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Determinants of Dividend Policies in Shariah Compliant and Non-Shariah Compliant Firms: A Panel Quantile Approach

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Abstract: Research Questions: Do Shariah-compliant firms have a different dividend policy from non-Shariah-compliant firms? Does this policy reflect similarity at different quantile levels of dividend? Motivation: The purpose of this paper is to investigate whether Shariah-compliant firms have different determinants than non-Shariah-compliant firms, using the linear and panel quantile methods. **Idea:** The different selection criteria between Shariah-compliant and non-Shariah-compliant firms may contribute to a different dividend policy. **Data:** Data collected via DataStream and the Securities and Exchange Commission within the top 200 based on market capitalisation in 2019 for the period from 2010 to 2019. **Method/ Tools:** To test the hypothesis, the study used pooled OLS, random and fixed effects. To determine the most appropriate model, we use the Breusch-Pagan-Lagrange multiplier test (LM) and the Hausman test. To further investigate the difference between the dividend policy of Shariah-compliant and non-Shariah-compliant firms, the study also uses the quantile approach to examine the determinants of dividend at different quantile levels. **Findings:** The study not only reveals differences in the dividend policies of Shariah-compliant and non-Shariah-compliant firms in the linear approach, but also in the quantile approach. In a linear regression approach, firm size, growth opportunities, profitability, and free cash flow were found to be significant determinants of dividends for Shariah-compliant firms. On the other hand, firm size, growth opportunities, profitability, and risk were found to be significant determinants of dividends of non-Shariah-compliant firms. In the panel quantile approach, all tested variables (except at 0.50 quantile for non-Shariah compliant companies) were found to be significant determinants of dividend for both Shariah and non-Shariah compliant firms. The finding implies that the result of the linear approach may overgeneralize to different quantiles, so a comparison using a different approach may provide more insight into these determinants. **Contributions:** The study contributes to the existing knowledge on the determinants of dividend policy of Shariah-compliant and non-Shariah-compliant firms, especially by comparing it with the linear and quantile approaches, which has been neglected in previous studies.

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1. Introduction

Answering the question of whether Shariah-compliant firms have a different dividend policy than non-Shariah-compliant firms is crucial, especially for religiously motivated investors who otherwise diversify their investments into other forms of investment other than the equity markets (e.g. gold, real estate). In order to attract Muslim investors to invest in the stock market, the business owner must follow the standard business procedures prescribed by Shariah (Farooq and Tbeur, 2013). Shariah can be referred to as Islamic law derived from divine revelation (Al-Quran) and the practises of Prophet Muhammad P.b.u.h (Al-Hadith) (Adam and Bakar, 2014). The difference between Shariah-compliant and non-Shariah-compliant dividends should be understood carefully, because the non-Shariah-compliant firm includes activities that prohibit Muslims from investing. The non-Sharia-compliant firm includes three elements, gharar (insecurity), maisir (gambling) and riba (usury), which are considered haram (Aziah Abu Kasim, 2012). The Shariah-compliant dividend was introduced to meet the needs of Muslim investors who invest in the stock markets and receive profits in the form of dividends or homemade dividend. Due to the growing number of Muslim populations worldwide, the demand for Shariah-compliant investments such as dividends needs to be met.

Dividends were introduced specifically to distribute corporate profits to shareholders. However, the motivation for paying dividends to shareholders is associated with many theories, and one of the most popular is the agency cost theory to regulate the financial distribution of the firm. Dividends can serve as a governance mechanism, especially in emerging markets (Farooq and Tbeur, 2013). Early theories of governance mechanisms suggest that dividends can mitigate agency costs by reducing the cash available to managers to invest in unprofitable projects (Jensen, 1986). Much earlier research also suggests that high dividends can mitigate conflict by reducing the cash available to managers (Grossman and Hart, 1980). The results were later formalised in the form of a model known as the substitution model, in which dividends can be used as a substitute for the stakeholder monitoring function. This model assumes that the dividend payout signals to the market that there are fewer opportunities to tunnel incentives because the dividend payout makes less cash available.

The development of dividend theories enriches dividend research, especially in uncovering the factors that determine dividend policy. Previous research focused only on determining the dividend payout ratio, and less attention was paid to the influence of religious elements such as Shariah compliance on dividend policy. Studies on Shariah compliance in dividend policy have been conducted for several decades. For example, the study comparing dividend policies of Shariah and non-Shariah compliant firms in the MENA region was published by Farooq and Tbeur in 2013. Similarly, the study examining dividend policies in the stock exchanges of Gulf Cooperation Council (GCC) countries found that Shariah-compliant firms are likely to pay more dividends than their non-Shariah-compliant counterparts (Guizani, 2017). However, the Employee Provident Fund (EPF) chief executive officer posited that the lower dividend payout in the Malaysian EPF is due to the fact that Shariah-compliant assets are not exposed to global international conventional banking systems such as global banks and global insurance firms (Luqman Hariz, 2018). Moreover, most global banks do not have a Shariah compliance module, so the income from this module cannot be included in the Shariah-compliant dividend (Luqman Hariz, 2018). On contrary, the study on dividend payout in Indonesian firms shows a negative relationship between Shariah-compliant firms and dividends, suggesting that Shariah-compliant firms are less

likely to pay dividends than non-Shariah-compliant firms (Tyas and Bandi, 2021). The mix of international evidence and announcements by Malaysian EPFs on their dividend payments motivates the study to find out the different determinant of dividend policies between the Shariah and non-Shariah firms in Malaysia.

In addition to the mixed results, the study is also motivated by the different characteristics of Shariah-compliant and non-Shariah-compliant firms that contribute to the difference in dividend payouts. One of the most prominent examples is the leverage ratio of Shariah and non-Shariah firms. Shariah-compliant firms are subject to certain restrictions on the amount of debt they can take on and the amount of cash they can hold (Cheong, 2020). In addition, bank loans often contain covenants that prevent a firm from paying a dividend (Allen and Gottesman, 2006), and this is very important to protect the firm's ability to repay the loan. In fact, non-Shariah-compliant (conventional) firms have a higher debt-to-asset ratio than Shariah-compliant firms, which is due to the mandatory auditing process that Shariah-compliant firms in Malaysia are subjected to (Rashid and Wei, 2019). Limiting debt and leverage in Shariah-compliant firms should play an important role in determining dividend policy. On the other hand, the non-Shariah-compliant firms that are not affected by this rule should have a different dividend policy than their counterparts of Shariah-compliant firms.

To fill the gap of mixed results and gain a better understanding of the different determinants of dividend in Shariah and non-Shariah compliant firms, we compare the results of the analysis using linear and quantile approaches, which have been neglected in the previous studies. By using quantiles, we can not only specifically understand how different quantiles of the dividend respond to their factors, but we can also understand that different quantiles of the dividend amount may not respond to the factors in the same or similar way as the linear approach. Moreover, we must not overgeneralise our results under the linear approach as different quantiles may respond differently, and this can be used as a reference for future research in dividend determinants.

The rest of this paper is organised as follows. Section two discusses the literature review and section three discusses the methodology used in this study. Section four discusses the results and the robustness tests used in this study. Section five concludes with a discussion of the conclusions.

2. Literature Review

According to Brigham and Daves (2016), dividends are the distribution of a firm's profits to its shareholders. Dividend policy is "the practise followed by management in deciding whether to pay dividends or, in other words, the size and pattern of cash distributions to shareholders over time" (Lease *et al*., 2000). It is well known that there are contentious issues related to dividend policy, such as the optimal proportion of profits to be distributed as dividends, the competing priority of using profits to pay shareholders or to invest in expected profitable projects, and the appropriate form of dividend payment. This complexity of dividend policy is referred to by Black (1976) as the "dividend puzzle" The dividend puzzle has been increased by the distinction between Shariah-compliant and non-Shariah-compliant firms, as debt and receivables policies differ, which greatly affects dividend policy. Therefore, it is important to understand the factors that influence dividend policy, especially for Shariah-compliant firms, in order to solve the dividend puzzle for Shariah-compliant investments.

Islamic finance has piqued the interest of many stockbrokers. According to recent findings, the market for Shariah-compliant financial products has grown by about thirty per cent in recent years (Robinson, 2007). Considering the importance of Shariah-compliant products or assets, this paper aims to document the dividend policy of Malaysian Shariah-compliant firms. According to La Porta *et al*. (2000), dividend policy can serve as a proxy for corporate governance mechanisms in emerging markets. They consider dividend policy as an

important mechanism for firms to build their reputation. Gomes (2000), in a similar study, concludes that firms can reduce agency costs and improve their reputation by distributing large amounts of cash in the form of dividends. One way dividend payouts mitigate agency conflicts is by reducing the free cash flow available to managers (Grossman and Hart, 1980). According to Jensen (1986), high dividend payouts can reduce agency costs by reducing the free cash flow that could be spent on unprofitable projects. According to the previous literature, the payment of high dividends reflects the good faith of management and signals low agency problems and good corporate governance mechanisms.

One of many reasons why Shariah-compliant firms have different dividend determinants than the non-Shariah compliant is because Shariah-compliant firms must have low leverage, low accounts receivable, and low holdings of cash and interest-bearing securities (Farooq and Tbeur 2013). Previous research has shown that all three characteristics lead to lower payout ratios. For example, Higgins (1972) documents that debt is an important determinant of corporate dividend policy. They demonstrate that firms with high leverage have historically paid lower dividends than other firms. They argue that firms pay lower dividends to avoid the higher costs of borrowing. Moreover, bank loans often contain clauses that restrict dividend payments (Allen and Gottesman, 2006). Rozeff (1982) found that a firm with a higher leverage ratio will choose a lower dividend payout. Moreover, a higher leverage ratio leads to a lower dividend payout (Aivazian *et al*., 2003; Omran and Pointon, 2004). Based on the above theoretical arguments, it can be argued that financial constraints are extremely important for corporate dividend policy. In addition to low leverage, one of the most important characteristics of Shariah-compliant firms is a low level of accounts receivable. Empirical evidence from the past suggests that a high level of accounts receivable not only reduces available liquidity but also increases tunnelling incentives for the firm (Marquardt and Wiedman, 2004; Caylor, 2009).

The difference between Shariah and non-Shariah determinants of dividends may also be due to the clientele effect. According to Farooq and Tbeur (2013), Shariah-conscious investors constitute a significant portion of the clientele of Shariah-compliant firms. These Shariah-conscious investors use mutual funds and other types of institutional investors to invest their capital in Shariah-compliant assets (Farooq and Tbeur, 2013). Since institutional investors are better controlled (Brickley *et al*., 1988), Shariah-compliant firms indirectly have better governance than non-Shariah-compliant firms. Consequently, a firm with better governance (Shariah-compliant firm) may have a higher payout than a firm with weaker governance (non-Shariah-compliant firm) and this difference should lead to different dividend determinants of payout policy.

In addition to the theoretical arguments, previous empirical studies also show that Shariah-compliant firms pay more dividends than non-Shariah-compliant firms. Previous empirical studies show that Shariah-compliant firms pay 10.33 percentage points more dividends than non-Shariah-compliant firms (Guizani, 2017). Moreover, they find that the probability of paying dividends is 2.2056 times higher than non-Sharia-compliant firms (Guizani, 2017). One possible reason for the higher dividend payments by Shariah-compliant firms compared to non-Shariah-compliant firms could be insider ownership and high third-party ownership (Imamah *et al*., 2019). In addition, Anwer *et al*. (2021) have documented that Shariah-compliant firms in the United States are more likely to make a total distribution, cash dividend and buyback compared to non-Shariah-compliant firms. Although important previous studies demonstrate the significant difference between Shariah-compliant and non-Shariah-compliant firms, some other studies find the opposite. For example, Alnori and Bugshan (2022) and Alnori *et al*. (2022) find that there is no significant difference between Shariah and non-Shariah compliant firms when it comes to the relationship between dividend and cash holding. In other words, it shows that Shariah-compliant and non-Shariah-compliant firms do

not have a significant difference in the relationship between cash holding and dividend decision.

In conclusion, despite the contradictory results in the literature, we strongly believe that the noticeable differences in the characteristics of Shariah-compliant firms compared to non-Shariah-compliant firms should influence their dividend policy differently. Since Shariah-compliant firms have specific financial characteristics such as low leverage and low accounts receivable, Shariah-compliant firms should have different dividend policies or determinants than non-Shariah-compliant firms. To further fill the gap in the literature in comparing Shariah-compliant and non-Shariah-compliant dividend determinants, we extend the regression using the quantile approach, which has often been neglected in previous studies. Based on the above argument, we hypothesise that:

H1: The Shariah-compliant firms have a different dividend policy than the non-Shariah-compliant firms when using a linear regression approach.

H2: The Shariah-compliant firms have a different dividend policy than the non-Shariah-compliant firms when using the quantile regression approach.

3. Methodology

This section explains the methodology used and the data collection. The data collection period of the study is from 2010 to 2019. The study chooses this period because the Securities and Exchange Commission report that distinguishes between Shariah and non-Shariah compliant firms started in 2010. The data in this study consists of the 200 largest firms based on their market capitalisation in 2019. The reason for selecting the 200 largest firms is that the sample in the study has a significant market capitalisation so that investors can earn a return on their investments. However, due to some incomplete financial data, we could only include 195 firms in the sample during the selected period. The study selects Malaysia as the sample because Malaysia can be considered well developed in terms of the application of Shariah law in various industries. For example, Malaysia has a track record of more than 30 years in building and nurturing the Islamic finance industry (which is subject to Shariah law) (Bank Negara Malaysia, n.d.).

The data used for the study comes from DataStream and the Securities and Exchange Commission website. The dependent variable used in this study is dividend per share (DPS), which has also been used in other previous studies on dividends (Bakri *et al*., 2021; Bakri, 2021). In order to examine the main determinants of dividend policy, the study uses the main dividend determinants proposed by Fama and French (2001) such as firm size, investment opportunities and profitability. In addition, the study used additional factors used in previous dividend studies such as leverage, free cash flow and risk following Bakri *et al*. (2021) and Bakri (2021). The original quantile method was developed by Koenker and Bassett (1978), however, in this study we used the modified version of panel quantile developed by Powell (2016) to run the quantile regression. To examine the hypothesis in the study, we use the model as follows:

Model for Hypothesis 1

$$DPS_{i,t} = \beta_0 + \beta_1 Log(Size)_{I,t} + \beta_2 Tobins'Q_{I,t} + \beta_3 ROA_{I,t} + \beta_4 Leverage_{I,t} + \beta_5 FCF_{I,t} + \beta_6 Risk_{i,t} + \delta_{i,t} + \mu_{i,t} + \varepsilon_{i,t} \quad (1)$$

Model for Hypothesis 2

$$DPS_{i,t} = \beta_{0.10,0} + \beta_{0.10,1}\text{Log(Size)}_{I,t} + \beta_{0.10,2}\,\text{Tobins}'\text{Q}_{I,t} + \beta_{0.10,3}\text{ROA}_{I,t} + \beta_{0.10,4}\text{Leverage}_{i,t} + \beta_{0.10,5}\text{FCF}_{i,t} + \beta_{0.10,6}\text{Risk}_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$DPS_{i,t} = \beta_{0.25,0} + \beta_{0.25,1}\text{Log(Size)}_{I,t} + \beta_{0.25,2}\,\text{Tobins}'\text{Q}_{I,t} + \beta_{0.25,3}\text{ROA}_{I,t} + \beta_{0.25,4}\text{Leverage}_{i,t} + \beta_{0.25,5}\text{FCF}_{i,t} + \beta_{0.25,6}\text{Risk}_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$DPS_{i,t} = \beta_{0.50,0} + \beta_{0.50,1}\text{Log(Size)}_{I,t} + \beta_{0.50,2}\,\text{Tobins}'\text{Q}_{I,t} + \beta_{0.50,3}\text{ROA}_{I,t} + \beta_{0.50,4}\text{Leverage}_{i,t} + \beta_{0.50,5}\text{FCF}_{i,t} + \beta_{0.50,6}\text{Risk}_{i,t} + \varepsilon_{i,t} \quad (4)$$

$$DPS_{i,t} = \beta_{0.75,0} + \beta_{0.75,1}\text{Log(Size)}_{I,t} + \beta_{0.75,2}\,\text{Tobins}'\text{Q}_{I,t} + \beta_{0.75,3}\text{ROA}_{I,t} + \beta_{0.75,4}\text{Leverage}_{i,t} + \beta_{0.75,5}\text{FCF}_{i,t} + \beta_{0.75,6}\text{Risk}_{i,t} + \varepsilon_{i,t} \quad (5)$$

$$DPS_{i,t} = \beta_{0.90,0} + \beta_{0.90,1}\text{Log(Size)}_{I,t} + \beta_{0.90,2}\,\text{Tobins}'\text{Q}_{I,t} + \beta_{0.90,3}\text{ROA}_{I,t} + \beta_{0.90,4}\text{Leverage}_{i,t} + \beta_{0.90,5}\text{FCF}_{i,t} + \beta_{0.90,6}\text{Risk}_{i,t} + \varepsilon_{i,t} \quad (6)$$

where $DPS_{i,t}$= Dividend Per Share, $Log(Size)_{i,t}$ = Natural Logarithm of total asset, $Tobin's\ Q_{i,t}$ = Market value of assets / replacement value of assets, $ROA_{i,t}$ = Return on Asset, $Leverage_{i,t}$ = Total liabilities / total asset, $FCF_{i,t}$= Free Cash Flow per share, $Risk_{i,t}$= Historic Beta, $\delta_{i,t}$= Dummy variable equals 1 for different industry, $\mu_{i,t}$= Dummy variable equals 1 for different year, $\varepsilon_{i,t}$= Error term, and $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficient of the regression model.

Table 1: Variables definition

Variables	Symbol	Proxy
Dividend per share	DPS	Dividend per share
Firm size	Log (Size)	Natural logarithm of total asset
Investment opportunities	Tobin's Q	Market value divide replacement value of assets
Profitability	ROA	Return on asset
Leverage	Leverage	Total liabilities / total asset
Free cash flow	FCF	Free cash flow per share
Risk	Beta	Historic beta
Industry fixed effect	Industry	Dummy equal to 1 for different industry
Year fixed effect	Year	Dummy equal to 1 for different year

To test the hypothesis developed in this study, we used a total of six models. Model to test hypothesis one and model two to six to test hypothesis two. The first model was examined using pooled OLS analysis, random effect and fixed effect. Before examining the model, the data were winsorised at the 1st and 99th percentiles to alleviate concerns about outliers. The study also performs a correlation analysis to determine the presence of multicollinearity in the study data. In addition, the study uses various diagnostic tests such as the White test and the Breusch-Pagan Lagrange Multiplier test (LM) to identify problems with heteroskedasticity and serial correlation in the data. To mitigate this problem, we used robust standard error calculations in each model (hypothesis one). In models two to six, we used the panel quantile approach. The regression in the panel quantile approach is a 0.10, 0.25, 0.50, 0.75 and 0.90 level regression.

The descriptive statistics in Table 2 show the mean, standard deviation, minimum and maximum values for each variable tested in this study. As shown in Table 2, the mean values for dividend per share, log(size) and Tobin's Q are 0.09, 14.25 and 1.73 respectively, while the mean values for ROA, leverage, FCF and risk are 7.74, 0.39, 0.04 and 1.05 respectively. The standard deviation of all the variables tested range from the lowest value of 0.166 to the

highest value of 7.948. The minimum and maximum for each variable tested are also shown in Table 2 in column five and six respectively. Table 3 shows the correlation analysis to determine the relationship between the variables. A higher value of the correlation analysis indicates an early sign of multicollinearity. Any correlation above 0.60 may indicate multicollinearity problems. The decision to exclude investment opportunities and profitability as shown in Table 3 (above 0.60) may lead to a loss of important information, as these factors are considered important determinants of dividend policy, as suggested by Fama and French (2001). However, the decision to omit variables due to multicollinearity problems should ultimately be made using variance inflation factor (VIF) analysis. As can be seen in Table 2 in the VIF column, none of the values is higher than 10. The rule of thumb for multicollinearity problems occurs when the VIF value exceeds the value of 10. So, based on table 2, the data presented in the study should have a minimal risk of multicollinearity if this criterion is met.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	VIF
DPS	1,808	0.0978	0.1662	0.0000	1.0000	N/A
Log(size)	1,808	14.2505	1.6215	9.8861	19.0014	1.22
Tobin's Q	1,808	1.7314	1.4178	0.5360	8.3339	1.92
ROA	1,798	7.7441	7.9483	-16.8400	33.8500	1.95
Leverage	1,808	0.3910	0.1872	0.0511	0.8289	1.27
FCF	1,808	0.0353	0.2129	-0.7230	0.8190	1.05
Risk	1,808	1.0526	0.6780	-0.2950	3.1360	1.06

Table 3: Pearson correlation matrix

	DPS	Log(size)	Tobin's Q	ROA	Leverage	FCF	Risk
DPS	1						
Log(size)	0.1936***	1					
Tobin's Q	0.4819***	-0.1553***	1				
ROA	0.3909***	-0.1944***	0.6586***	1			
Leverage	0.0316	0.3801***	0.0420*	-0.1645***	1		
FCF	0.0827***	0.0271	-0.036	0.1147***	-0.1007***	1	
Risk	-0.2528***	0.1292***	-0.1800***	-0.1778***	0.1392***	-0.0186	1

Notes: *Denotes significance at the 10% level. ** Denote significance at the 5% level. *** Denote significance at the 1% level.

4. Results

The results of the regression analysis consisting of panel analyses, random effects analyses and fixed effects analyses are presented in Table 4. The result shows that there are significant differences between Shariah and non-Shariah compliant firms in the determinants of dividend. From Table 4, Model I, log(size), Tobin's Q and ROA significantly affect dividend policy in all samples (Shariah and non-Shariah compliant firms) with t-values of 2.29, 3.24 and 3.91 respectively. However, in model II (Shariah compliant firms), log(size), Tobin's Q, ROA and FCF were found to be significant determinants of dividend payout with t-values of 2.53, 2.36, 4.11 and -2.22 respectively. In contrast, in model III (non-Shariah compliant firms), we found that log(size), Tobin's Q, ROA and risk as significant determinants of dividend policy with t-values of 2.62, 2.47, 2.41 and 2.28, respectively. All the models presented in Table 4 are the best fitting model after performing Breusch-Pagan test LM and Hausman test as shown in the bottom section of Table 4.

Overall, we found that three factors as suggested by Fama and French (2001), namely log(size), investment opportunities and profitability, consistently affect dividend policy in all models tested using linear approaches. However, leverage, free cash flow and risk were found to affect the dividend policy of Shariah-compliant and non-Shariah-compliant firms in

different ways. For example, free cash flow was found to be a significant determinant of dividend policy for Shariah-compliant firms but not for non-Shariah-compliant firms. This is mainly because Shariah-compliant firms largely rely on the availability of cash to pay dividends, as they do not allow large amount of debt and must have low leverage as part of screening criteria. For these reasons, this may contribute to the significant determinants of dividend payout compared to the non-Shariah compliant firms.

Table 4: Fixed and random effect analysis (Main Analysis – Hypothesis 1)

	Model I: Full sample (Fixed Effect with RSE)		Model II: Shariah-compliant firms (Fixed Effect with RSE)		Model III: Non-Shariah compliant firms (Random Effect with RSE)	
Regressors	Regression coefficient	t-statistics	Regression coefficient	t-statistics	Regression coefficient	z-statistics
Constant	-0.1086	-1.80	-0.1076	-1.94	-0.2894	2.59*
$Log(size)_{i,t}$	0.0108	2.29*	0.0116	2.53*	0.0206	2.62**
$Tobin's\ Q_{i,t}$	0.0254	3.24**	0.0199	2.36*	0.0416	2.47*
$ROA_{i,t}$	0.0014	3.91***	0.0013	4.11***	0.0036	2.41*
$Leverage_{i,t}$	0.0190	0.46	0.0061	0.13	0.0466	0.75
$FCF_{i,t}$	-0.0300	-1.72	-0.0418	-2.22*	0.0126	0.33
$Risk_{i,t}$	-0.0077	-1.74	-0.0072	-1.52	-0.0254	2.28*
BP-LM Test	4638.58 (0.0000***)		3701.19 (0.0000***)		433.33 (0.0000***)	
Hausman Test	62.78 (0.0000***)		59.70 (0.000***)		11.37 (0.0775)	
Industries	No		No		No	
Year	No		No		No	
R-Squared	0.3127		0.2909		0.4173	

Notes: *Denotes significance at the 10% level. ** Denote significance at the 5% level. *** Denote significance at the 1% level. Industries and Year effect only use in pooled OLS, however, since it's not best fit model (as per Breusch Pagan LM (BP-LM) test and Hausman test) both effects are not included.

On the contrary, we have demonstrated that risk is another important determinant of dividend policy for non-Shariah-compliant firms in addition to the three main factors proposed by Fama and French (2001). One of the main factors for the significant influence of risk as a determinant of dividend policy is the fact that non-Shariah compliant firms are involved in riskier business activities. According to Durand *et al*. (2013), Shariah-compliant firms are not involved in risky business activities such as gambling, alcohol, military, firearms and nuclear power, which are found in non-Shariah-compliant firms. In addition, Hong and Kacperczyk (2009) have documented that non-Shariah-compliant firms are involved in gambling, alcohol, tobacco and gaming, which are risky and neglected by investors who adhere to norms. For these reasons, risk becomes an important factor for the non-Shariah-compliant firms in deciding their dividend policy.

Although Allen and Gottesman (2006) found that bank loans contain a clause that restricts dividend payments, debt or leverage was consistently found to be an insignificant determinant of dividend policy in linear approaches. Moreover, restricted debt financing in Shariah-compliant firms may affect dividend payout dynamics, which are affected by political risks, leading to a failure to pay dividends (Karimov *et al*., 2021). Based on this argument, we strongly believe that dividend can become an important determinant of dividend when we analyse the data from different perspectives. To further explore the data, we use the quantile method as it can capture different quantiles of the dividend and shows how the determinants of the dividend respond at different quantile levels. Moreover, the quantile method provides a clear view of the determinants of the dividend as it groups a given sample into different quantiles that may or may not show similar responses to the determinants of the dividend in linear approaches. The results of the quantile method are presented in Table 5.

Table 5 shows the results of the panel quantile method. The table is divided into three panels: the analysis of the whole sample, the second section is the Shariah-compliant firm and the last section is the non-Shariah-compliant firm. As can be seen in Panel 1, all the factors tested in this study are significant at the 0.01 per cent level. The result is different when compared with the whole sample in the linear approach in Table 4, Model I. For example, only log(size), Tobin's Q and ROA are significant in the linear approach. However, using the quantile approach, we can find a significant difference where three more variables are found to be significant, namely leverage, FCF and risk. The result is consistent at all percentile levels which ranges from 0.10 to 0.90 as shown in Table 5, Section 1.

Table 5: Panel quantile analysis (Main Analysis – Hypothesis 2)

Regressors	Model I: 0.10 quantile	Model II: 0.25 quantile	Model III: 0.50 quantile	Model IV: 0.75 quantile	Model V: 0.90 quantile
Panel 1: Full sample					
$Log(size)_{i,t}$	0.0044***	0.0081***	0.0188***	0.0302***	0.0422***
$Tobin's\ Q_{i,t}$	0.0009***	0.0027***	0.0188***	0.0854***	0.1315***
$ROA_{i,t}$	0.0005***	0.0010***	0.0011***	0.0017***	0.0004***
$Leverage_{i,t}$	-0.0092***	-0.0289***	-0.0653***	-0.0884***	-0.2046***
$FCF_{i,t}$	0.0164***	0.0395***	0.0602***	0.0761***	0.0504***
$Risk_{i,t}$	-0.0047***	-0.0119***	-0.0208***	-0.0304***	-0.0544***
Panel 2: Shariah compliant firms					
$Log(size)_{i,t}$	0.0057***	0.0106***	0.0214***	0.0344***	0.0474***
$Tobin's\ Q_{i,t}$	0.0011***	0.0010***	0.0111***	0.0632***	0.1435***
$ROA_{i,t}$	0.0004***	0.0007***	0.0010***	0.0004***	-0.0020***
$Leverage_{i,t}$	-0.0212***	-0.0415***	-0.0605***	-0.0564***	-0.1711***
$FCF_{i,t}$	0.0146***	0.0434***	0.0594***	0.0359***	0.1431***
$Risk_{i,t}$	-0.0039***	-0.0111***	-0.0220***	-0.0391***	-0.0605***
Panel 3: Non-Shariah compliant firms					
$Log(size)_{i,t}$	0.0032***	0.0105***	0.0155***	0.0228***	0.0289***
$Tobin's\ Q_{i,t}$	0.0035***	0.0179***	0.0627***	0.0975***	0.1083***
$ROA_{i,t}$	0.0009***	0.0038***	0.0050***	0.0034***	0.0035***
$Leverage_{i,t}$	-0.0131***	-0.0337***	-0.0180	-0.1643***	-0.1992***
$FCF_{i,t}$	0.0049***	0.0187***	0.0729***	0.0480***	0.0427***
$Risk_{i,t}$	-0.0026***	-0.0047***	-0.0203***	-0.0247***	-0.0574***

Notes: *Denotes significance at the 10% level. ** Denote significance at the 5% level. *** Denote significance at the 1% level.

In Panel 2, the study discovers another significant difference between using the linear and quantile approaches. The determinants of dividend policy in Shariah compliant firms show that all the variables tested are significant at the 0.01 level. Compared to the results in Table 4, model II, only log(size), Tobin's Q, ROA and free cash flow turn out to be significant determinants of dividend policy using linear approaches. However, when quantile approaches were used, two other variables, leverage and risk, were also found to be significant. Another striking difference discovered in this section is the change in sign from positive and significant to negatively significant. For instance, the quantile ROA from 0.10 to 0.75 was found to be positively significant in determining dividend policy. However, at the 0.90 quantile level, ROA changes to negative significance in determining dividend policy at the 0.01 level.

In Panel 3, the striking difference between linear and quantile approaches continues. In Table 4, model III, only log(size), Tobin's Q, ROA and risk were found to significantly affect dividend policy. In the quantile approaches, on the other hand, all tested variables have a significant impact on dividend policy at the 0.01 level, except ROA. At the 0.50 quantile level, leverage is not a significant determinant of dividend policy for non-Shariah compliant

firms. The signs of the tested variables are consistent at the different quantile levels between 0.10 and 0.90.

As shown in Table 5, the use of the study's quantile regression provides a clear view of the determinants of dividends. Specifically, how different quantiles of dividend levels may affect the determinants of dividends in Shariah-compliant versus non-Shariah-compliant firms. The model presented by hypothesis two allows us to better understand the behaviour of dividend determinants when compared with linear approaches. For example, a variable that has been shown to be insignificant in linear approaches (leverage, FCF and risk) may become significant at different dividend quantile levels. Another example is a variable that has been shown to be positively significant may turn out to be negative at different quantile levels (ROA). It can be concluded that there are significant differences between Shariah-compliant and non-Shariah-compliant firms when compared using quantile approaches. This research proves that the use of quantile method should be carried out to better understand the determinants of dividend as it shows that we cannot treat all quantiles of dividend level at different levels equally.

5. Conclusion

The study examines the different determinants of dividend policy between Shariah and non-Shariah compliant firms. Using data from 2010 to 2019, a panel analysis was conducted, namely random, fixed and quantile analysis. The results indicate that there are significant differences between Shariah and non-Shariah compliant firms in linear approaches and quantile approaches. In linear approaches, firm size, investment opportunities, profitability and free cash flow were found to be significant determinants of dividend policy for Shariah compliant firms. In contrast, firm size, investment opportunities, profitability and risk were found to be significant determinants of dividend policy in non-Shariah-compliant firms. Using the quantiles method, the study found no significant differences between Shariah-compliant and non-Shariah-compliant firms in the determinants of dividends. However, this result is not consistent at every quantile level. For example, profitability was found to negatively affect dividend policy in Shariah-compliant firms at the 0.90 quantile level.

Based on the findings, the study contributes in two ways. First, the study extends the literature on the comparison of Shariah-compliant and non-Shariah-compliant dividends. Previous research on the comparison of dividends focuses on the MENA region and the GCC countries, while less research has been conducted in Malaysia on the comparison of Shariah-compliant and non-Shariah-compliant dividends. This study confirms that the comparison between Shariah-compliant and non-Shariah-compliant dividends in Malaysia is unique as some of the dividend determinants are different from those in the MENA region, GCC countries and neighbouring countries such as Indonesia. Thus, this study confirms that the mixed results of previous empirical studies may be due to the different context of a country, hence the Malaysian context provides unique empirical insights. Secondly, the paper also contributes to the literature by using quantiles approaches, which are neglected especially when examining the determinants of dividends and comparing Shariah-compliant and non-Shariah-compliant firms.

However, this study is not without limitations. First, the data is limited to the Malaysian context, so the results cannot be extrapolated to countries with different environments than Malaysia. Second, the results are limited to a proxy for Shariah compliance obtained from data from the Securities and Exchange Commission. Therefore, the results are not necessarily transferable to other indicators of Shariah compliance. Future studies could therefore consider other indicators of Shariah compliance that might yield similar or different results. Despite this limitation, the study provides new insights into the differences between Shariah and non-Shariah compliance, especially in the Malaysian context using the quantile method.

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