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Profitability and dividend policy: How does free cash flow explain this relationship?

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Abstract

Purpose – This study aims to examine the possible explanations for the inconsistency between profitability and dividend policy association. It also aims to carefully investigate the explanations of the free cash flow regarding the profitability-dividend policy relationship while specifying the shape of the moderating variables.

Design/methodology/approach –This study uses LQ45-listed enterprises as research sample and adopt hierarchical moderating analysis as our methods. This study also uses 10-year observations from 2012-2020 with 170 firm-years observations represented by 17 companies.

Findings – The results showed a positive association between profitability and dividend policy, suggesting that higher profit was capable of inducing firms to provide more dividend payments for the stockholders. Furthermore, increasing free cash flow strengthened the profitability-dividend policy relationship and it play a role as a pure moderator between both variables.

Research limitations/implications – As this study use LQ45 sample firms, the interpretation from the research funding should be carefully made and generalizations should be done with caution. Also, current study does not include managerial characteristics as potential factors to influence dividend policy due to data limitation.

Practical implications – This study provide implication for managers by suggesting that the free cash flow condition of a company may be essential for deciding dividend payout policy when firms can create good profitability. Firms need to maintain its fee cash flow level to gain benefit as a driver to create favorable dividend policy for stockholders.

Originality/value – This study adds essential contribution to the moderating role literature by distinguishing the type of moderating role of free cash flow on the relationship between dividend policy and profitability. In addition, this study also incorporates hierarchy regression analysis which is different from prior similar study.

Keywords: profitability; dividend policy; free cash flow; hierarchy moderating regression; LQ45.

Introduction

Dividend policy is presently an interesting topic in the financial literature (Asad & Yousaf, 2014; Khan et al., 2016), due to its ability to yield mixed outputs (Gordon, 1959; Litzenberger & Ramaswamy, 1979; Miller & Modigliani, 1961) and ultimately provide a perfect condition to engage more empirical analysis (Black, 1976). Another reason to highly examine the policy issue emphasizes the influential patterns of a theory in building an optimal study model in the financial literature and

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obtaining information about the factors producing the dominant influence (Fitriana et al., 2018). Based on the finance literature, dividend policy was widely considered the regulation of a firm, regarding its pattern of distributing wealth to stockholders. It was also a policy used to determine the distribution steps of wealth, such as dividends, to investors or preserved in the form of retained earnings. When management decides to pay dividends to investors, the allocation to retained earnings will decrease, and vice versa. This pragmatically explains that various companies tend to pay dividends in relatively stable amounts or gradually increase the nominal pay. In this case, the companies understand the preference of investors for stable payments. Dividend policy was also capable of serving as a signal for investors regarding the prospects of an organization (Wahjudi, 2020). According to the agency theory M. C. Jensen & Meckling (1976),dividend payments were considered a mechanism to anticipate firm problems. (Easterbrook, 1984; Rozeff, 1982) also provided a similar explanation, where the payments were used as an internal mechanism to reduce agency costs.

Company performance is the most essential factor influencing the dividend policy. This is because the decision for firms to pay dividends to its stockholders often considers the performance (Lin et al., 2018). According to (Asad & Yousaf, 2014; Fitriana et al., 2018), firm profitability was one of the most important variables visualizing company performance and greatly influencing dividend policy. However, document inconsistency was observed regarding the relationship between profitability and dividend policy before subsequent related studies, as evidenced in (Asad & Yousaf, 2014; Fitriana et al., 2018; Lin et al., 2018; Novatiani et al., 2021; Pradana & Sanjaya, 2017; Puspaningsih & Pratiwi, 2017; Rizqia et al., 2013).

To complete the existing literature on profitability and dividend policy, this study aims to use free cash flow as an alternative to better explain the relationships between both variables. This cash flow concept is rarely used in earlier reports as a moderating variable that can explain the relationship between company performance factors and dividend policy (Husaini et al., 2022). It is also one of the factors causing the emergence of agent conflicts within an organization (M. C. Jensen, 1986). This is because free cash flow is capable of explaining the financial flexibility represented by the optimal capital reserves owned by companies prone to mismanagement. Therefore, this study aims to determine the type of free cash flow as moderating variable. Establishing the type of moderating variables is very essential due to improving experimental accuracy. It can also contribute to the provision of comprehensive knowledge, regarding the optimal functions and roles of the moderating variable (Akhmadi & Januarsi, 2021). By adopting the method from Sharma (2003), a hierarchy analysis is used to assess the service pattern of free cash flow as a pure or quasi-moderator in the relationship between profitability/leverage and dividend policy.

This study subsequently aims to investigate the present policy issues using LQ45 Indonesia-listed firms (LQ45 firms, hence). These firms emphasize 45 listed agencies, which characterize good fundamentals and financial stability, large market capitalization, and high transaction liquidity. A number of considerations lead us to choose LQ45 listed company as our research setting to examine the proposed hypothesis. As LQ45 listed company provide unique characteristics, such as consistency of the company performance and reflect the high level of value development, these conditions letting us better analyze how profitability may affect the dividend policy. In addition, LQ45 listed firms showing strong performance which often transmit a signal to investors, highlighting their ability to pay dividends effectively. As a result, a more comprehensive explanation and comprehension can be achieved regarding the influential patterns of profitability on dividend policy, by concentrating on the study subject within the LQ45 index listed firms.

Literature Review and Hypotheses

The basic theories related to the present investigation are explained, regarding the moderating role of free cash flow on the association between profitability and dividend policy. These include signaling and agency theory, whose connection patterns with profitability, dividend policy, and free cash flow are emphasized.

Signaling Theory

The signal theory is responsible for emphasizing the asymmetric information occurring between internal management and external parties, such as investors and banks. According to Ross (1977) management had better knowledge and information about the organizational investment opportunities than external parties. These parties often encountered asymmetric information or data gaps, regarding the true present and future values of the company investment. Furthermore, signaling theory explained that the announcement of dividend payments was an important information, as investors commonly had the asymmetric data prioritizing future organizational profits (Bhattacharya, 1979). Increasing the dividend payout ratio was also capable of providing a positive signal to investors and the capital market, indicating that the company had good profit prospects in the future (Khan et al., 2016). From this context, the organizations generating optimal profit levels in the future were capable of paying more dividends to investors (Vo & Nguyen, 2014).

Agency Theory

Based on M. C. Jensen & Meckling (1976), agency problems emerged due to conflicts of interest between principals and agents, incomplete contracts, and information asymmetry. Besides this, the problems were also capable of increasing the agency costs. In Easterbrook (1984) agency theory was introduced by proposing an inverse relationship between dividends and firm costs. From this context, the payments of dividends often led to the reduction of agency costs (Khan et al., 2016) due to its function as a form of internal mechanism used to mitigate firm capital (Rozeff, 1982). This indicated that higher conceptuality of agency cost caused the lower dividend payout rate, with the principality becoming a substitute for anticipating agency problems.

Hypothesis Development

Profitability and dividend policy

Profitability is a factor that explains the ability of the parties responsible for managing the company. This indicates that the high effectiveness and efficiency of the factor in using and generating organizational assets and costs cause the greater acquisition of the profits aligning with the targets expected by investors. Profitability also reflects the company performance outputs over a specific period (Hadian, 2019), to provide a signal to investors about organizational prospects. In this case, more profit stability leads to higher financial flexibility. Therefore, a firm is capable of increasing its orientation in paying off debts, investing, and distributing profits to investors.

The signaling theory is also responsible for explaining the relationship between profitability and dividend policy (Yarram & Dollery, 2015). Based on signaling theory, profitability is positively associated with the dividend policy, with a high-profit level alerting the investors about good organizational performance (Karang et al., 2020). In this case, the higher profit level produced a signal interpreted by investors as information on the acquisition of returns. This emphasized the dividends obtained from the entire investment effort. Moreover, the companies stably distributing profits were capable of anticipating the occurrence of information asymmetry between investors and management. The possession of dividend payments was also a signal that organizational management had an effective and efficient orientation, leading to increased performance and profits distributed to investors. In addition, agency theory also may explain why firms are more likely consider dividend policy as an essential action which can be beneficial for the company. In addition, the association between profitability and dividend policy can also explained from agency theory perspective. Following the agency theory, conflict between managers and shareholders because of information asymmetry may take place as the former party take actions that may be harmful for the later party. Dividend may become an option to minimize managers' free cash flow accessibility to peruse their interests, and reduce the agency cost (Boshnak, 2023).

Profitability is used to provide an overview of a company ability to generate profits, with dividends being part of the profits determined to be distributed to investors (Wahjudi, 2020). This demonstrates that a higher profit level causes greater dividend payment probability. However, when the company earns low profits or losses, the company has insufficient portion of profit to be

distributed to investors (Pradana & Sanjaya, 2017). In this case, management, as the manager of the company, needs to increase profits according to the expectations of investors and improve their organizational confidence (Novatiani et al., 2021). This discussion is in line with (Arilaha, 2009; Hadian, 2019; Karang et al., 2020; Vo & Nguyen, 2014), where the higher the level of profitability led to the greater dividends paid to stockholders. Based on these descriptions, the following hypothesis is proposed:
Hypothesis 1 (H1): Profitability positively associates with a dividend policy in index LQ45-listed firms.

Profitability, free cash flow, and dividend policy

Present profit is the dominant factor used by companies and investors in expecting the future revenues to be distributed. This is because profitability explains the performance produced by companies through profit information. From this context, the generated revenues are not necessarily and entirely obtained by the company during the period, due to the accrual accounting recording method. In this case, net profit is still divided into components of overall incomes and obtainable, to support the business activities of the organization, such as: (1) The need for working capital, (2) paying off debt, (3) investing, and (4) paying dividends. The company can also rely on internal capital or cash to meet organizational needs. Moreover, the cash owned by the company is a substitute for profits, due to its revenue accumulation retained from previous periods. This leads to an increase in financial flexibility and profit-generating capacity, which are distributed to investors. In exploring the factors or determinants of dividend policy, (Naceur et al., 2006) found that large companies with stable profitability levels were able to obtain and manage greater amounts of cash flow and pay higher incomes (Khan et al., 2016).

Based on Ambarwati (2014), free cash flow strengthened the positive relationship between profitability and dividend policy. This indicated that the optimal level of profitability was a signal to investors, regarding the ability of the company in distributing profits to stockholders. When the country had a large amount of free cash flow, the signal was strengthened. From this context, the combination of the two factors increased the organizational ability to pay dividends to investors (Abor & Bokpin, 2010; Deni et al., 2016; M. C. Jensen & Meckling, 1976). This discussion was in line with (Ambarwati, 2014; Puspitaningtyas, 2018), where free cash flow was the optimal variable in strengthening the relationship between profitability and dividend policy. Based on these descriptions, the following hypothesis is proposed.
Hypothesis 2 (H2): The positive relationship between profitability and dividend is stronger because of the free cash flow for LQ45-listed firms.

Research Methods

Data and Sample Selection

In this research, data was obtained from the annual report of the LQ45 company from 2012 to 2021, where the annual report was accessed from each company's website. A purposive sampling technique was also used for selection processes, considering that the sample were able to represent the population (Ferdinand, 2014), with the use of LQ45 index companies emphasizing the experimental objects. Since the membership structure of the 45 LQ45 organizations were reviewed and potentially changed every 6 months, the implementation of purposive sampling was capable of filtering out the companies consistently included in the index. The companies consistently paying dividends to investors from 2012-2021 were also screened out, to obtain relevant samples. Based on the specified sampling criteria, 17 organizations were obtained during the 10-year experimental period, with 170 firm-year observations obtained from the LQ45 enterprises.

Measurement of Variables and Empirical Specification

Dependent variable

Dividend policy was used as the dependent variable in this study, with the income deflated by total asset emphasizing the proxy. This was because total assets provided a more optimal interpretation

in explaining the organizational dividend policy, compared to other measurements (Pinto & Rastogi, 2019). The DPR (dividend payout ratio) was also used as an alternative to the dividend policy indicator to test for robustness. This indicator was selected by considering its contribution in various previous financial literature as a determinant of dividend policy. It was also able to represent the proportion of the payout regulation set by the company (Hadian, 2019; Karang et al., 2020; Wahjudi, 2020).

Independent variable

Profitability was the independent variable used in this study, whose level was measured by implementing ROE (return on equity) and ROI (return on investment) to analyze the baseline model and robustness test, respectively. These indicators were selected because both were often used as a measure of profitability in previous financial literature (Akhmadi & Januarsi, 2021; Pinto & Rastogi, 2019).

Moderating variable

Free cash flow was used as the moderating variable, with two of its ratios implemented to analyze the baseline model and robustness test. From this context, the first ratio (assigned as FCF1) was formulated through the cash flows from operations and investing divided by total assets (Rochmah & Ardianto, 2020; Widyasti & Putri, 2021). Meanwhile, the second ratio (assigned as FCF2) was established by the cash flow from operations minus dividend and deflated by total assets (Suhartono, 2015; Wulandari et al., 2019). These calculations were considered a ratio representing free cash flow due to positively and significantly influencing dividend policy in previous literature. In this case, the calculations were expected to provide an optimal contribution as a conceptual variable.

Control variable

In this study, the first control variable was sales growth, which was an important indicator for management when deciding to pay dividend (Salvatori et al., 2020). This indicated that the companies with relatively stable sales levels easily generated profits, obtained funds, and had higher fixed costs than unstable organizations (Brigham & Houston, 2019). The variable was also measured by the difference between the number of sales in the present and previous years. The output obtained was then divided by the number of sales last year (Nerviana, 2015). Moreover, the second control variable was liquidity, whose condition in an organization was important due to strongly affecting various decisions, specifically dividend decisions. This proved that the companies with sufficient cash reserves were more comfortable paying dividends to investors than the organizations having lower capital capacities (Khan et al., 2016). Current ratio was also used to measure liquidity, through the division of present assets by liability (Dewasiri et al., 2019). This study also incorporate leverage as control variables following (Pinto & Rastogi, 2019; Rochmah & Ardianto, 2020; Wahjudi, 2020; Endang et al., 2020). This study was required to control for industry- and year-fixed effects (industry and year dummies), to explain macro variation and time-invariant organizational factors (Akhmadi & Januarsi, 2021).

Model Specification

Based on the model specifications described by (Akhmadi & Januarsi, 2021; Sharma, 2003), a hierarchy moderating analysis was used to test the proposed hypotheses. Hierarchy moderating regression (Sharma, 2003) was performed to identify whether free cash flow had a role as a pure or quasi-moderator using Equations (1)–(3). Following this method, we developed three regression models. First step is regressing the dependent variable (dividend policy) on the independent variable (profitability) and control variables. Second step, profitability (independent variable), free cash flow (moderating variable) and control variables were regressed on profitability (dependent variable). Step 3, which is similar with step two, the model includes the interaction between

independent variable and moderator variable in the regression. These three steps are illustrated in following equations:

$$DIVTA_t = \beta_0 + \beta_1 ROE_{i,t} + \beta_2 CV_{i,t} + \varepsilon_{i,t} \quad (1)$$

$$DIVTA_t = \beta_0 + \beta_1 ROE_{i,t} + \beta_2 FCF_{i,t} + \beta_3 CV_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$DIVTA_t = \beta_0 + \beta_1 ROE_{i,t} + \beta_2 FCF_{i,t} + \beta_3 ROE_{i,t} * FCF_{i,t} + \beta_4 CV_{i,t} + \varepsilon_{i,t} \quad (3)$$

From these equations, β_1 on equations 1, 2, and 3 was expected to be positive and significant to support H1. To examine the moderating effect of free cash flow on the relationship between profitability and dividend policy, this study expects that coefficient β_3 in equation (3) will be positive and significant. Last, to determine the form of moderating variable, whether it is pure or quasy moderating role, we analyze equation (1) to (3) which led to the implementation of the hierarchy regression (Akhmadi & Januarsi, 2021). Following this method, the first step is that it was essential to determine whether there was a significant interaction between the independent variables and the moderator. To determine this requirement, hierarchical moderated regression focused on whether β_3 was significant in equation (3). Second, by adopting criteria from Sharma (2003) free cash flow played a role as a pure moderator variable when β_1 and β_3 were significant and while β_2 was insignificant. In contrast, it served as a quasi-moderator variable when β_1, β_2, and β_3 were all significant. Additionally, free cash flow did not play a moderator role when the interaction between the moderator and independent variable was insignificant.

Results and Discussion

Descriptive Results

This study aimed to analyze the factors influencing dividend policy in company performance by investigating LQ45 index organizations listed on the Indonesia Stock Exchange. From this context, a sample of 170 firm-year observations was used, representing 17 companies from 2012-2021. All variables were also winsorize at the level of 1% and 99%, to minimize extreme data or outliers. Using winsorizing technics is a common technic adopted in many finances and financial accounting empirical research as it allows us to overcome the outlier problem, (Fauver et al., 2017; Liu et al., 2019). Differ from trimming technics (removing the outlier), winsorizing overcome the outlier problem by winsorizing amounts to changing the value of each outlier to that of the nearest inlier. By Winsorizing at 1% and 99% level, we sets all observations greater than the 99th percentile equal to the value at the 99th percentile and all observations less than the 1st percentile equal to the value at the 1st percentile. We did the winsorizing by using help from STATA software.

Table 1. Descriptive Statistics

	N	Min	Max	Median	Mean	Std. Dev.
DIVTA	170	0.003	0.379	0.056	0.033	0.082
DPR	170	0.089	1.838	0.482	0.402	0.317
ROE	170	0.04	1.400	0.232	0.164	0.275
ROI	170	0.046	1.484	0.255	0.191	0.297
FCF1	170	-0.193	0.382	0.057	0.049	0.098
FCF2	170	-0.647	0.453	0.052	0.060	0.171
SG	170	-0.275	0.618	0.086	0.081	0.142
CR	170	0	6.148	1.637	1.503	1.394
DAR	170	0	0.422	0.119	0.122	0.108

This table presents descriptive statistics for the major variables used in the analysis. All continuous variables are winsorized at 1% and 99% percentiles.

Table 1 showed the descriptive statistics for the entire sample in the LQ45 index companies, where the main indicator of dividend policy indicated that DIVTA had an average value of 0.56 with a standard deviation of 0.82. In this case, the diversity of dividend policies was low. DPR also had an average value of 0.482 or 48.2%, explaining that almost half of the net profit

earned by the company was paid to investors. From this context, the LQ45 organizations had optimal and stable performance yearly, to pay excellent dividends for investors. Furthermore, the profitability ratios, namely ROE and ROI, had average values of 0.232 and 0.255 with a standard deviation of 0.275 and 0.297, respectively. This indicated that LQ45 index companies equally generated profits. Based on the description of the profitability ratios, the high average value of the dividend policy was influenced by the optimal profit generated by the company.

Table 2. Correlation

Variables	DIVTA	DPR	ROE	ROI	DAR	DER	SG	CR	FCF1	FCF2
DIVTA	1.000									
DPR	0.560*	1.000								
ROE	0.922*	0.306*	1.000							
ROI	0.912*	0.291*	0.987*	1.000						
DAR	-0.096	-0.099	-0.140	-0.191	1.000					
SG	-0.119	-0.389*	0.036	0.053	-0.056	-0.068	1.000			
CR	0.104	0.205*	-0.145	-0.160	0.189	0.098	-0.055	1.000		
FCF1	0.766*	0.365*	0.727*	0.726*	-0.129	-0.072	-0.138	0.068	1.000	
FCF2	0.566*	0.219*	0.573*	0.585*	-0.071	-0.059	0.044	0.007	0.657*	1.0000

This table presents the correlations for the major variables used in the analysis. All continuous variables are winsorized at 1% and 99% percentiles. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 2 showed the correlation analysis, where the relationship between the variable profitability (ROE) and dividend policy (DIVTA) produced a value of 0.922 and was significant at the 10% level. This explained that the companies with higher profitability levels paid dividends in larger amounts. Similar output was also obtained by other profitability indicators used to analyze the robustness test, that is ROI. Moreover, the two free cash flow ratios produced a positive and significant relationship to dividend policy. This demonstrated that the greater cash owned by the company led to the higher amount of dividends paid by the company to investors. Sales growth (SG) and current ratio (CR) also had a negative and positive relationship with dividend policy, respectively.

Baseline Results

Based on Table 3, the baseline model outputs were observed, with the first hypothesis expecting a positive relationship between profitability and dividend policy. Columns (1), (2) and (3) also presented the regression outputs through equations (1), (2), and (3) respectively. In these columns, profitability had a positive coefficient (0.2697) and significant level of 1%. These results were consistent with a proposed hypothesis, where high profitable firm had great dividend policy ratio, supporting H1. From this context, alignment was observed with the signally theory, where profitability was considered a signal for investor or stockholders about future performance and influential on agency policy.

In Table 3, column (3) provided output from the moderating effect of free cash flow. By using equation (3), the interaction model in this column showed a positive coefficient (0.4205) and significance level of 5% between profitability and free cash flow. This demonstrated that free cash flow had a role as a moderating variable on the relationship between profitability and dividend policy. In this case, more free cash flow strengthened the relationship of both variables in LQ45 listed firm, leading to the alignment with H2.

To examine the type of moderating variable, equations (2) and (3) were implemented to determine the existence of a pure or quasi moderator role in free cash flow. Columns (2) and (3) also showed that free cash flow did not significantly affect dividend policy. Meanwhile, a significant effect was observed in the interaction coefficient within column (3). From these results, the moderating variables (free cash flow) had a role as a pure moderator in the relationship between profitability and dividend policy. This suggested that the variable only mattered when combined

with profitability, to strongly affect dividend policy. Free cash flow was also only considered a non-value-added information to the stockholders or investors of the LQ45 listed firms.

Regarding control variables, this study find that DAR and SG have negative (-0.1259 and -0.0715) coefficient and significant at 1% and 5% respectively, while CR does not have significant effect. Next, we perform further robustness test to convince the consistency of our finding.

Table 3. Baseline Model

	(1) DIVTA	(2) DIVTA	(3) DIVTA
ROE	0.2697***	0.2701***	0.1284***
	(0.0064)	(0.0073)	(0.0379)
FCF_A		-0.0019	-0.0181
		(0.0491)	(0.1052)
ROE*FCF1			0.4205**
			(0.1402)
DAR	-0.1259***	-0.1266**	-0.1665***
	(0.037)	(0.0402)	(0.0387)
SG	-0.0715**	-0.0716**	-0.0596*
	(0.0295)	(0.029)	(0.0264)
CR	0.0053	0.0053	0.0052
	(0.0034)	(0.0036)	(0.0046)
cons	0.0049	0.005	0.0335**
	(0.012)	(0.0118)	(0.0105)
Observations	170	170	170
R-squared	0.9474	0.9474	0.9564

This table presents a hierarchy regression analysis, examining the relationship between profitability and leverage with dividend policy and the moderating role of free cash flow in the profitability and leverage–dividend policy relationship. All variables are winsorized at 1% and 99% percentiles. We used robust standard error clustering at the firm and year in every model. We included industry- and year-fixed effects. Standard errors are in parentheses, with ***, **, and * denoting statistical significance at the 1%, 5%, and 10% levels, respectively.

Robustness Tests

This study performed several robustness test to verify that the expected outputs were robust in handling various changes, regarding measurements and variable conditions (Akhmadi & Januarsi, 2021).

Alternative Dividend Policy Measurements

In this study, the DPR (dividend payout ratio) was used as an alternative measure of dividend policy, with columns (1-3) presenting the outputs as observed in Table 4. This proved that profitability had a positive and significant relationship with dividend policy in each model, as the companies generating large profits increased the DPR to investors. To explain the moderating role of free cash flow, Columns (2) and (3) also presented the outputs remaining consistent with the main outcomes. From this context, free cash flow served as a pure moderator in explaining the relationship between profitability and dividend policy. In this case, the robustness test indicated that the main outcomes were robust using various alternative variable measurements.

Alternative Free Cash Flow Measurements

Based on the results, FCF2 was used as an alternative measurement of free cash flow and presented within column (4-6) in Table 4. This was consistent in each model and confirmed the outputs of the baseline model. It also showed that the parameters in Table 3 were robust by using alternative free cash flow measurements.

Table 4. Robustness test using alternative measurement of dividend policy (DPR) and alternative free cash flow measurement (FCF2).

	(1) DPR	(2) DPR	(3) DPR	(4) DIVTA	(5) DIVTA	(6) DIVTA
ROE	0.2818*	0.3628**	1.6542*	0.2697***	0.2556***	0.103**
	(0.1405)	(0.1218)	(0.8771)	(0.0064)	(0.0062)	(0.0333)
FCF1		-0.4094	-1.6339*			
		(0.4102)	(0.7155)			
ROE*FCF1			6.3876**			
			(2.591)			
FCF2					-0.0498*	-0.0318
					(0.0236)	(0.0536)
ROE*FCF2						0.405***
						(0.0792)
DAR	-1.2839**	-1.4347**	-2.0604**	-0.1259***	-0.1146***	-0.153***
	(0.5424)	(0.6081)	(0.7534)	(0.037)	(0.0314)	(0.0397)
SG	-0.6446*	-0.6833*	-0.4684	-0.0715**	-0.0732**	-0.054*
	(0.3225)	(0.3409)	(0.3018)	(0.0295)	(0.0288)	(0.0281)
CR	0.0058	0.0021	0.0138	0.0053	0.0041	0.0068
	(0.021)	(0.0185)	(0.0369)	(0.0034)	(0.0044)	(0.0048)
cons	0.5977***	0.6123***	1.0108***	0.0049	0.0298	0.0333*
	(0.1189)	(0.1086)	(0.2697)	(0.012)	(0.0217)	(0.0174)
Observations	170	170	170	170	170	170
R-squared	0.5108	0.5154	0.6116	0.9474	0.9488	0.9561

This table presents a robustness test of the profitability and leverage–dividend policy relationship and the moderating role of free cash flow using dividend payout ratio (DPR) as an alternative measurement of the dividend policy and FCF2 as an alternative free cash flow measurement. All variables are winsorized at 1% and 99% percentiles. We used robust standard error clustering at the firm and year in every model. We included industry- and year-fixed effects. Standard errors are in parentheses, with ***, **, and * denoting statistical significance at the 1%, 5%, and 10% levels, respectively.

Alternative Profitability Measurements

Table 5 presented the ROI considered an alternative measure of profitability. These results were consistent across models when profitability was replaced by alternative measures. In this case, the interaction between profitability and free cash flow was positive and significant. These were subsequently consistent with the perspectives considering free cash flow a moderating variable in the relationship between profitability and dividend policy.

Discussion

Effect of profitability on dividend policy

First purpose of current study is to examine the effect of profitability on dividend policy for LQ45 listed firms between 2012 to 2021. Current study finds that profitability positively and significantly affects dividend policy, confirming the acceptance of H1. This was consistent with (Arilaha, 2009; Hadian, 2019; Karang et al., 2020; Novatiani et al., 2021; Pradana & Sanjaya, 2017; Vo & Nguyen, 2014). From this context, we suggest that more profitable firms are more likely to pay dividends to investors as they have an ability to produce more profit causing greater amount of dividend distribute to shareholders. Our justification is in line with the original purpose of shareholders investing their fund in firm shares, receiving dividend (Nai et al., 2022; Wulandari et al., 2019).

These results subsequently supported signaling theory**,** which posits the positive association between profitability and dividend policy for LQ45 index companies. It means that firms with high profitability may produce a signal to inform investors and potential investors that the firms may produce better or high return in the future. High profitability may also enhance dividend ratio as suggested by signally theory. In addition, our result also suggests that distributing stable profit may help to decrease information asymmetry between investors and management. The

possession of dividend payments may also a signal that organizational management had an effective and efficient orientation, leading to increased performance and profits distributed to investors. Our result also support (Yarram & Dollery, 2015), regarding the signaling hypothesis. Our prediction also robust with several sensitivity tests using different setting of examinations.

In addition to signaling theory, current study also supports the agency theory which suggest that dividend policy may help to minimize conflict between managers and shareholders as a result of the existence of information asymmetry. Dividend may become an option to minimize managers' free cash flow accessibility to peruse their interests, and reduce the agency cost (Boshnak, 2023). In summary, currents study conclude that more profitable firms tend to pay more dividend as an effort to provide signal to current or potential investors regarding the performance of company in generating return for the future.

Table 5. Robustness test using alternative measurement of profitability and leverage.

	(1) DIVTA	(2) DIVTA	(3) DIVTA
ROI	0.2604***	0.2629***	.00805**
	(0.0107)	(0.0084)	(0.0317)
FCF1		-0.0127	-0.162*
		(0.0528)	(0.074)
ROI*FCF1			0.5788***
			(0.0901)
DAR	-0.0943*	-0.0986*	-0.1636***
SG	-0.0775**	-0.0788**	-0.0581*
	(0.0293)	(0.0297)	(0.0261)
CR	0.008*	0.0079*	0.0088*
	(0.0037)	(0.0039)	(0.0043)
cons	0.0011	0.0015	0.0348**
	(0.0112)	(0.0114)	(0.0125)
Observations	170	170	170
R-squared	0.945	0.9451	0.9577

This table presents a robustness test of the profitability and leverage–dividend policy relationship and the moderating role of free cash flow using alterative measurements of profitability and leverage: baseline model (1–3), return on investment in Column (4–6), and debt to equity ratio in Columns (7–9). All variables are winsorized at 1% and 99% percentiles. We used robust standard error clustering at the firm and year in every model. We included industry- and year-fixed effects. Standard errors are in parentheses, with ***, **, and * denoting statistical significance at the 1%, 5%, and 10% levels, respectively.

Profitability, free cash flow, and dividend policy

The second purpose of our study is to investigate the moderating role of free cash flow in the relationship between profitability and dividend policy for LQ45 listed firms during 2012-2021. Based on the statistical test using the proposed model on equation (3), we find that free cash flow plays a role as moderating variable in the association between profitability and dividend policy, therefore support the second hypothesis (H2). This result suggests that the interaction between profitability and free cash flow create incremental motivation for firm to pay more dividend, as the company has sufficient (even more) cash flow to pay dividend to its shareholders. This line of reasoning supported by Ambarwati (2014) who find that free cash flow strengthened the positive relationship between profitability and dividend policy. The moderating role of free cash flow also indicate that the optimal level of profitability was a signal to investors, regarding the ability of the company in distributing profits to stockholders. In addition, combination between the ability of the firm to generate its profit and the sufficient free cash flow possessed by the company proved that the company produced optimal performance and had good financial flexibility to pay more excellent dividends to investors. From this context, the combination of the two factors increased the organizational ability to pay dividends to investors (Abor & Bokpin, 2010; Deni et al., 2016; G.

R. Jensen et al., 1992). Our finding support prior studies by (Ambarwati, 2014; Puspitaningtyas, 2018), where free cash flow was the optimal variable in strengthening the relationship between profitability and dividend policy.

In addition to moderating role of free cash flow on profitability and dividend policy relationship, current study also attempts to distinguish the form of moderating role, pure or quasy moderator, as suggested by (Sharma, 2003). We find that free cash flow served as a pure moderator in explaining the relationship between profitability and dividend policy, suggesting that free cash flow has an incremental contribution when it interacts with firm profitability. One possible explanation of this finding is that ability to generate profit is stronger for LQ45 companies in our setting than that of their ability to maintain the free cash flow. This is reasonable as LQ45 companies have characteristics as firms with high liquidity with large market capitalization and good future company growth, causing easier for the LQ45 companies to produce more profit. Current result were consistent with (Ambarwati, 2014; Puspitaningtyas, 2018), where the moderator (free cash flow) strengthened the relationship between profitability and dividend policy. It also supported the signaling theory used to establish a relationship between both variables (profitability and dividend policy) strengthened by free cash flow. In this case, the higher profitability level generated by the company improved its accumulated reserved position, with the combination of the two variables providing information to the public. This information proved that the company produced optimal performance and had good financial flexibility to pay more excellent dividends to investors. Our findings also robust to several different examinations.

Theoretical Implication and Managerial Implication

This study contributes to the body of knowledge in several important patterns. First, the present study provides renewed evidence regarding the form and role of free cash flow moderating effects to expand and complement the previous literature. In this case, valuable and innovative insights are presented to the public, highlighting the significant role of free cash flow as a pure moderator in the relationship between profitability and dividend policy, an aspect often overlooked in previous reports. These results suggest that the joint influence of profitability and free cash flow enhances the capacity of a company to distribute dividends. However, when free cash flow is considered the sole determining factor, its impact on dividend policy was likely non-optimal. From this context, free cash flow operates solely as a pure moderator within LQ45 index companies.

Second, this study contributes to the literature on the type of free cash flow moderating variable emphasizing the association between profitability and dividend policy. This is because extensive empirical studies examine the roles played by a moderating variable without investigating its type. Since the subsequent examination is crucial in determining the type of moderating variable, the proposition of a differentiation process is essential for conducting a comprehensive analysis. This shows that free cash flow functions as a pure moderating variable, indicating its significant influence on the profitability and dividend policy of a firm. However, the designation of these policies often leads to the relatively low relevance of free cash flow information, compared to profitability. This suggests that profitability holds more valuable information than free cash flow, for firms prioritizing dividend payments.

Third, this study provide implication for managers by suggesting that the free cash flow condition of a company may be essential for deciding dividend payout policy when firms can create good profitability. In addition, current study also contributes to the signaling theory by providing evidence on the association between profitability and dividend policy for highly liquid firms.

Conclusion, Limitations, and Suggestions for Future Research

Based on the results, the relationship between profitability and leverage with dividend policy was investigated, while exploring the moderating effect of free cash flow on LQ45 index companies in the Indonesian Capital Market. By using hierarchy analysis, profitability was a positive factor in increasing dividend policy. Current study also finds that free cash flow play a role as moderating

variable, which served as a pure moderator, on profitability and dividend policy relationship. These findings also robust to several examination using different settings.

Several practical implications were also provided, considered, and implemented by management and investors. First, the results provided were important for investors from the LQ45 index companies. This was due to their consideration of profitability and free cash flow as the dominant combination in representing management judgments and decisions regarding dividend policy. From this context, more optimal profit led to the greater the cash owned by the company, causing a signal obtained by investors regarding the consideration of higher excellent dividend payout by the management. Second, the outputs were very important for management when setting the regulations regarding dividend policy. This was a potential strategy to increase firm value while anticipating the conflicts occurring between investors and management.

From these results, various limitations were observed: First, only LQ45 index companies were implemented as the study sample, causing limited output generalization. This proved that future research should expand the evidence by including samples from another industry and conducting various comparisons; second, current study only consider dividend policy as independent variable, while earlier payout decisions and investment opportunities were identified as significant determinants of dividend policy according to Dewasiri et al. (2019). This was because several reports represented samples from emerging and developing markets. In this case, the uniqueness and similarity of samples should be considered in future analyses, for appropriately implementing factors in Indonesia. Also, future research may consider other independent variable such as investment opportunities when examining determinant of dividend policy. Third, current study does not include managerial characteristics as potential factors to influence dividend policy due to data limitation.

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