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The Influence of USDT Dominance on Volatility and Stock Market Performance in Indonesia

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ABSTRACT

This study aims to analyze the influence of USDT (Tether) dominance on the volatility and performance of the stock market in Indonesia. USDT, as one of the largest stablecoins in the world, plays a significant role in the global crypto market and can impact various asset classes including stocks. This study uses time series data covering the period from 2018 to 2023, focusing on the Indonesian stock market index (IHSG) and USDT dominance in the crypto market. The methods used in this research include multiple regression analysis to examine the relationship between USDT dominance and IHSG movements, as well as Granger Causality tests to evaluate whether USDT dominance can predict changes in stock market volatility. The results show a significant relationship between increased USDT dominance and increased stock market volatility in Indonesia. Additionally, USDT dominance is found to have a predictive effect on the decline in stock market performance, especially in unstable market situations. These findings have important implications for investors and policymakers in Indonesia, given the increasing interconnection between the crypto market and traditional financial markets. This study recommends tighter monitoring of stablecoin movements like USDT and enhanced financial literacy among market participants to anticipate potential volatility impacts.

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1. INTRODUCTION

In this era, new investment forms have emerged, such as virtual currencies or cryptocurrencies [1]. The most well-known cryptocurrency is Bitcoin, but there are many other digital currencies, including USDT (Tether). USDT differs from other cryptocurrencies because its value is pegged to the US dollar. USDT is used as a substitute for dollars in the cryptocurrency market and as an intermediary currency before investors choose other cryptocurrencies. USDT is also frequently used as a means to secure the value of investor portfolios in the highly volatile cryptocurrency market [2].

USDT dominance indicates the proportion of USDT market capitalization

relative to the total cryptocurrency market capitalization. Changes in USDT dominance can provide indications about the overall cryptocurrency market sentiment. When USDT dominance is high, it may suggest that the market is in a "wait and see" phase and tends to be cautious. In this condition, investors prefer to hold USDT rather than invest in more volatile cryptocurrencies. This study aims to test whether, during a "wait and see" phase in the cryptocurrency market, cryptocurrency investors tend to switch to other investment instruments such as the stock market in Indonesia. By understanding the relationship between USDT dominance and Indonesian stock market movements, we can gain better insights into investor behavior and market dynamics under economic uncertainty.

USDT's role as a stablecoin pegged to the US dollar provides stability not found in most other cryptocurrencies. This makes it an attractive option for investors wanting to protect their portfolios from the high volatility often seen in the cryptocurrency market. Therefore, when USDT dominance increases, it may reflect cautious sentiment among cryptocurrency investors who prefer to hold their value in USDT rather than investing in riskier digital assets. According to the Chainalysis Global Crypto Adoption Index 2023, Indonesia ranks 7th among the largest crypto markets in the world, indicating a large crypto user base in Indonesia. Assuming that fears in the crypto market and increased USDT dominance drive investors to switch to the stock market, we might suspect an increase in stock demand in this market. Increased demand for stocks usually drives stock prices up, which in turn will lead to an increase in the IHSG.

In this research, we will analyze weekly closing price data and weekly trading volume of companies listed in the IHSG index on the Indonesia Stock Exchange. Using paired t-tests and linear regression analysis, we will assess whether there is a relationship between USDT dominance and the movements of the Composite Stock Price Index (IHSG). The results of this study are expected to provide new insights into how changes in USDT dominance can affect the Indonesian stock market and help investors make better investment decisions in a dynamic and uncertain market.

2. LITERATURE REVIEW

USDT, known as Tether, is a cryptocurrency classified as a stablecoin. A stablecoin is a type of cryptocurrency designed to maintain a stable value relative to a certain asset, typically a fiat currency like the US dollar (USD). Tether was first introduced in 2014 by [3], with the goal of providing a stable alternative to other cryptocurrencies such as Bitcoin and Ethereum, which tend to experience significant price fluctuations. According to the [3], each USDT unit should be backed by US dollar reserves at a 1:1 ratio, meaning that each USDT issued must have an equivalent amount of US dollar reserves in a bank account controlled by Tether Limited. This provides users with confidence that the value of USDT will remain stable and equivalent to one US dollar [3]. USDT is issued on various blockchains, including Bitcoin (via the Omni Layer protocol), Ethereum (as an ERC-20 token), Tron, and others. The mechanism of USDT is quite simple: users can purchase USDT with US dollars or other fiat currencies, or with other cryptocurrencies on various crypto exchanges. USDT can then be used as a medium of exchange or value storage on various crypto platforms, including exchanges, wallets, and decentralized financial (DeFi) applications.

USDT is widely used in the crypto ecosystem due to its stability. Many crypto investors and traders use USDT to avoid the value fluctuations typically experienced by other cryptocurrencies. Additionally, USDT is often used as a medium of transfer between exchanges due to its high liquidity and low cost. Despite its widespread use and perceived stability, Tether Limited has faced some controversy, particularly regarding the transparency of its reserves. On several occasions, Tether Limited has been accused of not having sufficient dollar reserves to back all circulating USDT. This has raised concerns

among investors and regulators that USDT may not be fully backed by real assets, which could lead to a collapse in the value of USDT in the event of a large-scale withdrawal (bank run) [4].

Research by [4] also suggests that USDT may have been used for Bitcoin market manipulation, where the creation and distribution of USDT not backed by real reserves contributed to the rise in Bitcoin prices during certain periods. This study raises further questions about the transparency and trust in USDT and its impact on the overall stability of the crypto market.

2.1 Trading Volume Activity

Trading volume activity refers to the total number of shares or contracts traded over a specific period, usually measured daily, weekly, or monthly. Trading volume is an important indicator in technical analysis as it reflects market liquidity, investor interest, and transaction intensity. According to [5], trading volume shows how actively a stock is traded, which can indicate changes in market sentiment or price direction predictions.

Volume is used by analysts to confirm market trends or potential changes in trend direction. For example, if a stock price rises along with increasing trading volume, the upward trend is considered strong and sustainable [6]. Conversely, if the price rises but volume decreases, it might signal that the trend is weakening and could reverse. Additionally, high trading volume indicates that the market for a particular asset is very liquid, allowing investors to buy or sell assets easily without significantly affecting the price [7]. Low volume can indicate a lack of investor interest and may lead to higher price volatility due to large orders causing more significant price movements.

Several studies have shown a relationship between trading volume and market volatility. According to [8], there is a positive relationship between trading volume and price volatility. When trading volume increases, price volatility usually increases as well, reflecting higher market uncertainty. This often occurs in volatile markets or during major news announcements affecting investor sentiment. Trading volume not only reflects liquidity but can also directly affect stock prices. Research by [9] shows that high trading volume can amplify price movements, as large demand can drive prices higher or lower.

2.2 Modern Portfolio Theory (MPT)

In Modern Portfolio Theory (MPT) is an analytical framework for constructing optimal investment portfolios, aiming to maximize returns for a given level of risk or, conversely, minimize risk for a desired level of return. This theory was introduced by Harry Markowitz in 1952 in his article "Portfolio Selection," and further developed in his book "Portfolio Selection: Efficient Diversification of Investments" published in 1959 [10]. MPT revolutionized how investors and portfolio managers think about diversification and risk management. MPT is based on several fundamental assumptions and principles, including:

One of the main principles of MPT is diversification, which is a strategy to reduce risk by spreading investments across various assets that are not perfectly correlated. Markowitz demonstrated that by combining assets with low correlation in a portfolio, the overall portfolio risk can be reduced without sacrificing expected returns [11]. An efficient portfolio is one that provides the highest return for a given level of risk, or the lowest risk for a given level of return. The curve connecting these efficient portfolios is known as the "efficient frontier." Any portfolio below this curve is considered inefficient because it has higher risk or lower returns than other available portfolios [12].

MPT measures risk using the variability of returns, often represented by standard deviation. In MPT, risk is divided into two components: systematic

risk (market risk) and unsystematic risk (specific risk). Systematic risk affects the entire market or economy, while unsystematic risk is unique to individual assets. MPT focuses on managing systematic risk through diversification (Miller, 2011). Investors are assumed to be rational and risk-averse, meaning they prefer less risk for the same level of return and seek higher returns for taking on more risk. This rational behavior is used to construct efficient portfolios that align with the investor's risk tolerance [13].

MPT has become a foundational theory in finance and investing. Its concepts are used to construct diversified portfolios that manage risk while aiming for optimal returns. However, MPT has its limitations, such as assuming normally distributed returns and perfect market conditions, which may not always reflect real market situations [10]. Despite these limitations, MPT remains a widely used and influential framework in investment management and financial planning.

3. METHODS

3.1 Data Collection

The data collection in this study uses time series data from January 2018 to December 2023. The data sources include:

1. IHSG Index Data: Obtained from the Indonesia Stock Exchange (IDX) website or other reliable financial data providers. The IHSG Index data includes weekly closing prices and trading volumes of companies listed on the IDX.
2. USDT Dominance Data: Obtained from cryptocurrency market data platforms such as CoinMarketCap or CoinGecko. USDT dominance data shows the percentage of USDT market capitalization relative to the total cryptocurrency market capitalization.

3.2 Data Analysis

The data analysis in this study involves several steps:

1. Descriptive Analysis: Provides an overview of the data characteristics, including average, median, standard deviation, and other statistical measures.
2. Multiple Regression Analysis: Used to examine the relationship between USDT dominance and the IHSG Index. The regression model is formulated to test whether changes in USDT dominance significantly affect IHSG movements.
3. Granger Causality Test: This test assesses whether USDT dominance can predict changes in stock market volatility or IHSG movements. Granger Causality helps to determine if there is a directional influence between USDT dominance and stock market performance.

4. RESULTS AND DISCUSSION

4.1 Analysis of USDT Dominance Impact on IHSG

The analysis results indicate a significant impact of USDT dominance on the Indonesian stock market. In periods of high USDT dominance, there is a tendency for increased stock market volatility. The increased market volatility is associated with increased trading activity and price fluctuations in the IHSG Index. The results also suggest that USDT dominance can serve as a predictor of stock market performance. High USDT dominance is associated with a decline in stock market performance, especially during periods of high market uncertainty or instability. This implies that investors may be using USDT as a safe haven during times of market stress, leading to a shift of investments away from stocks and into USDT.

4.2 Multiple Regression Analysis

The results of the multiple regression analysis indicate that USDT dominance has a significant positive coefficient with respect to IHSG volatility ($p < 0.05$). This suggests that an increase in USDT dominance is associated with an

increase in stock market volatility in Indonesia. Additionally, USDT dominance shows a significant negative coefficient with respect to IHSG performance ($p < 0.05$), meaning that an increase in USDT dominance tends to be followed by a decline in IHSG performance.

Table 1. Multiple Regression Analysis Result

Independent Variable Coefficient	Coefficient	t-Statistic	Probability (p-value)	Significance
USDT Dominance	0.256	3.48	0.0012	Significant
Control Variable (Inflation)	0.145	2.25	0.024	Significant
Control Variable (Interest Rate)	-0.187	-2.75	0.006	Significant
Intercept	5.678	12.34	0.000	Significant

5. CONCLUSION

5.1 Dependent Variable: IHSG Volatility

The table above shows that USDT dominance has a coefficient of 0.256 with a p-value of 0.0012, indicating that its impact on IHSG volatility is statistically significant at the 5% significance level. This suggests that an increase in USDT dominance in the cryptocurrency market tends to increase volatility in the Indonesian stock market. Control variables such as inflation and interest rates also have significant effects on IHSG volatility. Inflation, with a coefficient of 0.145, and interest rates, with a coefficient of -0.187, indicate that inflation tends to increase volatility.

5.2 Impact on Market Volatility

The results show a positive relationship between USDT dominance and stock market volatility. When USDT dominance increases, it tends to be accompanied by higher market volatility. This is consistent with the notion that investors may shift their investments to USDT during uncertain market conditions, leading to increased fluctuations in the stock market.

5.3 Predictive Power of USDT Dominance

The Granger Causality test results indicate that USDT dominance has predictive power over stock market performance and volatility. The analysis shows that changes in USDT dominance can help predict future movements in the IHSG Index and overall stock market performance. This finding highlights the interconnectedness between the cryptocurrency market and traditional financial markets, emphasizing the importance of monitoring stablecoin movements like USDT.

5.4 Granger Causality Test

USDT dominance can significantly predict changes in IHSG volatility ($p < 0.05$). However, strong causality is found only from USDT dominance to IHSG volatility, not the other way around. This indicates that USDT dominance acts as a leading indicator for changes in the stock market volatility in Indonesia. Conversely, IHSG performance does not significantly affect USDT dominance, suggesting that movements in the Indonesian stock market do not directly impact USDT dominance in the cryptocurrency market.

Table 2. Bootstrapping Test

Hypothesis	F-Statistic	Probability (P-Value)	Conclusion
USDT Dominance does not cause IHSG	4.52	0.037	Rejected
IHSG Volatility does not cause USDT	1.24	0.287	Accepted
USDT Dominance does not cause IHSG	5.67	0.015	Rejected
IHSG Performance does not cause USDT	0.89	0.412	Accepted

5.5 Predictive Power of USDT Dominance

The table above shows that the hypothesis "USDT Dominance does not cause IHSG Volatility" is rejected (p-value = 0.037), meaning that USDT dominance significantly causes volatility in the Indonesian stock market. Conversely, the hypothesis "IHSG Volatility does not cause USDT Dominance" cannot be rejected (p-value = 0.287), indicating that IHSG volatility does not affect USDT dominance. Similar results are observed for IHSG performance, where USDT dominance causes changes in IHSG performance (p-value = 0.015), but IHSG performance does not cause changes in USDT dominance (p-value = 0.412). This suggests that USDT dominance is a significant external factor influencing Indonesian stock market performance, but the reverse is not true. The impact of movements in the cryptocurrency market on traditional financial markets and may need to implement risk mitigation measures. Additionally, closer oversight of stablecoins like USDT and a monetary policy responsive to fluctuations in the cryptocurrency market may be necessary to maintain stock market stability.

The regression analysis results show that USDT dominance has a positive and significant impact on IHSG volatility. This means that an increase in USDT dominance in the cryptocurrency market is likely to be followed by increased volatility in the Indonesian stock market. This indicates that movements in the cryptocurrency market, particularly related to the USDT stablecoin, have a direct impact on the stability of the stock market in Indonesia. In addition to volatility, USDT dominance also has a significant negative impact on IHSG performance. This implies that an increase in USDT dominance is likely to be followed by a decline in IHSG performance. This may be due to a shift in capital flows from the stock market to the cryptocurrency market, or an increased perception of risk among stock investors due to stablecoin dominance.

These findings underscore the importance of monitoring USDT dominance as an indicator of volatility in the Indonesian stock market. Investors and policymakers need to consider The Granger Causality test reveals that USDT dominance significantly causes changes in both volatility and performance of the IHSG, but not the other way around.

This underscores that USDT dominance can serve as a leading indicator for predicting conditions in the Indonesian stock market, particularly regarding volatility and performance. Given the impact of USDT dominance on the stock market, investors and policymakers need to pay attention to developments in the cryptocurrency market as part of their risk analysis. Investors in the Indonesian stock market should be cautious of increased USDT dominance, as it may signal heightened volatility and potential declines in stock market performance.

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