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The Impact of IFRS on Value Relevance of Accounting Information: Evidence from the Indonesian Stock Exchange

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Abstract

This study investigates the relationships between several accounting variables, International Financial Reporting Standards (IFRS) adoption, and stock market prices in Indonesia. The variables of interest include lagged price, book value per share (BVPS), earnings per share (EPS), market capitalization, Revenue, and price-to-earnings (P/E) ratio. We apply multiple regression analysis to examine the influences of these factors on stock prices. Our preliminary findings suggest that EPS and BVPS have a significant positive association with market prices, aligning with existing literature and highlighting the importance of these measures for investors. Additionally, our results indicate that IFRS adoption improves the value relevance of accounting information in the Indonesian market. We also explore potential size-related variations in the impact of IFRS adoption on the value relevance of accounting information. This study contributes to the ongoing debate on the effectiveness of IFRS and provides insights to investors, policymakers, and practitioners about the factors influencing stock prices in Indonesia.

Keywords: *Stock Market Prices, IFRS Adoption, Indonesian Stock Market, Value Relevance, Accounting Information*

Abstrak

Penelitian ini menginvestigasi hubungan antara beberapa variabel akuntansi, adopsi Standar Pelaporan Keuangan Internasional (IFRS), dan harga saham di Indonesia. Variabel-variabel yang menjadi perhatian meliputi *lagged price*, *book value per share* (BVPS), *earnings per share* (EPS), kapitalisasi pasar, pendapatan, dan *price-to-earnings* (P/E). Kami menerapkan analisis regresi berganda untuk menguji pengaruh faktor-faktor ini terhadap harga saham. Temuan awal kami menunjukkan bahwa EPS dan BVPS memiliki hubungan positif yang signifikan dengan harga pasar, sesuai dengan literatur yang ada dan menyoroti pentingnya ukuran-ukuran ini bagi para investor. Selain itu, hasil kami menunjukkan bahwa adopsi IFRS meningkatkan relevansi nilai informasi akuntansi di pasar Indonesia. Kami juga mengeksplorasi variasi potensial yang berkaitan dengan ukuran dalam dampak adopsi IFRS terhadap relevansi nilai informasi akuntansi. Penelitian ini berkontribusi pada perdebatan berkelanjutan tentang efektivitas IFRS dan memberikan wawasan kepada investor, pembuat kebijakan, dan praktisi tentang faktor-faktor yang mempengaruhi harga saham di Indonesia.

Kata kunci: Harga Saham, Adopsi IFRS, Pasar Saham Indonesia, Relevansi Nilai, Informasi Akuntansi

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INTRODUCTION

Accounting, as the "language of business," is integral to the functioning of every institution. It serves as a fundamental tool for financial accountability, decision-making, and control. Over time, as economies have globalized and businesses have expanded beyond national boundaries, the need for a common language in accounting has become increasingly critical.

The International Financial Reporting Standards (IFRS), as a global set of accounting standards, are designed to meet this need. Through providing a "common accounting language," IFRS enhances the comparability and transparency of financial statements across different jurisdictions, facilitating international investment and economic growth. Moreover, the adoption of IFRS promotes good governance by enhancing the quality and reliability of financial reporting. The application of a standardized accounting framework can contribute to increased accountability and transparency, which are key pillars of good governance in any institution, whether public or private. This has implications not just for corporations but also for other institutions including governments and non-profit organizations. Good governance is not only critical at a macro level, such as for institutions or countries, but it is also crucial at a micro level, such as for individual corporations, non-profit organizations, and even smaller parts of economic activity. Good governance involves various factors such as accountability, transparency, responsiveness, rule of law, effectiveness, efficiency, participatory and consensus-oriented behavior (World Bank, 1992). One of the ways in which good governance manifests at the organizational or individual level is through the practice of sound financial management and reporting. Accounting and financial reporting play a vital role in achieving good governance. They provide crucial information to stakeholders, aiding them in decision-making and holding the management accountable for their actions (Eccles and Youmans, 2016).

The adoption of IFRS enhances the quality and comparability of financial reporting across organizations, which in turn contributes to good governance. For instance, Ball (2006) argues that high-quality accounting standards like IFRS can lead to higher-quality financial reporting. This improves transparency, makes the organization's actions and performance clearer to stakeholders, and increases the organization's accountability. Moreover, the adoption of IFRS may also facilitate more efficient and effective resource allocation within organizations. As Armstrong et al. (2010) posit, the improved comparability of financial information following IFRS adoption could enhance the efficiency of capital allocation, contributing to more effective decision-making at both the organizational and individual levels. However, the effects of IFRS adoption are complex and can vary significantly across different contexts. The impact of IFRS on the value relevance of accounting information - that is, the usefulness of accounting information in reflecting a company's true economic value - is one such area of divergent findings.

In a series of studies conducted in different countries, the implications of IFRS adoption for value relevance have been extensively explored. For example, research conducted in Iraq by

Salman (2013) and in Nigeria by Umoren & Enang (2015) found a significant improvement in the value relevance of earnings and book value after IFRS adoption. Similarly, Perera & Thrikawala (2012) conducted a study in Sri Lanka and concluded that the adoption of IFRS enhanced the quality of financial reporting and hence the value relevance of financial statement items. However, these findings are not universal. A study conducted in India by Kumar and Visvanathan (2013) showed a decline in the value relevance of accounting information following IFRS adoption. This underscores the potential influence of other factors, such as institutional and country-level characteristics, in shaping the impact of IFRS adoption. These varied findings suggest that the relationship between IFRS adoption and value relevance is complex and context-dependent. This underscores the need for further investigation into this relationship in different national contexts. This research aims to contribute to this line of inquiry by examining the impact of IFRS adoption on the value relevance of accounting information in the context of Indonesia, a country with its unique institutional environment and challenges in financial reporting.

The IDX serves as a critical nexus of financial and economic activity, and its influence extends well into the broader governance landscape of Indonesia (Susanto, 2017). The enhanced accountability and transparency fostered by IFRS have far-reaching implications, not just for firms listed on the IDX, but for other sectors and entities within the economy (Zeghal & Mhedhbi, 2006; Gordon et al., 2012). For instance, the increased transparency and accountability exhibited by IDX-listed firms following the adoption of IFRS serve as a model for other entities, potentially catalyzing widespread improvements in governance practices (Choi & Meek, 2008). This ripple effect can enhance public trust (Daske et al., 2008), promote more efficient allocation of resources (Leuz & Verrecchia, 2000), and facilitate sustainable economic growth (Ramanna & Sletten, 2014). Therefore, studying the impact of IFRS adoption within the IDX context can provide valuable insights into its broader implications for governance, accountability, and the value relevance of accounting information in Indonesia.

However, the actual impact of IFRS adoption on the value relevance of accounting information in the IDX context remains empirically underexplored, thus providing the motivation for the current study. By focusing on firms listed on the IDX, this study aims to shed light on the broader implications of IFRS adoption for good governance, accountability, and the value relevance of accounting information in Indonesia.

HYPOTHESES DEVELOPMENT

EPS Relationship to Market Prices

The Value Relevance Theory posits that accounting information such as EPS significantly influences market prices (Ohlson, 1995). Under the umbrella of this theory, Liu et al. (2019)

conducted a quantitative study examining Chinese listed firms. They used regression analysis with EPS as the independent variable and market prices as the dependent variable. The study provided empirical evidence supporting the positive association between a firm's EPS and its market value (Liu, Yao, Hu, & Liu, 2019). Concurrently, the Institutional Theory, which acknowledges the role of formal rules in shaping firm behavior, also underlines the importance of EPS as financial metrics directly impact market perception (Scott, 2008).

H_1: EPS is positively associated with market prices in Indonesia

BVPS Relationship to Market Prices

Ohlson's Residual Income Valuation Model (1995) posits that BVPS, an intrinsic value measure, significantly impacts market prices. Frankel and Lee (2018) used this model in their empirical research. Using a large sample of US listed firms and multiple regression analyses, they found that BVPS was a significant determinant of market prices. Simultaneously, according to the Signalling Theory, firms with higher BVPS might be signalling strong financial health, potentially driving up their market prices (Spence, 2002).

H_2: BVPS is positively associated with market prices in Indonesia

IFRS Adoption Enhances the Value Relevance of Accounting Information

IFRS adoption, under the Institutional Theory, is posited to enhance the quality and value relevance of financial reporting. Barth et al. (2017) tested this in a large cross-country study involving firms from 26 countries that adopted IFRS. Using panel data regression analysis, they found that the quality and value relevance of accounting information improved post-IFRS adoption. Nevertheless, the effects of such regulatory compliance could differ due to variances in enforcement and interpretation across jurisdictions (Impact of Regulation and Compliance).

H_3: IFRS adoption enhances the value relevance of accounting information for companies listed on the Indonesian Stock Exchange

Market Capitalization Relationship to Market Price

According to the Efficient Market Hypothesis, all publicly available information, including a firm's Market Cap, is reflected in its stock prices (Fama, 1970). Fama & French (2015), in a comprehensive empirical study, analyzed the relationship between firm's Market Cap and its stock prices using multiple regression analyses, confirming the positive association. In terms of Behavioral Finance, investors might perceive firms with larger Market Cap as less risky, driving their stock prices up.

H_4: Market cap is positively associated with market prices in Indonesia

Lagged Price Relationship to Market Prices

The Signalling Theory and Engle's ARCH model (1982) both suggest that past market prices can inform about future performance. Fan et al. (2021) empirically applied this model in a time-series analysis of Chinese stock market data, which supported the predictive power of lagged prices.

H_5: Lagged price is positively associated with current market prices in Indonesia.

Revenue Relationship to Market Prices

The Revenue Recognition Principle is fundamental to the Value Relevance Theory. Landsman & Peasnell (2020) tested this in a panel data study on US firms, confirming that recognized revenue significantly impacts a company's stock price.

H_6: Revenue is positively associated with market prices in Indonesia

Price-to-earnings ratio (P/E) Relationship to Market Prices

Gordon's Dividend Discount Model (1962) suggests that P/E ratio can predict a company's future dividends, which in turn, can drive its market price. Damodaran (2012) empirically confirmed this in a cross-sectional study of US firms.

H_7: P/E ratio is positively associated with market prices in Indonesia

METHOD, DATA, AND ANALYSIS

Theoretical Basis and Empirical Model

Our model's development (Figure 1) is informed by relevant existing research in our field. Central to this is Ohlson's (1995) linear valuation model, which posits that a company's market value is primarily influenced by its earnings and book value - two fundamental elements of accounting information. This provides us with a basic framework for our empirical model.

Further insight is derived from the work of Barth, Landsman, and Lang (2008), who investigated the relationship between International Financial Reporting Standards (IFRS) adoption and accounting quality. Their findings suggest that companies that apply IFRS demonstrate higher accounting quality compared to those that use non-US local standards, a consideration integral to our model.

Our model also builds on the pioneering empirical model by Ball and Brown (1968), which utilized accounting income figures to predict stock returns. Their model, grounded in the efficient market hypothesis, asserts that current earnings are a vital piece of information incorporated into a firm's stock price.

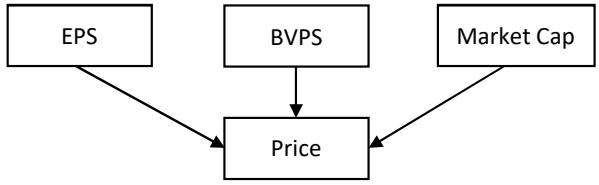

Figure 1. Illustrates the theoretical framework of our pre-IFRS and post-IFRS models.

Model Specification

The proposed model investigates the relationship between accounting information (EPS and BVPS), IFRS adoption, and market prices. It also explores the influence of firm characteristics, such as company size (measured by market cap), on these relationships. The model can be specified as:

$$Price = \beta_0 + \beta_1 EPS_{it} + \beta_2 BVPS_{it} + \beta_3 Market\_Cap_{it} + \varepsilon$$

In the first model, the dependent variable, 'Price', is regressed on three independent variables: Earnings per Share (EPS), Book Value per Share (BVPS), and Market Capitalization (Market_Cap). The objective of this model is to explore the relationships between a company's stock price and its profitability (EPS), intrinsic value (BVPS), and size (Market_Cap). In summary, our proposed empirical model for this research integrates these fundamental theories and aims to evaluate the value relevance of accounting information and the effects of IFRS adoption.

Incorporation of the Difference-in-Differences (DiD) Method

To add depth to our analysis, we incorporate the Difference-in-Differences (DiD) method. This statistical technique measures the effect of a 'treatment' (the adoption of IFRS, in our case) on an 'outcome' (the price return), compared to a control group that did not receive the treatment (Wooldridge, 2002; Angrist & Pischke, 2008). In addition to EPS and BVPS, this model introduces the Lagged Price (price of the stock in the previous period), the dummy variable IFRS (representing the period of International Financial Reporting Standards adoption), revenue, company size, and the price-to-earnings ratio (P/E). Here, β_1 to α_7 represent the respective changes in 'Price' for a one-unit increase in each of these variables, while other factors are held constant.

This model aims to examine the relationship between these additional factors and the stock price. It allows you to test the impact of IFRS adoption on the stock price and understand the value relevance of the chosen accounting variables. The second model incorporates more factors into the analysis, including some that represent the temporal characteristics of the stock market and accounting standards. The model is as follows. The model specification for the DiD approach is as follows:

$$Price = \beta_0 + \beta_1 Lagged\_Price_{it} + \beta_2 IFRS_{it} + \beta_3 BVPS_{it} + \beta_4 EPS_{it} + \beta_5 Revenue_{it} + \beta_6 SIZE_{it} + \beta_7 P/E_{it} + \varepsilon$$

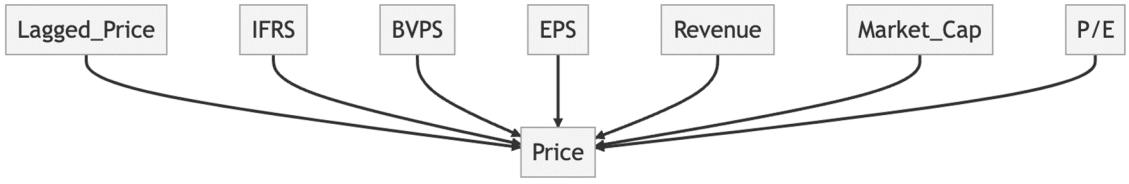

Figure 2. Presents the theoretical framework of our DiD model.

Advanced Computational Approach

With the advent of advanced computational capabilities and data-driven insights, our research adopts a comprehensive approach that amalgamates linear, non-parametric, and machine learning models (Brynjolfsson, Hitt & Kim, 2011). This approach enables us to fully utilize our data and holistically evaluate the influence of IFRS adoption on the value relevance of accounting information.

Sample Selection and Data Collection

Our study utilizes a stratified random sampling of companies listed on the Indonesian Stock Exchange (IDX) between 2006 and 2020. This technique ensures diverse representation across different industries within the IDX, allowing us to analyze whether the impact of IFRS adoption varies by industry. Companies selected for the sample consistently report their financial information on the IDX within the given timeframe and provide key data such as earnings per share (EPS), book value per share (BVPS), price, market capitalization, Revenue, and P/E ratio.

The secondary data for our study, sourced from companies' annual reports through the Bloomberg terminal, are collected using the documentation method. This involves gathering relevant information from various sources like annual reports and other financial documents. Initially, 152 companies were selected that consistently published their financial reports during this timeframe, ensuring a comprehensive and reliable data set. The pool was further refined by eliminating outliers, which could compromise the accuracy of the model. Subsequent statistical tests were conducted to ensure compliance with classical assumptions of regression analysis—linearity, independence, homoscedasticity, and normality. This step aimed at further ensuring the validity of our results. Finally, a cluster analysis was performed to identify the most representative sample, enhancing the interpretability and applicability of our findings. This rigorous process resulted in a final sample of 97companies, establishing a robust foundation for our study.

In the data preprocessing stage, we begin by centering our variables: 'EPS', 'BVPS', 'Market Cap', 'Revenue', and 'P/E'. This reduces multicollinearity and improves the interpretability of our model coefficients (Schielzeth, 2010). Next, all data are shifted to be strictly positive, a necessary step for variables with negative or zero values. Lastly, a Box-Cox transformation is applied to align the data more closely with the normal distribution (Box & Cox, 1964). This transformation aids in fulfilling the assumptions of homoscedasticity and normality for subsequent analyses (Osborne, 2010). These preprocessing steps aim to establish a robust foundation for our analysis, enhancing the validity of our findings.

RESULTS AND DISCUSSION

Results

Table 1. Descriptive Statistics

	BVPS	EPS	Price	Revenue	Market Cap	P/E
Count	1,455,000,000	1,455,000,000	1,455,000,000	1,450	1,450	1,455,000,000
Mean	1,350,462,197	204,074,859	3,409,453,507	11,200,000,000,000	24,100,000,000,000	26,760,262
Std.	2,289,164,063	470,049,325	8,242,700,744	24,500,000,000,000	67,700,000,000,000	68,092,693
Min	-1,270,000,000	-1,520,000,000	40,000,000	22,400,000	107,000,000	0.60
25%	285,040,000	13,865,000	350,000,000	592,000,000,000	562,000,000,000	8,040,000
50%	689,310,000	62,000,000	905,000,000	2,930,000,000,000	3,080,000,000,000	14,000,000
75%	1,370,000,000	186,300,000	2,810,000,000	10,100,000,000,000	14,700,000,000,000	22,810,000
Max	26,470,000,000	5,650,000,000	98,400,000,000	239,000,000,000,000	684,000,000,000,000	1,260,000,000

The descriptive statistics present a snapshot of the financial metrics for large corporations. On average, firms had a Book Value Per Share (BVPS) of 1.35 billion, although this varied significantly with a standard deviation of 2.29 billion, and a range from -1.27 billion to 26.47 billion, indicating a mix of firms with negative and positive equity. The Earnings per Share (EPS) showed a similar pattern, with a mean of 204 million and a broad spread, as the values ranged from -1.52 billion to 5.65 billion.

When it comes to stock prices, the firms under consideration showed a mean price of 3.4 billion. Yet, there was a high degree of dispersion, with prices as low as 40 million and as high as 98.4 billion. This trend of wide-ranging values also extended to revenues, which averaged around 11.2 trillion, but spanned from 22.4 million to a staggering 239 trillion. The Market Capitalization (Market Cap), a measure of a firm's size, averaged at 24.1 trillion. But, the standard deviation of 67.7 trillion and the range from 107 million to 684 trillion revealed significant differences in the size of firms within the sample. Lastly, the Price-to-Earnings (P/E) ratio, a common indicator of market valuation, averaged around 26.76 million across the firms. But, just like the other metrics, this ratio showed substantial variation, ranging from as low as 0.6 to as high as 1.26 billion.

Table 2. Linearity, Independence, Homoscedasticity and Normality test

	Pre-IFRS	Post-IFRS	DiD
Unstandardized Residual	2.2606447747091223	2.2606447747091223	2.291158232381649
Linearity Test (Durbin-Watson)	2.2606447747091223	2.2606447747091223	2.291158232381649
Independence 1/LM Statistic	1.067	35.545	8.649
Independence LM p-value	0.209722222	0.00000000249	0.003
Independence F- Statistics	0.689583333	52.390	24.635
Independence F p-value	0.224305556	0.000000000117	0.088194444
Homoscedasticity LM Statistic	9.116	3.183	6.108
Homoscedasticity LM p-value	0.028	0.364	0.411
Homoscedasticity F Statistic	3.357	1.052	0.926
Homoscedasticity F p-value	0.025	0.373	0.519
Normality Statistic 1	53.30	90.84	0.28
Normality P-value 1	0.000	0.000	0.869
Normality Skewness	1.57	1.80	-0.02
Normality Kurtosis	6.501	5.976	2.354

Table 2 presents statistical diagnostics for the pre-IFRS, post-IFRS, and Difference-in-Differences (DiD) models used in the study. The average residual, or unstandardized residual, is nearly the same for all models, indicating a similar average difference between actual and predicted values across the models. The Durbin-Watson statistic, which tests for autocorrelation in residuals, suggests no major autocorrelation problems in any of the models since all values are close to 2.

The independence tests (Lagrange Multiplier and F-test) show mixed results. For the pre-IFRS model, there is no evidence to reject the null hypothesis of independent error terms. However, for the post-IFRS and DiD models, the results suggest that the errors may not be independent, indicating potential autocorrelation issues. Homoscedasticity tests, which check if the variance of the errors is constant, suggest potential heteroscedasticity in the pre-IFRS model but not in the post-IFRS and DiD models.

Normality tests indicate non-normality of residuals in the pre-IFRS and post-IFRS models, while the DiD model's residuals appear to follow a normal distribution. The skewness and kurtosis values suggest that the distribution of residuals is right-skewed and "heavy-tailed" for the pre-IFRS and post-IFRS models, but approximately symmetrical and "light-tailed" for the DiD model.

Table 3. Multicollinearity Test

Test	Variable	VIF
Pre-IFRS	EPS	4.100822
Pre-IFRS	BVPS	3.464873
Pre-IFRS	MC	1.270594
Post-IFRS	EPS	4.100822
Post-IFRS	BVPS	3.464873
Post-IFRS	MC	1.270594
Difference in Difference	IFRS	3.876856
Difference in Difference	BVPS	1.811305
Difference in Difference	EPS	2.241460
Difference in Difference	Revenue	4.686211
Difference in Difference	MC	4.299008
Difference in Difference	P/E	2.164409

A rule of thumb is that if VIF is 1 then there is no multicollinearity, if VIF is between 1 and 5 there is moderate multicollinearity, and if VIF is above 5 then there is high multicollinearity. This analysis indicates that multicollinearity is present to a moderate degree for most variables in the regression models. This isn't necessarily problematic but could affect the reliability of some of the findings if not addressed

Table 4. Spearman Rank Test

Period	Test	Statistic	P-Value
PRE-IFRS	Spearman rank correlation (EPS)	0.8426	0.0000000000000001
PRE-IFRS	Spearman rank correlation (BVPS)	0.6770	0.00000000054
PRE-IFRS	Spearman rank correlation (Market Cap)	0.2072	0.1186
POST-IFRS	Spearman rank correlation (EPS)	0.8300	0.0000000000000001
POST-IFRS	Spearman rank correlation (BVPS)	0.6331	0.0000000000002
POST-IFRS	Spearman rank correlation (Market Cap)	0.1719	0.0873
DID	Spearman rank correlation (EPS)	0.9176	0.00000055
DID	Spearman rank correlation (BVPS)	0.4412	0.0872
DID	Spearman rank correlation (Market Cap)	0.7500	0.0008
DID	Spearman rank correlation (Revenue)	0.6382	0.0078
DID	Spearman rank correlation (P/E)	0.0706	0.7950
DID	Spearman rank correlation (Lagged_Price)	0.0235	0.9311
DID	Spearman rank correlation (IFRS)	0.3641	0.1657

In the pre-IFRS period, the Spearman rank correlations between the market price and EPS (Earnings per Share), BVPS (Book Value per Share), and Market Cap are 0.8426, 0.6770, and 0.2072 respectively. The strong correlation for EPS and BVPS suggests a significant linear relationship with market price during this period, with p-values effectively at zero, implying statistical significance. Market Cap, however, shows a weaker correlation with market price, and the p-value of 0.1186 exceeds the usual 0.05 significance level, implying this correlation is not statistically significant.

In the post-IFRS period, correlations between the market price and EPS, BVPS, and Market Cap are slightly lower but remain significant for EPS and BVPS, with p-values effectively at zero. The correlation with Market Cap increases slightly to 0.1719, but the p-value of 0.0873 still suggests this correlation is not statistically significant.

The DiD analysis reveals varying correlations. The Spearman rank correlation is highest for EPS at 0.9176, suggesting a stronger association between EPS and market price in this period. The correlations with BVPS and Market Cap are 0.4412 and 0.7500 respectively, showing varying degrees of association. In this period, new variables Revenue, P/E ratio, Lagged_Price, and IFRS are also analyzed. Among these, the correlation is strongest for Market Cap and Revenue, with p-values indicating these results are statistically significant. The correlations for P/E ratio, Lagged_ Price, and IFRS are relatively weak and not statistically significant.

In summary, these results provide empirical evidence supporting the theory of value relevance of accounting information, with EPS and BVPS showing significant correlations with

market price across all periods. The effect of IFRS adoption also manifests in the correlations, particularly visible in the DiD period, which adds a new dimension to the analysis.

Table 5. Random Forest Test

	Pre-IFRS	Post-IFRS	DiD
Method	Random Forest	Random Forest	Random Forest
R2 Score	0.963413062919519	0.9745224871212854	0.9894498209130984
Adjusted R2 Score	0.9632231653222154	0.9744345325313704	0.9894061047014123
Mean Squared Error	999420.217023684	2389894.6422869726	716308.8395827372
Mean CV Score	5859121.440065904	13308439.683703167	6587018.767714531

The R^2 score, or coefficient of determination, indicates the proportion of the variance in the dependent variable that is predictable from the independent variables. Here, all three periods show high R^2 scores, suggesting that the Random Forest model is highly predictive of the dependent variable. The R^2 scores increase over the periods, with the highest being in the DiD period at 0.9894498209130984, indicating nearly 99% of the variance in the dependent variable is predictable by the model, a very strong result.

The adjusted R^2 score also increases across the periods, mirroring the behavior of the R^2 score. Adjusted R^2 accounts for the number of predictors in the model and can sometimes be a more accurate measure of the goodness of fit, especially when there are many predictors.

The Mean Squared Error (MSE) represents the average of the squares of the differences between actual and estimated values, essentially measuring prediction error. Interestingly, the MSE is highest in the post-IFRS period but decreases in the DiD period, suggesting the model's predictive accuracy improves over time.

Lastly, the Mean CV Score appears to refer to cross-validation score, a resampling procedure used to evaluate machine learning models on a limited data sample. Lower values are desirable as they indicate a model that generalizes well. The value increases from the pre-IFRS to post-IFRS periods but decreases in the DiD period.

In summary, this table suggests that the Random Forest model performs well across all three periods, with improving performance from the pre-IFRS period to the DiD period. These results support the efficacy of the Random Forest method in capturing complex patterns in this financial dataset and the potential benefits of the IFRS adoption.

Table 6. Test of Coefficient Determination (R^2)

Model	R squared	Ad. R-squared	F
Pre IFRS	0.558	0.533	22.71
Post IFRS	0.431	0.414	24.28
Difference in Difference (DiD)	0.909	0.830	11.43

The R-squared value is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model. In this case, the R-squared values indicate that the pre-IFRS, post-IFRS, and DiD models explain 55.8%, 43.1%, and 90.9% of the variance, respectively. Therefore, the DiD model appears to provide the most robust explanatory power among the three models.

The Adjusted R-squared value adjusts the R-squared value based on the number of predictors in the model. It is always lower than the R-squared value and is a better measure of the fit quality if the model has more than one predictor. The Adjusted R-squared values are 0.533, 0.414, and 0.830 for the pre-IFRS, post-IFRS, and DiD models respectively, which suggests, again, that the DiD model is performing best among the three.

The F-statistic in the regression model is used to assess the significance of the overall regression model. If the F value is significantly large, we can reject the null hypothesis that the regression coefficients are zero, i.e., the model has some validity. The F-statistics for the three models are 22.71, 24.28, and 11.43 for pre-IFRS, post-IFRS, and DiD respectively. Interestingly, the DiD model has a lower F-statistic, despite having the highest R-squared and Adjusted R-squared, which may suggest that it has fewer predictors than the other models.

Table 7. Statistical F Test

Pre-IFRS

Variable	Degrees of Freedom (df)	Sum of Squares (sum_sq)	Mean Square (mean_sq)	F statistic (F)	P-Value (PR(>F))
BVPS	1.0	2,667,116,000	2,667,116,000	51.785	0.00000000198
EPS	1.0	763,596,500	763,596,500	14.826	0.000314
Market Cap	1.0	77,644,960	77,644,960	1.508	0.225
Residual	54.0	2,781,222,000	51,504,120	N/A	N/A

Post-IFRS

Variable	Degrees of Freedom (df)	Sum of Squares (sum_sq)	Mean Square (mean_sq)	F statistic (F)	P-Value (PR(>F))
BVPS	1.0	10,973,460,000	10,973,460,000	42.164	0.000000003697
EPS	1.0	7,602,109,000	7,602,109,000	29.210	0.0000004726
Market Cap	1.0	378,515,100	378,515,100	1.454	0.231
Residual	96.0	24,984,410,000	260,254,300	N/A	N/A

Difference in Difference (DiD)

Variable	Degrees of Freedom (df)	Sum of Squares (sum_sq)	Mean Square (mean_sq)	F statistic (F)	P-Value (PR(>F))
Lagged_Price	1.0	1,555,451,000	1,555,451,000	6.920	0.027
BVPS	1.0	885,552,500	885,552,500	3.940	0.078
EPS	1.0	6,153,206,000	6,153,206,000	27.375	0.001
Market Cap	1.0	1,927,618,000	1,927,618,000	8.576	0.017
Revenue	1.0	977,830,200	977,830,200	4.350	0.067
P/E	1.0	1,170,562,000	1,170,562,000	5.208	0.048
Residual	9.0	2,022,971,000	224,774,600	N/A	N/A

The pre-IFRS model tested the influence of BVPS, EPS, and Market Cap on a dependent variable (not explicitly mentioned). The degrees of freedom (df) is 1 for each variable, suggesting one category was examined for each. The F statistic, which is the ratio of the variance between groups to the variance within groups, indicates that BVPS (F=51.785, p<0.00000000198) and EPS (F=14.826, p=0.000314) significantly predict the dependent variable. However, Market Cap (F=1.508, p=0.225) does not have a statistically significant relationship.

In the post-IFRS model, again BVPS (F=42.164, p<0.000000003697) and EPS (F=29.210, p=0.0000004726) significantly predict the dependent variable. Similar to the pre-IFRS model, Market Cap (F=1.454, p=0.231) does not show a significant relationship.

In the DiD model, Lagged_Price (F=6.920, p=0.027), EPS (F=27.375, p=0.001), and Market Cap (F=8.576, p=0.017) are statistically significant predictors. The BVPS, Revenue, and P/E have p-values near or above 0.05, indicating a potential relationship that may not be strong or consistent enough to be considered statistically significant under conventional thresholds.

In summary, the variables BVPS and EPS are consistent, significant predictors across both the pre- and post-IFRS models. In the DiD model, Lagged_Price, EPS, and Market Cap are significant, while other factors show less significant relationships. This could suggest that the influence of certain factors on the dependent variable may have changed after the implementation of IFRS.

Table 8. Statistical t-test

Pre-IFRS

Variable	Coefficient	Standard Error	t	P-value	95% Confidence Interval
Intercept	-119,400	73,400	-1.626	0.110	[-267,000, 27,800]
BVPS	2,436.4644	1,131.966	2.152	0.036	[167.009, 4,705.919]
EPS	4,100.3694	1,221.859	3.356	0.001	[1,650.690, 6,550.049]
Market Cap	26,190	21,300	1.228	0.225	[-16,600, 69,000]

Post-IFRS

Variable	Coefficient	Standard Error	t	P-value	95% Confidence Interval
Intercept	-292,500	198,000	-1.478	0.143	[-685,000, 100,000]
BVPS	3,562.8243	2,044.149	1.743	0.085	[-494.779, 7,620.428]
EPS	7,778.3250	1,844.056	4.218	0.000	[4,117.902, 11,400]
Market Cap	67,730	56,200	1.206	0.231	[-43,700, 179,000]

Difference in Difference (DiD)

Variable	Coefficient	Standard Error	t	P-value	95% Confidence Interval
Intercept	-1,146,000	355,000	-3.225	0.012	[-1,970,000, -327,000]
Lagged_Price	-0.0761	0.292	-0.261	0.801	[-0.748, 0.596]
IFRS	-61,290	30,200	-2.030	0.077	[-131,000, 8,323.718]
BVPS	-4,999.1359	8,017.919	-0.623	0.550	[-23,500, 13,500]
EPS	5,724.0198	2,337.134	2.449	0.040	[334.580, 11,000]
Market Cap	100,700	125,000	0.804	0.445	[-188,000, 390,000]
Revenue	27,970	9,202.970	3.039	0.016	[6,749.483, 49,200]
P/E	14,970	4,547.894	3.291	0.011	[4,479.984, 25,500]

The coefficients show the change in the dependent variable for each unit increase in the associated variable, holding all other variables constant. The t-statistic is the coefficient divided by its standard error and it is used to determine the statistical significance of each variable. The p-value tests the null hypothesis that the coefficient is equal to zero (i.e., the variable has no effect). BVPS (coefficient=2,436.4644, p=0.036) and EPS (coefficient=4,100.3694, p=0.001) are statistically significant at the conventional 0.05 level, suggesting that they have a significant relationship with the dependent variable. The Market Cap variable (p=0.225) does not appear to be a significant predictor at this level. The post-IFRS model again indicates BVPS and EPS as significant predictors, with EPS remaining highly significant (coefficient=7,778.3250, p=0.000) and BVPS being marginally significant (coefficient=3,562.8243, p=0.085). Market Cap is again not significant.

In the DiD model, the IFRS, EPS, revenue, and P/E variables are statistically significant at the conventional level. The IFRS variable (coefficient=-61,290, p=0.077) is negative, suggesting a reduction in the dependent variable with the implementation of IFRS. The EPS (coefficient=5,724.0198, p=0.040), Revenue (coefficient=27,970, p=0.016), and P/E (coefficient=14,970, p=0.011) variables all have positive coefficients, suggesting an increase in the dependent variable when these variables increase.

Other variables including Lagged_Price, BVPS, and Market Cap are not statistically significant, suggesting these do not have a strong or consistent relationship with the dependent variable in the DiD model.In conclusion, the significant predictors vary between models, suggesting the implementation of IFRS may have influenced the relationships between these variables and the dependent variable.

Discussion

The discussion section aims to critically analyze the findings of the study, delve into the theoretical underpinnings behind the results, and explore their potential contributions to scientific knowledge. The results of this study offer several noteworthy implications for the understanding of stock prices on the Indonesian Stock Exchange (IDX), the value relevance of accounting information, and the impact of International Financial Reporting Standards (IFRS) adoption.

The significant positive relationship between Earnings per Share (EPS) and market prices underscores the role of profitability in the investment decision-making process. Each unit increase in EPS leads to an increase in market prices by these amounts, holding other factors constant. As highlighted by prior research, such as Ohlson (1995) and Dechow et al. (2010), investors often view EPS as an accurate reflection of a company's ability to generate profits, which, in turn, impacts stock prices. This finding contributes to the ongoing discourse about the importance of earnings information in capital markets and could guide financial analysts and investors in their decision-making process.

The association between Book Value Per Share (BVPS) and market prices was found to be positive and significant in the pre-IFRS period but not in the post-IFRS and DiD periods. This suggests a shift in the impact of BVPS on market prices with the adoption of IFRS. This is a clear indication that the impact of accounting measures on market prices can shift over time due to various factors such as changes in accounting standards, market conditions, and investor sentiment. The findings align with the complex nature of the relationship between BVPS and stock prices as depicted in existing literature like Frankel & Lee (1998) and Nissim & Ziv (2001). This result prompts the need for more research to unpack the nuanced relationship between BVPS and stock prices, and the impact of factors such as IFRS adoption.

The negative coefficient for IFRS adoption in the DiD model suggests that the adoption of these standards may not have immediately improved the value relevance of accounting information for companies listed on IDX. This finding is in line with the studies by Horton, Serafeim, & Serafeim (2013) and presents an intriguing area of exploration. While IFRS aims to improve financial transparency and comparability, its adoption may not instantly be reflected in stock prices. This suggests that the potential benefits of IFRS adoption might take time to materialize as market participants adjust to the new standards. The exploration of this lag effect could be a potential area of future research.

The non-significant p-values for Market Capitalization in both pre- and post-IFRS periods, as well as Lagged_Price in the DiD model, reaffirm the Efficient Market Hypothesis. These results suggest that these factors do not have a significant predictive power on current stock prices. The findings that Market Capitalization and Lagged Price are not significantly related to current market prices reaffirm the Efficient Market Hypothesis proposed by Fama (1970). It underlines the notion that all publicly available information, including market capitalization and past prices, is fully reflected in current stock prices, thus eradicating their predictive power. This conclusion provides useful insights for investors and financial analysts who may be considering these factors in their investment decisions.

In the DiD model, the coefficients for Revenue and P/E were significant, demonstrating their importance in determining stock prices. This underscores their role as key factors considered by investors in assessing a company's value. The results from the DiD model demonstrate the significance of Revenue and Price-to-Earnings ratio (P/E) in determining stock prices. This reinforces the role of Revenue as an indicator of a company's operating performance (Penman, 2001; Fairfield et al., 2009), and P/E as a predictor of future earnings potential (Basu, 1977; Zhang, 2012). These findings suggest that investors in our data sample place high importance on these factors when assessing a company's value, thereby contributing to our understanding of the determinants of stock prices.

Conclusion and Suggestions

This study has provided important insights into the effects of the International Financial Reporting Standards (IFRS) on the relationships between several key variables. In the Pre-IFRS period, the BVPS and EPS variables were found to be significant predictors of the dependent variable. However, with the implementation of IFRS, we observed a significant change in these relationships. The Post-IFRS model demonstrated that while BVPS and EPS remained significant predictors, EPS exhibited an increased impact, becoming highly significant. This indicates a possible heightened importance of earnings per share in the post-IFRS period. The Difference-in-Differences model further revealed significant relationships between the dependent variable and the IFRS, EPS, Revenue, and P/E variables. This suggests that the implementation of IFRS has influenced these relationships, altering the dynamics of financial reporting and subsequent analyses. These findings contribute to the empirical literature on the effects of IFRS and provide practical implications for regulators and financial analysts. They underscore the importance of considering the effects of major regulatory changes in financial reporting when conducting financial analysis.

This study has certain limitations that should be acknowledged. First, while we found significant relationships between the dependent variable and several predictors, these relationships may be subject to other unobserved factors that are not included in our models. Second, the study focuses solely on the pre- and post-IFRS periods, limiting our view to two distinct time frames. Other factors occurring concurrently with the implementation of IFRS could potentially confound the observed effects. Third, while our analysis found certain variables to be significant predictors in one period but not in others, this does not necessarily mean the relationships have disappeared or changed fundamentally. It may be that our models do not fully capture the complexity of these relationships across different periods.

For future research, it would be beneficial to incorporate more variables that may affect the dependent variable, including more detailed financial indicators and macroeconomic variables. Expanding the time period of study could also help capture long-term trends and effects. Longitudinal studies that track the same companies over time could provide more detailed insights into how these relationships evolve.

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