Research article

Is conservatism good news? The case of stocks of Jakarta Islamic index

Felizia Arni Rudiawarnia,*, Dedhy Sulistiawanb, Bruno S. Sergib

a Faculty of Business and Economics, University of Surabaya, Indonesia
b University of Messina, Italy & Harvard University, USA

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ABSTRACT

This study examines the role of Sharia stocks to affect the association between conservatism and crash risk. Sharia stocks are represented by the Jakarta Islamic Index (JII) stocks. We use Sharia stocks as a moderating variable to provide contextual issues in discussing conservatism and crash risk. Our findings show that conservatism reduces the crash risk for Sharia stocks. The test also suggests that conservatism cannot affect crash risk for non-Sharia stocks. The examinations are also consistent with the belief that Sharia, as a set of religious norms, helps minimize future risk. This paper contributes to the literature on religion and corporate behaviors by adding a contextual factor, Sharia stocks in Indonesia.

1. Introduction

Investors and regulators have a motivation to minimize crash risk because it is detrimental to the prosperity of shareholders. We also see many studies on stock crashes, especially in the last two decades (e.g., Jin and Myers, 2006; Hutton et al., 2009; Kousenidis et al., 2014; DeFond et al., 2015; Kim and Zhang, 2016). Those papers explore the factors that cause stock crashes and contextual factors related to stock crashes. Our research contributes to a crash risk study by adding the context of Sharia stocks in the Indonesia Stock Exchange (IDX).

The discussion of Sharia is particularly important in Indonesia because it is a country with the most significant number of Muslims, the follower of Islam. The Muslim population is more than 210 million people, or around 87% of the Indonesian population (Diamant, 2019). Based on the data of the Islamic Financial Services Board (2021), Indonesia is the fifth country that receives the distribution of assets of Islamic funds worldwide. It implies that some listed firms are funded by Islamic funds worldwide.

Indonesia has its uniqueness compared to other developing markets. Indonesia is in the early stages of development where according to Sharma et al. (2019), this type of market results cannot be equated with other emerging markets. Indonesia’s average market growth has been around 7.9% per annum since 2008–2017, outperforming almost all major emerging markets (Sharma et al., 2019). As the largest Muslim population in the world, the status of stock listed as Sharia is essential because, from local investors’ perspective, they do not want to invest in things that violate their religion. Anticipating this issue, Indonesian authorities introduce the Sharia stocks indexes, consisting of shares that do not conflict with a religious law that is part of the Islamic tradition. There are three indexes containing constituents screened by the principles of Islam (idco.co.id).

From three Sharia stock indexes released by Indonesia Financial Services Authority (OJK), we use Jakarta Islamic Index in this study (JII). JII is the first Islamic index and is the most widely used Islamic index in Indonesia as a reference to date. The other two Islamic indices, namely JII 70, were published in 2018 and IDX-MES BUMN 17 only consists of 17 sharia stocks which are State-Owned Enterprises.

JII was launched on July 3, 2000 (idco.co.id). The list of Sharia stocks covered in JII is evaluated twice a year by OJK. IDX has specific liquidity criteria to select thirty Sharia stocks listed in JII. The Sharia stocks included in the JII are selected stocks that have gone through a rigorous screening process. Those stocks must not conflict with the Islamic principles and should pass the screening process of their financial ratios. Therefore, in the context of Sharia stocks in Indonesia, the risks posed by market-wide factors for Sharia stocks should have been minimized. We predict that Sharia stocks represented by stocks in Jakarta Islamic Index have a lower crash risk than non-Sharia shares.

In presenting financial statements, issuers on the Indonesia Stock Exchange are subject to Financial Accounting Standards (PSAK), which adopt International Financial Reporting Standards (IFRS). One of the long-lasting principles that characterize the accounting treatment and financial reporting is the principle of conservatism. Conservatism recognizes good news timelier than admits bad news, or there is an asymmetry in identifying good and bad news.

* Corresponding author.
E-mail address: felizia@staff.ubaya.ac.id (F.A. Rudiawarni).

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Based on the joint project between the International Accounting Standard Board and Financial Accounting Standard Board, conservatism and prudence are no longer the qualities required in the Financial Reporting Framework (IASB, 2006). Using the conservatism principle is not considered to support neutrality. This policy raises pros and cons. In Europe, auditors have faced more aggressive financial reports since the joint project was initiated (Piot et al., 2015). In 2018, IFRS reintroduced the element of prudence into the Financial Reporting Framework (IASB, 2018).

Although IFRS does not include conservatism, prudence is the spirit that characterizes conservative accounting treatment. We also support the need to apply the conservatism principle in minimizing risk. Various studies provide the usefulness of conservatism in different situations. Ahmed et al. (2002) and Zhang (2008) discussed that conservatism drives an important role in efficient debt contracting. Gigler et al. (2009) stated that conservatism does not play a role in optimal debt contracting if the cost of debt is minimized. In another research, Li (2015) noted that legal enforcement in the capital market plays an essential role in supporting the role of conservatism to reduce the cost of capital. Lara et al. (2008) stated that conservatism could not improve the relevance and reliability of financial reports in emerging countries where investor protection is low. From various studies conducted both at the individual firm level and country level, the role of conservatism varies, so it is concluded that conservatism’s optimum benefit varies across firms and the context where it is applied.

There is an increasing interest in Islamic assets for Muslims and non-Muslim investors (Umar, 2017). Therefore, with the largest Muslim population globally, Indonesia is an attractive market for investors. During 2008–2017, the Indonesian stock market had a high average return and turnover volume compared to emerging markets regionally, outperforming Malaysia, the Philippines, Singapore and Vietnam (Sharma et al., 2019). The study of stock crashes on Sharia stocks in Indonesia is valuable for investors.

There are several studies on Indonesia stock market as well as its Sharia index, such as the role of research activity, especially for Indonesia Islamic financial market (Juhro et al., 2020), the predictability of the Indonesia stock market (Sharma et al., 2019); Indonesia’s consumer price formation (Narayan, 2019a). This study completes the picture of Indonesia by investigating the role of conservatism in reducing crash risk, especially in the framework of Islamic finance.

This study contributes to research on Islamic finance, especially related to financial reporting and investment issues. Best to our knowledge, there are still few studies that examine the relationship between financial reporting and Sharia stock. Our study contributes by providing a unique perspective when considering Sharia stocks in evaluating the role of conservatism in decreasing crash risk. This study also explores the economic significance of what conditions allow conservatism to reduce stock crash risk to guide portfolio formation strategies.

In this study, we discuss Sharia stock and crash issues. The stock crash is an essential issue because it affects shareholder wealth. The stock crash caused significant losses for investors. This study also contributes to asset pricing research in Islamic finance. Based on a survey conducted by Narayan and Phan (2019), asset pricing in Islamic finance is still a research area that has not been explored much. This study develops an asset pricing research path in Islamic finance by investigating asset pricing in terms of stock crash issues.

The paper is organized as follows. The second and third sections provide literature reviews and describe data and methodology. Empirical results are presented in the fourth section, and the final section concludes.

2. Literature review

Stock crashes refer to a significant decline in stock prices in a short period (Garg et al., 2020). Stock crash captures asymmetry risk, namely, downsize risk. Therefore, the stock crash is significant for investment decisions and risk management. Many studies have examined stock crashes, both in terms of the factors that cause a crash and the contextual factors accompanying the stock crash phenomenon (Habib et al., 2018). This study discusses the stock crash phenomenon in Islamic finance, especially Sharia stocks.

Religiosity will affect ethical intention so that the higher the level of religiosity, one prefers not to make morally questionable business decisions (McCullough and Willoughby, 2009; Vitell, 2009) such as bad news hoarding activities (Longenecker et al., 2004), even though the decision taken will be detrimental to his career, reputation, and bonuses that will be obtained.

According to a survey from the Pew Research Centre, Indonesia is in the top rank of the most religious country (Tamir et al., 2020), with the largest number of Muslims globally (World Population Review, 2021). Ninety-six per cent of Indonesian respondents think one must believe in God, and 98% consider religion necessary in their lives. As a country with the largest Muslim population globally (Diamanti, 2019), the principles of Islam become the foundation of their lives and the decisions they make, including the decision related to investment and risk management.

Sharia stocks are securities as shares that do not conflict with Sharia principles. To be included in the Sharia index, certain stocks must go through a series of selection criteria. Although there may be differences in the criteria used in different countries, the screening process usually consists of two steps (Rifqi, 2016), screening the company’s business activities and financial ratios.

In Indonesia, stocks determined as Sharia shares are based on the Financial Services Authority (OJK) regulation number 35/POJK.04/2017 and 17/POJK.04/2015. The list of Sharia stocks is issued by the OJK periodically, every May and November. Regarding the screening processes, the first step is screening on business activities. Listed companies in the Sharia category should not engage in the following business activities: gambling, usury financial services, conventional insurance, providing harmful goods or services according to the Indonesian Ulema Council (Indonesia National Sharia Council Fatwa, 2003). Sharia stock issuers should also have non-halal liabilities to total assets is not more than 45%, or the ratio non-Islamic income to total revenue is not more than 10% (Indonesia National Sharia Council Fatwa, 2003). Non-halal liabilities are interest-based liabilities.

We use the Jakarta Islamic Index (JII) list to represent Sharia stocks. It was launched on July 3, 2000. JII consists of the thirty most liquid Islamic shares listed on IDX, and it is reviewed in May and November by OJK. JII constituents are: (1) Sharia stocks for the last six months, (2) the sixty stocks based on the highest average order of market capitalization during the past one year, and (3) of those stocks, OJK then selected thirty stocks based on the highest average daily transaction value in the stock market.

The stocks included in the JII have gone through a rigorous screening process. These shares are classified as halal investments and healthy debt ratio firms, so they are not at risk of default. Therefore, stocks included in the JII list are predicted to have low risk. Following these arguments, our hypotheses are:

H1. Sharia stocks decrease stock crash risk.

Conservatism refers to the accounting treatment of recognizing bad news more quickly than acknowledging good news (Basu, 1997). In other words, bad news requires less verification than the verification required to acknowledge good news (Watts, 2003). The benefits of conservatism are still debatable. On the one hand, there are many arguments criticizing conservatism. Criticism of conservatism refers to the neutrality of accounting treatment. Conservatism is considered compromising neutrality, where bad news requires a lower verification weight than good news. Guay and Verrecchia (2006) stated that conservatism biased financial statement figures and resulted in inefficiency in decision making. This statement is supported by the findings of Dichev and Tang (2008). They found that the correlation between previous expenses and...
current revenues increased, increasing earnings volatility and decreased earnings persistence (Dichev and Tang, 2008; Chen et al., 2014).

On the other hand, conservatism is a principle that has lasted for decades and has become a spirit that characterizes financial reporting. According to Watts (2003), conservatism is applied systematically over a long period. Various studies also support the benefits of conservatism. Balachandran and Mohanram (2011) state that an increase in conservatism does not cause a decrease in value relevance. LaFond and Watts (2008) show that investors demand conservatism because conservatism can reduce the effect of information asymmetry.

Information asymmetry in the form of bad news hoarding is the cause of stock crashes. When bad news can no longer be hidden, managers are forced to release the information to the public, causing a sizeable adverse stock price reaction from the market, which leads to a stock crash (Harper et al., 2020; Hutton et al., 2009; Jin and Myers, 2006; Kim and Zhang, 2016; Kothari et al., 2009). Kim and Zhang (2016) stated that conservatism could play a role in reducing crash risk. Conservatism can prevent opportunistic behavior from the management to hoard bad news because of the timelier recognition of bad news.

Furthermore, Kim and Zhang’s research (2016) also found that the ability of conservatism to reduce the risk of crashes was more visible in environments with high information asymmetry. Rousenidis et al. (2014) also stated that conditional and unconditional conservatism could reduce crash risk.

From previous studies, we conclude that the benefits of conservatism are contextual. According to Scott and O’Brien (2020), conservatism serves the needs of creditors more than shareholders because conservatism can provide an early warning system that is beneficial for creditors because creditors face asymmetry payoff. However, according to Watts (2003), conservatism also reduces litigation risk. Kim and Zhang (2016) give evidence that in conditions of high information asymmetry, the role of conservatism in lowering the risk of crashes is also greater. Brown et al. (2011) state that an increase in conservative behavior is reintegrated into the Financial Reporting Conceptual Framework.

The element of prudence in preparing financial reporting (IASB, 2018). Although this new conceptual framework does not explicitly mention conservatism, the spirit of prudence that underlies conservative behavior is reintegrated into the Financial Reporting Conceptual Framework.

In this study, we offer that the role of conservatism is contextual, so we highlight the role of conservatism in the analysis of Sharia stocks and JII stocks. Sharia principle should affect the relation between conservatism and crash risk. Because of its good principle, we believe that JII stocks can add the benefit of conservatism to reduce crash risk. Therefore, in this study, we put forward the hypothesis:

H2. Sharia stocks strengthen conservatism’s ability to reduce crash risk.

3. Data and methodology

3.1. Sample selection

The objects of this research include all publicly listed companies of the IDX for the period 2014–2018, except companies in the financial industry. The company’s shares must be actively traded for at least 90% of the total trading days in one period. We only select companies with their financial statements ending on December 31 to avoid any confounding effect. Mostly, listed firms determine the end of the year as their financial statement date. Companies selected should have complete data for the variables used in this study. Data were obtained from the Indonesian Capital Market Institute (TICMI), the subsidiary of IDX.

3.2. Variables measurement

Crash risk measure in this study is measured using down to up volatility (DownVOL). This measurement refers to the company’s specific risk of experiencing down volatility for each up volatility. We first regress the company’s weekly returns with market returns and industry returns for each company and each year (Kim and Zhang, 2016; Hutton et al., 2009), that is shown in Eq. (1):

\[
\begin{align*}
r_{ijw} &= \beta_0 + \beta_1 f_{isw-1} + \beta_2 f_{isw-1} + \beta_3 f_{isw-1} + \beta_4 f_{sibw} + \beta_5 f_{sibw} + \beta_6 f_{sibw} + \beta_7 f_{sibw} + \varepsilon_{ijw} \\
&= \beta_0 + \beta_1 f_{isw-1} + \beta_2 f_{isw-1} + \beta_3 f_{isw-1} + \beta_4 f_{sibw} + \beta_5 f_{sibw} + \beta_6 f_{sibw} + \beta_7 f_{sibw} + \varepsilon_{ijw}
\end{align*}
\]

\(r_{ijw}\) is the weekly return of the firm \(i\) in week \(w\), \(r_{idx}\) is the weekly Indonesian stock exchange composite index representing market return, and \(r_{i}\) is the weekly industrial return. Lags and leads in the regression are used to capture non-synchronous trading. Next, we transform the residual from regression into \(W_{ijw} = \ln(1 + \varepsilon_{ijw})\) to get the symmetrical distribution. \(W_{ijw}\) is the specific weekly abnormal return.

Next, as presented in previous papers (DeFond et al., 2015; Xu et al., 2013), we calculate DUVOl as presented in Eq. (2):

\[
DownVOL_{ij} = \log \left[ \frac{(n_d - 1) \sum_{down} W^2_{ij}}{(n_u - 1) \sum_{up} W^2_{ij}} \right] \tag{2}
\]

\(n_d\) is the number of up weeks in a year, while \(n_d\) is the number of down weeks in the same year. For each stock \(j\) over a fiscal year \(t\), we separate the firm’s weekly returns below the annual average from those above the annual average. We categorize both groups into down weeks and up weeks, respectively. Next, this article calculates the standard deviation for each down and up weeks. DUVOl is the natural logarithm of the standard deviation of down weeks divided by up weeks. The higher the DUVOl, the higher the risk of crashing.

We use dummy variables to distinguish between Sharia stocks (dummy = 1) and non-Sharia stocks (dummy = 0). The company is classified as Sharia if the company is included in the JII’s list in at least one release period during the year.

Conditional conservatism (CONSV_t) in this study refers to the measurement of C-SCORE (Conservatism Score) from Khan and Watts (2009) as the development of Basu (1997). Those articles are also important in conservatism studies. Although the models use return, the main development of Khan and Watts (2009) is that the article includes interaction factors separately. The measurement of C-Score is provided in Eq. (3):

\[
X_{ij} = \beta_0 + \beta_1 D_{ij} + \beta_2 (\mu_{j} + \mu_{j} \times SIZE_j + \mu_{j} \times MTB_j + \mu_{j} \times LEV_j) + \mu_{j} \times D_{ij} + \mu_{j} \times \Delta SIZE_j + \mu_{j} \times \Delta MTB_j + \Delta LEV_j + \mu_{j} \times \Delta D_{ij} + \delta_{j} \times \Delta SIZE_j + \delta_{j} \times \Delta MTB_j + \delta_{j} \times \Delta LEV_j + \varepsilon_{ij}\n\]

\(X_{ij}\) is the weekly return of the firm \(i\) in week \(w\), \(D_{ij}\) is the daily weekly return of the firm \(i\) in week \(w\).
Eq. (3) is cross-sectional with a rolling window of three years (Ahmed and Duellman, 2013). Furthermore, the estimated coefficients $\lambda_1$ to $\lambda_4$ obtained from the regression Eq. (3) are used to calculate the C-SCORE of each company in Eq. (4):

$$\text{C-Score} = C - \text{SCORE} = \lambda_1 \times \text{Size}_{t-1} + \lambda_2 \times \text{MTB}_{t-1} + \lambda_3 \times \text{LEV}_{t-1}$$

(4)

C-SCORE is conservatism score or CONSV in this study. X refers to net income divided by market value. R refers to return. The model use D or dummy variable, taken value $1$ if return less than zero and $0$ if otherwise. This dummy variable captures the timelines of bad news reflected in return. Size is calculated as the natural logarithm of market capitalization. MTB is market to book value. LEV is defined as total debt to total equity. In this model, leverage use long-term and short-term debts. Conservatism studies use it as a common measurement for leverage (Hutton et al., 2009; Khan and Watts, 2009; Kim and Zhang, 2016). Next, j and t refer to firm j in period t, respectively.

In this study, we use the following control variables: (1) company's size (FSIZE), (2) growth (MTB), (3) leverage (LEV), (4) CEO Age, (5) percentage ownership by institutional investors (INSTINV), (6) stock’s liquidity (LIQ) and (7) profitability (ROE). According to Hutton et al. (2009), firm size significantly impacts the probability of a crash, as the bigger firm's size, the higher the risk. Growth is expected to affect stock risk since higher growth stock tends to experience a higher crash probability (DeFond et al., 2015). Leverage is also one factor associated with risk. Higher leverage shows higher financial and bankruptcy risks (Ghosh et al., 2000). This financial difficulty causes the probability of a crash to increase. According to Andreou et al. (2017), CEO Age significantly explains crash risk. Younger CEOs tend to be motivated to hide bad news since they consider their future wealth and career. Hiding and accumulating bad news increase the probability of a stock crash. We use the percentage of institutional investors as a monitoring role for minimizing stock crash risk (Callen and Fang, 2013). Stock liquidity can decrease the probability of a crash through price informativeness (Chauhan et al., 2017). Finally, firms with good profitability can reduce crash risk during the year (Hutton et al., 2009).

We specify our model presented in Eq. (5):

$$\text{DownVOL}_{j,t+1} = \alpha_0 + \alpha_1 \times \text{FSIZE}_{j,t} + \alpha_2 \times \text{MTB}_{j,t} + \alpha_3 \times \text{LEV}_{j,t} + \alpha_4 \times \text{CONSV}_{j,t} + \alpha_5 \times \text{Sharia} \times \text{CONSV}_{j,t}$$

$$+ \alpha_6 \times \text{EOA}_t + \alpha_7 \times \text{INSTINV}_{t} + \alpha_8 \times \text{LIQ}_{j,t} + \epsilon_{j,t}$$

(5)

DownVOL is down to up volatility, representing crash risk. We use a dummy variable to denote Sharia stock. Sharia equals 1 when the stock is included in the JII index and 0 otherwise. CONSV refer to the conservatism score. Following prior studies, we employ several control variables: (1) firm's size, measured as the natural logarithm of the total asset (FSIZE), (2) market to book value (MTB), (3) LEV, determined by debt to total assets, (4) CEO Age, (5) percentage ownership of institutional investor (INSTINV), (6) LIQ denotes stock liquidity, measured as the average volume of shares traded divided by the average number of shares outstanding during the period, and (7) ROE calculated as net income divided by total equity, while j and t refer to firm and period respectively.

We use the natural logarithm of total assets as a proxy for firm size instead of the natural logarithm of market capitalization because market capitalization is the primary input in calculating CONSV, as stated in Eq. (3). We adopt this method from the research of Kim and Zhang (2016). Furthermore, in their research, Kim and Zhang (2016) state their consideration of using MTB and LEV as control variables in the regression model because these two variables are also significant inputs in the CONSV calculation. They are concerned about multicollinearity problems. However, in our study, we have tested multicollinearity, and all the variables we used in the regression equation are free from multicollinearity.

We use panel data for this study. Regression equations are estimated using ordinary least squares (OLS). For H1, our focus is on the effect of Sharia to minimize crash risk, that is, on the coefficient of $\alpha_1$. $H_2$ is supported when $\alpha_1 < 0$, shows that Sharia can reduce the possibility of crashes.

For $H_2$, we focus on the effect of Sharia and CONSV on future stock crash risk, that is, on the coefficient of $\alpha_1$. We expect that $\alpha_1 < 0$ since we predict that Sharia can mitigate the positive relationship between conservatism and stock crash.

4. Results and discussion

Table 1 provides the sample’s descriptive statistics; we use 927 firm-year observations. The mean DownVOL is 0.230, indicating the presence of crash risk. The volatility of return is higher when the stock price declines. The conservatism is strongly positive, 0.224. As for the control variables, the average of MTB is 2.448. It implies that the growth of sample firms is relatively high. The mean of debt to total assets is 0.479. The mean of CEO age and institutional ownership is 54.423 and 0.141, respectively. The mean of trading volume is almost 50% of outstanding shares, indicating market participants can hold significant ownership from the market. The mean value of the ROE is 0.069. The number implies that sample firms are profitable.

Table 2 describes the correlation matrix. Table 2 shows that CONSV and MTB, (3) LEV, determined by debt to total assets, (4) CEO Age, (5) percentage ownership of institutional investor (INSTINV), (6) LIQ denotes stock liquidity, measured as the average volume of shares traded divided by the average number of shares outstanding during the period, and (7) ROE calculated as net income divided by total equity, while j and t refer to firm and period respectively.

We expect that Sharia and CONSV have a negative correlation. Table 2 shows that firm size (FSIZE), and firm growth rate (MTB) are positively correlated with the risk of a crash. CONSV and Sharia has a negative correlation with Fsize and MTB. Although some of the variables in Table 2 show a high correlation, we have tested all of these variables, and none has multicollinearity.

Table 3 shows the results of regressing crash risk on firms' size, market to book value, leverage, CEO age, the ownership of institutional investors, trading volume, and return on equity. Model 1 provides a dummy variable equal to one of the stocks is included as Sharia stocks and zero otherwise. Model 2 presents the conservatism level in the regression equation. Model 3 uses both Sharia stocks status and conservatism level. The interaction of Sharia stocks and conservatism level is added in Model 4 as stated in Eq. (5).

Table 3 shows that the coefficients of Sharia (Model 1) and conservatism level (Model 2) are not significant. Model 3 also presents that both Sharia and conservatism level variables do not affect the magnitude of volatility when the stock price declines. However, Model 4 shows that the interaction of Sharia stocks and conservatism level produce a significant coefficient.

Based on Model 4 of Table 3, Sharia stocks significantly affect crash risk. Statistically, Sharia firms produce lower crash risk at the 5% level. This finding suggests that stocks included in Jakarta Islamic Index generate lower volatility when the stock price decline. This result is in

| Table 1. Descriptive statistics |
|--------------------------------|
| N    | Minimum | Maximum | Mean | Std. Deviation |
|--------------------------------|
| DownVOL_t+1 | 927 | -3.957 | 7.977 | 0.230 | 0.781 |
| CONSV_t | 927 | -3.683 | 3.629 | 0.224 | 1.016 |
| FSIZE_t | 927 | 22.446 | 33.941 | 28.664 | 1.883 |
| MTB_t | 927 | -0.619 | 46.626 | 2.448 | 4.703 |
| LEV_t | 927 | 0.024 | 1.407 | 0.479 | 0.201 |
| CEOAg_t | 927 | 29.000 | 80.000 | 54.423 | 8.963 |
| INSTINV_t | 927 | 0.000 | 0.951 | 0.141 | 0.227 |
| LIQ_t | 927 | 0.001 | 4.750 | 0.426 | 0.628 |
| ROE_t | 927 | -1.352 | 1.272 | 0.069 | 0.190 |

DownVOL is crash risk; FSIZE = firms’ size MTB = market to book value; LEV = debt to total assets; CEOAge = CEO age; INSTINV = ownership percentage of institutional investors; LIQ = trading volume divided by outstanding shares; ROE = return on equity; CONSV = Conservatism level using Khan and Watts (2009); t – period t.
Table 2. Correlation matrix.

|       | DownVOL_t+1 | CONSV_t | FSIZE_t | MTB_t | LEV_t | CEOAge_t | INSTINVt | LIQ_t | ROE_t+1 |
|-------|-------------|---------|---------|-------|-------|-----------|----------|-------|---------|
| Coef. | 1.00        | -0.10** | 0.14**  | 0.06  | 0.02  | -0.02     | -0.02    | -0.07*| -0.02   |
| (t-value) |          |         |         |       |       |           |          |       |         |
| Constant | -1.494** | -1.452** | -1.493** | -1.987*** | -2.847 | -2.308 | -2.255 | -2.966 |
| LEV_t | 0.01       | -0.12** | -0.02   | 0.02  | 1.00  | 0.08*     | 0.03     | 0.06  | -0.03   |
| CEOAge_t | 0.00      | 0.09**  | -0.11** | -0.11** | 0.06  | 1.00     | 0.01     | -0.05 | -0.02   |
| INSTINVt_t | -0.01     | 0.06   | -0.86** | -0.09** | 0.04  | 0.00     | 1.00     | -0.08*| 0.00    |
| LIQ_t | -0.05      | -0.02   | 0.01    | -0.01 | 0.07* | 0.00      | -0.04    | 1.00  | -0.05   |
| ROE_t+1 | 0.01      | -0.24** | 0.33**  | 0.40** | -0.04 | -0.01    | -0.09**  | -0.08*| 1.00    |

Two-tailed test. ***, **, *. Correlation is significant at the 1%, 5%, and 10% levels, respectively. The upper part is Pearson correlation, and the lower part is the Spearman correlation.

Table 3. Effects of Sharia stocks on the relation between conservatism accounting and crash risk.

|       | DownVOL_t+1 | CONSV_t | FSIZE_t | MTB_t | LEV_t | CEOAge_t | INSTINVt | LIQ_t | ROE_t+1 |
|-------|-------------|---------|---------|-------|-------|-----------|----------|-------|---------|
| Coef. |             |         |         |       |       |           |          |       |         |
| (t-value) |          |         |         |       |       |           |          |       |         |
| Constant |           |         |         |       |       |           |          |       |         |
| Sharia_t |           |         |         |       |       |           |          |       |         |
| CONSV_t | <0.001     | <0.001  | 0.063*  |       |       |           |          |       |         |
| (0.013) | (0.004) | (1.558) |         |       |       |           |          |       |         |

One-tailed test, ***, **, and * represent the significance at 1%, 5% and 10% respectively. DownVOL is crash risk; FSIZE = firm's size; MTB = market to book value; LEV = debt to total assets; CEOAge = CEO age; INSTINV = ownership percentage of institutional investors; LIQ = trading volume divided by outstanding shares; ROE = return on equity; Sharia = stocks of Jakarta Islamic Index; CONSV = Conservatism level using Khan and Watts (2009); Sharia*CONSV_t is the interaction of Sharia and CONSV; t = period t.

line with the research of Callen and Fang (2015), where firms in a country with a high level of religiosity can reduce the risk of crashes. The norms of religiosity can suppress opportunistic behavior from managers to hide bad news for their interests.

Conservatism is also an important factor in crash risk. It is moderately significant at the 10% level. Higher conservatism stimulates higher crash risk. The result implies that the "loss recognition priority" policy is not good news for the market. The interaction variable of Sharia and CONSV is negative and significant. It indicates that Sharia can affect the relationship between conservatism and crash risk. Individually, CONSV produces a positive coefficient, but after interacting with Sharia, CONSV reduces crash risk. This finding supports H2 that Sharia moderates the relationship between conservatism and crash risk, whereas conservatism can reduce the crash risk for Sharia-based stocks. Our findings support the research of Ma et al. (2019) that the higher the level of religiosity tends to increase accounting conservatism. Religiosity makes an individual more risk-averse and prudent, which aligns with the concept of conservatism (Bjornsen et al., 2019). When these two traits are combined, the ability of the two variables to reduce the risk of crashes is stronger.

Several control variables are important factors to stimulate crash risk. FSIZE coefficient is positively significant at the 1% level in all models. Bigger firms produce higher crash risk. Both LIQ and ROE negatively affect DownVOL in Model 1, 2, 3 and 4 at the 5% level. The findings imply that liquidity and firms' profitability minimize the crash risk at the 5% level. Size has a positive effect on crash risk. The bigger the size of the company, the higher the risk of crashes. Kim and Zhang (2016), Defond et al. (2015) also have the same finding. Referring to the research of Hutton et al. (2009), the higher the size, the higher R2, which indicates that the firm-specific information is getting lower, which will increase the risk of crashes. LIQ hurts crash risk. As predicted, the higher the stock liquidity, the more informative the price, reducing the crash risk (Chauhan et al., 2017). ROE in the current period has a significant effect in reducing the risk of crashes. These results are consistent with previous studies (Hutton et al., 2009; Kim and Zhang, 2016, Androue et al., 2017). The higher the company's performance as reflected in its profitability, the lower the risk of crashes.

Referring to Narayan (2019b and 2020), we also perform the hypothesis testing using different sub samples. In Table 4 we divide the sample into Sharia (Model 1) and non-Sharia (Model 2) samples. Table 4 provides the regression results of those examinations. Model 1 of Table 4 shows that the adjusted R square of Model 1 is 8%. It is twice than adjusted R square in model 4 Table 3. The coefficient of CONSV is negatively significant at the 1% level.

Model 2 in Table 4 shows that in non-Sharia stocks, conservatism escalates stock crash risk. Although moderately significant, this finding suggests that conservatism is good news for stocks listed in JII. Recognizing expected expense and loss improves the stock volatility when the price decreases.

Our main topic is conservatism using the case of stocks of the Jakarta Islamic Index. Adjusted R-Squared are low when considering all samples in Table 3 – only 2%-3%. Additionally, in Table 4, we test the role of conservatism to crash risk using only Sharia stocks sample. We present evidence that adjusted R-Squared values increase substantially from 2% in Table 3 to 8.8% in Table 4. Using US data, Kim and Zhang (2016) and...
Kousenidis et al. (2014) produce adjusted R-squared around 6–8% when examining the impact of conservatism and stock crash risk.

Expanding the test, we also conducted a series of tests to understand when conservatism is good news to reduce stock crash risk. These findings indicate that Sharia and conservatism have positive effects on crash risk, but the moderation of these two variables cannot explain crash risk in the selected sample category. Our findings on the Sharia and non-Sharia samples divided based on growth rate indicate that conservatism in Sharia companies is better able to reduce crash risk than conservatism in low growth non-Sharia companies.

To improve the understanding of our data, we also perform a regression on non-Sharia companies based on (1) size, (2) liquidity, and (3) market to book value. Those tests are untabulated. The evidence shows that conservatism cannot explain crash risk based on liquidity and MTB for Non-Syariah firms. By using a test based on size, conservatism can reduce the risk of crashes in big firms, but it cannot in small firms. So, investors interested in non-Sharia portfolios can consider investing in big firms with higher conservatism levels to reduce the risk of crashes.

In this article, we highlight the economic significance of our results. This article also answers previous studies’ suggestions that research in small Sharia firms is better able to reduce crash risk than small non-Sharia firms.

### Table 4. Effects of conservatism accounting and crash risk: Sharia and non-Sharia sample.

| Dependent variable: DownVOL_{t+1} | 1 | 2 |
|-----------------------------------|---|---|
| | Sharia | Non-Sharia |
| Coef. | Coef. | Coef. | Coef. |
| (t-value) | (t-value) | (t-value) | (t-value) |
| Constant | -1.980 | -2.014*** | -2.299** |
| (1.065) | (2.746) | (2.713) | (2.746) |
| CONSV_{t} | -0.243*** | 0.066* | -0.385 |
| (3.225) | (1.541) | (1.541) | (1.541) |
| FSIZE_{t} | 0.055 | 0.089*** | -0.385 |
| (0.941) | (3.356) | (3.356) | (3.356) |
| MTB_{t} | -0.01 | -0.01 | -0.01 |
| (0.293) | (0.718) | (0.718) | (0.718) |
| LEV_{t} | 0.458 | 0.068 | -0.278 |
| (1.134) | (0.491) | (0.491) | (0.491) |
| CEOAge_{t} | <0.01 | <0.01 | <0.01 |
| (0.533) | (0.371) | (0.371) | (0.371) |
| INSTINVT_{t} | -0.071 | -0.028 | -0.487 |
| (-0.207) | (-0.178) | (-0.178) | (-0.178) |
| LIQ_{t} | -0.086 | -0.074** | -1.471 |
| (-0.385) | (-1.747) | (-1.747) | (-1.747) |
| ROE_{t+1} | -0.281 | -0.276** | -1.11** |
| (-0.491) | (-1.770) | (-1.770) | (-1.770) |
| F-test | 2.625 | 2.728 | 5.057 |
| Adj. R² | 0.088 | 0.017 | 0.098 |
| N | 136 | 790 | 399 | 399 |

One-tailed test, ***, **, and * represent the significance at 1%, 5% and 10% respectively. DownVOL is crash risk; FSIZE = firms’ size MTB = market to book value; LEV = debt to total assets; CEOAge = CEO age; INSTINVT = ownership percentage of institutional investors; LIQ = trading volume divided by outstanding shares; ROE = return on equity; Sharia = stocks of Jakarta Islamic Index; CONSV = Conservatism level using Khan and Watts (2009); Sharia*CONSV_{t} is the interaction of Sharia and CONSV; t = period t.

### Table 5. Effects of conservatism accounting and crash risk: Splitting the non-Sharia sample.

| Dependent variable: DownVOL_{t+1} | 1 | 2 |
|-----------------------------------|---|---|
| | Sharia and non-Sharia small firms | Sharia and non-Sharia low MTB firms |
| Coef. | Coef. | Coef. | Coef. |
| (t-value) | (t-value) | (t-value) | (t-value) |
| Constant | -0.378* | -2.299** |
| (1.339) | (2.746) | (2.746) | (2.746) |
| Sharia_{t} | 0.310*** | -0.066 |
| (2.567) | (3.356) | (3.356) | (3.356) |
| CONSV_{t} | 0.240*** | 0.220** |
| (4.576) | (3.356) | (3.356) | (3.356) |
| Sharia*CONSV | -0.509*** |
| (-5.609) | (-5.328) | (-5.328) | (-5.328) |
| FSIZE_{t} | 0.077** |
| (2.289) | (2.289) | (2.289) | (2.289) |
| MTB_{t} | 0.099 |
| (0.672) | (0.672) | (0.672) | (0.672) |
| LEV_{t} | 0.180 | 0.226 |
| (0.963) | (1.219) | (1.219) | (1.219) |
| CEOAge_{t} | 0.003 | 0.002 |
| (0.722) | (0.525) | (0.525) | (0.525) |
| INSTINVT_{t} | -0.083 |
| (-0.487) | (-0.581) | (-0.581) | (-0.581) |
| LIQ_{t} | -0.111** |
| (-1.741) | (-1.555) | (-1.555) | (-1.555) |
| ROE_{t+1} | -0.278 |
| (-1.078) | (-0.615) | (-0.615) | (-0.615) |
| F-test | 5.807 |
| 5.057 | 5.057 | 5.057 |
| Adj. R² | 0.098 | 0.084 |
| N | 399 | 399 | 399 | 399 |

One-tailed test, ***, **, and * represent the significance at 1%, 5% and 10% respectively. DownVOL is crash risk; FSIZE = firms’ size MTB = market to book value; LEV = debt to total assets; CEOAge = CEO age; INSTINVT = ownership percentage of institutional investors; LIQ = trading volume divided by outstanding shares; ROE = return on equity; Sharia = stocks of Jakarta Islamic Index; CONSV = Conservatism level using Khan and Watts (2009); Sharia*CONSV_{t} is the interaction of Sharia and CONSV; t = period t.
Islamic finance should focus on statistical significance and provide economic significance (Narayan and Phan, 2019; Sharma et al., 2019; Juhero et al., 2020). Our results offer economic significance for investment portfolios strategy.

Conservatism accounting recognizes bad news more timely than good news to protect users’ interest in financial reporting. It will avoid overvaluation because of management aggressiveness in reporting assets and income. Conceptually, conservatism accounting produces less crash risk (Kim and Zhang, 2016; Kounenidis et al., 2014). Conversely, our examination presents evidence that conservatism accounting of Indonesian firms stimulates higher crash risk. The different results are caused by the uniqueness of the Indonesian stock market because its market is in a recent development stage (Sharma et al., 2019). Market participants do not recognize the importance of conservatism but only focus on bottom-line information without analyzing accounting policy.

By examining Sharia stocks in Indonesia, we provide economic significance by presenting the role of Sharia in moderating the relation between conservatism and stock crash risk. Investing in Sharia firms with higher accounting conservatism levels prevent investors from being exposed to crash risk. As the world’s largest Muslim population, the status of Sharia-listed stocks is essential because, from the perspective of local investors, they only invest in things that are in line with their religious beliefs. Learning from our findings, the status of Sharia stock benefits firms presenting more conservative accounting by generating less crash risk. Investment managers may use this finding to build a less crash risk portfolio in Indonesia.

5. Conclusions

This paper examines whether Sharia stocks produce moderating effect on the association of conservatism and crash risk. We provide evidence that Sharia stocks in Indonesia, represented by stocks listed in the Jakarta Islamic Index, increase the ability of conservatism to reduce the risk of crashes.

Our findings are consistent with the conjecture that religious norms effectively control managerial bad-news-accumulation activities within firms. Our paper contributes to the literature on religion and corporate behavior. Religiosity brings a positive impact to the firms that tend to produce size biases. Future studies may also use other proxies of religiosity such as the number of religious adherents in a country (Callen and Fang, 2013; Ma et al., 2019) – to mitigate the risk of extreme outcomes in the stock markets.

Declarations

Author contribution statement

Felizia Arni Rudiawarni & Dedhy Sulistiyawan: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed analysis tools or data; Wrote the paper.
Bruno S. Sergi: Contributed analysis tools or data; Wrote the paper.

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Data availability statement

Data will be made available on request.

Competing interest statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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