Determinants Of Stock Liquidity During COVID-19: Evidence From Indonesian Listed Firms

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Abstract.

The COVID-19 pandemic has heightened awareness among Indonesian citizens regarding the significance of investing. The increased market capitalization of the IHSG has contributed to enhanced stock liquidity during this period. Prospective investors assess both internal and external factors of companies to make informed investment decisions, aligning their capital allocation with the perceived potential of the target firms. The objective of this research is to empirically analyze the determinants of stock liquidity, including firm size, profitability, leverage, firm growth, inflation, and dividend policy, focusing on non-financial companies listed in Indonesia during the COVID-19 period. The empirical results indicate a negative and significant relationship between stock liquidity and company size, profitability, leverage, growth, inflation, and dividend policy among non-financial firms listed on the IDX30 for the period February to July 2023.

Keywords: *Stock Liquidity, Dividend Policy, Market-To-Book, Leverage, and Inflation.*

I. INTRODUCTION

The COVID-19 pandemic precipitated a substantial economic downturn in Indonesia, characterized by a 2.23% contraction in GDP and a 1.79% rise in poverty rate in 2020 compared to the preceding year [1]. Chikwira & Mohammed (2023) posited a positive correlation between stock liquidity and economic growth, suggesting that listed companies leverage the market to access capital for expansion, thereby stimulating economic activity through increased production, service provision, and other related endeavors [2]. Concurrently, a surge in investor interest emerged, as evidenced by the increase in Single Investor Identification (SID) numbers to 10,000,628 by November 3, 2022 [3]. The surge in SID reflects a growing interest among Indonesian citizens in the stock market, anticipated to drive an increase in stock trading volume [4]. Vice President of the Republic of Indonesia, Mr. K.H. Ma'ruf Amin stated that The Composite Stock Price Index (IHSG) experienced a 3% growth, supported by an average daily transaction of IDR 14 trillion and a 4.09% increase in market capitalization reflecting healthier market conditions and greater investor activity. This positive development had a substantial impact on the Indonesian economy, contributing to the country's recovery from the COVID-19 pandemic [5]. Smales (2024) observed that increased stock trading activity during the COVID-19 pandemic was driven by the potential for substantial returns that outweighed the additional costs associated with trading [6]. Notably, Mardhiah & Yunita (2021) found that the initial announcement of COVID-19 cases in Indonesia did not precipitate a substantial alteration in stock transaction volume [7].

The lack of significant differences suggests that investors are relatively inactive in the market, engaging in minimal buying or selling activities, thereby having a negligible impact on overall stock liquidity [8]. As of July 29, 2022, the IDX30 index exhibited a year-to-date appreciation of 4.65% indicating a significant increase in the share prices of companies listed on the index [9]. Recognized as the most liquid stock index on the Indonesia Stock Exchange, the IDX30 also demonstrates a high degree of market efficiency, such that investors are unable to consistently generate abnormal returns over extended periods [10].Taher & Al-Shboul (2022) found a negative effect of dividend policy on stock liquidity [11], while Herlambang et al. (2017) observed a positive effect of stock liquidity on dividend policy [12], presenting contrasting views on their relationship. This divergence can be attributed to the distinct market contexts in which the studies were conducted: the United States and Indonesia, respectively. Factors such as ineffective shareholder monitoring, weak stock trading regulations, and insufficient corporate governance, as evidenced

by the countries' rankings in the Best Performing Global Market index [13], may explain these contrasting results. However, the recent convergence in performance between the Indonesian and US capital markets, as indicated by Yardeni Research (2023), necessitates further investigation to determine the persistence of these differences [14].

The current study aims to address the research gap identified in Taher & Al-Shboul (2022) by examining the impact of the COVID-19 pandemic, a global financial crisis, on the relationship between dividend policy and stock liquidity. Furthermore, this research refines the work of Sawitri & Sulistyowati (2018) by exploring the bidirectional influence between these variables within the context of Indonesian listed companies [15]. Given the limitations of previous research, particularly the restricted timeframes employed in studies on stock liquidity during the COVID-19 pandemic [16], this study extends the analysis to encompass the period from 2020 to 2022.This study employs seven hypotheses to examine the impact of both internal and external company factors on stock liquidity during the COVID-19 pandemic in Indonesia. The hypotheses and the research model are as follows:

H1: Firm size, profitability, leverage, firm growth, inflation, and dividend policy simultaneously influence the stock liquidity of non-financial companies listed on the IDX30.
H2: Firm Size has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.
H3: Profitability has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.
H4: Leverage has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.
H5: Firm Growth has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.
H6: Inflation has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.
H7: Dividend Policy has a significant effect on Stock Liquidity of non-financial companies listed on the IDX30.

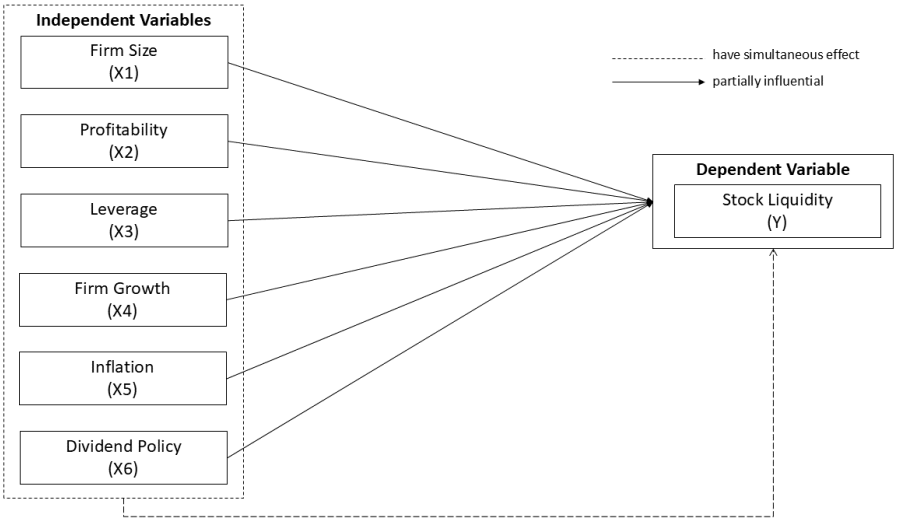

Fig 1. Research Model

II. METHODS

The target population for this investigation comprised non-financial companies listed on the IDX30 index during the period February-July 2023. A purposive sampling technique was employed to select a sample size of 16 companies. The inclusion criteria encompassed: (1) non-financial companies actively listed on the IDX30 between February and July 2023, (2) availability of published annual financial statements, and (3) consistent dividend distribution throughout the 2020-2022 period. Data collection for this study relied on documentary analysis, with the official website of the Indonesia Stock Exchange (IDX) serving as the primary data source. A panel data methodology is employed in this study, utilizing quarterly data to capture the dynamic relationships among the variables over time. This approach allows for a more comprehensive analysis by incorporating both cross-sectional and time-series dimensions. The statistical analysis and calculations were conducted using Stata16.

The variables used in this study are stated on the table below:

Table 1. Research Variable

Variable		Symbol	Measurement
Dependent Variable	Stock Liquidity	LS	$liq_{i,t} = \frac{1}{Dt}\sum_{t=1}^{Dt}\frac{V_{it}}{S_{it}}$
Independent Variable	Firm Size	UP	$Firm\ size = Ln(Total\ Asset)$
	Profitability	PROFP	$Return\ on\ asset = \frac{Net\ profit}{Total\ Asset}$
	Leverage	LEV	$Leverage = \frac{Total\ Debt}{Total\ Asset}$
	Firm Growth	PERTP	$Market\ to\ book\ value = \frac{Market\ capitalization}{Total\ book\ value}$
	Dividend Policy	KD	$Dividend\ payout\ ratio = \frac{Total\ Dividend}{Net\ Profit}$

Inflation data, sourced from the official website of Bank Indonesia, was incorporated into the analysis as a key macroeconomic factor influencing stock liquidity and investor behavior. The inflation rate represents the percentage change in the price level of a good or service between the current period and a previous period [17]. Alamsyahbana (2022, p. 34) classifies inflation conditions according to the inflation rate as follows: (i) low inflation when the rate is below 10%, (ii) moderate inflation when the rate ranges from 10% to 30%, (iii) severe inflation when the rate falls between 30% and 100%, and (iv) hyperinflation when the rate exceeds 100% [18]. The list of quarterly inflation in Indonesia in 2020-2022 is as follows:

Table 2. Inflation Data

Inflation (in decimals)

Year/Quarter	**Q1**	**Q2**	**Q3**	**Q4**
2020	0.03	0.02	0.01	0.02
2021	0.01	0.01	0.02	0.02
2022	0.03	0.04	0.06	0.05

III. RESULT AND DISCUSSION

Validity and Reliability Test

Kusumaningtyas et al. (2022) posit that traditional diagnostic tests, such as those for heteroscedasticity and multicollinearity, remain essential in panel data analysis despite the potential redundancy of classical assumption checks indicated by R-squared, F-statistic, and Durbin-Watson values. Diagnostic tests indicate the absence of heteroscedasticity and autocorrelation in the data [19]. Consequently, the Feasible Generalized Least Squares (FGLS) regression method was employed in Stata16 to estimate the model parameters. Multicollinearity diagnostics were conducted on the variables firm size, profitability, leverage, firm growth, inflation, and dividend policy. The results indicate the absence of multicollinearity among these variables.

Table 2. Multicollinearity Result

Variable	**VIF**	***Tolerance***	**Intepretation**
Firm Size (X1)	1,06	0,9431	No Multicollinearity
Profitability (X2)	1,76	0,5692	No Multicollinearity
Leverage (X3)	1,47	0,6804	No Multicollinearity
Firm Growth (X4)	1,76	0,5673	No Multicollinearity
Inflation (X5)	1,12	0,8960	No Multicollinearity
Dividend Policy (X6)	1,21	0,8281	No Multicollinearity
MEAN	1,40		No Multicollinearity

Data Panel Model

Model selection for panel data analysis involves the Chow, Hausman, and Lagrange Multiplier tests to determine the most appropriate model (fixed, random, or common effects) [19]. The selection of an appropriate panel data model requires the application of diagnostic tests, such as the Chow, Hausman, and Lagrange Multiplier tests, to ensure the validity of the research findings. These tests assist in determining

whether a fixed effects, random effects, or pooled effects model is most suitable for the given dataset. A fixed effects model was selected for this study calculated with model below:

LS = 0,0067531 – 0,0000754 UP – 0,0009451 PROFP – 0,001495 LEV- 0,0000404 PERTP – 00062249 INF – 0,0000234 KD + e

Table 3. Data Panel Result

α (0,05)

Test	Probability	Intepretation
Chow Test	0.00000	Fixed Effect Model
Hausman test	0.00000	Fixed Effect Model

Coefficient of Determination (R^2)

The adjusted coefficient of determination (R^2) of 0.6548 indicates that 65% of the variation in the dependent variable is explained by the independent variables in the model. The remaining 35% of the variance is attributed to other factors. This R^2 value, falling within the range of 0.33 to 0.67, suggests a moderate relationship between the variables.

F-Test

The findings support Hypothesis 1, indicating a significant simultaneous influence of firm size, profitability, leverage, growth, inflation, and dividend policy on the stock liquidity of non-financial IDX30 companies during the February-July 2023 period ($p < 0.05$).

T-Test

Table 4. T-Test Result

α (0,05)

Variable	Coeff	Std. Error	Probs.
Firm Size (X1)	-0.0000754	0.0000117	0.000
Profitability (X2)	-0.0009451	0.0003624	0.010
Leverage (X3)	-0.001495	0.0002312	0.000
Firm Growth (X4)	-0.0000404	0.00000751	0.000
Inflation (X5)	-0.0062249	0.0011986	0.000
Dividend Policy (X6)	-0.0000234	0.00000169	0.000

Firm size exhibited a significantly negative relationship with stock liquidity ($\beta = -0.0000754$, $p < 0.05$), supporting Hypothesis 2. This finding aligns with Hussain et al. (2021) [20] and Cakici & Zaremba (2021) [21], who reported similar negative associations. The negative coefficient suggests that factors beyond firm size contribute to lower liquidity for larger companies, contradicting the findings of Salim and Dillak (2018) [22]. The discrepancy might be attributed to the differing research periods, particularly the onset of the COVID-19 pandemic.Profitability exhibited a significant negative relationship with stock liquidity ($\beta = -0.0009451$, $p < 0.05$), supporting Hypothesis 3. This finding contradicts previous research by Ritonga & Wardhani (2021) [23] and Mughni et al. (2021) [24] which reported positive associations. The negative relationship might be attributed to investor behavior during the pandemic, as suggested by Anggiani et al. (2021), where a focus on long-term value led to holding onto high-quality stocks despite declining prices [25].Leverage significantly and negatively influenced stock liquidity ($\beta = -0.001495$, $p < 0.05$), supporting Hypothesis 4. This finding aligns with Syukran & Faozan (2020) [26] and Ritonga & Wardani (2021) [23], suggesting that higher leverage is associated with lower liquidity. The COVID-19 pandemic likely exacerbated this relationship by forcing companies to rely more on debt to maintain operations. These results contradict Mughni et al. (2021), who reported a positive association between leverage and liquidity in a context of favorable investment conditions [24].

Firm growth negatively and significantly influenced stock liquidity ($\beta = -0.0000404$, $p < 0.05$), supporting Hypothesis 5. This finding aligns with Ellahi et al. (2021) [27] and Taher & Al-Shboul (2022) [11], suggesting that high-growth companies may experience lower liquidity, potentially due to investment prioritization or risk aversion during uncertain economic conditions. The results contradict Khan et al. (2019), who reported a positive but insignificant relationship between market-to-book value and stock liquidity [28].nflation exerted a significant negative influence on stock liquidity ($\beta = -0.0000234$, $p < 0.05$), supporting Hypothesis 6. This result is consistent with the findings of Abdulkadir et al. (2022), who demonstrated a negative relationship between inflation and stock liquidity [29]. The impact of inflation

includes increased production costs and reduced purchasing power, which further explains the decrease in liquidity [30]. UOB (2024) found that 32% of Southeast Asian companies experienced higher costs due to inflation [31], influencing dividend decisions as mentioned by Pratama & Ginting (2024) [32].Dividend policy significantly and negatively influenced stock liquidity (β = -0.0000234, $p < 0.05$), supporting to Hypothesis 7. This finding supports the hypothesis and aligns with Taher & Al-Shboul (2022) findings that higher dividend policies increase demand but reduce trading activity as investors hold onto their shares [11]. However, it contradicts Ebrahim (2023) that found positive relationship where higher dividends are associated with greater market liquidity.

IV. CONCLUSION

The dynamics of stock liquidity, firm size, profitability, leverage, and growth have exhibited fluctuating trends during the 2020-2022 period, highlighting the interplay between macroeconomic conditions and stock market performance. A simultaneous analysis revealed that firm size, profitability, leverage, growth, inflation, and dividend policy significantly impacted stock liquidity for non-financial IDX30 companies during February-July 2023. Furthermore, a partial analysis indicated that these variables exerted a significant negative influence on stock liquidity.

This study's broad scope, encompassing multiple industries, limits its ability to uncover industry-specific patterns affecting stock liquidity. Future research should place greater emphasis on sector-specific analyses to uncover distinct patterns influencing stock liquidity. By narrowing the focus to particular industries, researchers can gain a deeper understanding of the unique factors that drive liquidity in different market segments. Additionally, external socio-political events, such as the #boycottforpalestine movement, should be considered as they may significantly impact stock market behavior and investor sentiment. Incorporating such broader contextual elements into future studies will provide a more comprehensive view of the forces shaping stock liquidity across sectors.

V. ACKNOWLEDGMENTS

Based on the coefficient of determination (R^2) of 65%, the independent variables—company size, profitability, leverage, growth, inflation, and dividend policy—moderately influence stock liquidity. To improve stock liquidity, companies should reevaluate their growth strategies. Although rapid growth is often seen as positive, uncontrolled expansion can have long-term negative effects, reducing liquidity. Additionally, optimizing profitability by identifying and prioritizing high-performing products can enhance both consumer demand and financial performance. Inflation also poses a significant risk, as rising costs for raw materials and declining consumer purchasing power can hinder production and sales. Companies should develop strategies to forecast inflation trends and mitigate its impact on operations. Managing these factors effectively can lead to more stable stock liquidity and overall financial health. By addressing growth, profitability, and inflation risks, firms can maintain a balanced approach to liquidity.

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