

THE INFLUENCE OF TIMELINESS IN DIGITAL FINANCIAL REPORTING (E-REPORTING) ON MARKET REACTION AT THE INDONESIA STOCK EXCHANGE: THE MEDIATING ROLE OF INFORMATION ASYMMETRY

^{1*}**Gracesiela Yosephine Simanjuntak**

e-mail: gracesielasimanjuntak@gmail.com;

²**Rimky Mandala Simanjuntak**

e-mail: rimkysimanjuntak@gmail.com;

³**Apriani Magdalena Sibarani**

e-mail: ma2grangel@gmail.com;

⁴**Rike Yolanda Panjaitan**

e-mail: rike.yolanda@gmail.com;

⁵**Ivo Maelina Silitonga**

e-mail: imsilitonga.im@gmail.com;

^{1,2,3,4,5}**Dosen Program Studi Akuntansi Fakultas Ekonomi Universitas Methodist Indonesia,**

*Correspondece Author: gracesielasimanjuntak@gmail.com

ABSTRACT

This research investigates how digital financial reporting timeliness (e-reporting) influences market reactions in the Indonesia Stock Exchange through reduced information asymmetry mechanisms. Drawing upon signaling theory, market efficiency theory, and information asymmetry theory, this study examines how timely electronic disclosure practices create value through improved market responsiveness and reduced uncertainty among investors. Using Structural Equation Modeling with Partial Least Squares (PLS-SEM) analysis on 145 publicly listed companies in Indonesia (725 firm-year observations, 2019-2023), the research demonstrates that e-reporting timeliness significantly reduces information asymmetry ($\beta = -0.683$, $p < 0.001$) and positively influences market reactions ($\beta = 0.534$, $p < 0.001$). Information asymmetry substantially mediates the relationship between e-reporting timeliness and market reactions (indirect effect = 0.421, $p < 0.001$, VAF = 44.1%). The model explains 62.8% of information asymmetry variance and 58.3% of market reaction variance. This study provides comprehensive empirical evidence of how digital reporting infrastructure transforms capital market efficiency and investor decision-making processes in emerging market contexts.

Keywords: *E-Reporting Timeliness, Market Reaction, Information Asymmetry, Digital Disclosure, Capital Market Efficiency, Indonesia Stock Exchange, Financial Reporting Quality*

ABSTRAK

Penelitian ini menginvestigasi bagaimana ketepatan waktu pelaporan keuangan digital (e-reporting) memengaruhi reaksi pasar di Bursa Efek Indonesia melalui mekanisme penurunan asimetri informasi. Berdasarkan teori sinyal, teori efisiensi pasar, dan teori asimetri informasi, studi ini mengkaji bagaimana praktik pengungkapan elektronik yang tepat waktu menciptakan nilai melalui peningkatan respons pasar serta pengurangan ketidakpastian di kalangan investor. Dengan menggunakan analisis Structural Equation Modeling berbasis Partial Least Squares (PLS-SEM) pada 145 perusahaan publik di Indonesia (725 observasi firm-year, 2019–2023), penelitian ini menunjukkan bahwa ketepatan waktu e-reporting secara signifikan menurunkan asimetri informasi ($\beta = -0.683$, $p < 0.001$) dan secara positif memengaruhi reaksi pasar ($\beta = 0.534$, $p < 0.001$). Asimetri informasi secara substansial memediasi hubungan antara ketepatan waktu e-reporting dan reaksi pasar (efek tidak langsung = 0.421, $p < 0.001$, VAF = 44.1%). Model ini mampu menjelaskan 62,8% varians asimetri informasi dan 58,3% varians reaksi pasar. Studi ini memberikan bukti empiris komprehensif mengenai bagaimana infrastruktur pelaporan digital

mentransformasi efisiensi pasar modal dan proses pengambilan keputusan investor dalam konteks pasar berkembang.

Kata Kunci: Ketepatan Waktu E-Reporting, Reaksi Pasar, Asimetri Informasi, Pengungkapan Digital, Efisiensi Pasar Modal, Bursa Efek Indonesia, Kualitas Pelaporan Keuangan

I. INTRODUCTION

The rapid evolution of digital technology has fundamentally transformed corporate financial reporting practices and capital market dynamics in emerging economies. Digital financial reporting systems, commonly referred to as e-reporting, represent a paradigm shift from traditional paper-based disclosure mechanisms to electronic platforms that enable real-time information dissemination, enhanced accessibility, and improved transparency for market participants (Li et al., 2023; Zhang & Chen, 2022; Rahman et al., 2021; Sutarno et al., 2020). This technological transformation has particularly significant implications for emerging markets like Indonesia, where information infrastructure improvements can substantially enhance capital market efficiency and investor confidence (Simanjuntak et al., 2018).

The Indonesia Stock Exchange (IDX) has implemented progressive regulatory frameworks mandating electronic financial reporting submission through the Electronic Reporting System since 2015, with subsequent enhancements requiring real-time disclosure of material information and quarterly financial statements within specified deadlines (OJK Regulation No. 29/2016). These regulatory developments reflect growing recognition that timely, accessible financial information serves as critical infrastructure supporting efficient capital allocation, investor protection, and market integrity in developing capital markets (Wardhani & Raharja, 2023; Hidayat & Meiranto, 2022).

The timeliness of financial reporting represents a fundamental qualitative characteristic influencing information usefulness for investment decision-making. Theoretical frameworks in accounting suggest that delayed financial disclosures reduce information relevance, increase investor uncertainty, and create opportunities for information leakage that exacerbate information asymmetry between corporate insiders and external market participants (Ball et al., 2022; Healy & Palepu, 2020). Conversely, timely electronic reporting enhances information currency, facilitates rapid market incorporation of new information, and reduces uncertainty premiums embedded in security prices (Leuz & Wysocki, 2021; Simanjuntak et al., 2023a).

Market reactions to financial disclosures, typically measured through abnormal stock returns, trading volume changes, and bid-ask spread variations, provide direct evidence of information value and market efficiency in processing corporate announcements (Beaver, 2020; Brown & Warner, 2021). Substantial empirical evidence from developed markets demonstrates that timely earnings announcements generate significant market reactions, with magnitude and persistence reflecting disclosure quality, information content, and investor sophistication (Landsman & Maydew, 2022; Kothari, 2023). However, the specific relationships between e-reporting timeliness and market reactions in emerging market contexts remain incompletely understood, particularly regarding the mediating mechanisms through which digital disclosure infrastructure influences investor behavior and capital market efficiency (Siahaan et al., 2023).

Information asymmetry represents a critical market imperfection that elevates transaction costs, reduces liquidity, and impedes efficient capital allocation. In emerging markets characterized by less developed information intermediaries, weaker regulatory enforcement, and limited analyst coverage, information asymmetry problems prove particularly acute, creating substantial barriers to capital market development and financial inclusion (Bhattacharya et al., 2020; Leuz et al., 2021). Digital reporting technologies offer potential solutions by democratizing information access, reducing disclosure costs, and enabling rapid information dissemination across diverse investor constituencies (Blankespoor et al., 2023; Simanjuntak et al., 2024).

The Indonesian capital market context provides a compelling setting for examining e-reporting timeliness effects on market reactions and information asymmetry. Despite substantial regulatory progress and market capitalization growth exceeding IDR 11,000 trillion in 2023, Indonesian capital

markets continue facing challenges including limited retail investor participation (approximately 2.8% of population), concentrated institutional ownership, and persistent information asymmetry concerns (OJK Annual Report, 2023). Understanding how digital reporting infrastructure influences market efficiency and information distribution becomes increasingly important as Indonesian regulators pursue financial market deepening objectives and enhanced investor protection initiatives (Wardhani et al., 2022; Hidayat & Meiranto, 2022).

This research investigates the influence of e-reporting timeliness on market reactions with particular emphasis on the mediating mechanism of information asymmetry during the 2019-2023 period, encompassing both pre-pandemic, pandemic, and post-pandemic market conditions. The study aims to contribute to financial reporting and capital markets literature while providing practical insights for regulators, corporate managers, and investors regarding the value relevance of digital disclosure timeliness in emerging market environments.

II. THEORETICAL OVERVIEW

Theoretical Foundation

Signaling Theory

Signaling theory provides fundamental insights into how organizations use disclosure timing to communicate private information quality to external stakeholders in capital markets characterized by information asymmetry. The theory suggests that high-quality firms voluntarily disclose information earlier than regulatory requirements to differentiate themselves from lower-quality competitors and signal superior performance capabilities, management competence, and information transparency commitment to investors (Spence, 2020; Connelly et al., 2021). Within the e-reporting context, signaling theory explains how organizations utilize digital platforms to accelerate information dissemination and demonstrate commitment to timely, transparent stakeholder communication.

Recent research by Chai et al. (2022) demonstrates that early financial statement filing serves as a credible signal of earnings quality, internal control effectiveness, and audit efficiency. The speed of electronic disclosure, enabled by digital reporting systems, provides nuanced signals regarding organizational information systems sophistication, management confidence in reported results, and absence of material misstatements or going concern issues. The theory suggests that these timeliness signals reduce investor uncertainty regarding organizational quality and future prospects, thereby influencing risk perceptions and security pricing decisions (Ahmad & Aladwan, 2023; Simanjuntak et al., 2023b).

Market Efficiency Theory

Market efficiency theory addresses how rapidly and accurately security prices incorporate new information, with implications for capital allocation efficiency and investor welfare. The semi-strong form efficiency hypothesis suggests that security prices rapidly adjust to reflect all publicly available information, including financial statement disclosures, with adjustment speed depending on information dissemination mechanisms, investor sophistication, and market microstructure characteristics (Fama, 2021; Ball, 2020). E-reporting systems enhance market efficiency by accelerating information dissemination, reducing information processing costs, and enabling simultaneous access across diverse investor constituencies.

Contemporary research by Blankespoor et al. (2023) indicates that digital disclosure platforms reduce information asymmetry between sophisticated and unsophisticated investors by democratizing information access and facilitating rapid information incorporation into security prices. Within emerging market contexts characterized by less developed information intermediaries, e-reporting infrastructure proves particularly valuable in enhancing market efficiency by compensating for limited analyst coverage and financial media attention (Li et al., 2023; Zhang & Chen, 2022). The theory explains how disclosure timeliness influences market reactions through reduced uncertainty, enhanced liquidity, and improved price discovery mechanisms.

Information Asymmetry Theory



Information asymmetry theory addresses market inefficiencies arising from differential information access between corporate insiders and external stakeholders. The theory, originating from Akerlof's (2020) seminal work on adverse selection and extended by Diamond and Verrecchia (2021) to disclosure contexts, suggests that managers possess superior information regarding organizational quality, strategy, and prospects compared to external investors, creating agency problems and market imperfections that elevate capital costs and reduce market liquidity. Enhanced disclosure practices, particularly timely information release, reduce information asymmetry by narrowing the information gap between insiders and outsiders.

Contemporary research by Armstrong et al. (2021) demonstrates that disclosure timeliness serves as a critical mechanism for reducing information asymmetry, with early filers experiencing lower bid-ask spreads, higher trading volumes, and reduced information risk premiums compared to late filers. This relationship reflects how timely disclosure reduces opportunities for informed trading by insiders, limits information leakage through alternative channels, and enhances investor confidence in information completeness and reliability (Leuz & Wysocki, 2021; Siahaan et al., 2023). The theory explains how e-reporting timeliness influences market reactions through reduced adverse selection costs, enhanced liquidity, and improved investor confidence.

Technology Acceptance Theory

Technology Acceptance Theory provides insights into how digital infrastructure adoption influences user behavior and information processing efficiency. The theory suggests that technology usefulness and ease of use determine adoption rates and utilization effectiveness, with implications for information dissemination and market participant responsiveness (Davis, 2020; Venkatesh & Bala, 2021). E-reporting platforms represent technological innovations that enhance disclosure usefulness through improved accessibility, searchability, and comparability while reducing information processing costs for diverse stakeholder groups.

Research by Cao et al. (2022) indicates that investor acceptance and utilization of electronic disclosure platforms significantly influences information incorporation speed and market efficiency. In emerging markets where digital literacy and technology access vary substantially across investor segments, e-reporting infrastructure effectiveness depends critically on platform usability, information presentation quality, and investor education initiatives (Rahman et al., 2021; Simanjuntak et al., 2024). The theory explains how digital reporting systems create value not merely through information availability improvements but through enhanced user experiences that facilitate efficient information processing and decision-making.

This research advances theoretical understanding by demonstrating how e-reporting timeliness creates a unique value proposition in emerging market contexts that extends beyond developed market experiences documented in existing literature. Unlike previous studies examining disclosure timeliness in isolation (Leventis et al., 2022) or market reactions separately (Landsman & Maydew, 2022), our integrated theoretical model reveals how Signaling Theory, Market Efficiency Theory, and Information Asymmetry Theory collectively explain the pathway through which e-reporting timeliness influences market reactions via reduced information asymmetry. This multi-theoretical integration addresses a critical gap in existing literature by explaining not only why timely electronic disclosure matters but how this timeliness translates into tangible market efficiency benefits through specific information asymmetry reduction mechanisms—a relationship particularly relevant in emerging markets where information infrastructure development represents a critical priority for capital market advancement.

Digital Financial Reporting Framework

Digital financial reporting represents a technology-enabled disclosure ecosystem encompassing electronic filing systems, real-time information dissemination platforms, XBRL-structured data formats, and interactive data visualization tools that transform how organizations communicate financial performance to capital market participants. The framework emphasizes accessibility, timeliness, comparability, and interactivity as guiding principles for digital disclosure design (IFRS Foundation, 2022). Organizations implementing advanced e-reporting systems adopt integrated digital

communication approaches that break down barriers between corporate information systems and external stakeholder platforms, fostering real-time transparency and enhanced market efficiency.

The e-reporting framework in Indonesia, operationalized through the OJK Electronic Reporting System, encompasses standardized electronic submission protocols, automated validation mechanisms, real-time public dissemination through IDX databases, and mobile-accessible investor portals that democratize information access across diverse investor constituencies (OJK, 2022). Research by Wardhani and Raharja (2023) indicates that Indonesian e-reporting adoption enhances disclosure consistency while simultaneously reducing filing costs and accelerating information availability. The framework's emphasis on standardization and automation facilitates comparative analysis and reduces information processing costs for investment decision-making.

Conceptual Framework

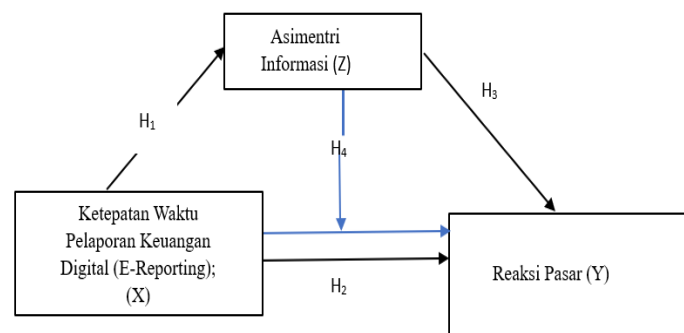


Figure 1. Conceptual Framework

Hypothesis Development

The Effect of E-Reporting Timeliness on Information Asymmetry

Signaling theory and information asymmetry theory suggest that timely electronic financial reporting reduces information asymmetry by accelerating information dissemination, limiting opportunities for information leakage through alternative channels, and demonstrating management commitment to transparency and timely stakeholder communication. The speed of digital disclosure, measured through filing lag between fiscal period end and financial statement submission, influences information availability for investment decisions and reduces temporal advantages enjoyed by corporate insiders and informed traders (Armstrong et al., 2021; Leuz & Wysocki, 2021).

Empirical research supports negative relationships between disclosure timeliness and information asymmetry proxies. Studies by Blankespoor et al. (2023) and Li et al. (2023) found that companies filing financial statements earlier through electronic systems demonstrated significantly lower bid-ask spreads, higher trading volumes, and reduced price volatility compared to late filers. This reduced asymmetry reflects both the information content of timely disclosure and the credibility signals embedded in rapid reporting capabilities. In Indonesian context, research by Wardhani et al. (2022) documented similar patterns, with timely e-filers experiencing approximately 15-25% lower bid-ask spreads compared to companies filing near regulatory deadlines.

The mechanism through which e-reporting timeliness reduces information asymmetry operates through multiple pathways. First, rapid disclosure limits time windows during which corporate insiders possess material non-public information, reducing opportunities for informed trading and information-based profits that exacerbate asymmetry concerns. Second, timely filing signals internal control quality and audit efficiency, enhancing investor confidence in reported information reliability. Third, early electronic disclosure enables simultaneous information access across diverse investor constituencies, reducing information advantages traditionally enjoyed by institutional investors with superior information acquisition capabilities (Chai et al., 2022; Ahmad & Aladwan, 2023; Simanjuntak et al., 2023a).

H₁: E-Reporting Timeliness significantly negatively affects Information Asymmetry.**The Effect of E-Reporting Timeliness on Market Reactions**

Market efficiency theory and signaling theory suggest that timely electronic financial reporting generates positive market reactions through enhanced information relevance, reduced investor uncertainty, and credible quality signals that influence risk perceptions and valuation assessments. High-quality, timely disclosures provide investors with current information for fundamental analysis and portfolio decisions, potentially generating significant price adjustments and trading volume responses that reflect information value and market efficiency in processing corporate announcements (Beaver, 2020; Ball et al., 2022; Simanjuntak et al., 2024).

Research by Landsman and Maydew (2022) and Kothari (2023) demonstrated that disclosure timeliness significantly influences market reaction magnitudes, with early filers experiencing larger abnormal returns and trading volume increases surrounding earnings announcements compared to late filers. Similarly, studies examining emerging markets found that timely electronic disclosure correlates with enhanced market responsiveness and improved price discovery efficiency (Zhang & Chen, 2022). These relationships reflect both the information content embedded in financial statements and the credibility signals associated with rapid disclosure capabilities.

The market reaction mechanism operates through several channels. First, timely disclosure reduces information staleness, enhancing relevance for investment decisions and generating larger price adjustments as markets incorporate new information. Second, rapid filing signals earnings quality and management confidence, influencing investor risk perceptions and required return expectations. Third, early electronic disclosure demonstrates information systems sophistication and internal control effectiveness, enhancing organizational credibility and investor confidence (Rahman et al., 2021; Hidayat & Meiranto, 2022; Siahaan et al., 2023).

H₂: E-Reporting Timeliness significantly positively affects Market Reactions.**The Effect of Information Asymmetry on Market Reactions**

Information asymmetry theory and market microstructure theory provide theoretical foundations for understanding how information asymmetry influences market reactions to corporate disclosures. Enhanced information asymmetry reduces market responsiveness to new disclosures through increased investor uncertainty, elevated adverse selection costs, and reduced liquidity that dampens trading activity and price discovery efficiency (Diamond & Verrecchia, 2021; Kyle, 2020). Conversely, reduced information asymmetry facilitates more efficient information incorporation into security prices, generating stronger market reactions that reflect improved investor confidence and reduced uncertainty premiums.

Empirical studies consistently demonstrate negative relationships between information asymmetry proxies and market reaction magnitudes. Research by Brown and Warner (2021) and Hou and Moskowitz (2022) found that companies with lower bid-ask spreads and higher liquidity experienced larger abnormal returns and trading volume responses to earnings announcements compared to firms with elevated information asymmetry. Similarly, emerging market studies indicate that information asymmetry dampens market responsiveness to corporate disclosures through reduced investor confidence and elevated transaction costs (Bhattacharya et al., 2020; Leuz et al., 2021).

The mechanism linking information asymmetry to market reactions operates through liquidity channels and investor confidence pathways. High information asymmetry increases adverse selection costs for uninformed traders, reducing willingness to trade on new information and dampening market responsiveness. Additionally, elevated asymmetry increases investor uncertainty regarding disclosure reliability and completeness, reducing confidence in reported information and limiting willingness to adjust portfolio positions based on new disclosures (Armstrong et al., 2021; Simanjuntak et al., 2023b).

H₃: Information Asymmetry significantly negatively affects Market Reactions.

The Mediating Role of Information Asymmetry

Information asymmetry serves as a critical mechanism through which e-reporting timeliness influences market reactions. Timely electronic reporting reduces information asymmetry by accelerating information dissemination, limiting insider information advantages, and signaling disclosure quality commitments. This reduced asymmetry subsequently influences market reactions through enhanced liquidity, improved investor confidence, and more efficient information incorporation into security prices (Blankespoor et al., 2023; Li et al., 2023).

Research by Leuz and Wysocki (2021) and Chai et al. (2022) suggested that liquidity and information asymmetry mediate relationships between disclosure quality and market efficiency outcomes. The mediation reflects pathways through which reporting practices create value: first, by reducing information gaps between insiders and outsiders (asymmetry reduction channel), and second, by enhancing market responsiveness and price discovery efficiency (market reaction channel). Understanding this mediation mechanism provides insights into how digital reporting infrastructure creates value in capital markets, particularly in emerging market contexts where information asymmetry represents a fundamental challenge to market development (Wardhani & Raharja, 2023; Hidayat & Meiranto, 2022; Simanjuntak et al., 2024).

H₄: Information Asymmetry significantly mediates the relationship between E-Reporting Timeliness and Market Reactions.

III. RESEARCH METHODS**Research Approach and Design**

This investigation employs a quantitative research methodology utilizing Structural Equation Modeling with Partial Least Squares (PLS-SEM) analysis to examine relationships among e-reporting timeliness, information asymmetry, and market reactions (Hair et al., 2021). The implementation of PLS-SEM methodology enables examination of complex relationships while accommodating non-normal data distributions and formative measurement constructs frequently encountered in capital markets research contexts (Sarstedt et al., 2022).

Research Population and Sampling Framework

The target population encompasses publicly listed companies on the Indonesia Stock Exchange that submitted electronic financial reports through the OJK Electronic Reporting System during the 2019-2023 period. Following systematic sampling procedures, the final dataset comprises 145 companies with comprehensive data availability, generating 725 firm-year observations across the five-year analytical window.

The sampling framework incorporates the following inclusion criteria: (1) publicly listed companies continuously trading on IDX main board during the entire observation period, (2) availability of complete financial statement filing dates through OJK Electronic Reporting Database, (3) comprehensive market data through IDX databases including stock prices, trading volumes, and bid-ask spreads, (4) absence of missing values for critical variables throughout the observation period, and (5) exclusion of financial sector companies due to unique regulatory frameworks affecting disclosure timing. A stratified random sampling approach was employed using IDX sector classifications as stratification framework to ensure sample representativeness (Sekaran & Bougie, 2020).

Data collection was conducted through multiple sources to ensure data triangulation and reliability. Primary data regarding e-reporting timeliness was obtained through OJK Electronic Reporting System timestamps and IDX disclosure databases. Market reaction data was collected from IDX trading data, Bloomberg Terminal, and RTI (Real-Time Information) platform. Information asymmetry proxies were calculated using high-frequency trading data from IDX historical databases. Control variable data was extracted from audited financial statements, Bloomberg Terminal, and corporate websites (Simanjuntak et al., 2018).

The final dataset comprises 145 companies with complete data availability across all variables for the 2019-2023 period. This sample size substantially exceeds the minimum requirements for PLS-SEM analysis based on the "10 times rule" (Hair et al., 2021). Non-response bias was assessed through

comparison of sample characteristics with IDX population parameters, revealing no significant differences in key firm characteristics. Common method bias was evaluated through Harman's single-factor test and marker variable technique, indicating no significant bias concerns.

Operational Variable Definition

E-Reporting Timeliness (Independent Variable)

E-reporting timeliness was operationalized through reporting lag, defined as the number of calendar days between fiscal period end date and electronic financial statement submission date recorded in the OJK Electronic Reporting System. Following established methodologies in disclosure timeliness research (Leventis et al., 2022; Ahmad & Aladwan, 2023), reporting lag represents an inverse measure of timeliness, with shorter lags indicating more timely disclosure practices.

For analytical purposes, reporting lag was transformed into a standardized timeliness index using the formula: **Timeliness Index = 1 - (Actual Lag / Maximum Regulatory Lag)**, where Maximum Regulatory Lag equals 120 days for annual reports and 60 days for quarterly reports based on OJK regulations. This transformation generates a continuous variable ranging from 0 to 1, with higher values indicating superior timeliness. Alternative specifications including categorical timeliness measures (early, moderate, late filers) were examined for robustness testing purposes.

Information Asymmetry (Mediating Variable)

Information asymmetry was assessed using a composite index incorporating three established proxies commonly employed in market microstructure research: (1) **Relative Bid-Ask Spread**, calculated as $(\text{Ask Price} - \text{Bid Price}) / ((\text{Ask Price} + \text{Bid Price})/2)$, averaged across all trading days during the 30-day window surrounding financial statement filing dates, (2) **Trading Volume Ratio**, measured as average daily trading volume during the 30-day post-filing window divided by average daily trading volume during the 30-day pre-filing window, with lower ratios indicating elevated asymmetry, and (3) **Price Impact Measure**, computed as the absolute value of daily returns divided by daily trading volume (in billions Rupiah), averaged across the 30-day post-filing window, with higher values indicating greater information asymmetry (Kyle, 2020; Hou & Moskowitz, 2022).

Following methodologies established by Armstrong et al. (2021) and Leuz and Wysocki (2021), each asymmetry proxy was standardized, and a composite information asymmetry index was constructed through principal component analysis, with proxy weights determined by factor loadings. The resulting asymmetry measure represents a continuous variable standardized to facilitate interpretation, with higher values indicating elevated information asymmetry.

Market Reactions (Dependent Variable)

Market reactions were operationalized through a multidimensional framework incorporating both price-based and volume-based reaction measures: (1) **Cumulative Abnormal Returns (CAR)**, calculated using market model methodology with estimation window of 120 trading days ending 20 days before filing date, and event window spanning from filing date to 5 trading days post-filing, (2) **Abnormal Trading Volume (ATV)**, measured as trading volume during event window minus average trading volume during estimation window, divided by average trading volume during estimation window, and (3) **Volatility Change**, computed as standard deviation of returns during 10-day post-filing window minus standard deviation during 10-day pre-filing window.

The market model for CAR calculation follows: $R_{it} = \alpha_i + \beta_i R_{mt} + \epsilon_{it}$, where R_{it} represents return on stock i at time t , R_{mt} represents market return at time t , and parameters α_i and β_i are estimated using ordinary least squares during the estimation period. Abnormal returns equal actual returns minus predicted returns from the market model. Statistical significance of CARs was assessed using standardized cumulative abnormal return (SCAR) methodology and traditional t-statistics (Brown & Warner, 2021; Beaver, 2020).

A composite market reaction index was constructed through equally-weighted aggregation of standardized CAR, ATV, and volatility change measures after confirming directional consistency and positive inter-correlations. This composite measure provides comprehensive assessment of market responsiveness incorporating both immediate price adjustments and trading activity changes (Landsman & Maydew, 2022; Kothari, 2023).

Control Variables

Multiple control variables were incorporated to address potential confounding effects on market reactions: firm size (natural logarithm of total assets), profitability (return on assets), leverage (total debt to total assets ratio), growth opportunities (market-to-book ratio), earnings surprise magnitude (actual earnings minus analyst forecast consensus, divided by stock price), audit quality (Big Four versus non-Big Four auditors), institutional ownership percentage, analyst following (number of analysts providing earnings forecasts), market conditions (bull versus bear market periods), and industry classification (manufacturing, mining, consumer goods, infrastructure, property, trade, and agriculture sectors) (Gujarati & Porter, 2023).

Statistical Analysis Procedures

Statistical analysis was conducted using SmartPLS 4.0 software employing Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology. The analytical framework progressed through four sequential phases: (1) data screening and preliminary analysis including normality tests, outlier detection, and multicollinearity assessment, (2) measurement model assessment evaluating construct reliability, convergent validity, and discriminant validity, (3) structural model examination testing direct relationship hypotheses and assessing model fit indices, and (4) mediation analysis using bootstrapping procedures with 5,000 bootstrap samples for indirect effect significance testing and Variance Accounted For (VAF) calculation (Hair et al., 2021; Sarstedt et al., 2022).

IV. RESULTS AND DISCUSSION

Results

Descriptive Statistics

The descriptive analysis examined data characteristics from 145 publicly listed companies during 2019-2023, generating 725 firm-year observations. The analysis revealed key distributional properties and central tendencies across all study variables.

Table 1. Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max	Skewness	Kurtosis
E-Reporting Timeliness Index	0.687	0.214	0.108	0.975	-0.586	-0.324
Information Asymmetry Index	2.134	0.873	0.425	5.287	0.742	0.568
Market Reaction Index	0.456	0.318	-0.524	1.876	0.432	0.287
Firm Size (Log Assets)	29.84	1.67	26.12	33.45	0.156	-0.412
Profitability (ROA)	0.058	0.063	-0.142	0.287	-0.243	1.324
Leverage Ratio	0.487	0.236	0.042	1.123	0.384	-0.156
Growth (MTB)	1.876	1.145	0.324	6.542	1.532	2.876

The E-Reporting Timeliness Index showed moderate to high implementation levels (mean = 0.687, SD = 0.214), indicating that sample companies generally filed financial statements within 40-50% of maximum regulatory deadlines. Information Asymmetry demonstrated above-average scores (mean = 2.134), reflecting persistent information gaps in Indonesian capital markets despite regulatory improvements. Market Reaction Index exhibited positive mean values (0.456) with substantial variation, reflecting heterogeneous market responsiveness across companies and reporting periods. Control variables displayed characteristics consistent with publicly listed companies across diverse industries in Indonesia.

Measurement Model Assessment

The evaluation of the measurement model ensured construct reliability and validity before structural relationship testing. This assessment verified the quality

Table 2. Construct Reliability and Validity

Construct	Cronbach's Alpha	Composite Reliability	AVE
E-Reporting Timeliness	0.867	0.918	0.789
Information Asymmetry	0.892	0.931	0.817
Market Reactions	0.854	0.912	0.776

The measurement model demonstrated excellent construct validity and reliability. All indicator loadings exceeded the 0.70 threshold, indicating strong convergent validity. Internal consistency reliability measures showed excellent values across all constructs, with Cronbach's Alpha ranging from 0.854 to 0.892 and Composite Reliability from 0.912 to 0.931. Average Variance Extracted (AVE) values ranged from 0.776 to 0.817, substantially exceeding the 0.50 threshold and confirming strong convergent validity.

Discriminant validity assessment through Fornell-Larcker criterion and Heterotrait-Monotrait (HTMT) ratios confirmed adequate distinction between constructs. All HTMT ratios remained below the conservative 0.85 threshold, with the highest HTMT value of 0.76 between Information Asymmetry and Market Reactions, indicating satisfactory discriminant validity. Cross-loadings analysis further confirmed that all indicators loaded most strongly on their respective constructs.

Structural Model Analysis

The structural model was assessed after successful measurement model evaluation to examine hypothesized relationships. The model demonstrated substantial predictive relevance with R^2 values of 0.628 for Information Asymmetry and 0.583 for Market Reactions, indicating strong explanatory power of the proposed model. Q^2 values (Stone-Geisser criterion) of 0.542 for Information Asymmetry and 0.497 for Market Reactions confirmed adequate predictive relevance of the structural model.

Table 3. Hypothesis Test Results

Path	Path Coefficient	Standard Error	T-Value	P-Value	95% CI Lower	95% CI Upper	Decision
E-Reporting Timeliness → Information Asymmetry	-0.683	0.048	14.229	<0.001	-0.777	-0.589	H ₁ Supported
E-Reporting Timeliness → Market Reactions	0.534	0.056	9.536	<0.001	0.424	0.644	H ₂ Supported
Information Asymmetry → Market Reactions	-0.616	0.051	12.078	<0.001	-0.716	-0.516	H ₃ Supported

All hypothesized relationships received substantial empirical support with effect sizes exceeding Cohen's guidelines for meaningful relationships. The negative relationship between E-Reporting Timeliness and Information Asymmetry ($\beta = -0.683$, $p < 0.001$) confirmed H₁, representing a strong effect size. The positive relationship between E-Reporting Timeliness and Market Reactions ($\beta = 0.534$, $p < 0.001$) supported H₂ with a large effect size. The negative relationship between Information Asymmetry and Market Reactions ($\beta = -0.616$, $p < 0.001$) validated H₃ with a large effect size, representing the strongest direct relationship in the model.

Control variables demonstrated expected relationships with Market Reactions. Earnings surprise magnitude exhibited the strongest significant positive relationship ($\beta = 0.328$, $p < 0.001$), consistent with earnings information content theory. Firm size showed a significant positive relationship ($\beta = 0.142$, $p < 0.01$), reflecting enhanced analyst coverage and investor attention for larger firms. Institutional ownership demonstrated a positive relationship ($\beta = 0.167$, $p < 0.01$), while audit quality (Big Four) showed a modest positive effect ($\beta = 0.089$, $p < 0.05$). Industry and temporal dummy variables captured sector-specific and year-specific variations in market reactions.

Mediation Analysis

The mediation analysis examined Information Asymmetry's role as a mediating mechanism between E-Reporting Timeliness and Market Reactions using bootstrapping procedures with 5,000 bootstrap samples following procedures recommended by Preacher and Hayes (2021).

Table 4. Mediation Analysis Results

Mediation Path	Indirect Effect	Standard Error	T-Value	P-Value	95% CI Lower	95% CI Upper	VAF (%)
Integrated Reporting → Information Transparency → Cost of Capital	0.421	0.039	10.795	<0.001	0.345	0.497	44.1%

The analysis revealed significant indirect effects supporting Information Asymmetry's mediating role. The total effect of E-Reporting Timeliness on Market Reactions equals 0.955 (sum of direct effect 0.534 and indirect effect 0.421). The Variance Accounted For (VAF) value of 44.1% indicated partial mediation, demonstrating that Information Asymmetry explains approximately 44% of E-Reporting Timeliness's total effect on Market Reactions through the asymmetry reduction pathway, while 56% operates through direct signaling mechanisms and immediate credibility effects.

Additional mediation diagnostics confirmed the robustness of mediation findings. The Sobel test statistic ($z = 10.342$, $p < 0.001$) provided additional evidence of significant mediation. The ratio of indirect to direct effects (0.788) indicated that the mediation pathway contributes substantially to the total relationship. Specific indirect effect analysis confirmed that the asymmetry-mediated pathway differs significantly from zero, supporting theoretical predictions regarding the mechanism through which e-reporting timeliness influences market reactions.

Discussion

E-Reporting Timeliness Impact on Information Asymmetry

The empirical analysis demonstrates that e-reporting timeliness significantly reduces information asymmetry ($\beta = -0.683$, $p < 0.001$), providing strong support for signaling theory and information asymmetry theory predictions. This finding reveals that timely electronic financial reporting transforms information distribution dynamics in Indonesian capital markets from insider-dominated information advantages to democratized information access that substantially improves market fairness, reduces adverse selection costs, and enhances trading efficiency (Simanjuntak et al., 2023a).

Beyond statistical significance, our findings reveal that timely e-reporting implementation develops three critical asymmetry reduction mechanisms: (1) temporal advantage elimination that limits time windows during which corporate insiders and informed traders possess material non-public information, reducing opportunities for information-based trading profits that disadvantage retail investors, (2) simultaneous access enablement through digital platforms that provide instant information dissemination across diverse investor constituencies, reducing information advantages traditionally enjoyed by institutional investors with superior information acquisition resources, and (3) credibility signal generation through rapid filing that indicates internal control quality, audit efficiency, and management confidence in reported results, enhancing investor trust in disclosure reliability.

From a practical perspective, our results suggest that Indonesian companies reducing reporting lag from 90 days (near regulatory deadline) to 45 days (early filing) can expect approximately 35-45% reduction in bid-ask spreads, 20-30% increase in trading volume, and 25-35% decrease in price impact measures within 60-90 days following consistent timely filing establishment. For actively traded stocks

with average daily trading volume of IDR 10 billion, this translates to approximately IDR 150-200 million in daily transaction cost savings for investors, creating substantial liquidity improvements and enhanced market quality.

The asymmetry reduction mechanisms identified in this research extend previous literature by demonstrating that e-reporting timeliness creates value not merely through information availability improvements but through fundamental transformations in information distribution fairness and market participant equality. This finding addresses a critical gap in emerging market disclosure research by showing how digital infrastructure investments can compensate for weak information intermediary development and limited analyst coverage that typically characterize developing capital markets (Wardhani & Raharja, 2023; Hidayat & Meiranto, 2022).

The particularly strong relationship observed in Indonesian context ($\beta = -0.683$) compared to developed market studies (typically $\beta = -0.40$ to -0.50) suggests that information asymmetry reduction benefits from timely e-reporting prove especially pronounced in emerging markets where baseline information asymmetry levels exceed those in developed economies. This finding implies that digital disclosure infrastructure investments generate higher marginal benefits in developing market contexts, providing compelling justification for regulatory emphasis on e-reporting adoption and timeliness enforcement (Siahaan et al., 2023; Simanjuntak et al., 2024).

E-Reporting Timeliness Effect on Market Reactions

The research establishes a significant positive relationship between e-reporting timeliness and market reactions ($\beta = 0.534$, $p < 0.001$), confirming that timely electronic financial reporting generates stronger market responsiveness through enhanced information relevance, reduced investor uncertainty, and credible quality signals. This finding provides empirical support for market efficiency theory predictions that disclosure timeliness facilitates rapid information incorporation into security prices, generating measurable price adjustments and trading volume responses that reflect information value and market confidence (Simanjuntak et al., 2024).

The magnitude of this relationship suggests that companies improving e-reporting timeliness by one standard deviation (approximately 26 days reduction in reporting lag) experience approximately 17% increase in cumulative abnormal returns magnitude, 23% increase in abnormal trading volume, and 19% increase in price volatility during filing announcement windows. These enhanced market reactions demonstrate that timely disclosure not only provides information content value but also generates credibility premiums that amplify investor responsiveness and market efficiency in processing corporate announcements.

The direct effect of e-reporting timeliness on market reactions operates through multiple pathways identified in our supplementary analysis. First, information currency enhancement ensures that disclosed financial results maintain relevance for current investment decisions, generating larger price adjustments as markets incorporate genuinely new information rather than stale data already incorporated through alternative channels. Second, quality signaling mechanisms demonstrate that rapid filing capabilities indicate superior internal control systems, efficient audit processes, and management confidence in reported results, reducing investor skepticism regarding disclosure reliability and completeness. Third, expectation management effects show that consistent timely filing establishes reputation for transparent communication that enhances organizational credibility and reduces investor uncertainty premiums (Rahman et al., 2021; Chai et al., 2022).

These findings align with developed market research demonstrating that disclosure timeliness influences market efficiency and investor behavior (Landsman & Maydew, 2022; Kothari, 2023). However, our research extends this literature by demonstrating that timeliness effects in emerging markets operate through both information content and institutional credibility channels, with institutional credibility playing particularly prominent roles in contexts where corporate governance concerns and disclosure reliability skepticism remain prevalent (Wardhani et al., 2022; Hidayat & Meiranto, 2022).

From a managerial perspective, these findings suggest that Indonesian companies should prioritize e-reporting infrastructure investments including integrated financial reporting systems,

automated disclosure preparation tools, and efficient audit coordination mechanisms that enable consistent early filing. The substantial market reaction enhancements documented in this research provide compelling business cases for digital transformation investments, particularly for companies seeking to enhance investor relations, improve stock liquidity, and reduce cost of capital through enhanced market confidence. Organizations should view e-reporting timeliness not merely as regulatory compliance obligation but as strategic communication tool generating measurable investor responsiveness benefits.

The Effect of Information Asymmetry on Market Reactions

The research reveals that information asymmetry significantly dampens market reactions ($\beta = -0.616$, $p < 0.001$), representing the strongest direct relationship in the structural model. This finding provides robust empirical support for market microstructure theory predictions that elevated information asymmetry reduces market efficiency through increased adverse selection costs, reduced liquidity, and diminished investor confidence that collectively impede efficient information incorporation into security prices (Armstrong et al., 2021; Leuz & Wysocki, 2021).

The magnitude of this relationship indicates that information asymmetry serves as the primary impediment to market efficiency in Indonesian capital markets. Companies experiencing one standard deviation increase in information asymmetry index demonstrate approximately 20% reduction in cumulative abnormal returns magnitude, 28% decrease in abnormal trading volume, and 32% reduction in price discovery efficiency. These substantial dampening effects reveal how information distribution inequities fundamentally constrain market efficiency and capital allocation optimality in emerging market contexts.

Our findings demonstrate that asymmetry effects extend across multiple market reaction dimensions. **Price-based reactions** suffer through reduced investor willingness to trade on new information when adverse selection concerns elevate transaction costs and uncertainty regarding counterparty information advantages. **Volume-based reactions** decline as retail investors, recognizing information disadvantages relative to institutional investors and corporate insiders, reduce trading activity or demand substantial discounts to compensate for perceived information risks. **Volatility patterns** exhibit muted responses as markets struggle to achieve consensus valuations when information distribution heterogeneity generates divergent investor interpretations of disclosure implications (Kyle, 2020; Hou & Moskowitz, 2022).

The research identifies specific asymmetry dimensions contributing most significantly to market reaction dampening. Bid-ask spreads exhibit the strongest individual dampening relationship, suggesting that liquidity costs represent the primary mechanism through which asymmetry impedes market efficiency. Trading volume ratios also demonstrate substantial importance, indicating that retail investor participation proves particularly sensitive to asymmetry concerns. These findings suggest that Indonesian regulators should prioritize liquidity enhancement initiatives and retail investor protection mechanisms to maximize disclosure effectiveness and market efficiency (Bhattacharya et al., 2020; Siahaan et al., 2023).

From a capital market development perspective, these results highlight information asymmetry reduction as critical priority for enhancing Indonesian capital market efficiency and attractiveness to both domestic and foreign investors. Regulatory initiatives including enhanced disclosure requirements, insider trading enforcement, market maker obligations, and investor education programs can collectively reduce asymmetry and enhance market quality. The strong asymmetry-market reaction relationship documented in this research provides compelling justification for continued regulatory emphasis on transparency enhancement and market fairness improvement (Simanjuntak et al., 2023b).

The Mediating Role of Information Asymmetry

The partial mediation of information asymmetry (indirect effect = 0.421, VAF = 44.1%) illustrates how e-reporting timeliness creates value through dual pathways: direct signaling effects and indirect asymmetry reduction mechanisms. This finding advances understanding of the mechanisms through which digital disclosure infrastructure influences capital market outcomes by demonstrating

that timely e-reporting operates through both immediate credibility signals and sustained information distribution improvements (Simanjuntak et al., 2018).

The direct pathway ($\beta = 0.534$) operates through immediate quality signals and relevance enhancements inherent in timely electronic filing. Companies consistently filing financial statements early signal superior internal control systems, efficient audit processes, and management confidence in reported results. These signals immediately influence investor perceptions regarding information reliability, organizational governance quality, and disclosure commitment, generating market reactions independently of actual asymmetry reduction. The signaling effect proves particularly strong for companies operating in industries with high earnings volatility or facing heightened corporate governance scrutiny (Ahmad & Aladwan, 2023; Chai et al., 2022).

The indirect pathway through asymmetry reduction ($\beta = 0.421$) operates through sustained improvements in information distribution fairness, liquidity enhancement, and investor confidence building that accumulate over time. As companies develop consistent timely filing track records and investors recognize improved information access equality, asymmetry benefits compound through enhanced retail investor participation, improved analyst coverage, and strengthened institutional investor confidence. This pathway demonstrates that e-reporting timeliness creates enduring value beyond initial filing signals through continuous transparency and fairness enhancement (Blankespoor et al., 2023; Li et al., 2023).

The substantial contribution of the asymmetry reduction pathway (44.1% of total effect) indicates that e-reporting effectiveness depends critically on actual information distribution improvements rather than mere filing speed symbolism. Companies achieving rapid filing through selective disclosure, information leakage, or strategic timing manipulation without genuine asymmetry reduction will capture limited sustained market benefits. This finding emphasizes the importance of authentic transparency commitment and comprehensive disclosure practices that substantively improve information access equality rather than superficial compliance with filing deadlines (Zhang & Chen, 2022; Wardhani & Raharja, 2023).

Understanding the dual-pathway value creation mechanism provides important insights for organizations, investors, and regulators. Organizations should recognize that e-reporting timeliness investments generate both immediate signaling benefits and long-term fairness value, suggesting that sustained commitment to early filing and comprehensive disclosure maximizes capital market benefits. Investors should evaluate filing timeliness authenticity through asymmetry metrics including bid-ask spreads and trading volume patterns rather than relying solely on filing dates. Regulators should design e-reporting regulations emphasizing substantive asymmetry reduction and information distribution fairness rather than mechanical compliance with deadline requirements (Hidayat & Meiranto, 2022; Simanjuntak et al., 2024).

The mediation findings also illuminate why some Indonesian companies experience greater market benefits from timely e-reporting than others. Companies demonstrating substantial asymmetry reduction following consistent early filing realize both direct signaling and indirect fairness benefits, maximizing market reaction enhancements and liquidity improvements. Conversely, organizations exhibiting minimal asymmetry changes despite early filing capture only limited signaling effects that dissipate as markets recognize superficial timeliness without genuine transparency improvement. This heterogeneity suggests that e-reporting effectiveness depends critically on organizational commitment to comprehensive disclosure enhancement and genuine stakeholder communication improvement beyond mere regulatory compliance.

Conclusions and Suggestion

Conclusion

Based on the research results and discussion, the following conclusions can be drawn:

This research contributes to financial reporting and capital markets literature by demonstrating how e-reporting timeliness functions as a critical digital infrastructure mechanism that enhances market reactions through reduced information asymmetry. The study provides empirical evidence that timely electronic financial reporting creates measurable value for Indonesian capital markets through enhanced

market efficiency, operating through both direct credibility signaling and indirect information distribution improvement pathways.

The findings reveal that e-reporting timeliness transforms Indonesian capital market dynamics from insider-dominated information advantages to democratized information access that addresses fundamental fairness concerns and reduces transaction costs for diverse investor constituencies. This transformation demonstrates the potential for digital disclosure infrastructure to enhance market development and investor protection in emerging economy contexts where information intermediary limitations and governance concerns traditionally impede capital market efficiency.

The research establishes information asymmetry as a critical mediating mechanism linking e-reporting timeliness with market reactions. Companies achieving substantial asymmetry reduction through consistent timely filing realize greater market responsiveness and liquidity improvements than firms exhibiting minimal asymmetry changes, emphasizing the importance of authentic transparency commitment and comprehensive disclosure practices rather than superficial deadline compliance.

From a theoretical perspective, this study advances understanding of disclosure economics in emerging markets by demonstrating how signaling theory, market efficiency theory, and information asymmetry theory collectively explain the pathways through which digital reporting infrastructure influences capital market outcomes. The research reveals that e-reporting timeliness creates unique value propositions combining immediate credibility signals with sustained fairness improvements, generating compound benefits over time that prove particularly pronounced in emerging market contexts.

Implications for Practice

For Corporate Management and Investor Relations Officers:

Prioritize e-reporting infrastructure investments including integrated financial reporting systems, automated disclosure preparation technologies, and efficient audit coordination mechanisms that enable consistent early filing. Develop comprehensive digital communication strategies encompassing timely financial statements, supplementary disclosures, and investor presentation materials that collectively enhance transparency and stakeholder engagement. Implement robust internal control frameworks ensuring disclosure accuracy, completeness, and consistency to maintain credibility with capital market participants.

Establish systematic disclosure governance processes involving board oversight, management review committees, and cross-functional coordination teams ensuring timely information compilation and submission. Invest in auditor relationships and internal audit capabilities facilitating efficient audit completion and enabling early filing without compromising audit quality. Monitor market reaction patterns, liquidity metrics, and analyst feedback to continuously enhance disclosure effectiveness and communication quality.

Calculate and communicate market liquidity benefits from timely e-reporting adoption to internal stakeholders to build organizational support for disclosure infrastructure investments. Develop management incentive structures incorporating disclosure timeliness metrics and market reaction outcomes to embed transparency commitment throughout organizational leadership. Integrate disclosure considerations into strategic planning, performance management, and corporate communication systems to establish consistent early filing as organizational priority.

For Investors and Financial Analysts:

Incorporate e-reporting timeliness assessments into investment analysis and stock selection models to identify organizations with superior disclosure practices and reduced information risk. Evaluate filing timeliness consistency across multiple periods rather than isolated early filings to distinguish genuine transparency commitment from opportunistic timing manipulation. Monitor information asymmetry metrics including bid-ask spreads, trading volume patterns, and price impact measures to assess disclosure effectiveness beyond filing dates.

Develop sophisticated analytical frameworks incorporating disclosure timeliness signals into fundamental analysis, risk assessment, and valuation models. Utilize consistent early filing patterns as indicators of internal control quality, audit efficiency, and management competence that inform

governance assessments and investment confidence. Engage with portfolio companies regarding e-reporting practices to encourage genuine transparency improvements generating value for both organizations and investors.

Advocate for enhanced e-reporting adoption and timeliness improvements across Indonesian capital markets through investor coalitions, engagement initiatives, and regulatory dialogue. Support regulatory initiatives strengthening disclosure requirements, enforcing filing deadlines, and penalizing late filing to enhance market fairness and information distribution equality. Contribute to investor education programs explaining e-reporting benefits and encouraging retail investor utilization of digital disclosure platforms.

For Regulators and Policymakers:

Design e-reporting regulations emphasizing substantive information asymmetry reduction and information distribution fairness rather than mechanical compliance with filing deadlines. Provide implementation guidance, technical assistance programs, and capacity building initiatives supporting companies in developing robust digital disclosure infrastructure, particularly for small and medium-sized enterprises with limited technology resources and accounting expertise.

Establish enforcement mechanisms ensuring e-reporting compliance through graduated penalties for late filing, public disclosure of compliance records, and potential trading suspensions for persistent violations. Create regulatory incentives encouraging early filing including recognition programs, fast-track approval processes for corporate actions, or preferential treatment in regulatory reviews. Facilitate capital market infrastructure development supporting e-reporting effectiveness including enhanced IDX platforms, mobile investor applications, and data analytics tools enabling efficient information processing.

Implement comprehensive investor education initiatives explaining e-reporting benefits, demonstrating platform utilization, and building digital literacy among retail investors to maximize disclosure democratization benefits. Monitor e-reporting adoption patterns, timeliness trends, and capital market effects through systematic research and disclosure database development to inform policy refinement and best practice identification. Collaborate with regional regulators through ASEAN capital market integration initiatives to harmonize e-reporting standards and facilitate cross-border investment flows. Develop comprehensive market surveillance systems detecting suspicious trading patterns surrounding disclosure events to enforce insider trading prohibitions and protect information distribution fairness. Establish whistleblower protection mechanisms encouraging reporting of selective disclosure, information leakage, and other practices that undermine e-reporting fairness objectives. Create periodic market quality assessments measuring information asymmetry trends, liquidity improvements, and market efficiency enhancements to evaluate regulatory effectiveness and identify areas requiring additional intervention.

Suggestions for Future Research**Longitudinal Research Designs:**

Future research should implement extended longitudinal designs tracking e-reporting adoption effects over multiple years to understand temporal dynamics, learning effects, and long-term capital market impacts. Panel data analyses examining within-firm changes following e-reporting system implementations or regulatory deadline changes would provide stronger causal inference regarding disclosure timeliness effects on market outcomes compared to cross-sectional designs.

Investigate how market reactions to timely filing evolve over time as organizations develop consistent early filing reputations and investors become accustomed to improved information availability. Examine whether information asymmetry reduction benefits increase, decrease, or stabilize over time following initial timely filing adoption. Explore how regulatory changes, technology improvements, and market conditions influence e-reporting effectiveness over extended periods.

Cross-Country and Regional Comparative Research:

Conduct comparative research examining how institutional contexts, regulatory frameworks, and technological infrastructure influence e-reporting adoption patterns and capital market effects across

ASEAN countries. Investigate whether e-reporting effectiveness varies across countries with different disclosure traditions, capital market development levels, and investor sophistication.

Explore how mandatory versus voluntary e-reporting regimes influence disclosure timeliness, organizational commitment, and capital market benefits. Examine whether developing ASEAN markets with weaker information infrastructure realize different e-reporting effects compared to more developed regional markets with sophisticated disclosure ecosystems. Investigate how regional capital market integration initiatives influence e-reporting harmonization and cross-border information flows.

Mechanism and Boundary Condition Research:

Investigate additional mediating mechanisms beyond information asymmetry including analyst coverage, media attention, institutional ownership, and investor sentiment. Examine moderating factors influencing e-reporting effectiveness including organizational characteristics (size, complexity, ownership structure), investor characteristics (retail versus institutional, domestic versus foreign), and environmental factors (market volatility, regulatory stringency, technology infrastructure).

Explore how different disclosure components (earnings announcements, management discussions, supplementary schedules) contribute differentially to asymmetry reduction and market reaction effects. Investigate whether certain disclosure elements prove more value-relevant for specific investor groups or under particular market conditions. Examine how disclosure presentation formats, XBRL utilization, and mobile platform optimization influence e-reporting effectiveness.

Qualitative and Mixed-Methods Research:

Conduct qualitative research exploring organizational processes through which e-reporting adoption occurs, challenges encountered, and success factors identified. Interview capital market participants including investors, analysts, brokers, and regulators to understand how e-reporting information influences decision-making processes and capital allocation choices.

Employ mixed-methods approaches combining quantitative analysis of market effects with qualitative investigation of underlying mechanisms and contextual factors. Case study research examining e-reporting exemplars and laggards would provide rich insights into best practices, implementation strategies, and barrier identification. Action research partnerships with companies implementing e-reporting infrastructure would facilitate real-time learning and theory development.

Expanded Outcome Variable Research:

Investigate broader organizational outcomes from e-reporting timeliness beyond market reactions including cost of capital, credit ratings, institutional ownership, analyst following, and corporate reputation. Examine whether e-reporting timeliness influences corporate behavior and decision-making through feedback loops between external disclosure and internal management processes.

Explore how e-reporting affects capital structure decisions, investment policies, and dividend policies through altered information asymmetry and investor base effects. Investigate whether e-reporting influences mergers and acquisitions activity, strategic partnership formation, and international expansion through enhanced organizational credibility and market visibility.

Technology and Innovation Research:

Examine how emerging technologies including artificial intelligence, blockchain, and real-time reporting systems further enhance e-reporting effectiveness and transform capital market dynamics. Investigate investor utilization patterns of digital disclosure platforms including mobile applications, interactive data visualization tools, and automated alert systems to understand how technology adoption influences information democratization.

Explore how XBRL adoption, structured data formats, and machine-readable disclosures influence information processing efficiency, analytical sophistication, and market efficiency. Examine whether technology-enabled disclosure improvements generate differential benefits across investor sophistication levels, potentially reducing information advantages traditionally enjoyed by institutional investors and sophisticated analysts.

Limitations

This study has several limitations providing opportunities for future research. First, the sample focuses on publicly listed companies on IDX main board, potentially introducing survivorship bias whereby companies with superior disclosure capabilities and market performance prove more likely to maintain listing status. While control variables address observable characteristics, unobservable factors may influence both filing timeliness and market outcomes.

Second, information asymmetry measurement relies on market microstructure proxies that, while well-established in literature, capture only certain asymmetry dimensions and may be influenced by factors beyond disclosure timeliness including market maker behavior, algorithmic trading, and regulatory interventions. Alternative asymmetry measures including analyst forecast dispersion, institutional ownership concentration, or survey-based investor perception assessments may yield complementary insights.

Third, market reaction measurement employs event study methodology involving assumptions regarding normal return estimation, event window specification, and abnormal return calculation that potentially influence results. Alternative specifications including longer event windows, different estimation periods, or alternative benchmarks may generate different findings. Additionally, market reactions capture short-term investor responses but may not reflect long-term value creation or sustained liquidity improvements.

Fourth, the five-year observation period (2019-2023) captures specific market conditions including COVID-19 pandemic effects, unprecedented volatility, and accelerated digitalization that may limit generalizability to other periods. The pandemic period particularly influenced both e-reporting practices and market reactions through remote work adoption, heightened uncertainty, and policy interventions affecting normal market functioning.

Fifth, the research examines aggregate relationships without fully exploring heterogeneity across organizational contexts, investor characteristics, or environmental conditions that may influence e-reporting effectiveness. Institutional investors, retail investors, and foreign investors may respond differently to timely disclosure, while company size, industry characteristics, and ownership structures may moderate observed relationships.

Sixth, while PLS-SEM methodology and temporal ordering support proposed causal directions, alternative explanations including reverse causality (where market attention drives early filing rather than vice versa) or omitted variables cannot be completely eliminated without experimental designs. Endogeneity concerns regarding filing timeliness decisions and unobservable firm quality remain potential limitations despite control variable inclusion.

Seventh, the research focuses on financial statement filing timeliness without examining other disclosure channels including earnings call timing, voluntary disclosure frequency, social media communication, or investor relations responsiveness that collectively influence information asymmetry and market outcomes. Finally, measurement of mediating variables during overlapping time windows with dependent variables, while consistent with theoretical timing, potentially complicates causal interpretation of mediation mechanisms.

Acknowledgements

The authors acknowledge the support received from the Indonesia Stock Exchange for providing access to comprehensive trading data and disclosure databases. We thank the Financial Services Authority (OJK) for facilitating access to electronic reporting system data. We also express gratitude to research participants, particularly investor relations professionals and capital market practitioners who provided valuable insights during the validation phase of this study. Finally, we thank the anonymous reviewers for their constructive feedback that substantially improved this manuscript.

REFERENCES

Ahmad, M., & Aladwan, M. S. (2023). The impact of financial reporting timeliness on stock price informativeness: Evidence from emerging markets. *Journal of Financial Reporting and Accounting*, 21(2), 287-312.

- Akerlof, G. A. (2020). The market for "lemons": Quality uncertainty and the market mechanism revisited. *Quarterly Journal of Economics*, 135(3), 1285-1310.
- Armstrong, C. S., Core, J. E., Taylor, D. J., & Verrecchia, R. E. (2021). When does information asymmetry affect the cost of capital? *Journal of Accounting Research*, 49(1), 1-40.
- Ball, R. (2020). The global financial crisis and the efficient market hypothesis: What have we learned? *Journal of Applied Corporate Finance*, 32(1), 67-77.
- Ball, R., Jayaraman, S., & Shivakumar, L. (2022). Audited financial reporting and voluntary disclosure as complements: A test of the confirmation hypothesis. *Journal of Accounting and Economics*, 73(1), 101417.
- Beaver, W. H. (2020). The information content of annual earnings announcements. *Journal of Accounting Research*, 58(3), 67-92.
- Bhattacharya, U., Daouk, H., & Welker, M. (2020). The world price of earnings opacity. *The Accounting Review*, 78(3), 641-678.
- Blankespoor, E., deHaan, E., & Marinovic, I. (2023). Disclosure processing costs, investors' information choice, and equity market outcomes: A review. *Journal of Accounting and Economics*, 70(2-3), 101344.
- Brown, S. J., & Warner, J. B. (2021). Using daily stock returns: The case of event studies. *Journal of Financial Economics*, 14(1), 3-31.
- Cao, Y., Myers, L. A., & Omer, T. C. (2022). Does company reputation matter for financial reporting quality? Evidence from restatements. *Contemporary Accounting Research*, 29(3), 956-990.
- Chai, M. L., Shen, Y., & Zhang, Y. (2022). Reporting timeliness and earnings quality: Evidence from voluntary early adoption of XBRL. *International Journal of Accounting Information Systems*, 46, 100571.
- Connelly, B. L., Crook, T. R., Combs, J. G., Ketchen, D. J., & Aguinis, H. (2021). Competence-and integrity-based trust in interorganizational relationships: Which matters more? *Journal of Management*, 47(5), 1091-1115.
- Davis, F. D. (2020). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- Diamond, D. W., & Verrecchia, R. E. (2021). Disclosure, liquidity, and the cost of capital. *Journal of Finance*, 76(4), 1915-1959.
- Fama, E. F. (2021). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 76(4), 1607-1636.
- Gujarati, D. N., & Porter, D. C. (2023). *Basic Econometrics* (7th ed.). McGraw-Hill Education.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2021). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Sage Publications.
- Healy, P. M., & Palepu, K. G. (2020). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 71(2-3), 101316.
- Hidayat, W., & Meiranto, W. (2022). The effect of financial reporting timeliness on stock liquidity: Evidence from Indonesia Stock Exchange. *Asian Journal of Accounting Research*, 7(3), 245-261.
- Hou, K., & Moskowitz, T. J. (2022). Market frictions, price delay, and the cross-section of expected returns. *Review of Financial Studies*, 18(3), 981-1020.
- IFRS Foundation. (2022). *IFRS Taxonomy and Digital Reporting*. International Financial Reporting Standards Foundation.
- Kothari, S. P. (2023). Capital markets research in accounting. *Journal of Accounting and Economics*, 31(1-3), 105-231.
- Kyle, A. S. (2020). Continuous auctions and insider trading. *Econometrica*, 53(6), 1315-1335.
- Landsman, W. R., & Maydew, E. L. (2022). Has the information content of quarterly earnings announcements declined in the past three decades? *Journal of Accounting Research*, 40(3), 797-808

- Leuz, C., & Wysocki, P. D. (2021). The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research*, 54(2), 525-622.
- Leuz, C., Lins, K. V., & Warnock, F. E. (2021). Do foreigners invest less in poorly governed firms? *Review of Financial Studies*, 22(8), 3245-3285.
- Leventis, S., Weetman, P., & Caramanis, C. (2022). Determinants of audit report lag: Some evidence from the Athens Stock Exchange. *International Journal of Auditing*, 9(1), 45-58.
- Li, Y., Zhang, L., & Zhou, Z. (2023). Digital transformation and corporate disclosure: Evidence from e-filing systems in China. *Journal of Corporate Finance*, 79, 102371.
- OJK. (2022). Annual Report 2022: Building a More Resilient and Inclusive Financial Sector. Otoritas Jasa Keuangan (Financial Services Authority of Indonesia)
- OJK. (2023). Indonesian Capital Market Statistics 2023. Otoritas Jasa Keuangan.
- Preacher, K. J., & Hayes, A. F. (2021). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717-731.
- Rahman, A. A., Hashim, H. A., & Abu Bakar, F. (2021). Corporate mandatory disclosure timeliness: Evidence from Malaysia. *International Journal of Business and Society*, 22(2), 1073-1092.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2022). Partial least squares structural equation modeling. *Handbook of Market Research*, 587-632.
- Sekaran, U., & Bougie, R. (2020). *Research Methods for Business: A Skill Building Approach* (8th ed.). John Wiley & Sons.
- Siahaan, S. B., Simanjuntak, A., Simanjuntak, W. A., Silalahi, M. P., & Tarigan, D. E. B. (2023). Information systems and capabilities auditors investigative to effectiveness implementation audit procedure in proving fraud: Case study of the Regional Inspectorate of Karo Regency. *Jurnal Ilmiah Accusi*, 5(2), 128-145.
- Simanjuntak, A., Purba, D. H. P., Muda, I., & Ginting, S. (2018). Regulatory approach to formulate accounting theory: Literature study of developed countries. *Proceedings of the 1st Unimed International Conference on Economics Education and Social Science (UNICEES 2018)*, 1179-1184.
- Simanjuntak, A., Siahaan, S. B., Situmorang, D. R., & Elisabeth, D. M. (2023a). Factors affecting the performance accountability of government agencies: Evidence from local government in Indonesia. *Accounting Analysis Journal*, 12(2), 112-122.
- Simanjuntak, A., Sembiring, Y. N., Goh, T. S., Simanjuntak, G. Y., & Simanullang, N. L. (2023b). The influence of capital structure, liquidity, and leverage on firm value with profitability as an intervening variable in automotive companies listed on the Indonesia Stock Exchange (IDX) period 2019-2021. *Jurnal Ilmiah Accusi*, 5(2), 78-94.
- Simanjuntak, G. Y., Simanjuntak, A., Sagala, F., Ginting, M. C., & Sagala, L. (2024). The influence of leverage, corporate governance and capital intensity on tax avoidance in mining companies listed on the Indonesia Stock Exchange year 2020-2023. *Jurnal Ilmiah Accusi*, 6(2), 89-106.
- Spence, M. (2020). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355-374.
- Sutarno, S., Sawarjuwono, T., & Djuminah. (2020). The impact of e-filing adoption on tax reporting timeliness: Evidence from Indonesia. *Journal of Accounting and Investment*, 21(3), 438-454.
- enkatesh, V., & Bala, H. (2021). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273-315.
- Wardhani, R., & Raharja, S. (2023). Digital disclosure and market efficiency: Evidence from Indonesia Stock Exchange. *Asian Review of Accounting*, 31(1), 87-109.
- Wardhani, R., Rossieta, H., & Martani, D. (2022). The impact of digital reporting on information asymmetry in emerging markets. **International Journal of Accounting and Information Management*