
Cash Position, Free Cash Flow, Firm Size, and Leverage as Determinants of Dividend Payout: Does Profitability Mediate?

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Abstract:

This study investigates whether cash position, free cash flow, firm size, and debt-to-equity ratio explain dividend payout and whether profitability transmits those relationships in Indonesian healthcare firms. The final balanced panel contains 17 companies listed on the Indonesia Stock Exchange over 2019-2024, yielding 102 firm-year observations after outlier trimming. Random-effects panel regressions estimate the direct paths, while Sobel tests assess the indirect paths through return on equity. Cash position and firm size are positively associated with dividend payout ratio, whereas free cash flow, leverage, and profitability have no significant direct association with payout. Free cash flow and firm size are positively associated with profitability, while leverage is negatively associated with profitability; cash position is not significant. None of the four indirect effects through profitability is significant. The evidence indicates that liquidity available at the payment date and organizational scale matter more for healthcare dividend decisions than accounting profitability alone. It also suggests that internally generated cash can strengthen profitability without necessarily being distributed, particularly where medical facilities, technology, and service expansion compete for funds. The study contributes a post-pandemic sector-specific test of dividend policy by separating cash availability from free cash flow and by examining profitability as a formally tested mediator.

Keywords: Dividend Payout Ratio, Cash Position, Free Cash Flow, Profitability, Firm Size, Debt-To-Equity Ratio

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1. Introduction

Dividend policy remains a central corporate-finance decision because it allocates earnings between current shareholder distributions and internal financing. Classical irrelevance reasoning holds under frictionless markets, yet actual payout decisions

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reflect taxes, information asymmetry, agency conflicts, financing constraints, and investment opportunities (Miller & Modigliani, 1961). Survey evidence further shows that managers value stable dividends and avoid changes that cannot be sustained (Brav et al., 2005). Consequently, the dividend payout ratio (DPR) can communicate confidence while simultaneously reducing the discretionary resources under managerial control (Jensen & Meckling, 1976).

These trade-offs are especially visible in healthcare. Pharmaceutical producers, hospitals, laboratories, and medical-equipment firms face persistent capital needs for facilities, regulated inventories, technology, clinical capacity, and research. During the COVID-19 shock, demand and cash generation rose for some issuers, while the post-pandemic normalization exposed substantial differences in liquidity, leverage, profitability, and payout behavior. The Indonesian healthcare sector also expanded in the number of listed firms, but only a subset paid cash dividends consistently (Indonesia Stock Exchange, 2024). This setting makes the distinction between accounting earnings and distributable cash particularly important.

Cash position captures immediately available liquidity relative to after-tax income, whereas free cash flow measures cash remaining after operating and capital-investment needs. The two measures can therefore generate different payout implications. A strong cash position can make a dividend operationally feasible, but positive free cash flow may still be retained when attractive projects or precautionary needs dominate. Firm size and leverage add further heterogeneity: large firms tend to have broader funding access and more stable operations, while debt service can constrain both earnings and distributions. Prior studies report mixed signs across sectors and samples (Angela & Budiman, 2022; Aqmalia & Anita, 2024; Brav et al., 2005; Chen & Zhang, 2021; Heliani et al., 2022; Lee & Park, 2021; Nguyen et al., 2023; Pangestu & Akwila, 2024; Rochmah & Ardianto, 2020).

Profitability may connect these determinants to payout, but the mediating mechanism is not automatic. Free cash flow and scale can improve operating performance, and high leverage can reduce return on equity through financing costs. Nevertheless, profitable firms may retain earnings for expansion rather than increase DPR. This study therefore asks two questions: which internal financial characteristics explain dividend payout among Indonesian healthcare firms, and does profitability carry their effects to DPR? It contributes by testing cash position and free cash flow jointly, focusing on a defensive but investment-intensive sector, and evaluating four indirect paths within a single panel-data framework.

2. Theoretical Background

Liquidity, Free Cash Flow, and Dividend Payout

Signaling arguments predict that firms with sufficient liquidity can distribute cash without weakening routine operations. Cash position should therefore be positively associated with DPR, consistent with evidence that immediately available funds are a

practical constraint on dividend payment (Aqmalia & Anita, 2024; Teresia & Santioso, 2025). Agency theory also links excess cash to payout because dividends reduce resources that managers could deploy in low-return projects (Jensen & Meckling, 1976).

Free cash flow creates a related but distinct prediction. After essential investment, a larger residual can support distributions and reduce agency costs (Chen & Zhang, 2021; Rochmah & Ardianto, 2020). Conversely, pecking-order reasoning predicts that managers prefer internal funds to costly external finance (Myers & Majluf, 1984). Healthcare firms may retain free cash flow to expand hospitals, modernize equipment, or develop products, so the empirical sign depends on the balance between distribution pressure and investment demand. The directional hypotheses follow the submitted thesis model.

H1. Cash position is positively associated with dividend payout ratio.

H2. Free cash flow is positively associated with dividend payout ratio.

Firm Size, Leverage, and Profitability

Large firms generally possess broader capital-market access, stronger reputations, more diversified operations, and lower relative transaction costs. These characteristics can support more stable dividends and profitability through economies of scale (Lee & Park, 2021; Nguyen et al., 2023). Leverage has the opposite expected effect. A higher debt-to-equity ratio increases fixed payment obligations and financial risk, which can reduce funds available for dividends and compress profitability when borrowing costs outweigh tax benefits (Heliani et al., 2022; Pangestu & Akwila, 2024).

Profitability is commonly treated as an immediate capacity measure for payout, but its effect depends on whether earnings are distributed or retained. In an investment-intensive sector, a high return on equity may coexist with conservative dividends if management prioritizes capacity expansion. The direct-path hypotheses are therefore:

H3. Firm size is positively associated with dividend payout ratio.

H4. Debt-to-equity ratio is negatively associated with dividend payout ratio.

H5. Profitability is positively associated with dividend payout ratio.

H6. Cash position is positively associated with profitability.

H7. Free cash flow is positively associated with profitability.

H8. Firm size is positively associated with profitability.

H9. Debt-to-equity ratio is negatively associated with profitability.

The Mediating Role of Profitability

Mediation requires both an economically meaningful path from the financial determinant to profitability and a subsequent path from profitability to DPR. Cash availability can support operations, free cash flow can fund productive investment, scale can create cost advantages, and leverage can reduce net returns (Veronisa et al., 2023; Mursidah et al., 2023; Suryaman et al., 2023; Novita et al., 2022). If changes in profitability are then translated into payout, indirect effects should emerge. If payout is determined more directly by liquidity, financing commitments, and investment policy, those indirect paths will be weak.

H10. Profitability mediates the association between cash position and dividend payout ratio.

H11. Profitability mediates the association between free cash flow and dividend payout ratio.

H12. Profitability mediates the association between firm size and dividend payout ratio.

H13. Profitability mediates the association between debt-to-equity ratio and dividend payout ratio

3. Methodology

Sample and Variable Measurement

The population comprises 34 healthcare companies listed on the Indonesia Stock Exchange (IDX). Purposive sampling required listing by the beginning of 2019, complete annual financial statements for 2019-2024, and at least one cash-dividend payment during the period. Eighteen firms initially met the criteria. Boxplot screening of DPR identified one extreme firm-level case for trimming, leaving a balanced panel of 17 firms and 102 firm-year observations. Financial statement data were collected from audited annual reports and official issuer or IDX sources.

DPR is dividend per share divided by earnings per share. Profitability is return on equity (ROE), measured as after-tax income divided by total equity. Cash position (CFP) is year-end cash divided by after-tax income. Free cash flow (FCF) is operating cash flow less capital expenditure, scaled by total assets. Firm size (SIZE) is the natural logarithm of total assets, and leverage (DER) is total debt divided by total equity. Table 1 summarizes the measurement model.

Table 1. Variable definitions and measurement

Code	Construct	Measurement	Role
DPR	Dividend payout	Dividend per share / earnings per share	Dependent
ROE	Profitability	After-tax income / total equity	Mediator

Code	Construct	Measurement	Role
CFP	Cash position	Year-end cash / after-tax income	Independent
FCF	Free cash flow	(Operating cash flow - capital expenditure) / total assets	Independent
SIZE	Firm size	Natural logarithm of total assets	Independent
DER	Leverage	Total debt / total equity	Independent

Panel Models and Mediation Test

The analysis begins with descriptive statistics and conventional checks of residual normality, multicollinearity, serial correlation, and heteroskedasticity (Ghozali, 2018). Chow, Hausman, and Breusch-Pagan Lagrange-multiplier tests guide the choice among pooled, fixed-effects, and random-effects specifications. The selection tests support a random-effects estimator. The two path equations are:

$$ROE_{it} = \alpha + \beta_1 CFP_{it} + \beta_2 FCF_{it} + \beta_3 SIZE_{it} + \beta_4 DER_{it} + \varepsilon_{it} \quad (1)$$

$$DPR_{it} = \alpha + \beta_1 CFP_{it} + \beta_2 FCF_{it} + \beta_3 SIZE_{it} + \beta_4 DER_{it} + \beta_5 ROE_{it} + \varepsilon_{it} \quad (2)$$

Each indirect effect equals the product of the determinant-to-ROE coefficient and the ROE-to-DPR coefficient. Sobel statistics evaluate whether those products differ from zero (Sholihin & Ratmono, 2021). All tests use a 5% significance level, and estimation was performed in EViews 12. Because the study is observational, coefficients are interpreted as conditional associations rather than definitive causal effects.

4. Empirical Findings/Result

Descriptive Evidence and Diagnostics

Table 2 shows substantial dispersion in cash position, leverage, DPR, and ROE. Negative minimum values for CFP, DER, DPR, and ROE reflect loss years or negative equity. SIZE is comparatively homogeneous. The scale of the distributions should therefore be considered when interpreting coefficient magnitudes.

Table 2. Descriptive statistics (N = 102 firm-years)

Variable	Mean	Median	SD	Min	Max	N
CFP	3.9286	1.4065	11.4987	-17.3861	85.6029	102
FCF	0.0247	0.0332	0.1598	-1.1671	0.3628	102
SIZE	28.6972	28.6190	1.3148	24.8046	31.0130	102

Variable	Mean	Median	SD	Min	Max	N
DER	-1.5216	0.4682	23.3884	-235.2166	4.5900	102
DPR	3.5899	0.4690	7.2898	-0.0009	29.0796	102
ROE	0.8119	0.1216	7.1564	-0.7393	72.3560	102

Notes: Ratios are reported on the raw scale used in the submitted analytical output.

The Jarque-Bera probability is 0.0629, so residual normality is not rejected. Centered variance-inflation factors range from 1.033 to 2.439, the Durbin-Watson statistic is 2.183, and the reported heteroskedasticity probability is 0.347. These diagnostics do not indicate material violations. Model-selection tests favor random effects: the Chow test rejects pooled estimation, the Hausman test does not reject random effects, and the Lagrange-multiplier test rejects pooled estimation in favor of random effects.

Table 3. Diagnostic and panel-model selection tests

Test	Statistic / p	Interpretation
Jarque-Bera	p = 0.0629	Residual normality not rejected
Centered VIF	1.033-2.439	No material multicollinearity
Durbin-Watson	2.1832	No first-order serial correlation
Heteroskedasticity	p = 0.3473	Homoskedasticity not rejected
Chow	p < 0.001	Fixed effects preferred to pooled
Hausman	p = 0.4747	Random effects retained
Breusch-Pagan LM	p < 0.001	Random effects preferred to pooled

Direct and Indirect Estimates

The DPR equation in Table 4 explains 58.41% of the observed variation (adjusted R-squared = 0.5624). Cash position is positive and significant (beta = 0.3448, p < 0.001), supporting H1. Firm size is also positive and significant (beta = 1.9342, p = 0.0047), supporting H3. FCF, DER, and ROE are not significant in the payout equation; H2, H4, and H5 are therefore not supported.

In the ROE equation, cash position is insignificant, rejecting H6. Free cash flow is positive (beta = 0.4158, p = 0.0005) and firm size is positive (beta = 0.0543, p = 0.0284), supporting H7 and H8. DER is negative and significant (beta = -0.3051, p < 0.001), supporting H9. The very large DER t-statistic in the submitted output should

be read with care because the raw DER distribution includes extreme negative-equity observations.

Table 4. Random-effects estimates for dividend payout and profitability

Variable	DPR β	SE	p	ROE β	SE	p
CFP	0.34476	0.03196	<0.001	-0.00068	0.00145	0.6390
FCF	-0.09626	2.72806	0.9719	0.41585	0.11487	0.0005
SIZE	1.93425	0.66853	0.0047	0.05430	0.02440	0.0284
DER	-0.95585	0.62184	0.1276	-0.30509	0.00070	<0.001
ROE	-3.11499	2.03869	0.1298	-	-	-
Constant	-52.19475	19.01256	0.0072	-1.21820	0.70062	0.0853

Notes: DPR model R-squared = 0.5841; adjusted R-squared = 0.5624. Estimates reproduce the submitted thesis output.

Table 5 reports the Sobel tests. None of the absolute statistics reaches the two-sided 5% critical value. Profitability therefore does not mediate the relationships of cash position, FCF, SIZE, or DER with DPR, and H10-H13 are not supported.

Table 5. Sobel tests of indirect effects through profitability

Path	Indirect effect	Sobel z	Approx. p	Decision
CFP -> ROE -> DPR	0.0021	0.452	0.652	No mediation
FCF -> ROE -> DPR	-1.2952	-1.685	0.092	No mediation
SIZE -> ROE -> DPR	-0.1691	-1.260	0.208	No mediation
DER -> ROE -> DPR	0.9504	-1.528	0.127	No mediation

Notes: Approximate two-sided p-values are derived from the reported Sobel statistics; all inferences match the thesis decision rule

5. Discussion

Determinants of Dividend Payout

The positive cash-position coefficient indicates that dividend decisions in healthcare firms are closely connected to immediately available liquidity. This result is consistent with signaling and operational-liquidity arguments: firms with stronger cash buffers can pay dividends while maintaining inventories, payroll, procurement, and service continuity. It also accords with prior evidence that cash position predicts payout (Aqmalia & Anita, 2024; Teresia & Santioso, 2025). The result should not be interpreted as a recommendation to maximize idle cash. Rather, a credible dividend requires enough liquid capacity after essential operating needs are protected.

FCF does not directly predict DPR, despite its positive association with ROE. This pattern is economically plausible in an investment-intensive sector. Cash remaining after routine operations may be committed to hospital expansion, diagnostic technology, production capacity, regulatory compliance, or research. In pecking-order terms, retaining internal funds can be less costly than raising new external capital (Myers & Majluf, 1984). The finding therefore distinguishes cash that makes a current distribution feasible from residual cash that management may allocate to future growth.

Firm size is the second robust payout determinant. Larger healthcare companies are more likely to possess diversified revenue sources, established brands, broader networks, and better access to finance. Those characteristics can support stable distributions even when individual business lines experience volatility. The result is consistent with cross-market evidence linking scale to payout capacity (Lee & Park, 2021; Nguyen et al., 2023). DER, by contrast, has no significant direct association with DPR. Debt may finance productive medical assets whose cash returns offset repayment obligations, and firms may also smooth dividends despite short-run changes in capital structure.

ROE itself is not significant in the DPR equation. Accounting profitability is therefore not sufficient to explain whether earnings are distributed. The result reinforces the difference between earning capacity and payout capacity: profitable firms may retain funds for expansion, while firms with strong liquidity and established scale can sustain dividends even when contemporaneous ROE varies. This sector-specific result is consistent with studies that report no universal profitability-payout relation (Pangestu & Akwila, 2024).

Profitability Paths and the Absence of Mediation

The profitability equation shows that FCF and SIZE support operating performance. Free cash flow provides flexibility to maintain productive assets and finance improvements, while scale supports economies of scope and lower relative costs (Veronisa et al., 2023; Mursidah et al., 2023). DER is strongly negative, consistent with the view that financing costs and risk can absorb operating gains (Suryaman et

al., 2023; Novita et al., 2022). Cash position is insignificant because liquidity can remain idle or precautionary rather than being transformed immediately into earnings. None of these profitability paths continues to a significant indirect payout effect. The result is informative rather than merely null. It implies that the mechanisms generating profit and the mechanisms governing distributions are partly separate. FCF and scale can improve profitability without committing management to a larger payout, and leverage can reduce ROE without causing an immediate dividend reduction. Cash position and size instead affect payout largely through direct liquidity and organizational-capacity channels.

For investors, the findings caution against treating ROE as a stand-alone dividend forecast. Cash availability, asset scale, capital commitments, and reinvestment plans should be read together. For managers, the results support explicit communication about the distinction between retained cash for medical investment and distributable liquidity. Such transparency can reduce the risk that conservative payout is misread as weak performance.

6. Conclusions

Using 102 firm-year observations from 17 Indonesian healthcare companies during 2019-2024, this study finds that cash position and firm size are positively associated with dividend payout ratio. Free cash flow, leverage, and profitability have no significant direct payout association. Free cash flow and firm size are positively associated with ROE, whereas DER is negatively associated with ROE. Profitability does not mediate any of the four determinant-DPR relationships. Dividend capacity in this setting therefore depends more on liquid resources and organizational scale than on profitability alone.

Managers should maintain sufficient cash to support credible payouts without compromising continuity of care or investment. Free cash flow should be balanced between shareholder distributions and productive projects, while debt should be controlled because its negative association with profitability can weaken long-run financial flexibility. Investors should combine ROE with cash position, scale, leverage, and stated capital-expenditure plans when assessing dividend sustainability.

The study is limited to one IDX sector, a six-year window that spans pandemic disruption, and a final sample of 17 firms. The use of aggregate financial ratios and Sobel tests also limits the analysis of nonlinear or heterogeneous mechanisms. Negative equity produces extreme DER values that warrant careful interpretation. Future research should extend the sample across sectors and periods, test mediation with bootstrap confidence intervals, consider robust or winsorized specifications, and incorporate governance, growth opportunities, ownership, business risk, and macroeconomic conditions.

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