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**Article**

## Moderating effect of audit quality: The case of dividend and firm value in Malaysian firms

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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | REVIEW ARTICLE

# Moderating effect of audit quality: The case of dividend and firm value in Malaysian firms

Mohd Ashari Bakri<sup>1</sup>

**Abstract:** This paper aimed to examine the effect of dividend on firm value, as well as the impact of audit quality on the relationship between dividend and firm value in Malaysian firms, which was measured via financial statements audited by four large-sized audit firms (henceforth the Big Four). The model projected was assessed by using Pooled Ordinary Least Square (OLS), panel random, and fixed effect regression. To ensure robust results, firm fixed effect were also employed. The results revealed that dividends negatively affected firm value, whereas audit quality moderated the relationship between the variables. The outcomes were robust even in further consideration of endogeneity concerns, specifically the omitted variable bias and reverse causality (i.e. firm fixed effect and Generalized Method of Moments (GMM)). The study findings provide novel information applicable for managers to devise investment strategies in the Malaysian market. The implication from this finding can be very useful for a manager to devise their strategy, especially by looking into the moderating effect of audit quality in mitigating information asymmetry that surrounds within dividend and firm value relationship. To the author's knowledge, this paper contributes significantly towards dividend and firm value literature by being the pioneering introduction into the moderating effect of audit quality, especially in the context of emerging markets.

**Subjects:** Finance; Corporate Finance; Business, Management and Accounting; Auditing

### ABOUT THE AUTHOR

This research is conducted by Dr Mohd Ashari Bakri as the sole and corresponding author. He completed her PhD in Finance from Putra Business School, UPM and currently serving as a lecturer in Labuan Faculty of International Finance, Universiti Malaysia Sabah (UMS). He has authored, co-authored in Scopus indexed and refereed journals including: Asian Academy of Management Journal of Accounting and Finance (AAMJAF), Jurnal Pengurusan, International Journal of Economics Management (IJEM), International Journal of Banking and Finance (IJBF) and Labuan Bulletin of International Business and Finance. He also serves as associate managing editor in Labuan Bulletin of International Business and Finance (LBIBF). He has been teaching in the Undergraduate program at UMS.

### PUBLIC INTEREST STATEMENT

Dividend puzzle can be considered as one of the most-discussed topics in the world of corporate finance. Specifically, the dividend relationship with firm value has become one of the most controversial topics, with various theories and empirical evidence supporting the arguments. The mixed theories and empirical findings indicate the existence of moderating factors influencing the relationship. Findings show that dividend negatively impacts firm value and positively moderates by audit quality, suggesting the importance of audit quality on dividend and firm value relationship, especially among the manager who use dividend as a signal for firm value. Meanwhile, an investor may use the audit quality as a tool to mitigate the information asymmetry that surrounds within dividend and firm value relationship. This research has significant implications for both academicians and investors as well as the markets in Malaysia.

**Keywords:** Audit quality; Big Four; dividend; firm value; signalling theory; information asymmetry

## 1. Introduction

Today, dividend has emerged as one of the most controversial research topics in the area of corporate finance, among which its most contentious query lies in its relationship with firm value. Some studies have argued its irrelevance towards firm value (Chen et al., 2002; Irum et al., 2012; Miller & Modigliani, 1961), while others have posited its correlation to the latter (Bhattacharya, 1979; DeAngelo & DeAngelo, 2006; S. Kim et al., 2018; J. Kim et al., 2021). The inconsistent findings and argument have thus suggested that the current crop of research is inconclusive, thereby requiring further investigation. In addition, conflicting results between dividend and firm value may be influenced by factors potentially affecting firm equity valuation, leading to past studies that have investigated the usefulness of financial statements for such purpose. Accordingly, the International Accounting Standard Board (IASB) has indicated that financial information is relevant when it offers the users the capacity to change their decision. However, its effect on equity valuation is highly dependent on how informative the statement is, which can be controlled by the degree of audit quality. According to Behn et al. (2008), higher audit quality will produce financial information of higher explanatory calibre, leading to better investor capability for value forecasting or estimation.

Furthermore, past empirical research has posited that better audit quality yields more value to the market participants as it assures the financial statements are a faithful reflection of the company's underlying economics (DeFond & Zhang, 2014). Its importance is celebrated by researchers and practitioners alike, in general. A survey by Institute of Certified Financial Analyst (ICFA) has discovered that 72 per cent of the respondents underline the auditor report as highly crucial for them in the investment decision-making process (CFA Institute, 2010). Similarly, Lee and Lee (2013) have delineated that an audit of better quality enhances the usefulness of financial statements, especially in reflecting firm economic performance. Meanwhile, Titman and Trueman (1986) are of the opinion that high audit quality strengthens the accounting information reliability, thus ensuring higher investor precision in estimating the firm value.

Moreover, Michael Prada, Chairman of International Financial Reporting Standards (IFRS), has stated that audit quality is an emerging and global issue for standard setters (Prada, 2007). For example, investors tend to rely on a financial statement delivered by a public firm, especially in making a sound investment decision. If auditors fail to provide an audit of high quality, investor trust may be diminished and thus affecting the local economy and market badly (Prada, 2007). Nevertheless, ensuring a high standard of audit quality is possible: auditors must execute the audit procedures and convey their opinions according to the standards of quality control established (El-Dyasty & Elamer, 2020). According to Sayyar et al. (2014), greater audit quality is positively associated with transparency in financial reporting, whereas Fu et al. (2015) have attributed transparency to better audit quality. Therefore, greater transparency linked with audit quality should further enhance dividend signalling towards firm valuations as per the signalling theory. As such, the relationship between dividend and firm value is projected to influence the property of audit quality towards increasing the transparency, information asymmetry mitigation, and improved investor reliance on firm evaluation via quality financial reports.

The current paper proceeds as follows: the second section discusses and summarises related theoretical and empirical literature and then posits a hypothesis, which is to be tested subsequently. Then, section three reviews the methodology implemented, research model generated, and data utilized in this study, followed by an explanation of the findings obtained in section four. Meanwhile, section five offers a discourse on the results and concludes the research by delineating the contributions, limitations, and future research recommendation.

## 2. Literature review and hypothesis development

In general, two schools of thought can be identified with regard to the relationship linking dividend and firm value. The first school of thought posits that there is no relationship between dividend and firm value, which is derived from the irrelevance theory of dividend. Meanwhile, the second school of thought indicates that dividend poses an impact on firm value, otherwise known as the relevance theory.

### 2.1. Dividend irrelevance theory

This is one of the most notable theories in finance, which is first introduced by Miller and Modigliani (1961), Noble Laureate winners. The scholars have posited that in the perfect capital market, dividend payment is unrelated to firm value; the theory further assumes that conflict does not exist between shareholders and managers in an ideal business world and investors are allocated equal access to all information. In addition, there is no cost of purchasing and selling as shares according to this theory, as well as no difference perceived between the tax rates for dividend or capital gains alike. Moreover, it suggests that the dividend policy follows the investment decision made, which then becomes the residual dividend policy and thus leading to the dividend non-effect on the firm value.

### 2.2. Dividend relevance theory

#### 2.2.1. Bird in hand theory

This theory offers the notion that in the world of business uncertainty, investors will prefer dividend (i.e. a bird in the hand) and capital gain (i.e. two in the bush); the latter can be correlated to the firm future, which is much riskier than the current dividend. Therefore, they are willing to pay a higher price for firms with dividend payments, thus resulting in a higher firm value (Gordon, 1963; Walter, 1963).

#### 2.2.2. Signalling theory (Information asymmetry)

In general, information asymmetry arises when a party has more information than another. In the context of firm management, a firm is likely to be equipped by more information about the current and future firm performance as opposed to an outsider. Therefore, managers can utilize dividend as a tool to signal the financial market regarding the current and future firm growth (John & Williams, 1985). In addition, Lintner (1956) has revealed managerial concerns regarding the signal of firm profit distribution throughout time. Accordingly, Bhattacharya's (1979) suggestion details the manner in which dividend serves as a function of company financial health, which is indicated by the dividend payment that reflects the future firm performance. In theory, a higher dividend signals higher firm valuation.

#### 2.2.3. Agency theory

The aforementioned irrelevance theory of dividend is dictated by many central assumptions, one of which infers that under the perfect capital market, no conflict of interest is present between the manager and shareholder. The modern agency theory suggested by Jensen and Meckling (1976) argues that the decrease in manager's share of total equity would likely result in a decision that is not optimal to the shareholders. As a result, the situation creates an agency cost to monitor the manager. Furthermore, the agency theory has stated that any surplus of earnings may either be used by the manager for their personal benefit or invested in a project with negative Net Present Value (NPV) if they are not distributed to the shareholder. Thus, an outsider shareholder will prefer dividend as opposed to profits, whereby a firm offering high dividends will generate higher firm valuation. This comes following the mitigation of the probability that the manager is likely to divert firm earnings for personal usage (La Porta et al., 2000; Rozeff, 1982).

#### 2.2.4. Tax-related theory

According to this theory, investor preferences towards dividend are highly dependent on tax treatment: an investor receiving proper tax treatments may lean towards a firm with low or no

dividend at all since it is taxed immediately and remains higher than the capital gains. Alternatively, higher dividend payouts may result in an increased taxable income. Therefore, Black and Scholes (1974) have indicated the trade-off made by an investor between dividend payment and capital gains, thus choosing a firm that fulfils their needs based on such trade-off.

### **2.3. Empirical evidence on dividend and firm value relationship**

Past theories and empirical evidence have suggested that the significant relationship between dividend and firm value tends to outweigh the irrelevance of the former towards the latter. In the real world, investors are rational and the critical assumption for dividend irrelevance only holds if the market is perfect, thus driving such notion. Accordingly, Gordon (1963) has highlighted that dividends affect firm value due to investor preference for the element rather than capital gain, thereby affecting firm shares. This notion is further supported by Woolridge (1983) in which signalling during dividend alteration has been identified as one of the main factors transforming share prices. Following this, Fama and French (1998) have also found that dividend conveys the information capable of creating a positive relationship between dividend and firm value, whereas it is underlined in Baker and Wurgler (2004) examination of the catering theory as the most natural explanation: dividend significantly affects shares value. Such positive impact on share price volatility has been further detailed by Proffitt and Bacon (2013) in their later work.

Despite the wealth of empirical evidence in support of dividend relevance on firm value, several studies have offered contrasting information regarding its irrelevance, especially in the context of emerging market. For instance, Chen et al. (2002) have found that stock returns are not affected by cash dividends in China-listed firms, while Irum et al. (2012) have indicated that cash dividend announcement poses no significant impact on the share price for the Pakistani petroleum sector. Additionally, the dividend irrelevance theory has been accepted in Tunisian listed firms (Naceur & Goaid, 2002). Furthermore, the empirical evidence from MENA emerging market shown an insignificant relationship between dividend yield and market value, suggesting that dividend irrelevance theory is supported (Budagaga, 2020). In contrast, different works have identified a positive relationship between dividend and firm value in the markets of emerging countries. An example of this is Yilmaz and Gulay (2006) finding that cash dividend significantly affects the prices and trading volumes. Subsequently, Altiok-Yilmaz and Akben-Selcuk (2010) have examined the reaction of firm value through dividend changes, revealing positive outcomes due to an increase in dividend and vice versa in line with the signalling hypothesis. Similarly, Zakaria et al. (2012) have further delineated the notable correlation between dividend payment and stock prices.

### **2.4. The relationship between audit quality, dividend, and firm value**

Mixed findings from past studies have suggested that the research on dividend and firm value is inconclusive and requires further studies, whereby their inconsistent relationship may be modulated by certain moderating factors. This study specifically suggests that audit quality is one of these moderating factors potentially influencing the relationship between the two elements. In particular, audit quality plays a crucial role in enhancing the credibility of financial statements and financial information, mitigating the financing costs, and reducing the opportunistic behaviour of a manager (Huguet & Gandía, 2016). The infamous audit firms known as the Big Four are linked with the delivery of a high-quality audit due to retainment of many clients with different resources and employment of qualified staff for the audit process (Miko & Kamardin, 2015). Therefore, it is expected that a higher audit quality will result in lower information asymmetry and greater transparency. According to Deshmukh (2003), the higher level of information asymmetry that can be shown through a low level of audit quality may be reflected in the lower dividend paid to the shareholders. Additionally, Mitton (2004) has found that firms audited by the Big Five firms yield more dividends compared to their counterparts.

In addition to affecting dividends, audit quality further enhances firm value. Hussainey (2009) has indicated that audit quality as proxied by the Big Four audit firms creates an opportunity for

investors to anticipate their future earning, thus potentially leading to better firm valuation. According to the signalling theory, firm dividend serves as a function reflecting firm prospects; a firm is more likely to generate increased dividends in line with investor confidence about its future performance. Using the same reasoning, a firm audited by the Big Four can be viewed as a signal in determining its firm value as this status creates better prediction regarding future earnings for the investors. Therefore, adaptation of the signalling theory in predicting firm value by using audit quality indicates that the latter may yield a moderating effect on the relationship linking dividend and firm value. Alfraih's (2016) analysis on the Kuwaiti stock exchange market spanning from 2002 to 2013, in particular, has revealed the positive and significant influence of audit quality on the value relevance of accounting measures to market participants. Besides, a Malaysia-based study by Hua et al. (2016) indicated audit quality's has significant and positive impact on the business firm success. Thus, based on the arguments made from past empirical research and the interrelationship between dividend, audit quality, and firm value as found in prior studies, this work posits that audit quality moderates the relationship between dividend and firm value.

### 2.5. Formulation of research hypotheses

Prior to examining the moderating effect of audit quality, this study ascertains the presence of a meaningful relationship between dividend and firm value. Based on past theoretical arguments and empirical research, it proposes the following for the first and second objectives, respectively:

H1: Dividend policy has a significant impact on firm value in Malaysia.

H2: Audit quality positively moderates the relationship between dividend and firm value in the Malaysian market.

## 3. Methodology

### 3.1. Data

The study opted for a sample consisting of the top 200 firms listed in Bursa Malaysia based on the market capitalization as of 31 December 2019. The study period encompassed a duration of 15 years, which spanned between 2005 and 2019. The selection of large firms for the current study was attributed to Yusof and Ismail (2016) explanation pertaining to their tendency to pay dividends. However, only 194 firms could be analyzed out of the 200 firms selected as sample due to incomplete financial data for the remaining six firms. Here, the data required to examine the moderating effect of audit quality depended on the types of auditor chosen by the firm, which were information that could be retrieved from their annual report. In addition, Datastream was implemented as another source of data, allowing the extraction of information such as firm value, dividend, and the control variables, namely size, profitability, cash holding, risk, debt level, industry, and year.

### 3.2. Variables

#### 3.2.1. Dependent variable

The dependent variable implemented in this study was firm value, which was proxied by Tobin's Q. The proxy can be calculated using the following formula:

$$= \frac{(\text{Market value of equity} + \text{Book value of total assets} - \text{book value of equity})}{\text{Book value of total assets}}$$

Tobin's Q can be defined as the market value of a firm's assets divided by its replacement value. According to Alam and Gupta (2018), the advantages of using Tobin's Q as a proxy is due to its simplicity and popularity in previous studies. Despite being used in many previous studies, Tobin's

Q has some drawbacks. Tobin's Q is named after the economist James Tobin, considered one of the essential variables in macroeconomic theory (Bartlett & Partnoy, 2020). But, scholars in law and finance often use the simple version of the Q ratio, which is essentially the version of the market to book ratio, which can be misleading (Bartlett & Partnoy, 2020). The problem is probably most severe when using standard regression that omits intangible capital, as the intangible capital can become the vital source for measurement errors (Peters & Taylor, 2017). To encounter this issue, the study uses robustness tests on endogeneity concerns following Jiang et al. (2017) in using firm-fixed effects to mitigate the concern related to the omitted variable bias.

### 3.2.2. Independent variable

The current study followed the study by Sulong and Nor (2008), by using dividend yield as proxy for dividend policy. The dividend yield is measure as dividend per share divided by closing market price per share (Sulong & Nor, 2008). Dividend yield is used as a dividend proxy to avoid the negative payout ratio resulting from negative earnings or extremely high payout ratio due to income close to zero (Schooley & Barney, 1994).

### 3.2.3. Moderator variable

The current study employed the popular measurement to proxy for audit quality as per DeAngelo's (1981) indication that big audit firms would generate better audit quality. This argument could be further supported by multiple empirical studies, such as those by Berglund et al. (2018), Eshleman and Guo (2014), and Geiger and Rama (2006). Accordingly, the current study paralleled the works of Jiang et al. (2017) and Hussainey (2009) by using the Big Four as a proxy for audit quality; a firm audited by the Big Four audit firms would be assigned with 1 and 0 if otherwise.

### 3.2.4. Control variable

Control variables in this study were included as per the literature of dividend and firm value, firm size, firm profitability, cash holdings, risk, and debt level. In addition, dummies were incorporated to control for the industry and year-fixed effects.

### 3.2.5. Analytical strategy

The current work investigated the relationship between dividend and firm value by utilizing pooled OLS, panel random, and fixed effect analysis. Unlike previous studies on the topic, audit quality was also added as a moderating variable in the second model, whereas the control variables commonly used as seen in the literature were maintained. To examine the link between dividend and firm value, the first model is as follows:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 \text{DIV}_{i,t} + \beta_2 \text{AQ}_{i,t} + \beta_3 \text{Size}_{i,t} + \beta_4 \text{ROA}_{i,t} + \beta_5 \text{CF}_{i,t} + \beta_6 \text{Risk}_{i,t} + \beta_7 \text{leverage}_{i,t} + \mu_{i,t} + \delta_{i,t} + \varepsilon_{i,t} \quad (1)$$

where firm value is denoted as Tobin's Q.  $\beta_1$  represents the dividend while  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ , and  $\beta_8$  are the coefficients for the control variables (i.e. firm size, profitability, cash holdings, risk, and debt level, respectively). Meanwhile,  $\mu_{i,t}$  represents the industry fixed effect,  $\delta_{i,t}$  represents the year-fixed effects, and  $\varepsilon_{i,t}$  represents the error term. Next, the second hypothesis is examined using the second model as follows:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 \text{DIV}_{i,t} + \beta_2 \text{AQ}_{i,t} + \beta_3 \text{DIV} * \text{AQ}_{i,t} + \beta_4 \text{size}_{i,t} + \beta_5 \text{ROA}_{i,t} + \beta_6 \text{CF}_{i,t} + \beta_7 \text{Risk}_{i,t} + \beta_8 \text{leverage}_{i,t} + \mu_{i,t} + \delta_{i,t} + \varepsilon_{i,t} \quad (2)$$

where firm value is denoted as Tobin's Q.  $\beta_1$  represents the dividend while  $\beta_2$  represents audit quality, which takes the value of 1 if the firm is audited by the Big Four and 0 if otherwise. Then,  $\beta_3$  is the interaction term between audit quality and dividend, whereas  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ , and  $\beta_8$ , are the coefficients for control variables (i.e. firm size, profitability, cash holding, risk and debt level, respectively). Meanwhile,  $\mu_{i,t}$  represents the industry fixed effect,  $\delta_{i,t}$  represents the year-fixed effects, and  $\varepsilon_{i,t}$  represents the error term.

#### 4. Findings

Prior to an examination of the model, several diagnostic tests were conducted to identify any issues pertaining to the variables tested in the study. First, a normality test was performed by using the Jarque-Bera's test to identify any potential outliers in the data, revealing a potential outlier present in the dataset. To mitigate this concern, the study Winsorized the data found at the top and bottom 1 percentile following related past studies, such as S. Kim et al. (2018). Then, any issues of potential multicollinearity are assessed by using Pearson's correlation matrix and Variance Inflation Factor (VIF) analysis as shown in Tables 2 and 3, respectively. Furthermore, the heteroscedasticity and autocorrelation tests were carried out by using the White and Breusch Pagan Lagrange Multiplier (LM) tests, respectively, thus revealing both issues to exist in the data analyzed. Consequently, robust standard error calculation was performed to solve the heteroscedasticity and autocorrelation issue following Ofori-Sasu et al. (2017). These outcomes are presented in Tables 5 and 6 accordingly.

Table 1 present definitions for variables tested in the study. Table 2 demonstrates the descriptive statistics generated for the tested variables. First, the firm value as proxied by Tobin's Q yielded a mean value of 1.62, whereas the dividend payment recorded by Malaysian firms averaged at 2.91 based on the study sample. Next, the audit quality as proxied by the Big Four audit firms averaged at 0.70. Meanwhile, the remaining control variables of natural logarithm of total asset, cash flow, risk and leverage, averaged at 14.00, 7.91, 0.31, 1.04 and 0.40, respectively.

Alternatively, Pearson's correlation matrix and VIF analysis are utilized to identify any multicollinearity in the model analysis process, which are presented in Tables 3 and 4, respectively. Table 3 shows that no correlation between independent variables exceeds the score of 0.60 (except dependent variable), indicating the lack of multicollinearity as per Hair et al. (2010): any value exceeding the value of 0.60 demonstrates a high level of multicollinearity. Despite being highly correlated with Tobin's Q, the study chooses not to exclude ROA because the study may lose

**Table 1. Definition and proxy of variables**

Constructs	Represent by	variables definition	References
Firm Value	Tobin's Q	Market value of equity plus book value of total assets minus book value of equity divided by book value of total assets	Jiang et al. (2017)
Dividend	DIV	Dividend Yield	Sulong and Nor (2008)
Audit Quality	AQ	Takes the value of "1" if firm audited by Big 4 and "0" otherwise.	DeAngelo's (1981) & Jiang et al. (2017)
Firm Size	Log (size)	Natural logarithm of total asset	Jiang et al. (2017)
Profitability	ROA	Net Income/Total Asset	Jiang et al. (2017)
Cash Holdings	CF	Cash flow per share	Yusof and Ismail (2016)
Risk	Risk	1 Year of Market Beta	Yusof and Ismail (2016)
Debt Level	Leverage	Total Liabilities over Total Asset	Jiang et al. (2017)
Industry	Industry	Dummy value of 1 for each different industry	Jiang et al. (2017)
Year	Year	Dummy value of 1 for each different year	Jiang et al. (2017)

**Table 2. Descriptive statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
Tobin's Q	2731	1.623207	1.273852	0.533056	7.865635
DIV	2743	2.906898	2.340381	0	11.02
AQ	2628	0.695586	0.4602464	0	1
Log (size)	2845	14.00488	1.691644	7.709757	19.00135
ROA	2769	7.90710	7.871714	-17.42	33.26
CF	2888	0.3023809	0.4537751	-0.115	2.81
RiskLeverage	27362845	1.0391810.3910856	0.66389280.1932653	-0.3570.0277766	3.2190.8474134

**Table 3. Pearson's correlation matrix**

	Tobin's Q	DIV	AQ	Log (size)	ROA	CF	Risk	Leverage
Tobin's Q	1							
DIV	-0.0223	1						
AQ	0.0180	0.0818***	1					
Log(size)	-0.1234***	-0.0095	0.3904***	1				
ROA	0.6158***	0.2329***	0.0043	-0.1581***	1			
CF	0.2388***	0.0809***	0.2306***	0.369***	0.2038***	1		
Risk	-0.1451***	-0.1573***	0.0229	0.1499***	-0.1543***	-0.1450***	1	
Leverage	-0.0577***	-0.1379***	0.0617***	0.2247***	-0.2606***	-0.0161	0.0982***	1

\*Denotes significance at the 10% level.

\*\* Denotes significance at the 5% level.

\*\*\* Denotes significance at the 1% level.

some important information by excluding ROA as one of the important control variables in the dividend study. In addition, the VIF analysis depicted in Table 4 offers an alternative to Pearson's correlation matrix in identifying multicollinearity, whereby Hair et al. (2010) have suggested that a VIF score exceeding 4 is indicative of a high level. The analysis yielded the highest VIF score of 1.66 and mean VIF score of 1.26, thus revealing that the risk of multicollinearity was absent according to this criterion.

The main analysis in the current study is presented according to Table 5 (i.e. H1) and VI (H2). In particular, Table 5 details the outcomes of models I, II, and III, whereas Table 6 depicts the outcomes for models IV, V, and VI; these models were analyzed by using pooled OLS, panel random, and fixed effect analysis accordingly. Furthermore, the direct relationship between dividend and firm value is presented in Table 5. To mitigate the concerns of heteroscedasticity and autocorrelation as indicated in White's test and Breusch Pagan LM Test respectively, panel random effect and panel fixed effect analyses were carried out using the robust standard error calculation following Ofori-Sasu et al. (2017). Based on Models I, II, and III, all direct relationships seen between dividend and firm value demonstrated a negative and significant effect, with t-statistics larger than 1.96, namely at -7.52, -5.90 and -5.16, respectively.

Following this, ascertaining the most appropriate model out of the three was completed by conducting Hausman's test. Between pooled OLS and random effect, the results of Hausman's test demonstrated that the latter was more appropriate. However, fixed effect analysis was shown to be superior in examining the study model when subjected to Hausman's test between fixed effect

**Table 4. VIF analysis**

Variable	VIF	1/VIF
Log (size)	1.66	0.603914
CF	1.35	0.741208
Leverage	1.23	0.814053
ROA	1.21	0.829324
AQ	1.2	0.833102
Risk	1.11	0.904878
DIV	1.10	0.911207
Mean VIF	1.26	

analysis and random effect. Regardless of the model deemed as most appropriate, all three models demonstrated a consistently negative and significant relationship between dividend and firm and rejecting the dividend signalling theory that previously predicted value created by dividend payment. Additionally, the results supported by Alam and Gupta (2018), where they posited that if a firm paying a dividend, then it may have limited capital to invest, and this will result in lower Q ratio or negative relationship between dividend and Q ratio.

#### 4.1. Main Analysis—Hypothesis 1

H2 serves to test the moderating effect of audit quality on the relationship between dividend and firm value, which is presented in Table 6. Similar to H1, the moderating effect of audit quality was examined by using pooled OLS, panel random, and fixed effect analysis, which was thus represented by  $DIV \times AQ$  as an interaction term between dividend and audit quality. To alleviate the concerns of heteroscedasticity and autocorrelation as shown in White's test and Breusch Pagan LM Test, robust standard error calculation was employed when running the panel random and fixed effect analyses. Based on Models IV, V, and VI, all interaction-term effects of audit quality demonstrated a significant and positive effect with t-statistics higher than 1.96, which were 3.57, 2.70, and 1.97, respectively.

**Table 5. Pooled OLS, random and fixed effect analysis (The relationship between dividend and firm value)**

Regressors	Model I:Pooled Ordinary Least Square		Model II:Random effect (robust standard errors)		Model III:Fixed effect (robust standard errors)	
	Regression coefficient	t-statistics	Regression coefficient	z-statistics	Regression coefficient	t-statistics
Constant	1.899955	6.41***	1.705647	3.28**	0.3261972	0.35
$DIV_{i,t}$	-0.0617363	-7.52***	-0.0688639	-5.90***	-0.0653047	-5.16***
AQ	0.132636	3.00**	0.0394844	0.47	0.0792816	0.77
$Log(size)_{i,t}$	-0.1515312	-7.61***	-0.0456899	-1.16	0.0580724	0.89
$ROA_{i,t}$	0.0946962	19.55***	0.0588796	6.81***	0.0469386	5.68***
$CF_{i,t}$	0.5290112	6.87***	0.4758049	2.65**	0.4540676	2.96**
$Risk_{i,t}$	-0.1274089	-3.74***	0.0147424	0.27	0.0685869	1.15
$Leverage_{i,t}$	1.046687	8.22***	0.3829789	1.06	0.1161233	0.30
IndustriesYearR-Squared	YesYes0.5478		NoNo0.1829		NoNo0.1904	

\*Denotes significance at the 10% level.

\*\* Denotes significance at the 5% level.

\*\*\* Denotes significance at the 1% level

**Table 6. Pooled OLS, random and fixed effect analysis (Moderating effect of audit quality)**

Regressors	Model IV:Pooled Ordinary Least Square		Model V:Random effect (robust standard errors)		Model VI:Fixed effect (robust standard errors)	
	Regression coefficient	t-statistics	Regression coefficient	z-statistics	Regression coefficient	t-statistics
<b>Constant</b>	2.010796	6.67***	1.893187	3.56***	0.5113831	0.53
$DIV_{i,t}$	-0.1075369	-6.76***	-0.1142341	-5.67***	-0.1020436	-4.70***
$AQ_{i,t}$	-0.038306	-0.51	-0.1226884	-1.08	-0.0504197	-0.39
$DIV * AQ_{i,t}$	0.0633496	3.57***	0.0630664	2.70**	0.0506097	1.97*
$Log(size)_{i,t}$	-0.1505508	-7.55***	-0.0519146	-1.33	0.0503966	0.76
$ROA_{i,t}$	0.0949266	19.74***	0.0590827	6.88***	0.0467433	5.69***
$CF_{i,t}$	0.5287201	6.86***	0.4812717	2.67**	0.4577116	2.98**
$Risk_{i,t}$	-0.1274401	-3.74***	0.0143017	0.27	0.0713875	1.20
$Leverage_{i,t}$	1.019152	8.01***	0.4062841	1.12	0.1446051	0.36
IndustriesYearR-Squared	YesYes0.5502		NoNo0.1862		NoNo0.1936	

\*Denotes significance at the 10% level.

\*\* Denotes significance at the 5% level.

\*\*\* Denotes significance at the 1% level

Determining the most appropriate model for H2 was done by conducting Hausman's test, whereby the analysis between pooled OLS and random effect demonstrated that the former was superior. However, the second Hausman's test between random and fixed effect analyses revealed the panel fixed effect analysis as the most appropriate assessment in examining the models in this study. Regardless of whichever model deemed the best, all three models used to analyze the moderating effect of audit quality on the relationship between dividend and firm value depicted a consistently positive and significant effect.

Surprisingly, the significant positive moderating effect of audit quality on the negative relationship between dividend and firm value indicate a notable discovery. Although the result in this study is contradict with signalling theory prediction and past empirical studies on audit quality and firm value. However, the result is still consistent with past empirical evidence, such as the work by Haat et al. (2008), where they discovered that audit quality has negative relationship with firm performance proxy by Tobin's Q (Haat et al., 2008). They also discovered that the good performance companies tend to have a stronger negative association between audit quality and firm value.

A part of reasons which may explain why there is positive moderating effect on negative association between dividend and firm value is because audit quality increase transparency on firm's limited capital ability to invest (due to increase in dividend) and this may affect their firm valuation. According to Alam and Gupta (2018) firms paying dividend will have lower Q ratio because of limited capital ability to finance investment opportunities. Since greater audit quality associated with greater transparency (Fu et al., 2015; Sayyar et al., 2014), firm's limited capital abilities becoming more transparent, and this may affect their firm valuation.

#### 4.2. Main Analysis- Hypothesis 2

The positive moderating effect of audit quality on the relationship between dividend and firm value documented thus far might be compromised due to omitted variable bias. Therefore, suitable methods were implemented to alleviate these concerns and ascertain the robustness.

#### 4.3. Robustness test: Endogeneity concern—Omitted variables bias

To ensure the results were not influenced by omitted variable bias, firm-fixed effect regression analysis was implemented following Jiang et al. (2017) and Bakri et al. (2020). According to Jiang et al. (2017), its inclusion when examining a model will control for time-invariant firm-specific characteristics, which may be correlated with the explanatory variables omitted. Consequently, firm-fixed effect analysis would remove any cross-sectional correlation between dividend, firm value, and audit quality and simultaneously mitigate the concerns of omitted variable bias. The analysis outcomes are presented accordingly in Table 7 via model VII and VIII both for hypotheses 1 and 2. Based on model VII, DIV remains significant with t-statistic value of  $-3.24$ , whereby based on model VIII, the moderating effect of audit quality represent by  $DIV \cdot AQ$  remains significant with a t-statistics value of  $2.01$ . This indicated a positive and significant moderating effect of audit quality even after controlling the endogeneity concerns pertaining to the omitted variable bias.

#### 4.4. Robustness test: Endogeneity concern—Reverse Causality

Besides testing for omitted variable bias, the study also tests for endogeneity concerns regarding reverse causality. The study uses the two-step system GMM to diagnose this issue. The study uses the `xtabond2` command with two-step robust. Based on Table 7, model IX, the interaction between the DIV and AQ has a z-value of  $2.72$  and a coefficient of  $0.03523$ , indicating that the significant level of interaction term remains to persist using two-step GMM. Table 7 also demonstrates that model IX did not suffer from the 2<sup>nd</sup> order of serial correlation with a p-value of  $0.764$  (rejecting the null hypothesis). Finally, 7 also shows that the instrument use in this model is valid and does not suffer from overidentification, as shown by the Hansen test with a p-value of  $0.315$  and  $0.119$ . This value indicates that this model is valid, and the study rejecting the null hypothesis on the model suffers from overidentification. The persistent, significant negative moderating effect of

**Table 7. Firm fixed effect (Robust standard errors)**

Model	Model VII:Firm Fixed Effect(H1)		Model VIII:Firm Fixed Effect(H2)		Model IXGeneralized Method of Moments (Twostep)—Robust Standard Error	
Regressors	Regression coefficient	t-statistics	Regression coefficient	t-statistics	Regression coefficient	z-statistics
<b>Constant</b>	3.1622070	2.26*	3.3264630	2.35*	0.66007	3.76***
$DIV_{i,t}$	-0.0423953	-3.24**	-0.0778418	-3.71***	-0.06347	-5.08***
$AQ_{i,t}$	0.1003514	1.03	-0.0249536	-0.2	-0.09132	-1.67
$DIV \cdot AQ_{i,t}$	N/A	N/A	0.0488335	2.01*	0.03523	2.72**
$Log(size)_{i,t}$	-0.2111806	-1.97*	-0.2166278	-2.02*	-0.02948	-2.40*
$ROA_{i,t}$	0.0498744	6.39***	0.0496553	6.39***	0.03533	5.16***
$CF_{i,t}$	0.3786892	2.88**	0.3828838	2.89**	0.136429	1.92
$Risk_{i,t}$	0.0859822	1.52	0.0885471	1.57	-0.05357	-2.50*
$Leverage_{i,t}$	0.3520995	0.86	0.3779557	0.92	0.308967	2.97**
<b>Industry</b>	Yes		Yes		No	
R-Squared	0.2438		0.2468		N/A	
2 <sup>nd</sup> Order Serial Correlation P-Value	N/A		N/A		0.764	
Difference in Hansen Test(P-Value)—GMM Instrument for levels	N/A		N/A		0.135	
Difference in Hansen Test(P-Value)—IV	N/A		N/A		0.119	

*Robustness test: Endogeneity concern—Omitted Variable Bias (Firm Fixed Effect) & Reverse Causality (Generalized Method of Moments)*

\*Denotes significance at the 10% level.

\*\* Denotes significance at the 5% level.

\*\*\* Denotes significance at the 1% level

audit quality on the relationship between dividend and firm value also indicates that the results are robust even after considering the endogeneity on reverse causality.

## 5. Summary and Conclusion

This paper successfully investigated the moderating effect of audit quality on the relationship between dividend and firm value in the context of Malaysian firms. To this end, pooled OLS, panel random, and fixed effect regression analyses spanning the duration from 2005 to 2019 yielded outcomes indicating the negative link between the two variables, which remained robust after mitigating for any potential heteroscedasticity and autocorrelation issues.

The primary analysis outcomes underlined that audit quality positively moderated the relationship between dividend and firm value, which was possible due to its mechanisms for mitigating information asymmetry via information conveyance to investors. Furthermore, the significant value of audit quality in the eyes of investors in determining the firm value was further highlighted. Regardless, the relationship between dividend and firm value was also crucial for managers, and not only to investors. Here, investor earnings through the relationship could be forecasted based on the information available in the market, rendering additional information necessary for investors to mitigate any concerns due to information asymmetry in a country burdened with it, such as in emerging markets. In line with the role played by audit quality as the moderating factor in alleviating such asymmetry, investors could thus be better equipped in projecting the relationship and devising their investment strategy.

Based on the findings obtained in this study, contributions have been made in terms of two aspects. First, this work extends the current wealth of literature regarding dividend and firm value in the context of emerging markets, particularly Malaysia, as prior research efforts have mostly focused on developed markets. It further highlights the importance of the link between dividend and firm value, especially for investors looking into diversifying their investment in the country. Second, this study considers the impact of audit quality in the relationship between stock liquidity and dividend, which is the first of its kind to introduce the element as a moderating factor for the relationship between dividend and firm value. This successfully generates an added value to the existing body of knowledge, namely by confirming the current literature pertaining the link between dividend and firm value while positioning the moderating effect of audit quality in the context of the Malaysian market.

However, this study is not without any limitations. First, the data sampled is only limited to the Malaysian market, rendering the outcomes not extrapolatable in other markets. Second, the study only considers one moderating factor, thereby allowing future studies to possibly investigate the impact of board composition as this component has a tendency to enhance firm value. Despite these limitations, the new insights provided in this study regarding the moderating effect of audit quality in the context of dividend and firm value correlation cannot be denied, specifically in the Malaysian market setting.

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