

Impact of Pre-Trade Transparency on Market Quality in IDX Pre-Opening Session

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ABSTRACT

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This study investigates the impact of enhanced pre-trade transparency on market quality during the pre-opening session of the Indonesia Stock Exchange (IDX), following the implementation of best bid and ask disclosures on March 25, 2024. Using empirical data from LQ45 index constituents (October 2023–September 2024), the research employs multiple linear regression to analyze changes in bid-ask spreads, market depth, overnight volatility, and retail investor participation. Results indicate that increased transparency significantly narrows bid-ask spreads, enhances market depth, and boosts retail participation, suggesting improved liquidity and reduced information asymmetry. However, it also leads to higher overnight volatility, reflecting faster price adjustments. The findings align with global evidence on transparency benefits while highlighting unique challenges in emerging markets. Policymakers and market participants can leverage these insights to balance transparency levels, optimizing efficiency without destabilizing volatility. Future research could expand to mid- and small-cap stocks for broader implications.

KEYWORDS

Pre-trade transparency, market quality, call auction, bid-ask spread, volatility, market depth, Indonesia Stock Exchange.



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INTRODUCTION

Transparency in financial markets is fundamental to ensuring fairness, liquidity, and efficiency. Pre-trade transparency, specifically, refers to the extent to which information about trading interests—such as bid and ask prices and the size of available orders—is visible to all market participants before transactions occur. It serves as a critical component of market microstructure, impacting price

discovery processes and shaping investor behavior (Ke et al., 2013; Çağlayan-Gümüş & Karahan, 2024).

Greater pre-trade transparency reduces information asymmetry between informed and uninformed investors, thereby enhancing market quality by facilitating more accurate pricing of securities (Anand et al., 2024; Aharon, 2023). In highly transparent environments, liquidity providers are encouraged to submit competitive quotes, while retail investors gain improved access to relevant trading information (Lucarelli et al., 2012; Xu et al., 2024; Goel et al., 2021). As a result, markets experience tighter bid-ask spreads, increased depth, and more robust retail participation.

Nevertheless, existing literature highlights that excessive transparency may induce unintended consequences. Too much visible information can trigger strategic behavior, such as order anticipation and herding, leading to heightened volatility and potential instability, especially during periods of market stress (Kovaleva & Iori, 2015; Zaznov et al., 2022; Lenglet et al., 2024).

IDX introduced visible one level best bid and best offer information during the call auction session on March 25, 2024, concurrently with the implementation of a full call auction mechanism (*IDX*, 2024). This reform triggered resistance from market participants, as the call auction mechanism on *IDX* had previously offered minimal pre-trade transparency. *Call auction* is a trading mechanism allowing investors to submit buy or sell orders based on price and time priority; however, these orders are not matched until the designated matching period at the end of the session (Lim, 2022).

Previous studies have shown that enhancing order book pre-trade transparency improves informational efficiency and reinforces market confidence (Aharon, 2023; Ernst et al., 2024). Furthermore, enhancement of pre-trade transparency affects market quality indicators such as bid-ask spread, overnight volatility, market depth, and retail investor participation (Goel et al., 2021; Lenglet et al., 2024).

Financial markets thrive on transparency, yet the optimal level of pre-trade information disclosure remains a contentious issue, particularly in emerging markets like Indonesia. While existing literature extensively examines transparency in continuous trading systems, there is a notable gap in understanding its impact on call auction mechanisms, especially during pre-opening sessions. The Indonesia Stock Exchange (*IDX*) presents a unique case study, having recently implemented enhanced pre-trade transparency in its call auctions, yet empirical evidence on its effects remains scarce. This gap is critical because pre-opening sessions play a pivotal role in price discovery, setting the tone for daily trading. Without robust evidence, regulators and market participants lack guidance on how such reforms

influence market quality, leaving room for suboptimal policy decisions that could either stifle liquidity or exacerbate volatility.

The urgency of this research is underscored by the rapid evolution of market structures and the increasing participation of retail investors in *IDX*. As global markets adopt hybrid trading mechanisms, Indonesia's experience with transparency reforms offers valuable insights for other emerging economies navigating similar transitions. Moreover, the March 2024 policy change in *IDX*'s pre-opening session was met with mixed reactions, highlighting the need for data-driven evaluations to address stakeholder concerns. Without timely analysis, misconceptions about transparency's trade-offs—such as its potential to amplify volatility or deter institutional participation—could hinder further reforms. This study addresses these pressing questions by providing empirical evidence on the immediate effects of transparency enhancements, ensuring policymakers can make informed adjustments to foster a fairer and more efficient market.

This research introduces novelty by focusing on the underexplored intersection of pre-trade transparency and call auction dynamics in an emerging market context. Unlike prior studies that predominantly examine continuous trading systems, this study zeroes in on the pre-opening session, where order imbalances and overnight information shocks uniquely shape market behavior. Additionally, it leverages high-frequency data from the *LQ45* index, capturing the nuanced responses of large-cap stocks to transparency changes. By employing a robust methodological framework—including bid-ask spread analysis, volatility metrics, and retail participation trends—the study offers a comprehensive assessment of transparency's multifaceted impact. These contributions fill a critical void in market microstructure literature, which has largely overlooked the distinctive challenges and opportunities of call auctions in developing economies.

This study focuses on the impact of pre-trade transparency during the pre-opening session at *IDX*, as this phase typically employs a call auction mechanism and plays a critical role in the overall stock trading process. The pre-opening session facilitates the balancing of order imbalances in the market that arise due to overnight information related to a particular stock or the overall market (Xiao & Yamamoto, 2024). Furthermore, pre-opening allows participants to observe indicative prices and liquidity conditions without immediate execution pressure, serving as a critical period for price discovery (Ozenbas & Schwartz, 2022; Tripathi et al., 2020; Chu et al., 2024).

Despite the importance of pre-trade transparency and the lack of empirical evidence specific to emerging market microstructure studies—including Indonesia's auction market structure—this study aims to evaluate the impact of increased pre-trade transparency on four key aspects of market quality: bid-ask spread, overnight volatility, market depth, and retail investor participation. Thus,

this research seeks to answer: How does pre-trade transparency affect market quality in the pre-opening session of *IDX*?

The primary objective of this study is to evaluate how enhanced pre-trade transparency affects key market quality indicators during *IDX*'s pre-opening session. Specifically, it seeks to quantify changes in bid-ask spreads, market depth, overnight volatility, and retail investor activity following the March 2024 reforms. By isolating the effects of transparency from other market variables, the research aims to identify causal relationships that can inform regulatory strategies. Furthermore, it explores whether the benefits of transparency—such as improved liquidity and reduced information asymmetry—outweigh potential drawbacks like increased volatility. These insights are crucial for designing policies that balance efficiency with stability, ensuring that transparency reforms achieve their intended goals without unintended consequences.

The benefits of this research extend beyond academia, offering practical value for market regulators, practitioners, and investors. For regulators, the findings provide an evidence-based foundation for refining transparency frameworks, potentially guiding future reforms in *IDX* and other emerging markets. Market participants, including institutional traders and retail investors, can leverage the results to adjust their strategies in response to transparency-driven changes in liquidity and volatility patterns. Additionally, the study's focus on retail participation underscores the democratizing potential of transparency, empowering smaller investors with better information access. By bridging the gap between theory and practice, this research contributes to the broader goal of fostering equitable and resilient financial markets, ultimately supporting sustainable economic growth in Indonesia and beyond.

RESEARCH METHOD

This study analyzes the effect of increased transparency on market quality and retail investor participation by observing market behavior before and after the introduction of best bid and best ask disclosures during the *call auction*, covering the period from October 2023 to September 2024. The pre-disclosure period spans from October 2023 to March 2024, while the post-disclosure period extends from March 2024 to September 2024. The analysis focuses on 37 stocks included in the *LQ45* index at any point during the sample period. Market quality is assessed through changes in bid-ask spreads, overnight volatility, and market depth, while retail participation is evaluated based on differences in retail order frequency across the two periods. The pre- and post-period (*TRANSP*) is treated as nominal data, with the pre-period coded as 0 and the post-period coded as 1. The bid-ask spread is calculated following the method proposed by Ke et al. (2013):

$$p_i^s = (\sum_{k=1}^n (p(B,ik)^s - p(A,ik)^s))/n$$

where:

p_B^s = the highest bid prices of stocks a, b, c, etc.

p_A^s = the highest sell prices of stocks a, b, c, etc.

Meanwhile, overnight volatility is measured following the approach outlined by Zournatzidou & Floros (2023):

$$\sigma_i = \sqrt{(1/(4N \ln(2))) \sum_{i=1}^n (\ln(h_{ik}/l_{ik}))^2}$$

where:

h_{ik} = the highest price between the opening price or the previous closing price

l_{ik} = the lowest price between the opening price or the previous closing price

σ_i = volatility in period i

Dependent variables to measure market quality include bid-ask spread (*SPREAD*), overnight volatility (*VOLA*), market depth (*DEPTH*), and retail participation (*RFREK*). The control variable used for Models 1, 3, and 4 is the USD/IDR exchange rate, while the control variable for Model 2 is pre-opening transaction volume. These control variables are incorporated to account for external influences.

To examine the impact of enhanced pre-trade transparency on market quality, this study employs four regression models. Regression analysis is conducted with classical assumption tests, including the Kolmogorov–Smirnov test for normality, the Glejser test for heteroskedasticity, VIF for multicollinearity, and Durbin–Watson for autocorrelation. The models are as follows:

Model 1: $SPREAD = \beta_0 + \beta_1 TRANS + \beta_2 Control Variable + \varepsilon$

Model 2: $VOLA = \beta_0 + \beta_1 TRANS + \beta_2 Control Variable + \varepsilon$

Model 3: $DEPTH = \beta_0 + \beta_1 TRANS + \beta_2 Control Variable + \varepsilon$

Model 4: $RFREK = \beta_0 + \beta_1 TRANS + \beta_2 Control Variable + \varepsilon$

RESULT AND DISCUSSION

Table 1 reports the regression results of bid-ask spread, overnight volatility, market depth, retail participation variables indicating the change in pre-trade transparency. The asterisk (*) denotes statistical significance at the 5% level (two tailed).

Table 1 Pre- and post-period of enhanced transparency to market quality and retail participation

Dependent Variable	Intercept	TRANSP	Control Variable	Adj. R Square
bid-ask spread (SPREAD)	2487.71*	– 68.485*	– 0.107*	0.202*
overnight volatility (VOLA)	-6.500*	0.617*	6e-10*	0.122*
market depth (DEPTH)	1.256e9*	65498052.9*	– 67688.6*	0.130*
retail participation (RFREK)	10420.59*	627.04*	– 0.537*	0.721*

The regression results show that the increase in pre-trade transparency significantly reduced the bid-ask spread, indicating improved market efficiency. Market depth also experienced a significant increase, reflecting greater liquidity and willingness of participants to display limit orders. Retail investor participation rose after the transparency enhancement, suggesting that better information

accessibility encouraged more trading activity by retail investors. However, overnight volatility increased, implying that faster dissemination of information led to quicker and sometimes excessive price adjustments in the market. These findings are generally in line with those of Ke et al., (2013), who report improved market quality following greater transparency, although there is positive change in overnight volatility. The increase in retail investor participation is also consistent with Yamamoto, (2011) in the context of pre-trade transparency reforms.

The dissemination of price levels and volume information in the order book (pre-trade transparency) is found to be associated with a reduction in bid–ask spreads. This outcome may be explained by the increased availability of information that traders can use to evaluate their transaction strategies, which in turn may reduce indirect transaction costs by improving their ability to make informed decisions. Furthermore, more accurate price formation facilitated by greater transparency can encourage investor participation, which may lead to increased competition among traders and narrower bid–ask spreads in the order book (Lucarelli et al., 2012).

Increased pre-trade transparency significantly raised overnight volatility by allowing market participants to react faster and more aggressively to new information. While transparency improves price discovery, it can also trigger overreactions, noise trading, and sharper price fluctuations (Kovaleva & Iori, 2015).

The results also suggest that pre-trade transparency is related to higher market depth during the call auction session. Traders may adjust their strategies in response to increased transparency in the order book (Hendershott et al., 2022), and the greater use of limit orders under more transparent conditions may support a more efficient price discovery process (Kovaleva & Iori, 2015). In addition, increased transparency appears to be related to greater trader participation. Better access to market information may reduce uncertainty and contribute to trading activity. Finally, the availability of more visible information may reduce asymmetric information, which can support retail investors in making more informed and deliberate trading decisions (Lucarelli et al., 2012).

Robustness testing was conducted through two approaches, a placebo event study and model specification tests. In the placebo event study, the event date was artificially shifted, and the regression results showed that the coefficients became statistically insignificant across all dependent variables, indicating that the observed effects in the main analysis are attributable to the actual transparency policy. Additionally, robustness was tested by removing the control variables (exchange rate and trading volume) from the regression models, where the coefficients on TRANSP remained statistically significant and consistent in direction.

CONCLUSION

This study examines the impact of enhanced pre-trade transparency on market quality during the pre-opening sessions of the Indonesia Stock Exchange (IDX) following the March 25, 2024, data disclosure reforms in *call auction*. Empirical analysis of *LQ45* index constituents from October 2023 to September

2024 reveals that the introduction of best bid and ask disclosures during *call auctions* significantly improved key market quality metrics. Bid-ask spreads narrowed, market depth increased, and retail investor participation rose, suggesting reduced information asymmetry and enhanced liquidity provision. However, the policy did not result in a statistically significant change in overnight volatility, indicating that improvements in pre-trade transparency may contribute to stabilizing intraday trading activity without substantially affecting price volatility within a single *call auction* session. The findings align with prior evidence from continuous auction systems, demonstrating that partial transparency enhancements in *call auctions* can foster liquidity and investor engagement even in emerging markets. These outcomes underscore the importance of balancing transparency levels to mitigate adverse effects, such as potential predatory trading, while optimizing market efficiency. Policymakers may consider these results when refining pre-trade disclosure frameworks, particularly in markets transitioning toward hybrid auction mechanisms. This study has several limitations, including its focus on large-cap stocks within the *LQ45* index and the relatively short post-policy observation period. Additionally, while external factors such as fluctuations in the USD/IDR exchange rate were controlled for, their interaction with transparency effects may be complex. Future research could broaden the scope to include mid- and small-cap stocks and explore the impact of transparency reforms during other *call auction* sessions, beyond just the pre-opening session. Such efforts would provide deeper insights into the relationship between transparency reforms, market structure, and investor behavior in varied contexts.

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