Does Sharia-Obedient Status Cause Firms to be Less Involved in Accrual-Based Earnings Management?

Bayu Adi Nugroho[1]; Rizki Annissa[2]; Edhi Juwono[3]; Inung Wijayanti[4]

[1,3,4]Accounting Department, Faculty of Economics and Business, Perbanas Institute
[2]Undergraduate Accounting Program, Perbanas Institute
Jln. Perbanas, Jakarta Selatan 12940, Indonesia
[1]bayunugrohomito@gmail.com; [2]msrizkia@gmail.com;
[3]edhi.juwono@gmail.com; [4]inung@perbanas.id

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ABSTRACT

The main objective of the research was to investigate the accrual quality of Sharia-obedient firms listed in Indonesia Stock Exchange (IDX). Specifically, this research attempted to study whether Sharia was an effective monitoring mechanism in reducing opportunistic managerial behavior through accrual quality and increasing the accuracy of the accounting report. The accrual quality or accrual truthfulness was measured using two widely-used proxies of accrual-based earnings management. The researchers utilized fixed-effect panel data of 84 manufacturing firms in 2013-2017 or 420 observations for the accrual quality computation and cross-section for the regression models (84 observations). This research also employed Two-Stage Least Squares (2SLS) regression method and Ordinary Least Squares method as the comparison. The researchers find robust results after mitigating heteroscedasticity and endogeneity issues. It shows that Sharia-obedient firms have a significantly higher quality of earnings. It also reveals that the close examination by regulators can improve accounting quality and attract new investors in Islamic market. Hence, the findings of this research may give insights to rule-maker and another accounting-related department to improve the quality of Islamic or Sharia accounting practices in Indonesia.

Keywords: sharia-obedient status, firm envolement, accrual-based earnings management

INTRODUCTION

Accrual truthfulness is part of financial reporting quality as it is a source of performance measurement (Wan Ismail, Kamarudin, & Sarman, 2015). In addition, the quality of the accounting report can be influenced by accrual truthfulness. Nugroho and Jasman (2018) stated that the implementation of accrual quality management could lead to an increase in firm value in Indonesia for firms with high debt to equity ratio and positive capital expenditure. Moreover, Sulistiawan and Rudiawarni (2017) showed that abnormal return could be obtained by using accrual quality management in Indonesia. Then, Yuliana and Alim (2017) showed that the status of Sharia-compliant firm became one of the determinants of real earnings management in Indonesia.

Previous researchers reveal that religion is an origin of work ethics in business organizations and it can mitigate earnings management behavior. Suryanto (2016) found that there was an absolute relationship between the Islamic conscience and auditing services. Meanwhile, Kareem, Azmin, and Ahmad (2017) investigated whether a higher percentage of directors whose religion was Islam would have an outcome in higher accrual quality. They showed that Muslim managers were held accountable to Allah or God in the afterlife so that they would be honest in conducting their duties. Similarly, Amilin, Ismail, Astuti, Reskino, and Mulazid (2018) stated that ethics issues were essential in mitigating business scandals.

Furthermore, they argued that the execution of Islamic work ethics would make a conducive working environment. As a result, accountants would execute optimum work performance and get a reward. Satisfied accountants would also minimize fraud.

Another correlated research was implemented by Wan Ismail *et al*. (2015). They examined the accrual truthfulness in Sharia-obedient firms listed on the Malaysian Stock Exchange. The research showed that the new reasonings that Sharia-obedient firms in Malaysia had a higher stimulus to declare accounting reports truthfully. They also highly emphasized on the investment view which was contradictory from other researchers which were excessively depended on Islamic reasonings and values.

Furthermore, due to higher inspection from rule makers and investors, the Sharia-obedient firms announce higher accrual truthfulness than other firms. Furthermore, there are contradictory conclusions regarding whether Sharia is an effective monitoring mechanism in reducing opportunistic managerial behavior through accrual quality in emerging markets. Wan Ismail *et al*. (2015) concluded that Sharia was an effective monitoring mechanism in reducing opportunistic managerial behavior through accrual quality in Malaysia. In contrast, Sabrun, Muhamad, Yusoff, and Darus (2018) suggested a different result. They found that Sharia-obedient firms might not exercise the Islamic ethical conducts thoroughly. There were chances that Islamic-obedient firms manipulated accrual truthfulness.

Moreover, they utilized not only accrual-based earnings management as in Wan Ismail *et al*. (2015) but also real activities earnings management. In Indonesia, Yuliana and Alim (2017) pointed out that the real earnings management did not significantly reduce the truthfulness of accounting report. Hence, in this research, the researchers attempt to bridge the gap.

Accrual measurement has abundantly been researched. For example, Alexander and Hengky (2017) agreed that earnings management happened when decision makers employed discretion to change financial information. In other words, accrual truthfulness was a choice of accounting policies to obtain a specific objective (Goel, 2016). Moreover, Goel (2016) stated that earnings management was the accrual-based accounting policies to obtain a certain objective.

In Malaysia, Islamic Capital Market (ICM) is generated to help Muslims to identify Sharia-obedient investments. Thus, with the establishment of ICM, Sharia-obedient listed firms have to do three screening examinations before they can be announced as Sharia-obedient firms (Wan Ismail *et al*., 2015). There are two types of Islamic-obedient rules: qualitative and quantitative rules (Ashraf & Khawaja, 2016; Astuty, 2015), In general, the screening is to investigate the firms' core business. The firms are prohibited from gambling and involved in highly uncertain trading or illegal drugs (Wan Ismail *et al.*, 2015). The next screening is accounting-related. For example, debt is limited to exceed 30% (Wan Ismail *et al*., 2015). Then, in the qualitative screening test, for example, it is prohibited to sell or serve alcoholic drinks in restaurants, to engage in pork-based business, or to acquire firms that do not adhere to Islamic values. Islamic-obedient firms are the ones that meet the previously mentioned criteria (Wan Ismail *et al*., 2015).

Similarly, in Indonesia, Astuty (2015) explained that Sharia-obedient firms had prohibited business activities, such as gambling or financial with usury concept and liquor. Additionally, Madyan, Salim, Anshori, and Solimun (2013) stated that they had to comply with the following accounting-related ratios. For example, the ratio of total interest-based debt was divided by total equity, and it should not exceed 82%. Furthermore, maximum debt to total assets was 45%.

Based on debt limitation, the average debt of Sharia stocks should be theoretically smaller than firms whose stocks are not in line with Sharia principle (non-Sharia). Thus, the financial risk of Sharia-obedient firms is theoretically smaller than non-Sharia stocks (Ashraf & Khawaja, 2016). Also, due to the closely regulated environment, several researchers show that Sharia-obedient stocks are resistant to market turmoils due to excessive leverage (Wan Ismail *et al*., 2015). Furthermore, Arouri, Ben Ameur, Jawadi, Jawadi, and Louhichi (2013) suggested that Islamic finance had advantages in facing an economic downturn than conventional finance. In addition, Islamic investment could produce positive returns, less risk, and various benefits.

Similarly, Jawadi, Jawadi, and Cheffou (2015) explained that emerging Islamic markets were less efficient than developed Islamic markets. It meant that there were trading opportunities and diversity benefits from this region. Therefore, there was an increased interest in Sharia-obedient financial markets other than conventional finance.

An emerging market such as Indonesia is strongly encouraged in luring foreign traders as the healthy business environment is maintained (Pranata & Nurzanah, 2015). Wan Ismail *et al*. (2015) saw that the Islamic financial market in Malaysia had been attractive to a foreign investor. Similarly, in Indonesia, the Indonesia Stock Exchange (IDX) (formerly known as Jakarta Stock Exchange) in cooperation with PT Danareksa Investment Management established the Jakarta Islamic Index (the first Islamic Index in Indonesia) on July 3, 2000. The Jakarta Islamic Index gives information to investors about Islamic shares (Pranata & Nurzanah, 2015). Moreover, Lusyana and Sherif (2017) suggested that Islamic capital markets had rapidly grown since the world financial crisis in 2008. In addition, they agreed that the attractiveness of the Islamic capital market in Indonesia could be seen that there were positive abnormal returns in Sharia stocks.

The mentioned research gives an affirmation that Sharia-obedient firms are under close examination from regulator compared to other firms. Furthermore, as shown by Sánchez, Alejandro, Sáenz, and García (2017), a higher accounting information quality can be achieved in a closely regulated environment, and it is evident that Sharia-obedient firms are eager to provide

an honest accounting report for investors. Besides Malaysia, Indonesia is one of the targeted markets for Sharia-obedient financial markets in Southeast Asia (Pranata & Nurzanah, 2015). Therefore, the used hypothesis is as follows:

H_a : Sharia-obedient firms have better accrual truthfulness than non-Sharia-obedient firms.

The main objective of this research is to investigate whether Sharia is an effective monitoring mechanism to reduce opportunistic managerial behavior through accrual quality, and as a result, Sharia will increase the quality of accounting report in Indonesia. In addition, Nugroho and Jasman (2018) stated that accrual quality management could be used to increase firm value in Indonesia. Also, there is a rapid growth of Islamic capital market in Indonesia (Pranata & Nurzanah, 2015). Hence, this research provides the reasoning that due to close examination by the rule-maker, the Sharia-obedient firms in Indonesia have huge encouragement to provide a truthful accounting statement for investors. The finding of this research has extended the research of Wan Ismail *et al*. (2015). In addition, the result is expected to support a close examination imposed by the regulators to comply with Islamic market. Since the Islamic market has grown rapidly, the result is also expected to help to lure faith-based investors.

METHODS

The researchers follow Jasman and Amin (2017) and Nugroho and Jasman (2018) for the sample selection method. The sample of this research consists of Indonesian manufacturing firms listed in IDX in 2013-2017. They are selected because they represent many industries listed in IDX, and manufacturing industry has contributed an important role in Indonesia's economic growth such as employment, exports, and national Gross Domestic Product (GDP). The purpose of only using the manufacturing firms is to cope with the differences in the firms' business nature as well as their investment capabilities that may strongly different from other sectors (Setianto & Kusumaputra, 2017).

The sample selection method is purposive sampling with several criteria. First, the manufacturing firms which are continuously listed in IDX from 2013 to 2017. Second, the financial statements of the firms are denominated in local currency which is Rupiah. Third, the firms are free from major corporate actions such as mergers and acquisition. The researchers hand-collects the sample from idx.co.id and available corporate annual reports of firms in their perspective websites. For the Sharia-firms selection, the researchers use IDX Announcement No. Peng-00535/BEI.OPP/O6-2018 concerning the list of Indonesian Sharia Stocks (Indonesia Stock Exchange, 2018).

The researchers use the method from Dechow and Dichev (2002) for the accrual truthfulness. In this research, only accrual-based earnings management proxies are used because other researchers have mostly employed accruals manipulation as a proxy for earnings management or accrual quality (Goel, 2016). The model is under the assumption that current accrual is the prediction of future cash flow. In addition, this model is based on the working capital variation and the realization of one-year cash flow. This model also connects the total current accrual of the previous year, current year, and one year ahead of cash flows from operations. The model is as follows:

$$TCA_{x,y} = \alpha_0 + \alpha_{1,x} CFO_{x,y-1} + \alpha_{2,x} CFO_{x,y} +$$
$$\alpha_3 CFO_{x,y+1} + \varepsilon_{x,y} \qquad (1)$$

It shows that $TCA_{x,y}$ is the total current accrual of x firm in y year, and $CFO_{x,y}$ is the cash flow from operations of x firm in y year. All variables are divided by total assets. Then, $\varepsilon_{x,y}$ is the residual of x firm in y year.

According to Dechow and Dichev (2002), accrual quality is the standard deviation of x firm's estimated residual. The standard deviation is based on the estimated residual of the total current accrual of x firm in y year. It implies that a larger variability of the residuals represents lower accrual truthfulness. However, according to Wan Ismail *et al*. (2015), the accrual truthfulness measurement requires sufficient data. At least eight years of data are required to compute the accrual truthfulness measurement (Dechow & Dichev, 2002). However, based on Wan Ismail *et al*. (2015), the data from emerging markets such as Malaysia are not capable of complying the requirement. Therefore, the researchers follow the research of Goel (2016) and use five years of annual data for accrual quality computation.

In addition, the researchers employ data panel model for the calculation of the residuals. Unlike Wan Ismail *et al*. (2015) who studied the accrual quality as the absolute value of residuals, the researchers use the five-year variability of the residuals. Hence, the researchers use the volatility of residuals instead of the magnitude of the residuals. Using the model in equation (1), the researchers perform data panel regression to estimate the accrual quality values for each firm from 2013-2017. This regression generates five-year residuals for each firm ($\varepsilon_{x,y}$). The higher standard deviation of the residuals indicates the lower accrual quality of a firm. Additionally, the researchers use fixed-effect panel data analysis for calculating the residuals. The regression analyses use the following model for hypothesis testing.

$$AQD_{x,y} = \theta_0 + \theta_1 SHARIA_{x,y} + \theta_2 BIG4_{x,y} +$$
$$\theta_3 SALESVAR_{x,y} + \theta_4 CFOVAR_{x,y} + \varepsilon_{x,y} \qquad (2)$$

Where:

$AQD_{x,y}$ = The five-year standard deviation of residuals from data panel regression model (Dechow & Dichev, 2002)

$SHARIA_{x,y}$ = Dummy variable (1 is for Islamic-obedient firm, 0 is others). The researchers use Indonesia Sharia Stock Index (ISSI) as a reference whether a company is a Sharia-obedient or not.

$BIG4_{x,y}$ = Dummy variable (1 is for big 4 auditing firm, 0 is others);

$SALESVAR_{x,y}$ = Standard deviation of sales revenue during 2013-2017

$CFOVAR_{x,y}$ = Standard deviation of cash flows from operating during 2013-2017

In equation (2), the coefficient SHARIA shows the difference between accrual truthfulness of Sharia and other firms. If the sign of the coefficient is greatly negative (positive), Sharia firms have greatly higher (lower) accrual truthfulness than other firms. In addition, there are six control variables in the regression. For instance, it is highly possible that well-known auditing firms give more comprehensive auditing services than other auditors. Gaynor, Kelton, Mercer, and Yohn (2016) stated that auditors with many clients from big firms tended to perform high auditing services since they had a big reputation at stake. Wan Ismail *et al.* (2015) also mentioned that high business uncertainties were reflected in a high standard deviation of Cash Flow from Operating (CFO) and revenues.

Following Na and Hong (2017), the researchers run the regression using the Two-Stage Least Squares (2SLS) method. This method is implemented as a different estimation method because there is a possible endogeneity problem. If accrual quality and Sharia-compliant firms are simultaneously determined, Ordinary Least Square (OLS) predicts that the coefficients on SHARIAit in equation (2) will be biased and inconsistent (Jumirah & Wahyuni, 2018; Na & Hong, 2017). The researchers use the following 2SLS regression stipulation:

First stage:

$$SHARIA_{x,y} = \omega_0 + \omega_1 LEVERAGE_{x,y} + \omega_2 LOSS_{x,y} +$$
$$\omega_3 BIG4_{x,y} + \omega_4 SALESVAR_{x,y} + \omega_5 CFOVAR_{x,y} + \pi_{x,y}$$
$$(3)$$

Second stage:

$$AQD_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} +$$
$$\omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \gamma_{x,y} \qquad (4)$$

It shows that $SHARIA_{xy}$ in equation (4) is $SHARIA_{x,y}$ after instrumentation with LEVERAGE and LOSS. LEVERAGE is total debt scaled by total assets, LOSS is a dummy variable which 1 is for a firm experiencing a net loss during 2013- 2017 or 0 is others, and the rest of the variables are previously explained.

The researchers implement leverage as an instrumental variable because earnings management practice is evident at highly leveraged firms in Indonesia. Thus, the application of discretionary accruals strengthens investment opportunities for firms with high debt (Nugroho & Jasman, 2018). In addition, the researchers use the loss as another instrumental variable because accrual quality is negatively related to negative income or loss since firms with negative earnings tend to have low accrual quality. It is also likely to have a negative capital value of company intellectual (Asmawanti & Wijayanti, 2017).

To test whether an endogeneity problem exists, the researchers perform the Hausman test (Jumirah & Wahyuni, 2018). There are two steps in the test. Firstly, the regression is run by equation (3). The residuals $\pi_{i,t}$ are taken and inserted to the regression equation as follows:

$$AQD_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} +$$
$$\omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \omega_5 \pi_{x,y} + \varepsilon_{x,y} \quad (5)$$

If the coefficient ω_5 in equation (5) is significant, it shows that an endogeneity problem prevails. An OLS prediction is biased compared to 2SLS. However, the 2SLS estimate is still consistent and efficient that the instrumental variables are valid. Secondly, the second regression in equation (4) is run with instrumental variables. Therefore, instrumental validity is important. There are two tests for checking the validity of instrumental variables. First, a combination of valid instruments will have to conform with the Cragg-Donald F test. Second, a combination of valid instruments will have to be in line with the overidentified test (J-Statistic) (Jumirah & Wahyuni, 2018; Widarjono, 2017)

RESULTS AND DISCUSSIONS

Following the several criteria for the sample selection, the result can be seen in Table 1. Panel A in Table 1 is the derivation of the sample. Panel B in Table 1 shows the industrial groupings in Indonesia. There are particular concentrations in automotive (10%), food and beverage (12%), plastics (10%), and steel (12%).

Table 1 Sample Selection

Sample derivation	Number of firms
Manufacturing Firms listed in IDX 2013-2017	144
Firms with financial statements denominated in non-local currency	(27)
New Initial Public Offering (IPO), Delisting firms	(14)
Firms with missing data	(15)
Final sample of Indonesian Manufacturing Firms	84

The category of the sample firms	Number of firms	Percentage of the sample
Animal Feed	4	4,77%
Automotive	8	9,52%
Cable	5	5,95%
Cement	3	3,57%
Ceramics	5	5,95%
Chemistry	4	4,76%
Cigarettes	4	4,76%
Cosmetics	3	3,57%
Food and Beverage	10	11,90%
Footwear	2	2,38%
Home furnishings	1	1,20%
Pharmacy	7	8,34%
Plastics	8	9,52%
Pulp and paper	3	3,57%
Steel	10	11,90%
Textile	6	7,14%
Wood	1	1,20%
Total	84	100,00%

(Source: Author's Calculation)

Table 2 Descriptive Statistics: Non-Dummy Variables

	Islamic-obedient		Non-Islamic-obedient		Difference	
Variable	Mean	Std dev	Mean	Std dev	ρ-value	t-statistic
AQF	0,140	0,098	0,194	0,158	0,000***	-5,914
AQD	0,140	0,100	0,196	0,160	0,000***	-5,602
SALESVAR	0,139	0,050	0,142	0,120	0,303	-1,040
CFOVAR	0,123	0,057	0,560	0,030	0,022**	-2,353

Notes: *** $\rho < 0,01$ and ** $\rho < 0,05$; AQD are the five-year standard deviation of Dechow and Dichev (2002) for fixed effect panel regression for 2013- 2017; AQF is the five-year standard modified deviation of Dechow and Dichev (2002) as suggested by Francis, LaFond, Olsson, and Schipper (2005) for fixed effect panel regression for 2013-2017; SALESVAR is the standard deviation of sales revenue of 2013-2017; CFOVAR is the variability of cash flows from operation from 2013 to 2017.

(Source: Data Processed Using EViews 10 by Researchers)

Tables 2 and 3 summarize the descriptive statistics of 84 manufacturing firms during 2013-2017. Table 2 shows the comparison of variables among the firms. The first accrual quality measure, Acrual Quality from Francis (AQF), is greatly lower in the Sharia-obedient sample than in other firms. The AQF in Sharia-obedient firms is 0,140. It is greatly lower than the mean in non-Sharia-obedient firms, which is 0,194. As previously mentioned, the larger the number of AQF and Acrual Quality from Dechow (AQD) is the lower the quality of financial reporting will be. The second accrual quality measure, AQD, shows that the mean of Sharia-obedient firms is significantly lower than in non-Sharia-obedient firms. Both tables suggest that the accrual truthfulness of Sharia-obedient firms is better than other firms.

Table 3 Descriptive Statistics: Dummy Variables

	Yes (1)		No (0)	
Variable	n	(%)	n	(%)
SHARIA	58	69%	26	31%
BIG4	32	38%	52	62%
LOSS	34	40%	50	60%

Notes: SHARIA is a dummy variable, 1 is the firm listed in Indonesian Sharia Stock Index (ISSI), 0 is other; BIG4 is a dummy variable, 1 if the firm is audited by a big 4 auditor, 0 is other.

(Source: Authors' Calculation)

Moreover, in terms of SALESVAR, Sharia-obedient firms are not different from other firms. However, the mean of cash flow variability (CFOVAR) of Sharia-obedient firms is 0,123, which is greatly lower than non-Sharia-obedient firms (0,560).

Table 3 shows the information of dummy variables in equation (2). Around 69% in 87 firm-years observations are Sharia-obedient firms. Non-Sharia-obedient firms represent only around 31% of the total sample. It shows that the sample consists of more Sharia-obedient firms than others. Moreover, Big4 auditing firms audit 38% of the total sample. In addition, variable loss shows that 40% of the total sample are ever experiencing a net loss during 2013-2017.

Table 4 Classical Assumptions Tests

Heteroskedasticity Test: White	
Prob. Chi-Square = 0,0027	
Breusch-Godfrey Serial Correlation LM Test:	
Prob. Chi-Square = 0,0682	
Variance Inflation Factors	
SHARIA	1,03
BIG4	1,01
CFOVAR	1,07
SALESVAR	1,11
Normality Test (Jarque - Bera)	
Jarque – Bera	56,45
Probability	0,000

(Source: Data Processed Using EViews 10 by Researchers)

Table 4 explains the results of classical assumption tests for equation (3). Using OLS, the researchers run the classical assumption tests for the regression models. As can be seen from Table 4, the regression model has passed classical assumption tests except for heteroskedasticity and Jarque-Berra test with $\alpha=5\%$. However, the researchers emphasize

Table 5 Regression Results for Hausman Test

$AQD_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} + \omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \omega_5 \bar{\pi}_{x,y} + \varepsilon_{x,y}$

Variable	Coefficients	t-statistic	Prob
Intercept	0,219	4,566	0,000***
$SHARIA_{x,y}$	-0,198	-3,722	0,000***
$BIG4_{x,y}$	-0,037	-1,708	0,091*
$SALESVAR_{x,y}$	0,399	4,779	0,000***
$CFOVAR_{x,y}$	1,086	4,722	0,000***
RESIDUAL($\bar{\pi}_{x,y}$)	0,105	1,775	0,07*
Adjusted R-squared		59,11%	
Prob (F- Statistic)		0,000***	
N		84	

Notes: *** ρ < 0,01 * ρ < 0,10 ** ρ < 0,05; RESIDUAL $\pi_{x,y}$ is the residual values from equation no 3, the rest of variables are previously mentioned.

(Source: Data Processed Using EViews 10 by Researchers)

on heteroskedasticity and autocorrelation for classical assumptions tests (Ghozali & Ratmono, 2017). In addition, Table 5 shows that the Hausman test for the 2SLS regression model. There is a potential endogeneity problem since the explanatory variable of $\pi_{x,y}$ is marginally significant at 10%. As a result, the researchers implement the 2SLS with white heteroskedasticity-consistent standard errors and covariance method in this research. It is because the data suffers from heteroscedasticity issue. The researchers also run OLS methods for comparison with other research.

Following Wan Ismail *et al.* (2015), the researchers also run OLS regression with White-Hinkley heteroskedasticity-consistent standard errors and covariance since the sample confirms that there is heteroscedasticity issue in Table 4. Table 6 shows the regression result for equation (2). It can be seen that SHARIA variable is significant at 1%, and the coefficient of the variable is negative in all regression methods. It indicates that the hypothesis of this research is accepted. This result suggests that Sharia-obedient firms have higher accrual truthfulness than non-Sharia-obedient firms. The result also supports the argument that Sharia-obedient firms are encouraged to provide higher accrual truthfulness due to Islamic screenings. In other words, due to higher inspection from rule-makers and investors, the Sharia-obedient firms announce higher accrual truthfulness than other firms. As a result, this finding has supported the Sharia-screening by regulators. Since the firm's inclusion to ISSI is not compulsory, managers seem to be interested in luring faith-based investors. This is because the Islamic market has grown rapidly. This result supports the result of Wan Ismail *et al.* (2015).

However, this result is not in line with Sabrun *et al.* (2018).

Moreover, BIG4 variable is also significant. It conforms to the researchers' expectation that highly reputable auditors give more comprehensive auditing services than other auditors. The auditors with a large client base tend to perform high auditing services since they have a big reputation at stake. This finding is not in line with Gaynor *et al.* (2016) that Big4 auditing firms did not have an effect on discretionary accruals. Similarly, SALESVAR and CFOVAR variables are positively significant. These results are in line with the researchers' expectation that high business uncertainties are reflected in high variability of cash flows from operations and sales. Then, as a consequence, it results in low accrual quality. These results are consistent with Dechow and Dichev (2002) and Wan Ismail *et al.* (2015).

The 2SLS results also show that the 2SLS regression passes the instrument relevance test. The Cragg-Donald F-statistic is above the minimum threshold value of 10. The result shows that the Cragg-Donald F-statistic is 19. The instruments also meet the requirement of exogeneity test. With the Hansen J-statistic (overidentified test), the result is not statistically significant. It means that the instrumental variables are exogenous (Jumirah & Wahyuni, 2018). Overall, the test indicates that the instrumental variables are valid and relevant. In addition, the regressor endogeneity test accepts the hypothesis that endogeneity is present in the models. It means that the 2SLS estimation should be used. Consequently, the researchers argue that the 2SLS coefficients are not biased.

Table 6 Main Results

$$AQD_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} + \omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \varepsilon_{x,y}$$

Variable	Expected Sign	Basic OLS		OLS with t-white		2SLS with t-white	
		Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
Intercept	-/+	0,1505	5,268***	0,1505	3,605***	0,2338	4,497***
SHARIA$_{x,y}$	-	-0,1135	-4,757***	-0,1135	-3,580***	-0,1609	-4,621***
BIG4$_{x,y}$	-	-0,0354	-1,581	-0,0354	-1,735*	-0,0594	-2,237**
SALESVAR$_{x,y}$	+	0,4144	4,936***	0,4144	3,442***	0,3246	3,263***
CFOVAR$_{x,y}$	+	1,2103	5,450***	1,2103	8,585***	0,9179	3,313***
Adj. R Squared		57,99%		57,99%		53,46%	
Prob (F-statistic)		0,000***		0,000***			
J-Statistic						0,003	
Prob (J-Statistic)						0,955	
Cragg-Donald F-Stat						19,58***	
Regressor Endogeneity Prob.						0,0387**	
n		84		84		84	

Notes: *** $\rho < 0{,}01$ * $\rho < 0{,}10$ ** $\rho < 0{,}05$; the rest of variables are previously mentioned
(Source: Data Processed Using EViews 10 by Researchers)

Furthermore, the value of 2SLS with t-white coefficients is lower than the value of OLS with t-white coefficients. It shows that there is an overestimation in OLS coefficients. This result is in line with Na and Hong (2017).

Then, the researchers execute sensitivity check. Consistent with Wan Ismail *et al.* (2015), the researchers recalculate equation (3) using other AQF. It is originated from a five-year modified standard deviation of Dechow and Dichev (2002) as suggested by Francis *et al.* (2005). Francis *et al.* (2005) adjusted the modifications in firms' economic surroundings and resulted in a better proxy for accrual truthfulness. They also suggested to include some variables such as the variation in revenue (ΔREV) and Property, Plant and Equipment (PPE) as the additional explanatory variables in the model of Dechow and Dichev (2002). The model of Francis *et al.* (2005) is a more powerful approach because of the addition. The accrual quality or truthfulness model is as follows:

$$TCA_{x,y} = \alpha_0 + \alpha_{1,x}CFO_{x,y-1} + \alpha_{2,x}CFO_{x,y} + \alpha_{3,x}CFO_{x,y+1} + \alpha_4\Delta REV_{x,y} + \alpha_5 PPE_{x,y} + \varepsilon_{x,y} \quad (6)$$

It illustrates that $TCA_{x,y}$ is the total current accrual of x firm in y year; $CFO_{x,y}$ is the cash flow from operations of x firm in y year; $\Delta REV_{x,y}$ is the change in revenue of x firm in y year; and $PPE_{x,y}$ is the gross in property, plant, and equipment of x firm in y year. All variables are divided by total assets, and $\varepsilon_{x,y}$ is the residual of x firm in y year. Furthermore, the researchers use the following model for the sensitivity test:

$$AQF_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} + \omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \varepsilon_{x,y} \quad (7)$$

In line with the result of Table 6, Table 7 shows that the coefficient for SHARIA is negative and statistically significant. It also shows that Islamic-obedient status is closely related to AQF. It also means that Sharia-obedient firms have greatly higher accrual truthfulness or accrual quality than non-Sharia-obedient firms. For the control variables, similar results are also reported. SALESVAR and CFOVAR variables are positively significant. These results are in line with the results in Table 6. Overall, the main results and the conducted sensitivity tests show that Sharia-obedient firms have higher accrual truthfulness than non-Sharia-obedient firms. It shows that Sharia-obedient firms are subject to greater close examination from rule-makers and obtain greater inducement to report truthful earnings. This finding is consistent with Wan Ismail *et al.* (2015) who found that Sharia-obedient firms had higher accrual truthfulness than non-Sharia-obedient firms in Malaysia.

Table 7 Sensitivity Test Results

$$AQF_{x,y} = \omega_0 + \omega_1 SHARIA_{x,y} + \omega_2 BIG4_{x,y} + \omega_3 SALESVAR_{x,y} + \omega_4 CFOVAR_{x,y} + \varepsilon_{x,y}$$

Variable	Expected Sign	Basic OLS		OLS with *t*-white		2SLS with *t*-white	
		Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
Intercept	-/+	0,152	5,360***	0,152	3,741***	0,244	3,937***
$SHARIA_{x,y}$	-	-0,112	-4,708***	-0,112	-3,568***	-0,164	-3,832***
$BIG4_{x,y}$	-	-0,035	-1,593	-0,035	-1,751*	-0,062	-2,188**
$SALESVAR_{x,y}$	+	0,375	4,483***	0,375	3,507***	0,276	2,366***
$CFOVAR_{x,y}$	+	1,239	5,602***	1,239	8,953***	0,917	3,290***
Adj. R Squared		57%		57%		55,5%	
Prob (F-statistic)		0,0000***		0,0000***			
J-Statistic						0,005	
Prob (J-Statistic)						0,943	
Cragg-Donald F-Stat						19,5***	
Regressor Endogeneity Prob.						0,0221**	
n		84		84		84	

Notes: *** ρ < 0,01 * ρ < 0,10 ** ρ < 0,05; the rest of variables are previously mentioned
(Source: Data Processed Using EViews 10 by Researchers)

The findings of this research may give insight to rule-makers and other accounting related department to improve the quality of Islamic or Sharia accounting practices in Indonesia. This research may also add literature on Sharia and earnings management studies especially in Indonesia. Furthermore, the result of this research implies that Sharia-screening can improve the accounting truthfulness and attract faith-based investors to invest in Islamic market. Moreover, consistent with previous research, this research focuses on the investment perspective without comparing to other religions other than Islam that can lead to preferential bias. Besides faith-based investors, this research provides benefits to investment analysts in a better understanding of accrual truthfulness in Sharia-obedient firms.

CONCLUSIONS

This research investigates the relationship between Sharia-obedient firms and accrual truthfulness, especially concerning accrual quality. Consistent with the result in Malaysia, Sharia-obedient firms in Indonesia have bigger encouragement to provide better accrual truthfulness in accounting report due to Islamic-obedient status. Supporting previous research, this research finds that it that investors highly favor accrual accounting numbers. The managers use this condition as a motivation to provide investors with better financial reporting. Moreover, this research finds that Sharia is an effective monitoring mechanism in reducing opportunistic managerial behavior through accrual quality. Thus, it increases the quality of the accounting report. In addition, Sharia-obedient firms are under close examination from rule-makers and obtain greater inducements to report better accounting report since there is rapid growth in ethical investment. In addition, this research also employs different proxies of accrual truthfulness, which are the original and the modified models of Dechow and Dichev (2002).

The research limitation is that the researchers only use manufacturing firms. The researchers strongly suggest that for future research, the corporate governance can be used as moderating factor to mitigate opportunistic behavior and investigate whether faith-based investors can obtain a positive return in investing in Sharia-firms with better accrual truthfulness.

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