# Modification of Dividend Payout Ratio with Operating Income, Comprehensive Income and Attributed Income: Evidence in Southeast Asian Market

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## Abstract

This study examines modifications to the dividend payout ratio formulation based on operating income, comprehensive income, and income attributable to future dividends and stock returns as a reflection of value relevance. The data for this study are the financial statements of companies listed on the Indonesia Stock Exchange (IDX), Bursa Malaysia (MYX), Vietnam Stock Exchange (SET), Singapore Stock Exchange (SET), and the Philippines Stock Exchange (PSE) for the years 2020-2024, with 1,252 firm-year observations. Hypothesis testing was conducted using multiple linear regression analysis. The test results demonstrate that the dividend payout ratio formulation based on operating income and income attributable to owners of the parent entity has a significant effect on future dividends and stock returns, indicating that the modification has predictive power and the ability to influence user decisions. Meanwhile, modifications based on comprehensive income and income attributable to non-controlling interests do not significantly influence the company's earnings, except when determining total comprehensive income only involves net income and other comprehensive income items that will be reclassified or realized, in which case the modification based on comprehensive income becomes relevant. This study offers a new alternative in calculating the dividend payout ratio by incorporating various types of income as dividend divisors. Each type of income has its own characteristics, advantages, and limitations. This provides a useful reference for predicting future dividends based on various types of previous period incomes.

***Keywords:*** *Dividend Payout Ratio, Operating Income, Comprehensive Income, Attributable Income, Value Relevance.*

## 1. Introduction

The topic of dividends is interesting to study because from an investor's perspective, dividends are an investment objective. Retail investors, oriented toward short-term returns, decide to purchase shares, hoping not only to gain income from price changes but also to receive optimal dividend income (Cheung et al., 2026). Meanwhile, from the perspective of company management, dividends are the distribution of income to shareholders, fulfilling the welfare of owners, minimizing agency problems, and enhancing the company's reputation among investors, as well as signaling a positive dividend payout (Hussain & Akbar, 2022)(Hussain & Akbar, 2022). The structure of financial statements has changed, particularly the income statement, which serves as a benchmark for presenting company performance. The income statement now includes not only net income but also clearer and more specific subtotals: operating income, comprehensive income, and attributable income. Unfortunately, financial accounting research has focused solely on net income when measuring the dividend payout ratio, even though other types of income have specific characteristics and advantages that may be relevant in predicting future dividend payments (Cao, 2022).

Research that has examined dividend determination has concluded that the factors that influence dividend payments are financial performance (Chasiotis et al., 2024), capital structure (Zainudin & Khaw, 2021), sustainability performance (Anolick et al., 2026), governance (Chintrakarn et al., 2025), free cash flow (Giriati, 2016), corporate social responsibility and foreign ownership (Lai et al., 2025), company size, company growth period (Kałdoński & Jewartowski, 2025), sustainability committee (Almulhim & Aljughaiman, 2026), board

of directors composition (Al-Hiyari et al., 2024), corporate culture including religious traditions (Ling et al., 2025), and the external environment such as economic policy uncertainty (Vo et al., 2025), political democracy (Bui, 2025), the pandemic period (Pettenuzzo et al., 2023), global conditions and energy deregulation (Balli et al., 2026). In addition to being an influenced variable, dividends also act as an influencing factor. Several studies examining the position of dividends as an independent variable have found that dividend payments influence market reactions, reflected in stock returns (Aspris et al., 2024) and firm value (Chasiotis et al., 2024a). Dividends impact a company's public reputation (Quang, 2024), leverage policy (Menoncin et al., 2025), and the number and extent of disclosures of key audit matters (Rahaman & Karim, 2025). Dividend payment pressure is a factor that encourages management to engage in creative accounting practices, such as earnings management (Haq et al., 2024) and tax avoidance (Chen et al., 2025).

An area that has not been studied in prior research to date, as mentioned in the paragraph above, is measuring dividend variables using the dividend payout ratio (DPR), which is formulated as 1) total cash dividend payments divided by net income, or 2) dividends per share divided by net income per share. Previous research has not specifically included operating income, nor has it included comprehensive income and attributable income in the dividend payout ratio calculation. The originality of this study lies in examining the effect of previous period dividend payments on future dividends and market reactions. In measuring dividend payments, a modified dividend payout ratio is used, which not only includes net income but also operating income, comprehensive income, and attributable income. This study offers a new alternative in calculating the dividend payout ratio by incorporating various types of income as dividend divisors, where each type of income has its own characteristics, advantages, and limitations, thus providing a reference in predicting future dividends based on various types of previous period incomes. The research problem formulation in this study is whether the modified dividend payout ratio formula based on operating income, comprehensive income, and attributable income has predictive power and is able to influence user decisions. Predictive power is demonstrated by its influence on future dividends, and its ability to influence user decisions is demonstrated by its influence on stock returns. The purpose of this study is to test the ability of a modified dividend payout ratio formula based on operating income, comprehensive income, and attributable income to predict future dividends and influence user decisions.

Modifying the dividend payout ratio formula to operating income is important because operating income is the specific income derived from operating activities within the entity's core business area, excluding income and losses outside of core operating activities. Modifying the dividend payout formula, which specifically includes only operating income, is considered more relevant for measuring the ability to pay cash dividends, where cash flow is derived from operating activities within the company's core business area. This eliminates bias from non-operating cash flows that could arise from asset sales, external debt, or equity financing, which are irrelevant to the entity's independent ability to maximize operational profitability in paying dividends. Similarly, modifying the dividend payout ratio to comprehensive income is important because comprehensive income combines realized and unrealized elements resulting from adjustments to the carrying value of assets to fair value at the date of the financial statements. This unrealized income is presented in other comprehensive income (OCI). OCI in the presentation period is not related at all to cash flow and net income, but for certain OCI items that are planned to be realized in the near future, these OCI items have high predictive power over net income and cash flow. For example, an OCI item in the form of an investment in securities categorized as available-for-sale financial assets (AFS). When the financial statements are prepared at the closing date, the difference between the carrying value and fair value may still be recognized as OCI, but when the audited financial statements are published, this item has been realized and reported as net income and increases cash flow. The modification of the DPR formula that includes comprehensive income is considered more relevant for measuring the ability to pay cash dividends, especially in entities that have financial assets that are sensitive to changes in value.

Modifying the dividend payout ratio formula to attributable income is also important because attributable income is net income and comprehensive income allocated to owners of the parent entity (OPE) and owners with non-controlling interests (NCI), respectively, in a group entity presenting consolidated financial statements. Disaggregating net income and comprehensive income to each type of owner makes it easier for financial statement users to determine their rights to income based on the type and proportion of share ownership, thus facilitating

predictions of investment returns based on their position within the group entity's share ownership structure, rather than using aggregate net income and aggregate comprehensive income, which still have mixed rights. Modifying the dividend payout ratio formula, which incorporates attributable income, is considered more relevant for measuring the ability to pay cash dividends in accordance with their rights, whether as owners of the parent entity or as owners of NCI.

This research contributes to academics by adding to the literature in financial accounting and capital markets, regarding the relevance of modifying the dividend payout ratio formula by incorporating operating income, comprehensive income, and attributable income, in addition to the conventional dividend payout formula that currently only uses net income. Each type of income has different characteristics. Operating income focuses on income from core operational activities, comprehensive income combines realized and unrealized elements in line with fair value accounting, and attributable income disaggregates income according to the rights of each type of owner. In practice, it is expected to provide input for potential investors in predicting investment returns in the form of dividends from various types of income presented in the income statement, with all the advantages and limitations of each type of income.

The use of DPR with a broader concept of income becomes an additional reference before making investment decisions. For example, if the potential investor has a small investment fund, and has the potential to become an NCI in the group entity's share ownership structure, then in predicting investment returns, DPR is based on income attributed to NCI. Likewise, if the potential investor has a relatively large investment fund, and has the potential to become an owner of the parent entity in the group entity's share ownership structure, then in predicting investment returns, DPR is based on income attributed to the owners of the parent entity. This is more relevant than using the conventional DPR formula based on aggregate net income, which still unites the rights to income of each type of owner. For regulations, especially the Financial Accounting Standards Board, the results of this study can be input in assessing the effectiveness of standard policies in increasing the value relevance of standard policies in preparing financial statements. In line with IFRS 18 on the presentation of financial statements, entities are required to present subtotals and categories in the income statement section, including the presentation of operating income items, while also maintaining the previous policy of IFRS-IAS 1 on the obligation to present comprehensive income and attributable income items.

## 2. Objectives

The objectives of this study are:

1) To test the ability of a modified dividend payout ratio formula based on operating income to predict future dividends and influence user decisions.

2) To test the ability of a modified dividend payout ratio calculation based on total comprehensive income to predict future dividends and influence user decisions.

3) To test the ability of a modified dividend payout ratio calculation based on attributable income to predict future dividends and influence user decisions.

## 3. Materials and Methods

*Signaling Theory*

Signaling theory (Spence, 1973) states that operating income, comprehensive income, and attributable income signal financial performance from management to users of financial statements, which informs investment decisions through predictions of operating activity-based cash dividend payments for operating income, including realized and unrealized elements for comprehensive income, and according to share ownership rights and proportions for attributable income. Operating income is a positive signal about performance achieved purely from operating activities, without additions or subtractions from non-operational elements not included in the company's core business activities. Comprehensive income is a positive signal about comprehensive revenue recognition, both from realized and unrealized elements, which accommodates the impact of macroeconomic fundamentals and the company's external environment on earnings ability. Attributable income is a positive signal about income that has been allocated according to the rights of each type of owner, proportional to their ownership rights. This signal



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will subsequently influence investment decisions, reflected in stock price changes around the publication date of the financial statements that inform dividend payments (Seth & Mahenthiran, 2022).

*The Information Content of Earnings Theory*

The information content of earnings theory (Ball & Brown, 1968) states that operating income, comprehensive income, and attributable income have value relevance for the market in deciding to purchase a company's shares. Complete information on subtotals of income is readily available to users and can be used to predict future cash dividend payments, taking into account the characteristics of each type of income. The presented operating income contains information about the contribution of operating activities to the company's ability to pay dividends to shareholders, which is then reacted to by the market as a reflection of decisions regarding the interpretation of earnings information. Similarly, comprehensive income and attributable income contain information about the combined contribution of realized and unrealized income, as well as the disaggregation of income based on share ownership proportion, to the company's ability to pay dividends.

*Efficient Market Hypothesis Theory*

The efficient market hypothesis theory (Fama, 1970) states that the stock price is formed as an equilibrium point from a series of information flows about the company, including operating income information as a reflection of income generated from operational activities, comprehensive income as a form of fair value accounting implementation, and attributable income that aligns with fairness and transparency of information for the interests of all types of shareholders, both majority and non-majority. Information on operating income, comprehensive income, and attributable income serves as input for market participants in decision-making, which ultimately shapes the supply-demand mechanism and is reflected in the market price per share in an active market.

*Trade-Off Theory*

The trade-off theory of capital structure (Modigliani & Miller, 1961) states that management prioritizes funding, including dividend payments, from internal sources in the form of operating income, comprehensive income, and attributable income, over other external funding sources that are fraught with risk and high capital costs. In this context, funds used to pay dividends are safer if they come from operating income, comprehensive income, and attributable income, which includes net income or earnings ability, rather than using external funding sources that carry the cost of debt and equity, which burden the company in the future.

*Agency Theory*

Agency theory (Jensen & Meckling, 1976) states that the interests of shareholders and management are divergent, and dividend payments can minimize this agency problem because management is deemed capable of allocating income gains between shareholder interests in dividends and management interests in retaining retained earnings for investment, bond repayment reserves, and other managerial purposes (Zahid et al., 2023). Dividends reflect earnings quality (Mulchandani et al., 2020), as regular dividend payments demonstrate that reported earnings are not the result of creative accounting. This clearly demonstrates the company's ability to pay dividends, meaning that reported earnings are not manipulated through earnings management. Companies that manipulate earnings through earnings management distribute dividends less frequently (Hussain & Akbar, 2022).

*Hypothesis Development*

Rahayu & Kusuma (2020) in their study of Southeast Asian markets, demonstrated that comprehensive income can predict future operating income. Operating income reflects management's ability to optimize cash receipts from operating activities and operational expense efficiency. Based on the trade-off theory, the higher the operating income, the more able the company is to obtain low-risk internal funding sources, both to fund asset investments and to meet shareholder expectations in the form of dividend distributions, rather than using external sources with high costs and risks. The modified DPR formula using operating income reflects the extent of dividends paid from earnings ability achieved purely from the company's operating activities, excluding income or losses from activities outside the company's core business. Based on this, we suspect that the modified DPR



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formula incorporating operating income will be positively reacted to by the market because it can be used to predict future dividend income.

$H_1$. Modified dividend payout ratio formulas based on operating income have a positive effect on stock returns and future dividend predictions.

The modified DPR formula using comprehensive income reflects the extent of dividends paid from earnings ability, a combination of realized and unrealized income that could potentially be realized in the future (Kusuma & Kusumaningarti, 2023). This formula is suitable for companies with a large number of financial assets, particularly available-for-sale financial assets whose fair value is sensitive to the external environment and whose potential for realization is significant, impacting net income. Including it is the right decision because it is more predictive in assessing future net income from income from the realization of financial assets. Based on this, we suspect that the modification of the DPR formula by including comprehensive income will be positively reacted to by the market because it can be used to predict future dividend income. Modifying the earnings ability formula using return on assets (ROA) based on comprehensive income has been shown to be positively reacted to by the market (Būmane, 2018) and capable of predicting future investment returns (Kusuma, 2021). Even in the Israeli capital market, comprehensive income determines the amount of dividend payments (Chen & Gavious, 2016), not only in conventional entities but also in entities operating based on Sharia principles (Wahyudi et al., 2025).

$H_2$. Modifying the dividend payout ratio formula based on comprehensive income has a positive effect on stock returns and predicting future dividends.

Parent entities and subsidiaries have distinct characteristics, unique to each, including the interests of both parent and non-controlling interests. A recent study by Chen et al., (2024) in the Chinese market even demonstrated that pressure from parent owners influences dividend payments in subsidiaries. The modified DPR formula, incorporating attributable income, reflects the extent of dividend payments from earnings ability, separated according to the rights of each shareholder within a group entity. This is more appropriate for predicting future dividend returns based on share ownership proportions than using aggregate net income, which still mixes income rights between parent and non-controlling interest owners (Kusuma et al., 2021). Based on this, we suspect that the modified DPR formula, incorporating attributable income, will be positively reacted to by the market because it can be used to predict future dividend income. Modified earnings ability formulations based on attributable income have been shown to generate positive market reactions (Marchini D Este) and are capable of predicting future investment returns (Ratih et al., 2025), not only in conventional entities but also in entities operating based on Sharia principles (Anam et al., 2025). The market reacts not only to net income information (Ball & Brown, 2019), but also to comprehensive income information (Kusuma et al., 2021).

$H_3$. Modifying the dividend payout ratio formula based on attributable income has a positive effect on stock returns and predictions of future dividends.

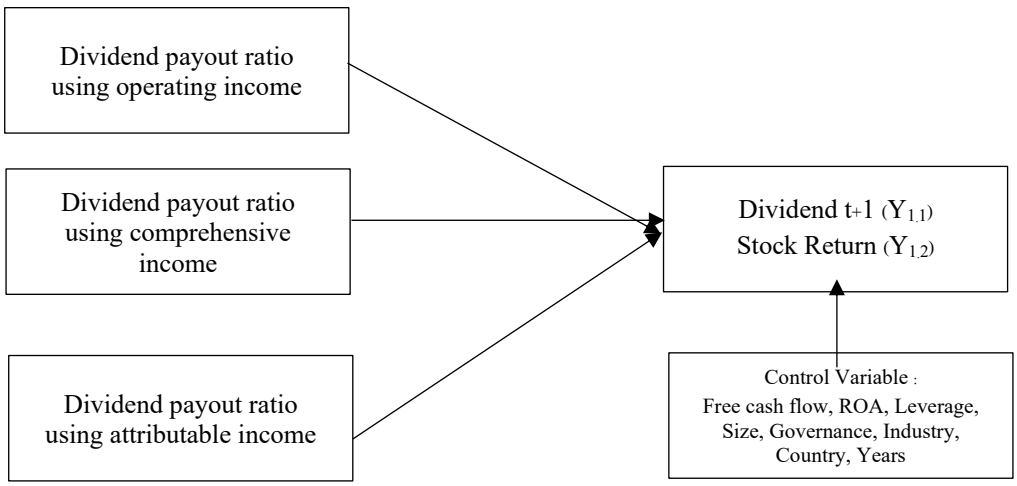

**Figure 1** Conceptual Research Framework

The data for this study are financial reports published by companies listed on the Indonesia Stock Exchange (IDX), Bursa Malaysia (MYX), Vietnam Stock Exchange (SET), Singapore Stock Exchange (SET), and the Philippines Stock Exchange (PSE) for the period 2020-2024. The data comprise 1,252 firm-year observations obtained using a purposive sampling technique with the criteria outlined in the table below. The research subjects are five Southeast Asian countries: Indonesia, Malaysia, Vietnam, Singapore, and the Philippines, as these five countries have the five most active capital markets and the largest market capitalizations in the region.

**Table 1** Research Data

| Description | IDX | MYX | SET | SGX | PSE | Amount |
|---|---|---|---|---|---|---|
| Registered population for the period 2020-2024 | 912 | 1.015 | 870 | 785 | 258 | 3.840 |
| Minus: | | | | | | |
| Non-routine financial reports available for 2020-2024 | 452 | 244 | 267 | 336 | 97 | |
| Net income or comprehensive income negative | 182 | 343 | 312 | 172 | 46 | |
| Non-routine dividend information available for 2020-2024 | 16 | 24 | 45 | 18 | 34 | |
| Firm-year data | 262 | 404 | 246 | 259 | 81 | 1.252 |

The dependent variables in this study are 1) the ability to predict future dividends (Dividend t+1), and 2) the ability to influence user decisions, particularly financial market participants (stock returns). These two factors reflect the value relevance of the dividend formula modification with operating income, comprehensive income, and attributable income. Accounting information contained in financial statements must be relevant to user needs, indicating high-quality information, including information on dividends, operating income, comprehensive income, and attributable income. Relevant and high-quality information is characterized by its ability to predict future information, including predicting future dividends as investment returns on equity securities, and its ability to influence user decisions, as represented by changes in stock prices before and after earnings information is announced in financial reports (Banks et al., 2018). Referring to the research by Arisyahidin et al., (2025), the value relevance of earnings is proxied by the ability to predict future dividends.

$$Div_{i,t+1} = \frac{Dividend_{i,t+1}}{Total\ Asset_{i,t+1}} \quad (1)$$

Referring to research by Kusuma et al., (2022) the ability to influence user decisions is proxied by stock returns, where the stock price used is the stock price on the 2nd day after the publication of the audited financial report and the stock price 1 day before.

$$SR_{i,t} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (2)$$

The independent variable in this study is a modified dividend payout ratio (DPR) formula involving three types of income: operating income, comprehensive income, and attributable income. Before measuring the modification, here is the conventional dividend payout ratio formulation (Kusuma & Hilda Agustin, 2024), which is widely used today:

$$DPR_{i,t} = \frac{Dividend_{i,t}}{Net\ Income_{i,t}} \quad (3)$$



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Based on this conventional formulation, we then modify it based on three types of income in the presentation of the income statement. The modified dividend payout ratio (DPR) formulation based on operating income (OI) is as follows:

$$DPR(OI)_{i,t} = \frac{Dividend_{i,t}}{Operating\ Income_{i,t}} \quad (4)$$

Modification of the dividend payout ratio (DPR) formulation based on comprehensive income (CI) is presented as follows:

$$DPR(CI)_{i,t} = \frac{Dividend_{i,t}}{Comprehensive\ Income_{i,t}} \quad (5)$$

Modification of the dividend payout ratio formulation based on income attributable to the owner parent entity (OPE) is presented as follows:

$$DPR(OPE)_{i,t} = \frac{Dividend\ OPE_{i,t}}{Net\ Income\ OPE_{i,t}} \quad (6)$$

Where OPE dividends are measured by the percentage of OPE shares multiplied by the dividend payment, and OPE net income is measured by net income attributable to OPE divided by total assets.

The modified dividend payout ratio formulation based on income attributable to non-controlling interest (NCI) is as follows:

$$DPR(NCI)_{i,t} = \frac{Dividend\ NCI_{i,t}}{Net\ Income\ NCI_{i,t}} \quad (7)$$

NCI dividends are measured by the percentage of NCI shares multiplied by dividend payments, and NCI net income is measured by net income attributable to OPE divided by total assets.

We refer to previous studies on dividend determinants, which we then use as control variables in this study. The first control variable is the availability of free cash flow, measured by the ratio of free cash flow to total assets (Zhou et al., 2025). Based on the study by Ren et al. (2025), the next control variables are incomeability and governance, where incomeability is measured by return on assets (ROA), which is total net income after tax divided by total assets, while governance is measured by the percentage of independent commissioners on the total board of commissioners. Other factors influencing dividend payments are leverage and company size (Krieger et al., 2021). Leverage is measured by the debt-to-equity ratio (DER), which is total debt divided by total equity, and company size is measured by the natural logarithm of total assets. To address the endogeneity issue of cross-country data over time within each industry type, referring to Zahid et al., (2023), we used all three measures with dummy variables.

We constructed the following equation model to test our hypotheses:



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$$DPR_{i,t+1} = \alpha + \beta_1 DPR(OI)_{i,t} + \beta_2 DPR(CI)_{i,t} + \beta_3 DPR(OPE)_{i,t} + \beta_4 DPR(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n \, Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n \, Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n \, Year\_Dummies_{i,t} + \varepsilon_{i,t} \quad (8)$$

$$SR_{i,t+1} = \alpha + \beta_1 DPR(OI)_{i,t} + \beta_2 DPR(CI)_{i,t} + \beta_3 DPR(OPE)_{i,t} + \beta_4 DPR(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n \, Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n \, Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n \, Year\_Dummies_{i,t} + \varepsilon_{i,t} \quad (9)$$

We conducted a robustness test to prove whether the model we built was able to survive or was consistent with the hypothesis proof when our proxy variable measurement was replaced with another measurement, namely the dividend payout ratio (DPR) was replaced with dividend per share (DPS), the conventional formulation (Zahid et al., 2023):

$$DPS_{i,t} = \frac{Dividend\ per\ Share_{i,t}}{EPS_{i,t}} \quad (10)$$

Modification of the dividend per share formula based on operating income (DPS-OI), previously the ratio of cash dividends divided by operating income, to dividends per share divided by operating income per share.

$$DPS(OI)_{i,t} = \frac{Dividend\ per\ Share_{i,t}}{EPS(OI)_{i,t}} \quad (11)$$

Modification of the dividend per share formula based on comprehensive income (DPS-CI), previously the ratio of cash dividends divided by comprehensive income, to dividends per share divided by comprehensive income per share.

$$DPS(CI)_{i,t} = \frac{Dividend\ per\ Share_{i,t}}{EPS(CI)_{i,t}} \quad (12)$$

Modification of the dividend per share formula based on income attributable to owners of the parent entity (DPS-OPE), previously the ratio of cash dividends divided by net income attributable to owners of the parent entity, to dividends per share divided by net income attributable to owners of the parent entity.

$$DPS(OPE)_{i,t} = \frac{Dividend\ OPE\ per\ Share_{i,t}}{EPS(OPE)_{i,t}} \quad (13)$$

Modification of the dividend per share formula based on income attributable to owners with non-controlling interests (DPS-NCI), previously the ratio of cash dividends divided by net income attributable to

owners with NCI, to dividend per share divided by net income attributable to owners with non-controlling interests (DPS-NCI).

$$DPS(NCI)_{i,t} = \frac{Dividend\ NCI\ per\ Share_{i,t}}{EPS(NCI)_{i,t}} \quad (14)$$

Model robustness test by changing the proxy measurement variable from dividend payout ratio (DPR) to dividend per share (DPS):

$$DPS_{i,t+1} = \alpha + \beta_1 DPS(OI)_{i,t} + \beta_2 DPS(CI)_{i,t} + \beta_3 DPS(OPE)_{i,t} + \beta_4 DPS(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n\ Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Year\_Dummies_{i,t} + \varepsilon_{i,t} \quad (15)$$

$$SR_{i,t+1} = \alpha + \beta_1 DPS(OI)_{i,t} + \beta_2 DPS(CI)_{i,t} + \beta_3 DPS(OPE)_{i,t} + \beta_4 DPS(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n\ Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Year\_Dummies_{i,t} + \varepsilon_{i,t} \quad (16)$$

We conducted additional tests to focus on the components of comprehensive income. In calculating total comprehensive income, we only included OCI items from the group that will be reclassified to net income (we denote this by OCIR, which stands for "other comprehensive income that will be reclassified"), because these OCI items have the potential to be realized in the near future, potentially impacting net income and cash flow. The goal is to measure the relevance of DPR modifications specifically to actual and potentially realized income, excluding unrealized income that has no potential to be realized, such as unrealized earnings from defined benefit plan liabilities and fixed asset revaluations.

$$DPR_{i,t+1} = \alpha + \beta_1 DPR(OI)_{i,t} + \beta_2 DPR(OCIR)_{i,t} + \beta_3 DPR(OPE)_{i,t} + \beta_4 DPR(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n\ Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Year\_Dummies_{i,t} + \varepsilon_{i,t} \quad (17)$$

$$SR_{i,t+1} = \alpha + \beta_1 DPR(OI)_{i,t} + \beta_2 DPR(OCIR)_{i,t} + \beta_3 DPR(OPE)_{i,t} + \beta_4 DPR(NCI)_{i,t} + \beta_5 FCF_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CG_{i,t} + \beta_8 DER_{i,t} + \beta_9 SIZE_{i,t} + \sum_{i=1}^{n} \beta_n\ Country\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Industry\_Dummies_{i,t} + \sum_{i=1}^{n} \beta_n\ Year\_Dummies_{i,t} + \varepsilon_{i,t}$$

(18)

## 4. Results and Discussion

Table 2 below displays the descriptive statistical results, where the average future dividend is 0.603. The average stock return is 0.214, while the average dividend payout ratio modified by operating income is 0.652, modified by comprehensive income is 0.563, modified by income attributable to owners of the parent is 0.645, and non-controlling interests is 0.256.

**Table 2** Descriptive Statistics

| Variable | n | Mean | Min | Max | SD |
|---|---|---|---|---|---|
| Div t+1 | 1,252 | 0.603 | 0.165 | 3.755 | 0.672 |
| SR | 1,252 | 0.214 | –0.067 | 0.646 | 1.338 |
| DPR(OI) | 1,252 | 0.652 | 0.178 | 3.477 | 0.794 |
| DPR(CI) | 1,252 | 0.563 | 0.298 | 2.818 | 1.005 |
| DPR(OPE) | 1,252 | 0.645 | 0.109 | 3.292 | 0.816 |
| DPR(NCI) | 1,252 | 0.256 | 0.051 | 0.103 | 0.927 |
| FCF | 1,252 | 0.176 | 0.442 | 0.641 | 0.083 |
| ROA | 1,252 | 0.028 | 0.001 | 0.052 | 0.194 |
| CG | 1,252 | 0.419 | 0.023 | 0.603 | 0.205 |
| DER | 1,252 | 1.308 | 0.323 | 2.849 | 0.361 |
| SIZE | 1,252 | 21.127 | 16.149 | 24.508 | 0.472 |

Table 3 below displays a correlation analysis using Pearson Correlation. The operating income-based dividend payout ratio (DPR) or OI is positively correlated with t+1 dividends with a coefficient of 0.811*** and with stock returns with a coefficient of 0.853***, meaning that the higher the operating income, the higher the dividend paid in the following period, and market participants respond positively to the operating income achievement. This is in line with the research of Ratih et al. (2025) that operating income-based incomeability modification is positively correlated with stock returns. The comprehensive income-based dividend payout ratio (DPR) or CI is negatively correlated with t+1 dividends with a coefficient of -0.021 and negatively correlated with stock returns with a coefficient of -0.044, but this relationship is not statistically significant. This is in line with the research of Anam et al. (2025) that the relationship between comprehensive income and stock returns is insignificant, unless it only involves other comprehensive income items that will be reclassified or realized into net income. The dividend payout ratio based on income attributable to owners of the parent entity (OPE) is positively correlated with dividends at t+1 with a coefficient of 0.843*** and with stock returns with a coefficient of 0.705***. This means that the greater the attributable income, the greater the dividend paid in the following period, and market participants respond positively to such income achievement. This aligns with the research by Andriana et al. (2025) that attributable income is positively correlated with stock returns and future earnings.

**Table 3** Correlation Matrix

| | Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Div t+1 | 1 | | | | | | | | | | |
| 2. | SR | 0.636*** | 1 | | | | | | | | | |
| 3. | DPR(OI) | 0.811*** | 0.853*** | 1 | | | | | | | | |
| 4. | DPR(CI) | –0.021 | –0.044 | 0.261* | 1 | | | | | | | |
| 5. | DPR(OPE) | 0.843*** | 0.705*** | 0.427* | 0.426* | 1 | | | | | | |
| 6. | DPR(NCI) | –0.174* | –0.161* | 0.383* | 0.473* | 0.309* | 1 | | | | | |
| 7. | FCF | 0.781*** | 0.727*** | 0.001 | 0.448* | 0.501** | 0.535** | 1 | | | | |
| 8. | ROA | 0.892*** | 0.938*** | 0.325** | 0.495* | 0.412* | 0.246 | 0.414* | 1 | | | |
| 9. | CG | 0.503** | 0.594** | 0.494* | –0.106* | 0.453* | 0.275 | 0.425* | 0.31* | 1 | | |
| 10. | DER | –0.514** | –0.504** | 0.205 | 0.371* | 0.446* | 0.268 | –0.163* | 0.42* | 0.498* | 1 | |
| 11. | SIZE | 0.425* | 0.415* | 0.014 | 0.328* | 0.375* | 0.397* | 0.374* | 0.032 | –0.109* | 0.308* | 1 |

Note: The number shown above is the Pearson correlation coefficient, where the closer the number is to 1, the stronger the correlation, and a positive or negative sign indicates the direction of the relationship. An asterisk indicates the significance of the Pearson correlation coefficient, where the ***, **, * signs indicate Pearson significance levels of 1%, 5%, and 10%, respectively.

Table 4 shows the results of hypothesis testing using multiple linear regression analysis, Model 8 with dependent variable Y1.1 as dividend for period t+1 and Model 9 with variable Y1.2 as stock return. Modification of the dividend payout ratio formula based on operating income has a positive effect on stock returns with a regression coefficient of 0.718*** (15.025) and is significant at the 1% level, and also has a positive effect on future dividends with a regression coefficient of 0.742*** (15.051) and is significant at the 1% level. Modification of the dividend payout ratio formula based on comprehensive income does not significantly affect stock returns with a regression coefficient of -0.024 (5.013), and does not significantly affect future dividends either with a regression coefficient of -0.027 (5.601). The modified dividend payout ratio formula based on income attributable to owners of the parent entity has a positive effect on stock returns with a coefficient of 0.643** (10.562), and also has a positive effect on future dividends with a regression coefficient of 0.651** (10.228) and is significant at the 1% level.

**Table 4** Hypothesis Test Results

| **Variable** | **(8)** $\mathbf{Y_{1.1}}$ **= DPR t+1** | **(9)** $\mathbf{Y_{1.2}}$ **= SR** |
|---|---|---|
| DPR(OI) | 0.718***<br>(15.025) | 0.742***<br>(15.051) |
| DPR(CI) | –0.024<br>(5.013) | –0.027<br>(5.601) |
| DPR(OPE) | 0.643***<br>(10.562) | 0.651***<br>(10.228) |
| DPR(NCI) | 0.146<br>(7.657) | 0.146<br>(7.593) |
| FCF | 1.457***<br>(12.878) | 1.405***<br>(12.174) |
| ROA | 0.892***<br>(11.609) | 0.822***<br>(11.643) |
| CG | 0.314*<br>(9.102) | 0.434*<br>(9.415) |
| DER | –8.323**<br>(11.4) | –8.264**<br>(11.45) |
| SIZE | 0.308**<br>(8.912) | 0.306**<br>(8.758) |
| Constant | 0.403*<br>(12.514) | 0.486*<br>(12.597) |
| Country | YES | YES |
| Industry | YES | YES |
| Year | YES | YES |

| | | |
|---|---|---|
| F-Statistics | 14.752***<br>(21.743) | 14.708***<br>(21.491) |
| Adjust. $R^2$ | 0.4276 | 0.4202 |

Note: The numbers above are regression coefficients, negative or positive signs indicate the direction of the influence is directly or inversely proportional, and the numbers in brackets are the t-values, while the asterisks indicate the significance of t, where the asterisks ***, **, * mean that t is significant at the 1%, 5% and 10% levels respectively.

Source : Data prosses 2026.

*Result of Robustness Test*

Table 5 presents the results of the robustness test. This test was conducted to prove the consistency of the model when the measuring proxy was changed, from the original dividend payout ratio (DPR) (see formulas 4, 5, 6) to dividend per share (DPS) (see formulas 11, 12, 13). The test results prove that the model is able to consistently provide the same evidence as the hypothesis. Modification of the dividend per share formula based on operating income (DPS OI) has a positive effect on stock returns with a regression coefficient of 0.733*** (16,207) and is significant at the 1% level, and also has a positive effect on future dividends with a regression coefficient of 0.724*** (15,302) and is significant at the 1% level. Modification of the dividend per share formula based on comprehensive income (DPS CI) does not significantly affect stock returns with a regression coefficient of -0.023 (5,041), and does not significantly affect future dividends with a regression coefficient of -0.024 (5,078). Modification of the dividend per share formula based on income attributable to owners of the parent entity (DPS OPE) has a positive effect on stock returns with a coefficient of 0.635**(10.826), and also has a positive effect on future dividends with a regression coefficient of 0.563**(10.652) and is significant at the 5% level.

**Table 5** Results of Robustness Test

| **Variable** | **(15)**<br>**$Y_{1.1}$ = DPR t+1** | **(16)**<br>**$Y_{1.2}$ = SR** |
|---|---|---|
| DPS(OI) | 0.724***<br>(15.302) | 0.733***<br>(16.207) |
| DPS(CI) | –0.024<br>(5.078) | –0.023<br>(5.041) |
| DPS(OPE) | 0.563**<br>(10.652) | 0.635**<br>(10.826) |
| DPS(NCI) | 0.146<br>(7.357) | 0.146<br>(7.957) |
| FCF | 1.458***<br>(12.479) | 1.845***<br>(12.907) |
| ROA | 0.802***<br>(11.615) | 0.802***<br>(11.016) |
| CG | 0.364*<br>(9.173) | 0.341*<br>(9.216) |
| DER | –8.428**<br>(11.954) | –8.732**<br>(11.458) |
| SIZE | 0.301**<br>(8.067) | 0.309**<br>(8.045) |

| | | |
|---|---|---|
| Constant | 0.423*<br>(12.845) | 0.419*<br>(12.652) |
| Country | YES | YES |
| Industry | YES | YES |
| Year | YES | YES |
| F-Statistics | 14.783***<br>(21.429) | 14.207***<br>(21.451) |
| Adjust. $R^2$ | 0.4126 | 0.4472 |

Note: The numbers above are regression coefficients, negative or positive signs indicate the direction of the influence is directly or inversely proportional, and the numbers in brackets are the t-values, while the asterisks indicate the significance of t, where the asterisks ***, **, * mean that t is significant at the 1%, 5% and 10% levels respectively.

Source : Data prosses 2026.

*Result of Additional Test*

Table 6 presents the results of the additional test. This test focused on the modification of the dividend payout ratio based on comprehensive income. However, in determining total comprehensive income, it only involved net income and the OCI items in the group that will be reclassified to net income (we denote this by OCIR, which stands for "other comprehensive income that will be reclassified"). The results of the hypothesis test (see Table 4) showed that when the modification involved all components of total comprehensive income, the results did not significantly affect future dividends and stock returns. However, when only net income and OCIR were included, the results significantly affected future dividends and stock returns (see Table 6 below). This is because this group of OCI items has the potential to be realized in the near future, thus potentially affecting net income and cash flow.

**Table 6** Results of Additional Test

| **Variable** | **(17)**<br>**$Y_{1.1}$ = DPR t+1** | **(18)**<br>**$Y_{1.2}$ = SR** |
|---|---|---|
| DPR(OI) | 0.643***<br>(14.305) | 0.661***<br>(17.431) |
| DPR(OCIR) | 0.624***<br>(11.273) | 0.603**<br>(15.492) |
| DPR(OPE) | 0.643***<br>(10.562) | 0.651***<br>(10.228) |
| DPR(NCI) | 0.146<br>(7.657) | 0.146<br>(7.593) |
| FCF | 1.257***<br>(12.098) | 1.105***<br>(12.384) |
| ROA | 0.892***<br>(11.609) | 0.822***<br>(11.643) |
| CG | 0.314*<br>(9.662) | 0.434*<br>(9.325) |
| DER | –8.311** | –8.264** |

| | | |
|---|---|---|
| | (11.4) | (11.209) |
| SIZE | 0.308**<br>(8.912) | 0.306**<br>(8.758) |
| Constant | 0.393*<br>(12.664) | 0.416*<br>(12.187) |
| Country | YES | YES |
| Industry | YES | YES |
| Year | YES | YES |
| F-Statistics | 14.362***<br>(21.613) | 14.727***<br>(21.521) |
| Adjust. $R^2$ | 0.4605 | 0.4317 |

Note: The numbers above are regression coefficients, negative or positive signs indicate the direction of the influence is directly or inversely proportional, and the numbers in brackets are the t-values, while the asterisks indicate the significance of t, where the asterisks ***, **, * mean that t is significant at the 1%, 5% and 10% levels respectively.

Source: Data prosses 2026.

*Endogeneity Problem*

This study uses a conventional endogeneity procedure, the Two-Stage Least Squares (2SLS), to ensure the findings are free from endogeneity bias caused by the correlation between the independent variables and the error term. The main independent variable in this study is the modified dividend payout ratio (DPR) formula using three types of income, and we use the instrumental variable, DPR change (ΔDPR). DPR change is used as an instrumental variable because it meets the correlation criteria with DPR as the main independent variable but not with stock returns as the dependent variable. After testing with 2SLS, the findings are consistent with the baseline model after accounting for the possibility of endogeneity. The modified dividend payout ratio formula based on operating income has a positive effect on stock returns with a regression coefficient of 0.704*** (15.051) and is significant at the 1% level. It also has a positive effect on future dividends with a regression coefficient of 0.622*** (17.025) and is significant at the 1% level. Modifying the dividend payout ratio formula based on comprehensive income did not significantly affect stock returns, with a regression coefficient of –0.018 (5.476), nor did it significantly affect future dividends, with a regression coefficient of –0.012 (5.087). Modifying the dividend payout ratio formula based on income attributable to owners of the parent entity had a positive effect on stock returns, with a coefficient of 0.671*** (10.228), had a positive effect on future dividends, with a regression coefficient of 0.704*** (10.142), and is significant at the 1% level, as presented in Table 7 below.

**Table 7** Robustness Test (2 SLS) Regression Results

| **Variable** | **(8)**<br>**$Y_{1.1}$ = DPR t+1** | **(9)**<br>**$Y_{1.2}$ = SR** |
|---|---|---|
| DPR(OI) | 0.622***<br>(17.025) | 0.704***<br>(15.051) |
| DPR(CI) | –0.012<br>(5.087) | –0.018<br>(5.476) |
| DPR(OPE) | 0.704***<br>(10.142) | 0.671***<br>(10.228) |
| DPR(NCI) | 0.126<br>(7.657) | 0.136<br>(7.593) |

| | | |
|---|---|---|
| FCF | 1.507***<br>(12.878) | 1.625***<br>(12.174) |
| ROA | 0.892***<br>(11.609) | 0.822***<br>(11.643) |
| CG | 0.314*<br>(9.102) | 0.434*<br>(9.415) |
| DER | –8.163**<br>(11.4) | –8.714**<br>(11.45) |
| SIZE | 0.308**<br>(8.912) | 0.306**<br>(8.758) |
| Constant | 0.113*<br>(12.514) | 0.326*<br>(12.597) |
| Country | YES | YES |
| Industry | YES | YES |
| Year | YES | YES |
| F-Statistics | 14.042***<br>(21.071) | 14.366***<br>(21.529) |
| Adjust. $R^2$ | 0.4211 | 0.4382 |
| Instrumental variable | ΔDPR | ΔDPR |

Note: The numbers above are regression coefficients, negative or positive signs indicate the direction of the influence is directly or inversely proportional, and the numbers in brackets are the t-values, while the asterisks indicate the significance of t, where the asterisks ***, **, * mean that t is significant at the 1%, 5% and 10% levels respectively.

Source: Data prosses 2026.

*The Effect of Operating Income-Based Dividend Payout Ratio (DPR) on Future Dividends and Stock Returns*

Based on the data analysis, this study successfully proved Hypothesis 1: the modified DPR formula based on operating income has a positive effect on future dividends and stock returns. This means that the use of operating income in the dividend payout ratio formulation has value relevance, meaning it has predictive power and can influence users' decision-making. These results are also consistent with the robustness test, when the DPR proxy is replaced with the ratio of dividends per share to operating income per share (operating income-based EPS). Operating income is a component of income that accounts for a larger proportion than non-operating components, and its value is relatively stable across periods and has high persistence. Therefore, the use of operating income in the modified DPR formula can be used to predict future dividends.

Operating income is income specific to operating activities, so the market reacts positively to operating income achievements. The market views operating income as income derived purely from internal managerial capabilities in boosting incomeability. Therefore, the value of operating income indicates management's ability to meet investment return expectations in the form of dividends. The use of operating income-based DPR is relevant to users' needs for input to predict future investment returns derived purely from internal management capabilities and operational activity optimization. Operating income-based dividend payout ratios (DPR) represent the ability to pay dividends purely from core operating activities. The advantage of using an operating income-based DPR, rather than the conventional DPR formula based on net income, is that it excludes funding sources from non-

operating activities, debt, and share issuance. Cash dividend payments originating from non-operating elements, debt, and share issuance, suggest that management is forcing itself to pay dividends, the cash inflow for which does not originate from management's internal capabilities, derived from its operating incomeability. This is in line with signaling theory, which states that operating income is a signal from management to financial statement users about financial performance, which informs investment decisions through predictions of operating income-based cash dividend payments. This is in line with the theory of the information content of earnings, which states that operating income has value relevance for the market in deciding to purchase shares in the company. Operating income information is reacted to by users and can be used to predict future cash dividend payments. This is in line with the efficient market hypothesis, which states that the resulting stock price represents the equilibrium point of a series of information flows about the company, including operating income information, which reflects income earned from operating activities. In line with the trade-off theory in capital structure, management prioritizes funding, including funds to pay dividends, from internal sources in the form of operating income achievements, rather than other external funding sources that are full of risks and high capital costs.

*The Effect of Comprehensive Income-Based Dividend Payout on Future Dividends and Stock Returns*

Based on the data analysis, this study successfully proved Hypothesis 2: Modifying the DPR using total comprehensive income does not significantly affect dividends in the following period and does not significantly affect stock returns. This result is also consistent with the robustness test, when the DPR proxy is replaced by the ratio of dividends per share to comprehensive income per share. This means that the use of total comprehensive income in the dividend payout ratio formulation is incapable of predicting future dividend payments and is not reacted to by the market. This is due to the nature and characteristics of other comprehensive income (OCI), which is part of total comprehensive income. Net income is indeed a dominant component of total comprehensive income, but OCI's characteristics include low persistence, high fluctuation, low comparability between periods, high sensitivity to the external corporate environment beyond management's control, and significant impact from fundamental macroeconomic and even sociopolitical changes that shape asset fair value and OCI recognition. Its high subjectivity or low objectivity in valuations contribute to the insignificant impact of total comprehensive income on future dividend payments and its lack of market reaction.

Its transitory nature, merely an adjustment for changes in historical valuation to fair value, renders OCI unrelated to cash flow and incomeability during the assessment period, even though it is presented as revenue in the income statement. This lack of connection to incomeability and cash flow makes OCI incapable of predicting future dividends, and users of financial statements already know this. Therefore, in making investment decisions that subsequently influence stock price movements, users only use incomeability, measured purely by net income, without considering OCI. Companies can pay cash dividends if they have sufficient cash available, particularly cash receipts from operating activities resulting from the sale of products or services. While it may be possible to force dividend payments when incomeability declines or the company is still in the growth phase, optimizing external funding sources from debt or share issuance to meet shareholder expectations for dividends can be done by optimizing external funding sources from debt or share issuance to meet shareholder expectations. However, this policy may be implemented only once or twice. In the long term, dividend policies from sources other than internal incomeability will disrupt financial stability, as using external funding sources carries a high cost of debt. Like digging a hole to fill a hole, paying dividends to meet shareholder expectations involves digging a new hole by creating new debt. Unlike internal funding sources from achieving optimal incomeability for dividend payments, this policy has minimal risk. However, when incomeability is not met, and the OCI component is higher than net income in the total comprehensive income structure, the company is unable to pay dividends and it is not recommended to force dividend payments from external funding sources.

The DPR modification using total comprehensive income does not significantly affect future dividends and does not significantly affect stock returns, but when it does not involve the OCI group that will not be reclassified (additional test results), the DPR modification using comprehensive income consisting only of net income plus the OCI group that will be reclassified, is proven to predict future dividends and is positively received by the market. In the presentation of the income statement, total comprehensive income consists of two main elements, namely net income and OCI. OCI is further divided into two groups: OCI that will be reclassified to net

income and OCI that will not be reclassified to net income. This OCI group that will be reclassified consists of items that will be realized in the next period, thus affecting net income and operating cash flow. These items are widely held by financial sector companies that have a large number of financial assets, which must always be presented at fair value, especially those in the available-for-sale category. Their lifespan is short, and they will quickly turn into cash, and the income is recognized as net income.

This is why total comprehensive income, which only includes net income and the reclassified group's OCI, has predictive power regarding future dividends, and is positively received by the market. In financial sector companies whose funding is invested in available-for-sale financial assets and the fair value difference is presented in the reclassified group's OCI, total comprehensive income can be used to modify dividend payments because it has been proven to significantly affect subsequent dividend payments, and the market responds positively. The greater the holding of available-for-sale financial assets, the greater the company's incomeability and ability to pay dividends. This study successfully demonstrated that modifying the dividend payout ratio using total comprehensive income, which only includes net income and the reclassified group's OCI (not aggregate OCI), can predict future dividends and is positively responded by the market.

This study's results align with Chen and Gavious and Kusuma SHARE's findings that the reclassified group's OCI influences dividend payments. Aggregate OCI which contains group OCI that will not be reclassified, generally in the form of actuarial difference items for post-employment defined benefit plans and revaluation of tangible fixed assets, will not be realized in the long term so that it has no effect at all on incomeability and cash flow, so that DPR modifications involving this OCI group have weak predictive power and weak value relevance.

*The Effect of Attributable Income-Based DPR on Future Dividends and Stock Returns*

Based on the data analysis, this study successfully proves Hypothesis 3: the modified DPR formula based on net income attributable to OPE has a positive effect on future dividends and stock returns. This means that the use of net income attributable to OPE in the dividend payout ratio formulation has value relevance, meaning it has predictive power and can influence users' decision-making. These results are also consistent with the robustness test, when the DPR proxy is replaced with the ratio of OPE dividends per share to OPE net income per share. Considering the proportion of dividend ownership allocated to majority shareholders in the parent and subsidiary, net income and equity attributable to OPE are also analyzed.

The use of income attributable to OPE, rather than aggregate income, reflects income that is purely OPE's rights, not mixed with NCI rights. Therefore, it is more relevant for OPE's interests in evaluating performance and predicting future investment returns, in the form of dividend receipts that are purely OPE, not mixed with NCI interests. It also reflects the percentage of OPE's rights to net assets and impacts dividend rights, thus influencing future dividends. OPE dominance confers control rights over the corporation, determines the composition of the board of directors and the board of commissioners, controls strategic decisions including current dividend payment decisions and future dividend payment plans, so the use of income attributable to OPE in the modified DPR formulation is more predictive of future dividend payments.

OPE ownership of corporate shares is very large and stable between periods, thus impacting dividend persistence. Meanwhile, the DPR modification using net income attributable to NCI does not significantly affect future dividend payments, nor does it significantly affect stock returns. This is because NCI ownership is very small, does not have control rights over strategic decisions such as dividend payments, and the stability of NCI ownership between periods is low because its orientation is short-term investment that is more focused on income from stock price changes rather than waiting for dividend payments that require a longer investment period. NCI ownership period is short, its share ownership rights change quickly, so its persistence is low.

## 5. Conclusion

This study was motivated by the lack of empirical evidence on the value relevance of using operating income, comprehensive income, and attributable income in calculating the dividend payout ratio. Financial accounting literature addressing this issue is still scarce, as most existing studies use only net income in calculating the dividend payout ratio, even though IFRS 18 and PSAK 118 require subtotals to be presented in the income statement consisting of operating income, net income, comprehensive income, and attributable income. This study complements a series of studies on dividend policy by focusing on the involvement of operating income,

comprehensive income, and attributable income in calculating the dividend payout ratio. The results of this study support agency theory, signaling theory, and the efficient market hypothesis regarding the relationship between dividend policy and market reaction, where the dividend payout ratio is calculated differently from the usual formula by involving various types of earnings. This study also supports the theory of the information content of earnings, stating that earnings information has value relevance, including its use in determining the dividend payout ratio, as evidenced by its ability to predict future dividends and influence market decisions.

The results of this study demonstrate that the modified DPR based on operating income has value relevance because it has predictive power and the ability to influence user decisions. The modified DPR formula using operating income reflects the amount of dividends paid from the profitability achieved purely from the company's operational activities without involving income or losses from activities outside the company's core business, and reflects the amount of dividends paid from the profitability achieved from realized income.

The modified DPR based on total comprehensive income is relevant, but only when it involves net income and the OCI group that will be reclassified to net income, while total aggregate comprehensive income is insignificant in its predictive power and does not significantly influence market reactions. This is because reclassified OCI will be realized immediately and turned into actual realized income that affects net income and cash flow in the realization period, while OCI will not be reclassified indicating that this item will not be realized, and therefore in a longer period it remains as unrealized earnings that do not affect profitability and cash flow. This OCI is purely unrealized income that is only the difference in asset adjustments from the carrying value to fair value.

The modified DPR formula using comprehensive income reflects the amount of dividends paid from the achievement of comprehensive profitability, a combination of actual realized income and unrealized income that will potentially be realized in the future. This formula is suitable for companies with a large number of financial assets, particularly available-for-sale financial assets whose fair value is sensitive to the external environment and whose potential for realization is significant in the near future, impacting net income. Including it is appropriate because it is more predictive in assessing future net income derived from the realization of financial assets.

The modified DPR based on attributable income is relevant, but only for income attributable to owners of the parent entity. While the DPR based on income attributable to NCI is not predictive and is not positively received by the market, NCI is a minority entity in the subsidiary and is insignificant in the shareholding structure of the group entity. The modified DPR formula using attributable income reflects the extent of dividends paid from profitability achieved, separated according to the rights of each shareholder within a group entity. This is more appropriate in predicting future dividend returns based on share ownership proportions than using aggregate net income, which still mixes the rights to income between owners of the parent entity and NCI owners.

This research has not tested the value relevance of using a modified dividend payout ratio in terms of its impact on firm value and is limited to the ASEAN market. We recommend that future studies examine the effect of modifying the dividend payout ratio based on three types of earnings on firm value and/or explore other market regions or specific countries. The limitation of this study is that it focuses only on the ASEAN market and three specific types of earnings, so the results may not be fully generalizable to other markets or earnings measures. Future research is recommended to extend the study context to developed countries or focus on a single country. Subsequent studies can also further develop the modified dividend payout ratio by incorporating other types of earnings, such as gross profit or possibly pre-tax income. We also recommend that potential investors use this modified dividend payout ratio formula as an alternative measure of dividend payouts to predict future investment returns, as a supplementary reference for investment decisions.

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