ANALYSIS OF VOLATILITY AND LIQUIDITY BEFORE AND AFTER BROKER ID ANONYMIZATION

Hasan Wahid[1]
Universitas Muhammadiyah Makassar, makassar, Indonesia
Hasanwahid.1990@gmail.com

Asri Jaya[2]
Universitas Muhammadiyah Makassar, Makassar, Indonesia
asrijaya@unismuh.ac.id

Sahabuddin Nanda[3]
Universitas Muhammadiyah Makassar, makassar, Indonesia
sahabuddin.nanda@unismuh.ac.id

Abstract

This study aims to analyze the impact of Broker ID's anonymization policy on stock price volatility and market liquidity in LQ45 index companies on the Indonesia Stock Exchange. This study uses a comparative quantitative method with *an event study approach* during the three-month observation period before and after the policy (September 2021- February 2022). Based on the results of *the Wilcoxon signed-rank test*, significant differences were found in the two variables between the period before and after the implementation of the policy. The results show that the average volatility has decreased sharply by 171.72%, which indicates that the market has become more stable and price fluctuations are more controlled in the absence of signals from the broker's identity. In contrast, market liquidity decreased by 4.36%, reflecting reduced speculative activity and *herding behavior* due to the loss of information transparency. In conclusion, this policy is effective in reducing price volatility and creating stability, but it has an impact on liquidity contraction as investors become more cautious in transactions.

Keywords: Anonymization of Broker ID, Volatility, Liquidity, LQ45

INTRODUCTION

The capital market plays an important role as a determinant of national economic health as well as the main source of long-term capital for companies (Sri Hartini, 2016) Therefore, legal protection for investors is a crucial aspect that affects their trust and participation, thus ensuring the integrity and stability of the capital market is a top priority for regulators (Brilliant, 2024) In Indonesia, the Financial Services Authority (OJK) has a central role in regulating and supervising the capital market with a focus on creating an orderly, fair, and efficient market. Any policy that affects the microstructure of the market, such as changes to trade transparency rules, must be rigorously evaluated against its ability to increase efficiency without sacrificing transparency and credibility (OJK, 2020)

The rapid development of the Indonesian capital market in recent years has been marked by an increasing participation of local investors (Naila Putri Inayah et al., 2024). On the other hand, the market is still facing the phenomenon of substantial price volatility. Data shows that the Jakarta Composite Stock Price Index (JCI) can experience significant daily volatility, for example a decline of 1.49% on October 23, 2025 (CNBC Indonesia, 2021). This persistent volatility reflects short-term price deviations from the fundamental value of the asset, which in the microstructural literature are referred to as fads. If left unmanaged, volatility can hamper long-term confidence and investment, so regulatory interventions to stabilize prices and improve price discovery mechanisms are particularly relevant (Finance, 2025).

Historically, the Indonesian capital market has prioritized the principle of transparency, where the identity of the broker (Broker ID) in each transaction is disclosed after the trade has occurred (post-trade transparency) as an integral part of efforts to build credibility and provide security guarantees to investors (Azmi & Kharisma, 2019; OJK, 2020). Broker ID serves as a surveillance signal that allows the identification of suspicious trading patterns, so any policy that reduces transparency should be assessed for its impact on investors' supervisory and protection capabilities (Azmi & Kharisma, 2019).

In response to the increasingly complex dynamics of modern markets, the Indonesia Stock Exchange (IDX) implemented the Broker ID Anonymization policy on December 6, 2021 (CNBC Indonesia, 2021). This policy, similar to Post-trade Anonymity (PoTA) in other countries, aims to improve market efficiency by reducing detrimental practices such as front-running or order anticipation strategies that rely on broker identities (Duong et al., 2018; Permanasari & Wibowo, 2022). Theoretically, within the framework of Market Microstructure Theory, anonymization can affect the cost of information asymmetry where market makers can no longer distinguish between informed and uninformed traders based on Broker ID (Barucci et al., 2025)

However, empirical evidence regarding the impact of anonymitization on market quality, particularly volatility and liquidity, remains inconsistent and highly dependent on market structure, actors' behavior, and the policy context of each exchange. In Indonesia, previous studies such as (Permanasari & Wibowo, 2022)) evaluated the impact of anonymitization on market quality using indicators such as volatility and bid-ask spreads, while other studies on LQ45 stocks found no indication of a change in post-policy herding behavior (Cahyono et al., 2024). The gap between theory, diverse international evidence, and the specific context of the Indonesian market drives the need for more in-depth research.

Based on this description, this study aims to analyze the impact of the Broker ID Anonymization policy on stock price volatility and market liquidity, with a case study on

LQ45 index stocks on the Indonesia Stock Exchange. The results of the study are expected to provide empirical evidence and scientific contributions for regulators and market participants in evaluating the effectiveness of trade transparency policies.

REVIEW OF LITERATURE

Market Microstructure Theory (Kyle & Obizheva, 2014) provides a solid theoretical basis in understanding the changing trading mechanisms that affect the efficiency and transparency of the capital market. This theory explains that price formation in the market is determined not only by the interaction of supply and demand, but also by the structure and rules of trade that govern the course of transactions. In the context of the Broker ID removal policy, the loss of broker identity in *order flow data* leads to a decrease in information asymmetry between market participants, reduces *front running* practices and *herding behavior*, and increases price efficiency. As a result, the price of the stock that is formed becomes more reflective of the fundamental value because the price formation process takes place more objectively without distortion of behavior based on the identity of the broker.

Information Asymmetry Theory (George, 1970) quality is greatly influenced by the inequality of information distribution between market participants. In the capital market, some investors, especially institutional investors and large brokers, often have superior information than retail investors. The broker's identity serves as an informational clue that allows other investors to identify the informative status of the market participants behind the execution of the transaction. In the context of Broker ID anonymization, the de-identification of the broker removes the non-fundamental signals previously used to read the direction and quality of the order flow.

RESEARCH METHOD

This research is a quantitative research with a comparative analysis approach through statistical testing. A comparative analysis was conducted to understand the implementation of *the Broker ID Anonymization* policy and compare its impact on market liquidity as well as stock price volatility before and after the policy was implemented. The event *study* and statistical test approach was used to obtain more in-depth results regarding the influence of this policy on market efficiency, especially in looking at changes in trading behavior, price stability in the capital market after the removal of broker IDs on the Indonesia Stock Exchange. The data used is secondary data including stock data, namely prices (high, low), and volume obtained from the Indonesia Stock Exchange and Yahoo finance websites which are accessed through www.idx.co.id and finance.yahoo.com.

The observation period in this study covers three months before and three months after the implementation of the Indonesia Stock Exchange Anonymization policy, which was officially enforced on December 6, 2021. Thus, the observation period used covers September 2021 to February 2022. The selection of the time range aims to look comparatively at changes in stock price volatility and market liquidity before and after the policy is implemented, so as to illustrate the direct impact of the implementation of the anonymization policy on trading dynamics in the Indonesian capital market. The population and sample in this study are all companies listed on the Indonesian stock exchange and are incorporated into the liquid index 45 (LQ45) which totals 45 companies.

The data analysis technique in this study uses a comparative quantitative approach with a comparative method to test the difference in market conditions before and after the implementation of the *Broker ID Anonymization policy* on the Indonesia Stock Exchange (IDX). The analysis was carried out by comparing the level of volatility of stock prices and market liquidity in the two periods to find out the extent to which the policy of de-identity of the broker affected market stability and efficiency. To ensure statistically valid results, this study used two types of statistical tests, namely the paired sample t-test for normally distributed data and the Wilcoxon signed-rank test for non-normally distributed data. Through this approach, it is hoped that a comprehensive empirical picture can be obtained regarding changes in the behavior of the Indonesian capital market after the enactment of the ID broker anonymization policy.

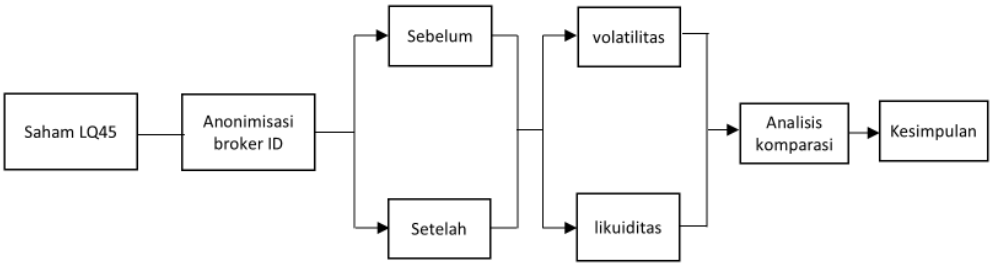
Research Hypothesis

This study aims to analyze the impact of the Anonymization policy of Broker ID on stock price volatility and market liquidity, with a case study on LQ45 index stocks on the Indonesia Stock Exchange. Based on the literature review and the framework of thought that has been presented, the hypotheses proposed in this study are as follows:

- H1: There is a significant difference in the level of volatility in the stock price of companies incorporated in the LQ45 index before and after the implementation of the Broker ID anonymization policy on the Indonesia Stock Exchange.
- H2: There was a significant difference in the level of liquidity of the shares of companies included in the LQ45 index before and after the implementation of the Broker ID anonymization policy on the Indonesia Stock Exchange.

Research Model

This research model describes the relationship between the impact of events or policies (*event study*) as an independent variable to dependent variables (volatility and liquidity). This model can be illustrated as follows:



The model overview of this study shows that the Broker ID Anonymization policy is tested The impact is directly on two indicators of market quality, namely volatility and liquidity. This study uses a quantitative approach with a comparative method (*event study*), where the data collected is secondary data (stock price and volume) from the Indonesia Stock Exchange. In contrast to the regression model, the data analysis technique used in this model is a *paired sample t-test* or *Wilcoxon signed-rank test* to measure the significance of differences in market conditions in the period before and after the implementation of the policy. The results of this study are expected to provide insight for regulators and investors regarding the effectiveness of transparency policies in creating market stability.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

This distribution is done to measure whether there is an average change before and after the broker id removal policy.

Tabel 1.
Statistics Descriptive

Variabel	N	Average		Changes
		Before	After	
Volatility	45	18537.68186	-13295.76686	-171.72%
Liquidity	45	108518108163.4220	103787075151.5330	-4.36%

Source: Data processed

Based on table 1 above, some key findings can be explained:

1. Volatility

The average value of volatility before broker id removal was 18537.68186 and after broker id removal decreased to -13295.76686. There was a change of -171.72%, this result shows a decrease in votility after the policy of removing broker ID.

2. Liquidity

The average value of Liquidity before the deletion of broker id was 108518108163.4220 after the deletion of the average broker id decreased to 103787075151.5330 There was a change of -4.36%, indicating a decrease in liquidity after the implementation of the deletion of broker ID.

Normality and Differential Tests

Table 2.
Results of Normality Test and Difference Test

Company	Variable	Normality		Test	P-Value	Conclusion
		Before	After			
LQ45	Volatilitas	Abnormal	Abnormal	Wilcoxon	0.000	Significant
	Likuiditas	Abnormal	Abnormal	Wilcoxon	0.006	Significant

Source: Data processed

Based on table 2 above, it is known that the results of the normality test show that all indicators are not normally distributed. Therefore, the Wilcoxon signed-rank test is used to test the differences between periods before and after the removal of the broker id.

1. The test results show that Volatility has a sig value of 0.000 < 0.05 which means that there is a significant difference in volatility before and after the broker id removal policy.
2. The test results showed that liquidity had a sig value of 0.006 < 0.05 which means that there was a significant difference in liquidity before and after the broker id elimination policy.

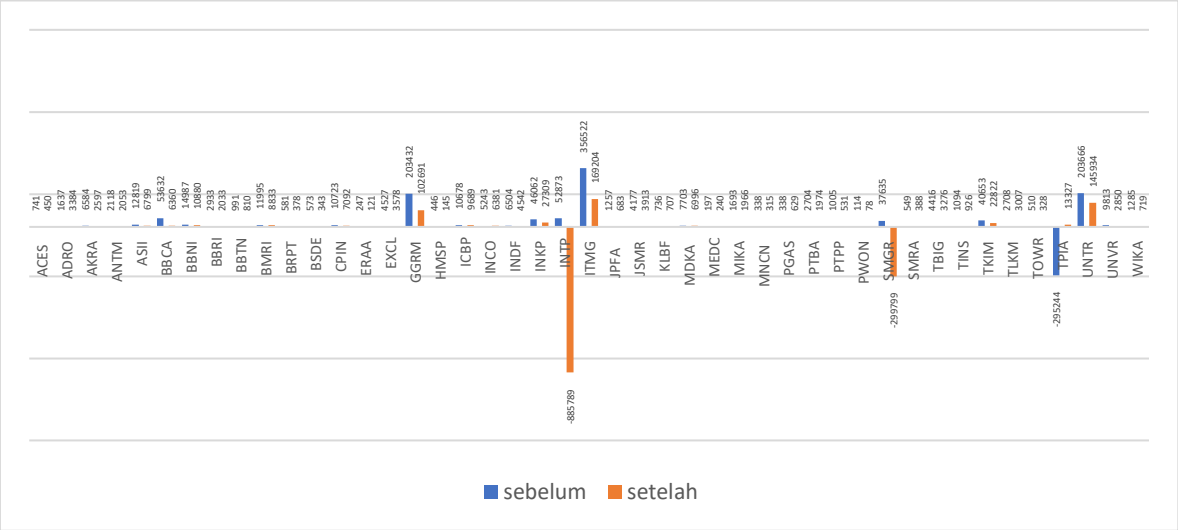
Stock Price Volatility Before and After Broker ID Removal Policy

Based on the results of the analysis obtained, it can be concluded that there is a significant difference in the level of volatility in the stock price of companies incorporated

in the LQ45 index before and after the implementation of the Broker ID anonymization policy on the Indonesia Stock Exchange (IDX). These findings are in line with the research hypothesis that there is a significant difference in volatility in the two periods.

On average, the volatility of LQ45 stocks decreased by 171.72% after the broker ID removal policy was implemented. This decline indicates a major shift in the dynamics of stock price formation post-policy, which indicates a reduction in price fluctuations in the market. Therefore, Broker ID's anonymization policy has proven to bring significant changes to the volatility of the stock price of the LQ45 index.

Figure 1.
Volatility



Based on the chart in figure 1, most stocks are seen to experience a decrease in volatility after the policy is implemented, which can be seen from the orange bars that are smaller or negatively valued than the blue bars. This means that stock price movements become more stable and buying and selling activities in the market are reduced. This condition shows that market participants no longer react as quickly as before to short-term information, so that stock price fluctuations become calmer and more controlled. Some issuers showed a sharp decline after the policy was implemented, as INKP experienced the most extreme decline, indicating a major change in the dynamics of its price movements. The TOWR, UNTR, and SMGR also showed a considerable decline which could indicate a decline in trade participation. In contrast, some stocks such as EXCL and IMAG showed increased volatility after the policy was implemented. (Farkas & Neszveda, 2024) found that some stocks (Laggards) are lagging behind in responding to general industry information. This delay causes the price adjustment process to run slower than other stocks (Leaders) so that the price does not immediately react to new information, but changes gradually over time.

This decrease in volatility indicates that the reduced transparency of information due to the removal of the broker ID reduces the volume and speed of transactions, resulting in calmer trading activity and decreased volatility. This decrease in volatility supports the assumption of Information Asymmetry Theory (George, 1970) where inequality of access to information triggers transactional behavior that does not account. The loss of the broker's code creates uncertainty for uninformed traders, who respond by reducing transaction

participation to avoid the risk of losses against more informed parties. This condition reflects reduced uncertainty and speculative activity in the market, because previously the identity of the broker provided additional information that market participants used to read the transaction patterns of institutional and retail investors. Once the identity is removed, market participants can no longer rely on order flow information to perform quick actions based on speculation, so trading becomes more cautious and oriented towards fundamental analysis. As a result, daily price fluctuations become more stable and controlled, signaling a significant decrease in volatility in the stock market.

This is in line with the theory of Market Microstructure (Perotti & Rindi, 2006) which explains that changes in market transparency mechanisms can affect market participants' behavior and price formation structures, market participants' behavior, and stock price stability.

The results of this study are in line with the findings of Comerton-Forde et al., (2005) who stated that the application of broker anonymity not only contributes to increased market liquidity, but is also able to reduce stock price volatility through a reduction in speculative activity, thus creating a more stable and efficient market.

However, the results of this study are not in line with the findings of Duong et al., (2018) which show that the implementation of the Broker ID anonymization policy has a significant impact on changes in market behavior, especially through increased stock price volatility. These differences in results indicate that the market response to the broker's anonymity policy may vary, depending on the characteristics of the market structure and the behavior of market participants in each country.

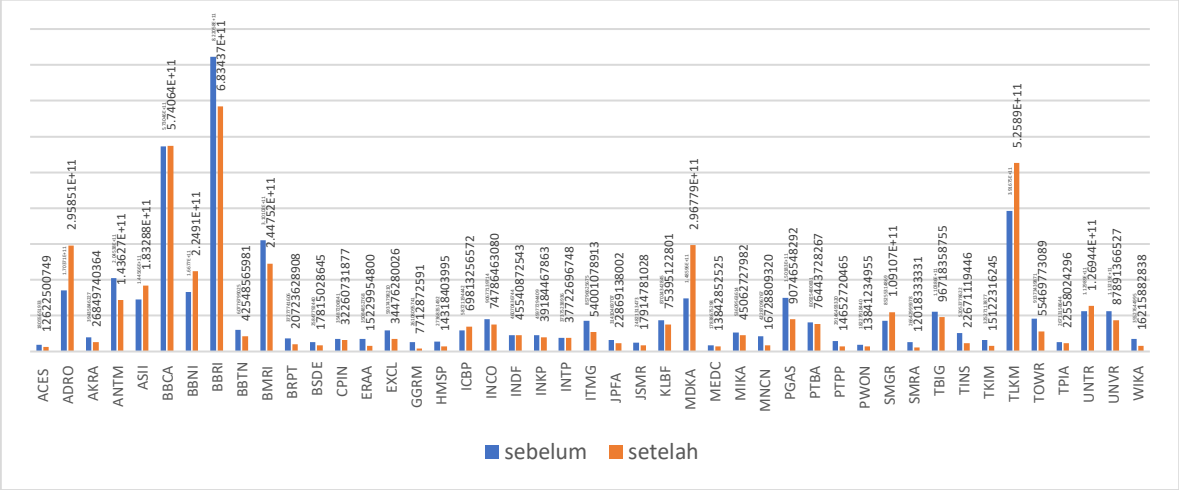
In addition, the results of this study are also different from the findings of Richard Payne, (2014) who stated that the level of trading activity actually increased after the implementation of anonymity. According to Payne, (2014) the elimination of broker codes can reduce transaction costs and increase a sense of security for market participants, so that investors feel more free to transact and do not hold back trading activities as previously feared.

Stock Price Liquidity Before and After Broker ID Removal Policy

Based on the results of the analysis, it is known that there is a significant difference in the level of liquidity of companies that are members of the LQ45 index before and after the implementation of the Broker ID anonymization policy on the Indonesia Stock Exchange (IDX). These results are in line with the hypothesis of the proposed research.

On average, stock liquidity decreased by -4.36% after the broker ID removal policy was implemented. This decline indicates a slight weakening in stock trading activities, caused by a decrease in the transparency of transaction information in the market as well as a minor adjustment in post-policy stock trading behavior. Some market participants may reduce the frequency of transactions because they no longer have access to the broker's identity information that was previously used as a reference in short-term trading decision-making. Thus, the hypothesis is accepted because the anonymization policy of Broker ID is proven to be related to the existence of significant differences in the liquidity level of the shares of the LQ45 index.

Figure 1.
Liquidity



Research conducted by Ladhari (2009) also supports this result by noting that in Figure 1, there is a significant change in liquidity pattern between the period before and after the implementation of the policy. In general, the chart shows a varied trend but has a tendency to decline in liquidity in *blue chip* stocks or large *market capitalization big caps.*

Significant Decline in JCI Driving Stocks The most striking decline in liquidity was seen in stocks in the banking and telecommunications sectors which had a large weight on the index. Stocks such as BBCA, BBRI, BMRI, BBNI, and TLKM showed a decline after the policy was implemented which was quite deep compared to before the policy was implemented by the Indonesia Stock Exchange (IDX). This indicates that the removal of the broker's code has a major impact on trading activities in these stocks that are the prima donna of foreign and domestic investors. This decline reflects the mechanism by which the loss of broker transparency reduces speculation or *herding behavior* .

On the contrary, a different pattern emerged in certain stocks, especially commodity-based or energy-based stocks such as MDKA and ADRO, as well as TOWR, which actually experienced a surge in liquidity, reflected in the value of liquidity after the policy which increased sharply compared to the previous period. This condition is likely driven by sectoral sentiment that occurred at the same time as the research period, so the sector's fundamental attractiveness remains able to attract liquidity despite the anonymization policy in place.

The decrease in liquidity in index-driving stocks indicates a reduction in herding and daily speculation behavior due to the closure of the broker's code, while the increase in liquidity in commodity stocks confirms the dominance of fundamental factors and stability in mid-sized stocks indicates a lack of influence of short-term speculation, so that overall after the implementation of the removal of broker IDs, market behavior becomes calmer and fundamental-based.

The findings of this study are in line with Asymmetric Information Theory, which states that a decrease in information transparency in financial markets can increase uncertainty and the risk of adverse selection. The loss of information regarding the identity of the broker causes market participants to miss out on important signals in assessing the quality of incoming orders, thus encouraging investors to be more cautious and reduce the intensity of transactions, which ultimately has an impact on decreasing market liquidity.

These results are also consistent with the findings of Duong et al., (2018) which show that the elimination of broker identities on the Australian Securities Exchange (ASX) lowers price efficiency and information content in order flow, thereby increasing information asymmetry and lowering market liquidity. In addition, Eom et al., (2007) found that the decline in pre-trade transparency on the Korea Stock Exchange (KSE) increased information asymmetry, widened bid-ask spreads, and decreased liquidity.

Furthermore, Madhavan, (2000) emphasized that market design and the level of transparency are important factors that affect market quality including liquidity and volatility. Therefore, the implementation of the IDX Broker ID anonymization policy has been theoretically and empirically proven to bring changes to the market information structure as reflected in the decline in the average liquidity of the shares of companies that are members of the LQ45 index.

CONCLUSION

Based on the results of the analysis obtained, it can be concluded that there is a significant change in volatility between the period before and after the policy of anonymizing broker IDs with an average decrease of -171.72%. This drastic decline indicates the creation of better market stability in the stocks of the LQ45 index, where price movements become more controlled and not volatile, This is in line with the theory of Market Microstructure that changes in information transparency directly affect the structure and stability of the market.

The results of this study show significant changes in the liquidity of the stock market after the implementation of the broker ID anonymization policy with an average decrease of -4.36%. This decline indicates a contraction in trading activity due to reduced information transparency after the annomization of id brokers carried out by the IDX which effectively reduces speculative behavior (*herding behavior*), especially in large-cap stocks. This phenomenon is also in line with the theory of market microstructure where the loss of broker identity increases information asymmetry and uncertainty, thus encouraging market participants to be more cautious in transactions which ultimately leads to a decrease in market liquidity.

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