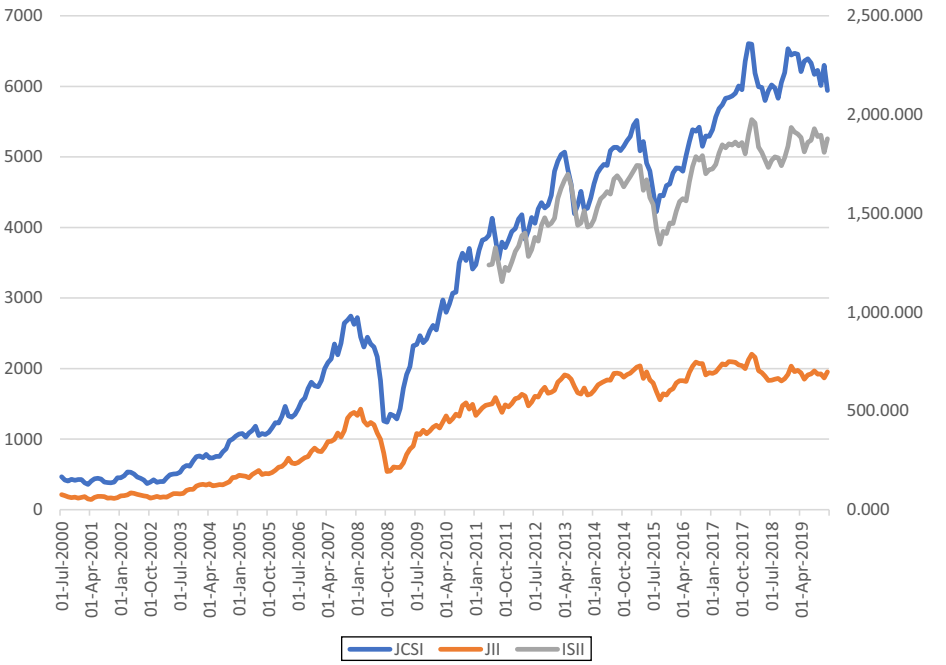


Figure 1. Development of Jakarta Composite Stock Index, Jakarta Islamic Index and Indonesia Shariah Stock Index

Notes: ISSI index is multiplied by 10 to facilitate comparison. JCSI consists of all stocks listed in the Indonesia Stock Exchange. JII consists of 30 most liquid shariah stocks. ISSI consists of all listed stocks that meet shariah screening. At the end of 2019, JCSI, JII, and ISSI stand at 5940, 698, and 187.72, respectively

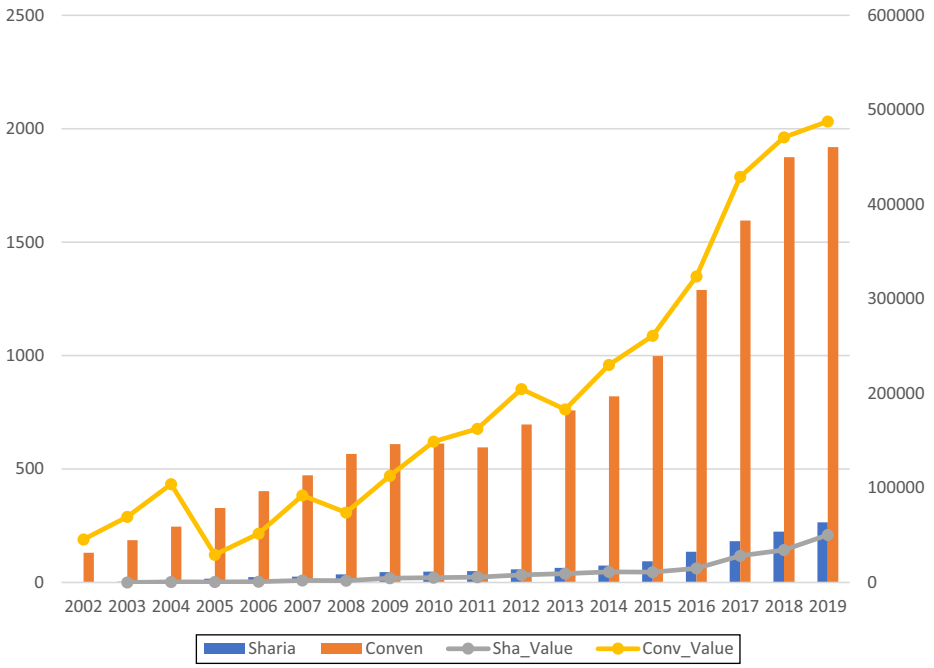


Figure 2. Development of shariah and non-shariah mutual funds (2002–2019)

that for non-shariah IPOs. The difference is weakly significant. However, trading returns between shariah and non-shariah IPOs are not significantly different. These patterns suggest that shariah IPOs have lower risk than non-shariah IPOs. Investors demand lower compensation for taking shariah IPOs.

In Table 3, except for market return, IPO size in Rupiah (Indonesia local currency), IPO percentage, total assets of issuing companies and underwriters' reputations do not show differences between shariah and non-shariah IPOs. Shariah IPOs tend to have lower market returns, suggesting that non-shariah IPOs are issued when market conditions are better. However, this difference is weakly significant.

To test the differences in IPO underpricing between shariah and non-shariah IPOs more formally, we perform regression analyses. For the regression, we include the size of IPOs, IPO percentage, total assets of issuing companies, underwriters' reputation and market return as control variables. IPO percentage is included to measure the agency variable (Brennan and Franks, 1997). Return on assets (ROA) and underwriter reputation represent signaling and information asymmetric theories, respectively. A higher ROA means higher firm quality, leading to lower risk and underpricing. On the other hand, higher ROA may increase investors' demand for IPOs, leading to higher underpricing. Underwriter reputation is one of the most commonly cited variables in the IPO literature. A better underwriter's reputation may signal firm quality, reduce information asymmetry and lower IPO underpricing. On the other hand, recent literature suggests that underwriters may induce agency conflicts among issuers, underwriters and informed investors, leading to higher IPO underpricing. Loughran and Ritter (2004) argue that higher underpricing in the more recent period in the US may be caused by agency issues, such as spinning practices. The executives of issuers choose underwriters that usually offer high underpricing because they

Table 2. Descriptive statistics of variables used in this research

Variables	Mean	Median	SD	Minimum	Maximum	*N*
Opening Return						
Non-shariah	0.1918	0.1397	0.2025	−0.4855	1.1451	281
Shariah	0.1578	0.0953	0.2212	−1.0438	0.8755	253
T-value (prob)	1.85 (0.0650)*					
Closing Return						
Non-shariah	0.0239	0	0.1719	−1.0033	0.9249	281
Shariah	0.0340	0	0.1431	−0.4168	0.7031	253
T-value (prob)	−0.74 (0.4601)					
Initial Return						
Non-shariah	0.2157	0.1222	0.2570	−0.4547	1.7579	281
Shariah	0.1918	0.1287	0.2689	−1.0438	1.0716	253
T-value (prob)	0.61 (0.2927)					
Ln (IPO size in Rupiah)						
Non-shariah	25.4765	25.0671	1.6687	22.1234	30.0106	281
Shariah	25.6451	25.5107	1.7287	20.7749	30.4222	253
T-value (prob)	−1.15 (0.2525)					
IPO Per-centage						
Non-shariah	24.8420	24.0000	10.9465	1	66	281
Shariah	23.6324	22.0000	10.3227	1	73	253
T-value (prob)	1.31 (0.1912)					
Ln (Total asset)						
Non-shariah	26.5186	26.5089	2.0709	17.8332	33.1644	281
Shariah	26.5714	26.7292	1.8857	17.7183	30.8418	253
T-value (prob)	−0.31 (0.7592)					
UnderwrtrReputation						
Non-shariah	6.2776	7.0000	2.6351	0	9	281
Shariah	6.4743	7.0000	2.6719	0	9	253
T-value (prob)	−0.86 (0.3925)					
Market Return						
Non-shariah	0.0107	0.0143	0.0641	−0.2197	0.1939	281
Shariah	0.0002	0.0146	0.0788	−0.3786	0.1939	253
T-value (prob)	1.68 (0.0940)*					

Notes: This table shows descriptive statistics of variables used in this research. Definition of each variable is explained in Table 1. P-values are in parenthesis. *, ** and *** denote significance level at 10%, 5% and 1%, respectively

receive share allocation. Higher stock prices increase their wealth, even at the expense of the company they run.

The finance literature documents pervasive clustering phenomena. Similarly, IPO literature also documents IPO clustering around certain variables, such as year, industry, country and price terms (Onali *et al.*, 2017; Jamaani and Ahmed, 2020). Estimations that do not consider the clustering effect may lead to biased standard errors, leading to incorrect conclusions (Petersen, 2009; Cameron and Miller, 2015; Jamaani and Ahmed, 2020). To account for this clustering effect, we perform one and two-way clustered regressions because IPO data may exhibit two-way clustering (Helwege and Liang, 2004). For one-way clustered regressions, we choose year and industry as the basis for clustering. This choice

	Dep Var: Offer to Open Return			Dep Var: Open to Close Return			Dep Var: Initial Return		
Intercept	0.5447***			0.3859**			0.9307***		
	(0.0094)			(0.0116)			(0.0046)		
	[<0.0001]			[0.0156]			[<0.0001]		
	{0.0023}			{0.0206}			{0.0017}		
Shariah	−0.0278*			0.0078			−0.0201		
	(0.0584)			(0.5833)			(0.3730)		
	[0.0885]			[0.5348]			[0.3182]		
	{0.0083}			{0.5164}			{0.2601}		
LnRp	−0.0272***			−0.0157*			−0.0429***		
	(0.0095)			(0.0548)			(0.0009)		
	[0.0002]			[0.0273]			[0.0001]		
	{0.0036}			{0.0693}			{0.0005}		
IPO percent	0.0031***			−0.0003			0.0027**		
	(0.0085)			(0.5326)			(0.0230)		
	[<0.0001]			[0.6034]			[0.0060]		
	{0.0017}			{0.5221}			{0.0079}		
Ln (Total Asset)									
	0.0080			0.0007			0.0088		
	(0.3717)			(0.8761)			(0.3795)		
	[0.2311]			[0.8226]			[0.2395]		
Underw Reputation	{0.3987}			{0.8471}			{0.3942}		
	0.0076			0.0042			0.0118*		
	(0.1703)			(0.2182)			(0.0179)		
Market Return	[0.1111]			[0.3961]			[0.0935]		
	{0.1426|			{0.3057}			{0.0241}		
	0.3089*			0.0723			0.3812*		
	(0.0998)			(0.4719)			(0.0388)		
	[0.0576]			[0.5042]			[0.0480]		
	{0.0923}			{0.4497}			{0.0519}		
R-square	0.067	0.067	0.071	0.071	0.071	0.0199	0.0704	0.057	0.057
F	4.17	11.89	6.54	6.54	6.54	1.95	6.54	6.45	6.45
(*p*-value)	(0.0039)	(<0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.072)	(0.0002)	(<0.0001)	(0.0003)
N	467	467	533	533	533	533	533	533	533
Number of Clusters	30	44	30	30	30	338	30	44	338

Notes: The definition of the variables is in Table 1. P-values from one-way year clustering, one-way industry clustering, and two-way year and industry clustering regressions are in parenthesis, bracket and braces, respectively. *, ** and *** denote significance level at 10%, 5% and 1%, respectively

Table 3. The effect of shariah on non-trading, trading and underpricing returns

resembles time series and cross-sectional features, although our data are not panel ones. Our data are basically cross-sectional data that have spread over the years. For two-way clustered regressions, we use time and industry as the basis for clustering (Petersen, 2009). Table 3 presents the regression results.

The results in Table 3 confirm those from Table 2. In Column (2), we find that shariah IPOs have less non-trading returns than non-shariah IPOs. The regression coefficient for shariah status is negative and significant at the 10% level. We observe that the amount of IPOs in rupiah (IPO size) negatively affects non-trading returns, while IPO percentage positively affects non-trading returns. Market returns also positively affect non-trading returns. Except for IPO size and IPO percentage, the statistical significance we obtain is

relatively weak. In Columns (3) and (4), we find that shariah IPOs do not affect trading returns and IPO underpricing.

Our results seem to confirm that underpricing compensates investors for bearing risk in the primary market, as discussed before. The negative relationship between shariah status and non-trading returns suggests that shariah status reduces the risk related to the IPO primary market. Our weak negative impact of shariah on IPO non-trading returns lies between Mayes and Alqahtani (2015) and Mehmood *et al.* (2021), who find a significant negative impact of shariah on IPO underpricing in Saudi Arabia and Pakistan, and Rahim and Yong (2010), who find relatively similar IPO underpricing for shariah and non-shariah IPOs in Malaysia. We rule out a low-quality argument for shariah IPOs for lower non-trading returns. Shariah and non-shariah IPOs tend to have similar fundamentals, as shown in Table 2. In addition, trading returns, which we believe is a better proxy for market reactions, make up a very small proportion of underpricing. There is no significant difference between the trading returns of shariah and non-shariah IPOs.

5.3 Long run performance of shariah and non-shariah IPO

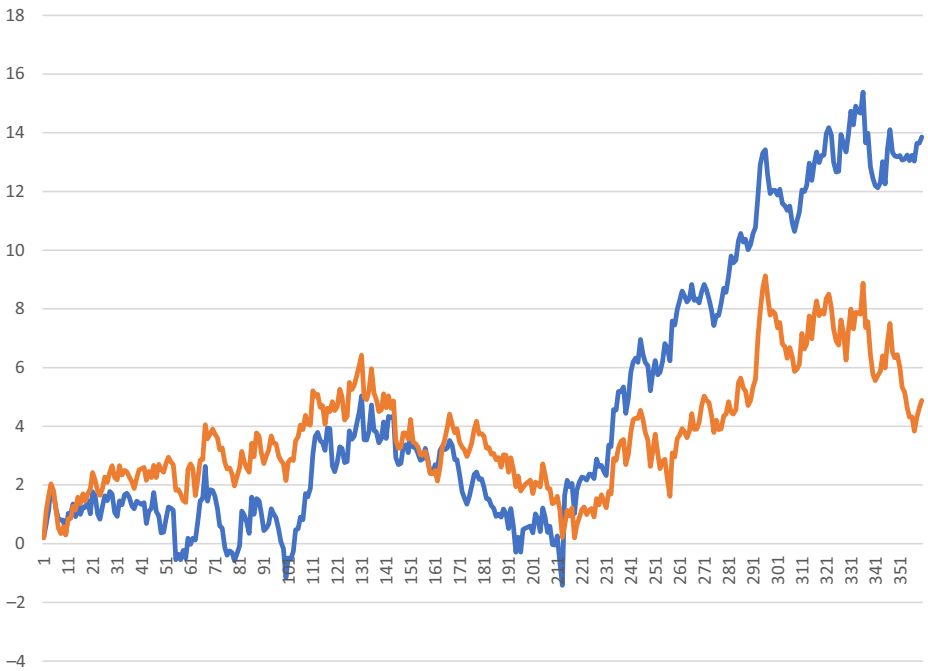
We investigate the long-run performance of shariah and non-shariah IPOs. Previous studies show that IPOs underperform benchmark portfolios. We investigate this issue by showing graphs for the long-term performance of shariah and non-shariah IPOs and investigating the performance using the Fama–French three factor model.

Figures 3 and 4 show the graph of the long-term performance of shariah and non-shariah IPOs for +360 days (about one year) after the IPO date. In Figure 3, we show that cumulative returns for non-shariah IPOs outperform those for shariah IPOs. In the first six months, shariah IPOs tend to outperform non-shariah IPOs. However, in the second part of our observation, non-shariah IPOs began to take off. At the end of our observation, non-shariah IPOs underperformed shariah IPOs. Figure 4 shows the CARs for shariah and non-shariah IPOs. Consistent with the results shown in Figure 3, the outperformance of non-shariah IPOs over shariah IPOs is observed in Figure 4.

In Table 4, we present the performance for 30, 180 and 360 days. Both non-shariah and shariah IPOs underperform the benchmark, as shown by the significant negative intercepts. In the first 30 days, shariah IPOs outperform non-shariah IPOs. However, the results change when we extend to a longer period. In the first 180 days and the first 360 days, non-shariah IPOs outperform shariah IPOs. We can conclude that after controlling for market risk, size and book-to-market factors, the evidence suggests that shariah and non-shariah IPOs underperform the benchmark, and shariah IPOs underperform non-shariah IPOs.

5.4 Long-term performance prediction: shariah vs non-shariah IPO

We further investigate whether initial returns predict long-term performance. There are several competing hypotheses that may explain the relationship between initial returns and long-term performance. First, shariah may serve as a quality signal for IPOs. Obtaining the shariah status requires rigorous examination from the Financial Services Authority. Using this framework, we may expect shariah IPOs to have a positive (or more positive) relationship between underpricing and long-term performance. Second, there is evidence of overreaction in the IPO market (Shiller, 1990; Agarwal *et al.*, 2008). Shariah status may attract more individual investors, leading to more overreactions in IPO underpricing. Using this framework, we may expect a reversal pattern, resulting in negative (or more negative) relationship between underpricing and long-term performance. Tables 5 and 6 show the regression results for the relationship between underpricing and long-term performance.



Notes: This graph shows long-term performance of Shariah (brown line) and Non-shariah IPOs (Blue line). Long-term performance is calculated using unadjusted returns

Figure 3. Long term performance of shariah and non-shariah IPOs

Table 5 Shows regression results using unadjusted performance, while Table 6 shows regression results from market adjusted performance. In Table 5, we observe that initial returns for shariah IPO have positive relationship with short-term performance (30 days). however, the relationship turns into significant negative signs for long-term performance (180 days and 360 days). for non-shariah IPO, we find same patterns. Statistical significance for non-shariah IPO is about the same as for shariah IPO

In Table 6, using market-adjusted long-term performance, we find similar patterns to those in Table 5. There is a positive relationship between underpricing and short-term performance for both non-shariah and shariah IPOs. Positive signs turn into negative signs for long-term performance. However, the statistical significance of non-shariah IPOs disappears, while the significance of shariah IPO persists. Overall, our results seem to suggest an overreaction in the IPO market. Overreaction tends to be higher for shariah IPOs than for non-shariah IPOs.

6. Robustness check: degree of religiosity and IPO underpricing

We attempt to investigate whether the degree of religiosity affects IPO underperformance. This issue has not been investigated extensively and needs to be addressed (Rahim and Yong, 2010; Alqahtania and Boulanouar, 2017; Almansour, 2019). We conduct this exercise as a robustness check to the conclusion in the previous section.

We proceed as follows. OJK conducts reviews semiannually, so OJK issues the list twice a year. If a company meets the requirements, the company will be included in the list. In the

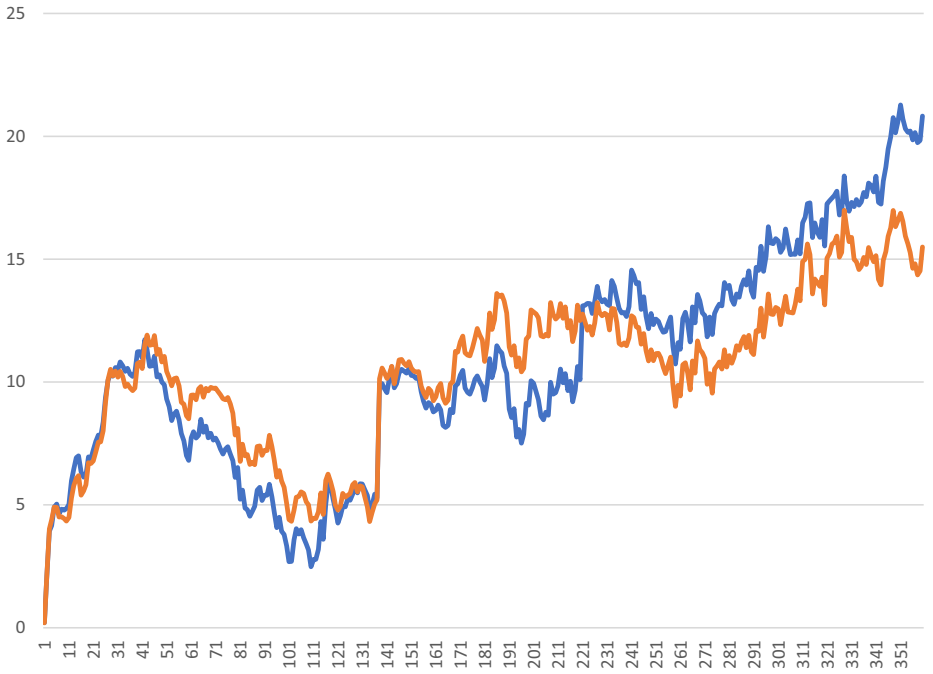


Figure 4.
Long term market adjusted performance of shariah and non-shariah IPOs

Notes: Long-term performance is adjusted by market returns. Market returns are returns from Jakarta Composite Stock Index

next semiannual, if this company does not meet the requirements, then the company will be excluded from the list. In the semiannual following the next semiannual, if this company meets the requirements, then this company will be included again in the list. If a certain company always meets the requirements, then this company will always be included in the list. We were able to collect records on the frequencies of entering and exiting from the list. Companies that never exit the list are considered "more" shariah than those that enter the list twice or more. To obtain stronger religiosity factor, we retain companies that are always in the list, thus excluding companies that enter the list twice or more. If the degree of religiosity matters, we expect to have a stronger impact on the effect of "more" shariah on IPO underpricing. Table 7 presents the results of this study.

In Table 7, we find similar patterns to those in Table 3. Shariah status affects IPO non-trading returns, again, with weak significance. The results in Table 7 suggest that the degree of religiosity does not affect IPO non-trading returns or underpricing in general. This result is consistent with the finding that investors seek shariah status first. Once the shariah status is obtained, the risk-return principle applies (Almansour, 2019).

7. Conclusion

We investigate the effect of shariah status on IPO underpricing using the Indonesian market. We find that shariah status reduces non-trading returns. Non-trading returns comprise a larger proportion of initial returns. The lower non-trading returns for shariah IPOs suggest that shariah status helps lower IPO uncertainty. We investigate the long-term

Table 4. Regression results of Fama–French three factor model

	Non-Shariah	Shariah	Non-Shariah	Shariah	Non-Shariah	Shariah
	30 day-performance		180 day-performance		360 day-performance	
Intercept	−0.8254*** (<0.0001)	−0.8061*** (<0.0001)	−0.7082*** (<0.0001)	−0.8062*** (<0.0001)	−0.7173*** (<0.0001)	−0.8002*** (<0.0001)
RM – RF	0.5314*** (<0.0001)	0.6876*** (<0.0001)	0.5704*** (<0.0001)	0.6544*** (<0.0001)	0.5089*** (<0.0001)	0.5829*** (<0.0001)
SMB	0.1475** (0.0175)	0.1224** (0.0444)	0.2246*** (<0.0001)	0.1115*** (0.0001)	0.1946*** (<0.0001)	0.0890*** (<0.0001)
HML	−0.0314 (0.3929)	−0.0067 (0.8672)	0.0259 (0.1665)	0.0274 (0.1356)	0.0194 (0.2305)	0.0358** (0.0137)
F-value	55.99	104.81	349.24	561.01	432.02	773.17
P-value	(<0.001)	(<0.001)	(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Adj-R squared	0.050	0.0739	0.0562	0.0761	0.0389	0.0588
N	3,196	3,941	17,132	20,434	32,042	37,122

Notes: This table reports the regression of Fama–French three factor model: $Rit - Rft = \gamma 0 + \gamma 1\,(Rmt - Rft) + \gamma 2\,SMBt + \gamma 3\,HMLt + \eta t$. Dependent variable is stock excess return. Market return is return of Jakarta Composite Index. Rf is risk free return using Bank Indonesia certificate and Indonesia Government Bond. SMB is equally weighted return for small stock portfolio minus return for large stock portfolio. HML is equally weighted return for high book-to-market portfolio minus low book-to-market portfolio. Shariah status is a dummy variable with a value of 1 for stocks that are included in list of shariah stocks issued by OJK, and 0 otherwise. P-values are in parentheses. *, ** and *** denote significance level at 10%, 5% and 1%, respectively

Table 5. OLS cross-sectional regression results of unadjusted long-term performance on initial returns

	Non-Shariah	Shariah	Non-Shariah	Shariah	Non-Shariah	Shariah
	30-day cumulative return		180-day cumulative return		360-day cumulative return	
Intercept	−0.3561 (0.7383)	0.7469 (0.5688)	0.7489 (0.2281)	1.6177*** (0.0037)	0.4118 (0.4341)	2.2615*** (<0.0001)
Initial Return	0.1113 (0.6459)	0.5030* (0.0910)	−0.2017 (0.1534)	−0.3520*** (0.0052)	−0.2893** (0.0166)	−0.3285*** (0.0016)
LnRp	0.0585 (0.3282)	−0.0025 (0.9649)	0.0067 (0.8469)	−0.0197 (0.4313)	0.0056 (0.8490)	−0.0409** (0.0488)
IPO percent	−0.0119** (0.0404)	0.0025 (0.7454)	−0.0083** (0.0146)	−0.0031 (0.3514)	−0.0042 (0.1391)	−0.0048* (0.0759)
Ln (Total Asset)	−0.0379 (0.4463)	−0.0251 (0.5865)	−0.0212 (04646)	−0.0345* (0.0771)	−0.0096 (0.6955)	−0.0408** (0.0114)
Underw Rep	0.0118 (0.6738)	−0.0213 (0.5062)	−0.0118 (0.4685)	−0.0041 (0.7627)	−0.0178 (0.2011)	0.0101 (0.3633)
Market Return	−0.1364 (0.8713)	0.4429 (0.6336)	0.3193 (0.5145)	0.3763 (0.3363)	−0,3168 (0.4453)	−0.0638 (0.8424)
F-value	0.95	0.99	1.81	2.71	2.18	5.35
P-value	(0.4664)	(0.4337)	(0.1009)	(0.0149)**	(0.0473)**	(<0.0001)***
Adj-R squared	−0.0017	−0.0003	0.0275	0.0439	0.0393	0.1043
N	171	223	172	224	174	225

Notes: This table reports results of OLS cross-section regression long-term performance on initial return. Dependent variable is Unadjusted Cumulative Return from day +2 to day + 30, day +180 and day +180. Initial return is excluded. We calculate daily return as (Closing price$_{(t)}$ – Closing price$_{(t-1)}$/Closing price$_{(t-1)}$) x 100%. Then we cumulate these daily returns. Initial return is IPO underpricing calculate as ({Closing price at first day – Offer price)/Offer price) x 100%. Definition of IPO percentage, underwriter reputation, and Ln(Total Asset) are explained in Table 1. P-values are in parentheses. *, ** and *** denote significance level at 10%, 5%, and 1%, respectively

Table 6. OLS cross-sectional regression results of market adjusted long-term performance on initial return

	Non-Shariah	Shariah	Non-Shariah	Shariah	Non-Shariah	Shariah
	30-day CAR		180-day CAR		360-day CAR	
Intercept	2.1337** (0.0501)	0.4273 (0.7121)	2.4131*** (0.0014)	1.9105 (0.0018)	−1.9230 (0.2493)	1.8421*** (<0.0001)
Initial Return	0.2286 (0.3522)	0.6935** (0.0290)	−0.0319 (0.8531)	−0.4159 (0.0134)	−0.1552 (0.6942)	−0.3128*** (0.0131)
LnRp	1.16E−13* (0.0621)	2.66E−14 (0.5218)	5.80E−14 (0.1837)	3.65E−16 (0.9867)	−1.79E−14 (0.8575)	−5.18E−15 (0.7544)
IPO percent	−0.0084 (0.1439)	0.0092 (0.2790)	−0.0071* (0.0779)	0.0006 (0.8924)	−0.0045 (0.6289)	−0.0016 (0.6256)
Ln (Total Asset)	−0.0823** (0.0490)	−0.0258 (0.5653)	−0.0793*** (0.0058)	−0.0693 (0.0034)	0.0899 (0.1592)	−0.0671*** (0.0002)
Underw Rep	0.0178 (0.5196)	−0.0161 (0.6212)	−0.0148 (0.4412)	0.0041 (0.8126)	−0.0631 (0.1493)	0.0086 (0.5020)
Market Return	−1.7040* (0.0505)	−1.8531* (0.0647)	−0.7758 (0.2021	−0.1147 (0.8282)	−3.6998*** (0.0071)	−0.3963 (0.3157)
F-value	1.95	1.55	2.50	2.54	1.98	3.91
P-value	(0.0767)*	(0.1632)	(0.0244)**	(0.0211)**	(0.0711)*	(0.001)***
Adj-R squared	0.0332	0.0149	0.0502	0.0399	0.0329	0.0723
N	165	219	171	217	174	225

Notes: This table reports results of OLS cross-section regression long-term performance on initial return. Dependent variable is Market Adjusted Cumulative Return (abnormal return) from day +2 to day + 30, day +180 and day +180. We calculate daily return as (Closing price(t) – Closing price(t−1)/Closing price(t−1)) × 100%. Initial return is excluded from long-term performance. We use Jakarta Composite Index for market return proxy, and calculate Index return in similar fashion. Then we subtract market return from stock return to create abnormal return. We cumulate these abnormal returns over period 30 days, 180 days and 360 days. Definition of is explained in table 1. P-values are in parentheses. *, ** and *** denote significance level at 10%, 5% and 1%, respectively

Table 7. The effect of stricter shariah status on offer to open, open to close and offer to close returns using stronger shariah sample

	Dep Var: Offer to Open Return			Dep Var: Open to Close Return			Dep Var: Initial Return		
Intercept	0.6161***			0.3888***			1.0050***		
	(0.0035)			(0.0031)			(0.0012)		
	[0.0009]			[0.0381]			[<0.0001]		
	{0.0009}			{0.0219}			{0.0004}		
Shariah	−0.0311*			0.0135			−0.0176		
	(0.0728)			(0.3963)			(0.4746)		
	[0.0785]			[0.3532]			[0.4429]		
	{0.0168}			{0.3581}			{0.4154}		
LnRp	−0.0327***			−0.0158*			−0.0486***		
	(0.0028)			(0.0310)			(0.0002)		
	[0.0002]			[0.0610]			[0.0001]		
	{0.0010}			{0.0764}			{0.0002}		
IPO percent	0.0034***			−0.0005			0.0029**		
	(0.0213)			(0.3711)			(0.0238)		
	[<0.0001]			[0.4731]			[0.0088]		
	{0.0012}			{0.3154}			{0.0099}		
Ln (Total Asset)	0.0101			0.0011			0.0111		
	(0.6101)			(0.8024)			(0.2743)		
	[0.1738]			[0.8151]			[0.1730]		
	{0.3280}			{0.8111}			{0.3006}		
Underw Reputation									
	0.0094			0.0024			0.0118*		
	(0.2508)			(0.3684)			(0.0532)		
	[0.0919]			[0.6353]			[0.1417]		
Market Return	{0.1290}|			{0.4625}			{0.0813}		
	0.3087*			0.0188			0.3274		
	(0.0361)			(0.8787)			(0.1286)		
	[0.0812]			[0.8451]			[0.1076]		
	{0.1134}			{0.8569}			{0.1499}		
R-square	0.0799	0.0799	0.0799	0.023	0.023	0.0186	0.058	0.058	0.057
F	4.44	9.70	6.54	2.29	2.27	1.63	3.80	9.00	4.15
(*p*-value)	(0.0027)	(<0.0001)	(<0.0001)	(0.0623)	(0.055)	(0.137)	(0.0065)	(<0.0001)	(0.0005)
N	406	406	406	406	406	406	533	533	533
Number of Clusters	30	44	286	30	44	286	30	44	338

Notes: Shariah status is a dummy variable with a value of 1 for stocks that are included in list of shariah stocks issued by OJK, and 0 otherwise. The definition of the variables is in table 1. P-values from one-way year clustering, one-way industry clustering, and two-way year and industry clustering regressions are in parenthesis, bracket, and braces, respectively. *, ** and *** denote significance level at 10%, 5%, and 1%, respectively

performance of shariah and non-shariah IPOs and find that both shariah and non-shariah IPOs underperform the benchmark, as shown in the Fama–French three-factor regressions. Shariah IPOs underperform non-shariah IPOs. Finally, we investigate the relationship between short and long-term performance. Our analysis shows negative relationships between underpricing and long-term performance. Shariah IPOs tend to have stronger negative relationships.

Our results suggest that underpricing compensates for taking risk in the primary market. Shariah screening helps reduce uncertainty related to IPOs. The compensation does not necessarily produce quality information, as evidenced by the lack of a positive

correlation between underpricing and long-term performance. Shariah criterion seems to drive more individual investors to the IPO market. Since individual investors tend to be more exposed to overreaction, we find that overreaction for shariah IPOs is stronger than that for non-shariah IPOs.

We show that shariah scrutiny helps reduces information asymmetry. However, shariah evaluation in Indonesia is conducted after the shares are traded in secondary market. Indonesia regulatory body could move more aggressively to start shariah evaluation for the IPOs, similar to regulations in Malaysia and Saudi Arabia, sending stronger messages to investors. Shariah status tends to induce investor sentiment, especially from individual investors, that leads to less efficient behavior. Indonesia government could educate investors on the role of shariah status in investment process. While shariah compliance is important, fundamentals of companies are also important parts in the process.

Our weak negative impact of shariah on IPO underpricing, which stands between Saudi Arabia, Pakistan and Malaysia, is of interest for further investigation. We believe that country characteristics may affect the relationship between shariah status and IPO underpricing. Thus, aside from more studies from different countries, cross-country analysis that incorporates the impact of different characteristics among countries on IPO underpricing warrants further investigation. Finally, future research can be directed to further investigate long-term performance of shariah IPOs, which is less explored, using the robust methodology. Long-term measurement for abnormal performance is treacherous. We leave these issues for future research.

Notes

1. For example, Hanafi (2021) shows that Indonesia IPO underpricing before year 2000, in which fixed price method was used, averaged around 10%. Underpricing average increased to around 25% after that year, when the IPO method was switched to book building. Similarly, Mehmood *et al.* (2020a) show that underpricing in Pakistan increased after the introduction of the book-building method.
2. https://worldpopulationreview.com/country-rankings/muslim-population-by-country, accessed on July 1, 2020.
3. The samples we use practically cover almost a full cycle of Indonesia IPOs. Modern Indonesia stock market started in 1977, however, the market started its life in early 1990s when Indonesia government introduced several deregulation packages. Indonesia stock market became active since these deregulations until today (Hanafi, 2021).
4. An alternative method to investigate long-term performance is buy and hold return (BHAR). BHAR has an advantage of measuring more realistic investors' experience (Barber and Lyon, 1997). However, BHAR also draws criticisms. BHAR still produces biased estimation from new listings, rebalancing of benchmark portfolios and skewness of multi-year abnormal returns (Kothari and Warner, 1997), Fama (1998) argues against the BHAR methodology and strongly advocates a monthly calendar-time portfolio approach for measuring long-term abnormal performance.
5. For comparison, Saudi Arabia IPO underpricing is around 267%: 164% for sharia IPO and 428% for non-sharia IPO (Mayes and Alqahtani, 2015), Malaysia IPO underpricing is reported at around 22% and 31% for sharia IPO in main and second boards, and around 11% and 49% for non-sharia IPO in main and second boards.

References

Agarwal, S., Liu, C. and Rhee, G.S. (2008), "Investor demand for IPOs and aftermarket performance: evidence from Hong Kong stock market", *Journal of International Financial Markets, Institutions and Money*, Vol. 18 No. 2, pp. 176-190.

Alam, M.M., Chowdhury, S.A., Shawon, M.S. and Mohammad, M.E. (2017), "The Islamic shariah principles for investment in stock market", *Qualitative Research in Financial Markets*, Vol. 9 No. 2, pp. 132-146, doi: 10.31219/osf.io/b7j4e.

Al-Hassan, A., Delgado, F.L. and Omran, M. (2010), "The under-pricing of IPOs in the Gulf cooperation council countries", *Research in International Business and Finance*, Vol. 24 No. 3, pp. 344-360.

Allen, F. and Faulhaber, G.R. (1989), "Signalling by underpricing in the IPO market", *Journal of Financial Economics*, Vol. 23 No. 2, pp. 303-323.

Almansour, A. (2019), "Muslim investors and the capital market: the role of religious scholars", *Pacific-Basin Finance Journal*, Vol. 58 No. 1, p. 101211.

Alqahtani, F. and Boulanouar, Z. (2017), "Long-run market performance of initial public offerings in Saudi Arabia: does shariah-compliant status matter?", *Corporate Ownership and Control*, Vol. 14 No. 3, pp. 293-298.

Alqahtania, F. and Boulanouar, Z. (2017), "Shariah compliance status and investor demand for IPOs: evidence from Saudi Arabia", *Pacific-Basin Finance Journal*, Vol. 46, pp. 258-268.

Barber, B. and Lyon, J. (1997), "Detecting long-run abnormal stock returns: the empirical power and specification of test statistics", *Journal of Financial Economics*, Vol. 43 No. 3, pp. 341-372.

Barry, C. and Jennings, R. (1993), "The opening price performance of initial public offerings of common stock", *Financial Management*, Vol. 22 No. 1, pp. 54-63.

Boulanouar, Z. and Alqahtani, F. (2016), "Underpricing in the insurance industry and the effect of shariah compliance: evidence from Saudi Arabian market", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 9 No. 3, pp. 314-332, doi: 10.1016/0304-405X(95)00862-9.

Brennan, M.J. and Franks, J. (1997), "Underpricing, ownership and control in initial public offerings of equity securities in the UK", *Journal of Financial Economics*, Vol. 45 No. 3, pp. 391-413.

Cai, J. and Loughran, T. (1998), "The performance of Japanese seasoned equity offerings, 1971-1992", *Pacific-Basin Finance Journal*, Vol. 6 No. 5, pp. 395-426.

Cameron, C.A. and Miller, D.L. (2015), "A practitioner's guide to cluster-robust inference", *Journal of Human Resources*, Vol. 50 No. 2, pp. 317-372.

Carter, R. and Manaster, S. (1990), "Initial public offerings and underwriter", *Journal of Finance*, Vol. XLV No. 4, pp. 1945-1067.

Centre for Economics and Business Research (2021), *World Economic League Table 2022*, available at: https://cebr.com/wp-content/uploads/2021/12/WELT-2022.pdf (accessed 21 May 2022).

Chen, H., Huang, H.H., Lobo, G.J. and Wang, C. (2016), "Religiosity and the cost of debt", *Journal of Banking and Finance*, Vol. 70, pp. 70-85.

Chi, J. and Padgett, C. (2005), "The performance and long-run characteristics of the Chinese IPO market", *Pacific Economic Review*, Vol. 10 No. 4, pp. 451-469.

Fohlin, C. (2010), "Asymmetric information, market power, and underpricing of new stock issues in Germany, 1882-1992", *Journal of Economic History*, Vol. 70 No. 3, pp. 603-656, doi: 10.1017/S0022050710000562.

Godlewski, C.J., Turk-Ariss, R. and Weill, L. (2013), "Sukuk vs. conventional bonds: a stock market perspective", *Journal of Comparative Economics*, Vol. 41 No. 3, pp. 745-761.

Hanafi, M.M. (2021), "Fixed price and book building method under exogenous environment", *Research in International Business and Finance*, Vol. 58, p. 101430.

Helwege, J. and Liang, N. (2004), "Initial public offerings in hot and cold markets", *Journal of Financial and Quantitative Analysis*, Vol. 39 No. 3, pp. 541-569.

Hilary, G. and Hui, K. (2009), "Does religion matter in corporate decision making in America?", *Journal of Financial Economics*, Vol. 93 No. 3, pp. 455-473.

Jamaani, F. and Ahmed, A.D. (2020), "Simultaneous effects of clustering and endogeneity on the underpricing difference of IPO firms: a global evidence", *Research in International Business and Finance*, Vol. 54 No. 6, p. 101250.

Kanagaretnam, K., Lobo, G.J., Wang, C. and Whalen, D. (2015), "Religiosity and risk-taking in international banking", *Journal of Behavioral and Experimental Finance*, Vol. 7, pp. 42-59.

Khan, A., Rizvi, S.A.R., Ali, M. and Haroon, O. (2020), "A survey of islamic finance research influences and influencers", *Pacific-Basin Finance Journal*, Vol. 69 No. 10, p. 101437.

Kothari, S.P. and Warner, J.B. (1997), "Measuring long-horizon security price performance", *Journal of Financial Economics*, Vol. 43 No. 3, pp. 301-339, doi: 10.1016/S0304-405X(96)00899-9.

Ljungqvist, A. (2008), "IPO underpricing", in Eckbo, B.E. (Ed.), *Handbook of Empirical Corporate Finance*, Vol. 1, Elsevier Science, Amsterdam, pp. 375-422.

Ljungqvist, A., Nanda, V. and Singh, R. (2006), "Hot markets, investor sentiment, and IPO pricing", *The Journal of Business*, Vol. 79 No. 4, pp. 1667-1702.

Loughran, T. and Ritter, J. (1995), "The new issues puzzle", *The Journal of Finance*, Vol. 50 No. 1, pp. 23-51.

Loughran, T. and Ritter, J.R. (2004), "Why has IPO underpricing changed over time?", *Financial Management*, Vol. 33 No. 3, pp. 5-37, doi: 10.2139/ssrn.331780.

Low, S.W. and Yong, O. (2011), "Explaining over-subscription in fixed-price IPOs: evidence from the Malaysian stock market", *Emerging Markets Review*, Vol. 12 No. 3, pp. 205-216.

McGuire, S., Omer, T. and Sharp, N. (2012), "The impact of religion on financial reporting irregularities", *The Accounting Review*, Vol. 87 No. 2, pp. 645-673.

Mahfooz, S.B. and Ahmed, H. (2014), "Shariah investment criteria: a critical review", *Journal of King Abdulaziz University: Islamic Economics*, Vol. 27 No. 1, pp. 3-38, doi: 10.4197/Islec.27-1.1.

Mayes, D. and Alqahtani, F. (2015), "Underpricing of IPOs in Saudi Arabia and Shariah compliance", *Journal of Islamic Accounting and Business Research*, Vol. 6 No. 2, pp. 189-207.

Mehmood, W., Mohd-Rashid, R. and Ahmad, A.H. (2020a), "Impact of pricing mechanism on IPO oversubscription: evidence from Pakistan stock exchange", *Pacific Accounting Review*, Vol. 32 No. 2, pp. 1-16, doi: 10.33736/ijbs.3347.2020.

Mehmood, W., Mohd-Rashid, R., Tajuddin, A.H. and Saleem, H.M.N. (2021), "Shariah-compliance and IPO underpricing: evidence from Pakistan stock exchange", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 14 No. 5, pp. 1753-8394.

Mohd-Rashid, R., Mansur Masih, M., Abdul-Rahim, R. and Che-Yahya, N. (2018), "Does prospectus information matter in IPO pricing? ", *Journal of Islamic Accounting and Business Research*, Vol. 9 No. 4, pp. 514-530.

Onali, E., Ginesti, G. and Vasilakis, C. (2017), "How should we estimate value-relevance models? Insights from European data", *The British Accounting Review*, Vol. 49 No. 5, pp. 460-473.

Petersen, M.A. (2009), "Estimating standard errors in finance panel data sets: comparing approaches", *Review of Financial Studies*, Vol. 22 No. 1, pp. 435-480.

Rahim, R.A. and Yong, O. (2010), "Initial returns of Malaysian IPOs and shari'a-compliant status", *Journal of Islamic Accounting and Business Research*, Vol. 1 No. 1, pp. 60-74, doi: 10.1108/1759081101103341.

Ritter, J.R. (2011), "Equilibrium in the initial public offerings market", *The Annual Review of Financial Economics*, Vol. 3 No. 1, pp. 347-374, doi: 10.1146/annurev-financial-102710-144845.

Ritter, J.R. and Welch, I. (2002), "A review of IPO activity, pricing, and allocations", *The Journal of Finance*, Vol. 57 No. 4, pp. 1795-1828.

Setya, V.A., Supriani, I. and Fianto, B.A. (2020), "Determinants of underpricing in islamic and Non-Islamic shares on IPO", *Shirkah: Journal of Economics and Business*, Vol. 5 No. 1, pp. 70-100.

Shiller, R.J. (1990), "Speculative prices and popular models", *Journal of Economic Perspectives*, Vol. 4 No. 2, pp. 55-65.

Swaminathan, B. and Purnanandam, A. (2011), "Are ipos really underprice", *Review of Financial Studies*, Vol. 17, pp. 811-848, doi: 10.2139/ssrn.281199.

Tajuddin, A.H., Abdullah, N.A.H. and Mohd, K.N.T. (2018), "Shariah-compliant status and IPO oversubscriptions", *Journal of Islamic Accounting and Business Research*, Vol. 9 No. 4, pp. 531-548.

Tajuddin, A.H., Mohd-Rashid, R., Khaw, K.L.-H. and Che Yahya, N. (2019), "Shariah -compliant status and investors' demand for IPOs: the effects of information asymmetry", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 12 No. 4, pp. 489-508.

Weaver, G.R. and Agle, B.R. (2002), "Religiosity and ethical behavior in organizations: a symbolic interactionist perspective", *Academy of Management Review*, Vol. 27 No. 1, pp. 77-97.

Yakub, N. and Sherif, M. (2019), "Performance of initial public offerings (IPOs): the case of shariah-compliant companies", *Islamic Economic Studies*, Vol. 27 No. 1, pp. 65-76.

Yong, O. and Isa, Z. (2003), "Initial performance of new issues of shares in Malaysia", *Applied Economics*, Vol. 35 No. 8, pp. 919-930.

Corresponding author
Syafiq Hanafi can be contacted at: 196705181997031003@uin-suka.ac.id

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: **permissions@emeraldinsight.com**