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The Consumer Confidence Index and the Promp Manufacturing Index on IDX Basic Material

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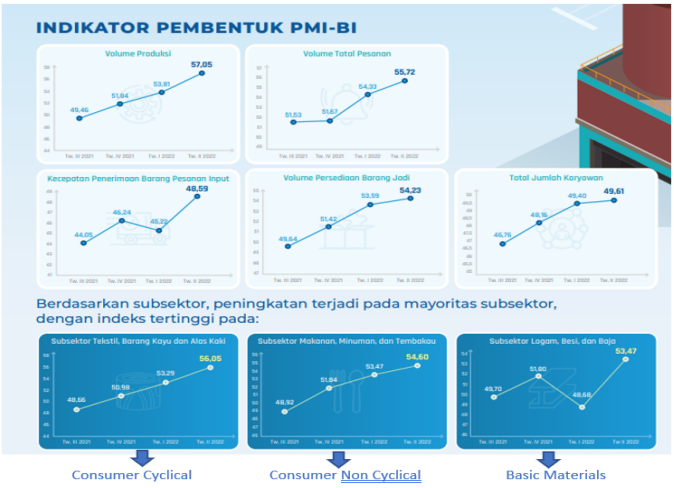
Abstract: This study aims to analyze the effect of Tracking Error and Total Volume Activity on Firm Size, with the Consumer Confidence Index (CCI) and Prompt Manufacturing Index (PMI) as moderating variables. This study focuses on issuers in the basic material sector listed on the Indonesia Stock Exchange (IDX) during the 2020-2022 period. Tracking Error measures the level of mismatch between portfolio performance and the expected benchmark, while Total Volume Activity indicates the number of stock transactions that can reflect market liquidity. The study results indicate that tracking error and total volume activity significantly affect firm size as measured by the expected return indicator and Tobins Q. In addition, the interaction with CCI and PMI strengthens the influence of independent variables on Firm Size. This research provides essential contributions for investors, asset managers, and financial market stakeholders in understanding the dynamics between market liquidity, company size, and macroeconomic indicators. The findings also provide practical implications for investment management strategies in the Basic Material Sector in Indonesia.

Keyword: Tracking Error, Consumer Confidence Index

INTRODUCTION

The basic material sector constitutes a fundamental pillar of Indonesia's national economy, encompassing industries that supply essential raw materials to downstream sectors such as manufacturing, construction, and infrastructure development. As a core contributor to industrial production, the performance of companies within this sector serves as a crucial barometer of economic vitality and industrial sustainability. Given its strategic importance, the stock performance of listed firms in this sector often becomes a focal point for investors, analysts, and policymakers alike. Here is the data on the increase in the basic material sector in Indonesia:



Sources: Indonesian Stock Exchange

Figure1 1. Basic Material For 2020-2022

In contemporary capital markets, a variety of interrelated financial, technical, and macroeconomic variables influence investor behavior and corporate valuation. One of the technical indicators commonly utilized to assess portfolio performance is the Tracking Error (TE), which represents the deviation between a portfolio's return and its benchmark index. Overlooked in the many studies of this ubject are the effects of financing costs incurred in the creation of leverage, and the costs and benefits introduced by the employment of professional management.Collectively, the trend, volatility, financing and management components of LETF return, give rise to tracking error.(Bansal & Marshall, 2015)

A higher tracking error implies increased portfolio management risk, potentially influencing investor confidence and firm valuation. This deviation may arise from active investment strategies that diverge from market indices in pursuit of superior returns (Martijn Cremers et al., 2006).

Total Volume Activity (TVA), which captures the intensity of trading in a company's shares, is a proxy for market liquidity. Liquidity, in this context, is a crucial determinant of investor sentiment, as stocks with high trading volume are generally considered easier to buy and sell, thus enhancing their appeal. Firms with consistently high trading volumes are perceived as having strong market interest, which can positively influence their market value and firm size over time (Blume, 1994)

However, the direct relationship between technical indicators such as TE and TVA and firm value does not exist in a vacuum. Macroeconomic sentiment variables, especially the Consumer Confidence Index (CCI) and the Prompt Manufacturing Index (PMI), are increasingly being recognized as influential moderating variables. CCI serves as a reflection of consumer optimism or pessimism regarding the current and future state of the economy. Its fluctuations often correlate with consumer spending, investment levels, and overall economic momentum. In contrast, the PMI measures the health of the manufacturing sector, providing critical insights into supply chain activities, production trends, and purchasing volumes—elements that are highly relevant to the basic material industry. One key element to active portfolio management concerns the performance persistence, which implies the ability of managers to systematically beat their benchmarks over short or longer periods of time. The literature has revealed that some mutual-fund managers (one-third of them according to Yannick Daniel from Societe Generale) possess some kind of stock picking or market timing skills at achieving above market returns in a persistent way.

Behavioral finance literature suggests that investor decisions are often influenced by sentiment and perception rather than purely rational assessments. For instance, investor

sentiment, as captured through indices like the CCI and PMI, has been found to influence stock returns, especially for smaller firms where information asymmetry tends to be more pronounced (Lemmon & Portniaguina, 2006). Conversely, other empirical studies (Tabassum & Nayak, 2021) argue that such sentiment variables may have limited or no significant impact on larger firms with more transparent financial disclosures.

This study is designed to bridge these theoretical and empirical gaps by examining the effect of Tracking Error and Total Volume Activity on firm size, while simultaneously investigating the moderating roles of CCI and PMI. The research focuses on publicly listed companies in the basic material sector on the Indonesia Stock Exchange (IDX) over the period 2020–2022—a time marked by substantial market volatility due to the COVID-19 pandemic and subsequent economic recovery.

The key contribution of this study lies in its dual-layered analytical approach. Not only does it assess the direct effects of technical trading metrics on firm valuation, but it also explores how broader economic sentiments can amplify or mitigate these effects. By integrating micro-level technical analysis with macro-level sentiment indicators, this research aims to provide a more comprehensive understanding of the valuation dynamics within a pivotal economic sector.

Ultimately, the findings from this research are expected to offer practical implications for investors, fund managers, policymakers, and financial analysts. These stakeholders may benefit from a nuanced understanding of how technical indicators interact with macroeconomic sentiment to influence firm size, thereby enabling the development of more robust, sentiment-aware investment strategies tailored to Indonesia's basic material sector.

METHOD

Research Design and Approach

This study adopts a quantitative research design, which is appropriate for analyzing the numerical relationships among variables using statistical. Quantitative methods are particularly suitable for validating hypotheses, identifying patterns, and measuring the strength of relationships between constructs. As defined by (Quinlan et al., 2008), quantitative research involves systematic data collection, statistical analysis, and objective interpretation based on measurable data.

The analytical technique employed in this study is Structural Equation Modeling using the Partial Least Squares (SEM-PLS) approach. SEM-PLS is a variance-based statistical technique that allows for the simultaneous assessment of both measurement models (relationships between latent variables and indicators) and structural models (relationships between latent variables). This approach is especially useful when the research involves complex models with multiple constructs, mediating or moderating variables, and non-normally distributed data.

Data Sources and Sample Selection

The study utilizes secondary data, which were sourced from publicly available company financial statements and index publications. The financial data include variables such as stock price, outstanding shares, return on equity, stock returns, net income, total assets, total debt, total equity, market capitalization, market-to-book ratio, and Tobin's Q. In addition, macroeconomic indices such as the IHSG (Jakarta Composite Index), government bond yields, CCI, and PMI were included to capture external economic sentiment.

The population of the study comprises all issuers listed under the IDX Industrial Classification (IDX-IC) in the Basic Material Sector, which is one of the primary sectors represented in the 2022 Prompt Manufacturing Index. The sample selection technique used is purposive sampling, based on specific inclusion criteria such as data availability, consistent

reporting over the 2020–2022 period, and active trading status. Following these criteria, a total of 25 companies were selected for detailed analysis.

Operational Definitions and Variables

Table 1. Operational Research Variables

Variable	Indicator	Formula
1. Technical Factors	Tracking Error (X1)	$\frac{(\text{Return Deviation} - \text{Average Return Deviation})x\ 100}{\textit{Average Return Deviation}}$
	Total Volume Activity (X2)	$\text{TVA} = \frac{\text{Total Shares Traded}}{\text{Total Shares Outstanding}}\ \text{x}\ 100$
2.Investor Sentiment	*Consumer Confidence Index* (Z1)	$Consumer\ Confidence\ Indeks = (\text{Balance Score of Consumer Index} - \text{Net Balance}) + 100$
	Prompt Manufacturing Index(Z2)	Prompt Manufacturing Index = (Balance Score of Manufacturing Index – Net Balance) + 50
3.Firm Value	*Return*Stock (Y1)	$\frac{Close\ Price\ it\ -\ \text{Close Price it} - 1}{\text{Close Price it} - 1}$
	Tobin's Q (Y2)	$= \frac{\text{Total Liabilities} + (\text{Total Shares Outstanding x Closing Price})}{Total\ Assets}$

Hypothesis

1. H1: Technical Factors (Tracking error and Volume Activity) suspected to have a direct influence on Firm Value
2. H2: Investor Sentiment suspected to moderate the influence of technical factors on firm value

Research Model

The conceptual framework of this study is presented in the following model:

X: Technical factors (Tracking Error, Total Volume Activity)
Y: Firm Value (Return, Tobin's Q)
Z: Moderating Variables (CCI and PMI)

The model posits both direct relationships (X → Y) and moderated relationships (X * Z → Y), tested using SEM-PLS software tools.

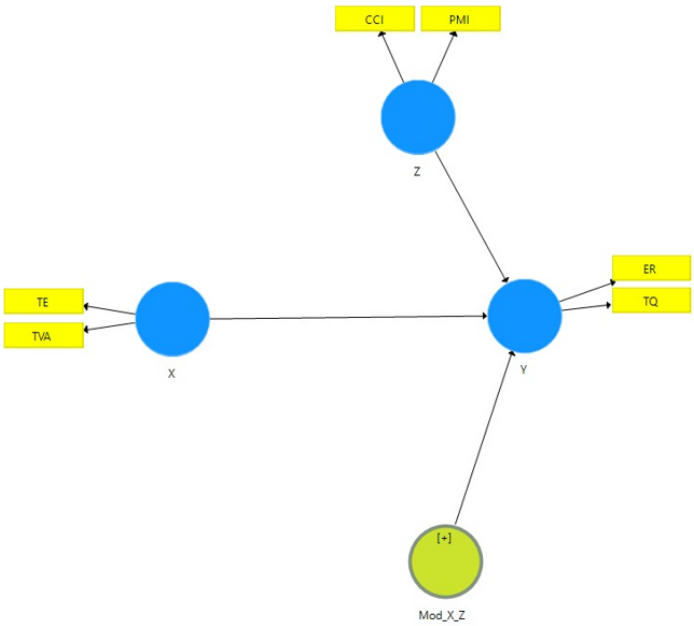
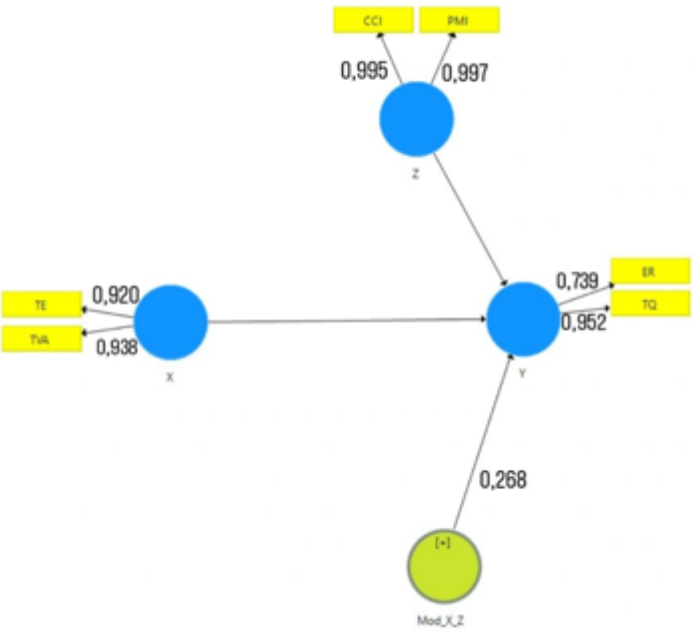


Figure 2. Research Model

RESULT AND DISCUSSION

Convergent Validity

The picture shows the results of the outer loading for all proxies in this model, which are declared valid.



Source: Smart PLS, 2023.

Figure 3. Outer Model

Table 1. Outer Loading Value

	Mod_X_Z	X	Y	Z
CCI				0.995
ER			0.739	
PMI				0.997

	Mod_X_Z	X	Y	Z
TE		**0.920**		
TQ			**0.952**	
TVA		**0.938**		
X * Z	**0.268**			

Source: Data Processing Results, 2023.

The outer loading value of all indicators met the criteria of being above 0.7, so the results obtained were significant.

Table 2. Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
X2	**0.842**	**0.927**	**0.863**
Y	**0.920**	**0.945**	**0.814**
Z1	**0.992**	**0.996**	**0.992**

Source: Data Processing Results, 2023.

Based on Table 2 above, it can be concluded that all variables have shown data accuracy and Reliability, where the Cronbach Alpha, Composite Reliability, and Average Variance Extracted (AVE) values are above 0.5 so that all variables are considered Reliable.

Discriminant Validity

Discriminant Validity was used to explain that each concept of latent variables is not the same as other variables. The Discriminant Validity value can be seen based on the Fornell Larcker Criterion value by comparing the minimum root (AVE) with the correlation built by the construct in question against other variables. If the condition of the construct described by the Minimum AVE value and has a Cross-Correlation with other constructs is more significant, it is said to be invalid. The following are the results of Discriminant Validity:

Table 3. Fornell Larckel Criterion Test Results

	Mod_X_Z	X	Y	Z
X	0.562	0.929		
Y	0.755	0.576	0.902	
Z	0.350	0.174	0.318	0.996

Source: Data Processing Results, 2023.

Table 3 presents the test result data. Fornell Larcker Criterion: The results show that each variable's value has a more significant correlation than other variables. Therefore, the results are said to meet the requirements of Discriminant Validity.

Composite Reliability

Composite Reliability tests the reliability value between each construct's indicators that form the model. The Composite Reliability test ensures that the indicators or items used to measure a construct provide consistent and reliable results. The recommended Composite Reliability value is more significant than 0.7, and the recommended Cronbach Alpha value is above 0.6. Table 5 shows the results of the Composite Reliability test:

Table 4. Composite Reliability Test Results

	Cronbach's Alpha	Composite Reliability	Test Results
Mod_X_Z	**1.000**	**1.000**	**Reliable**
X	**0.842**	**0.927**	**Reliable**
Y	**0.920**	**0.945**	**Reliable**
Z	**0.992**	**0.996**	**Reliable**

Source: Data Processing Results, 2023.

All constructs have a Cronbach Alpha value above 0.6, so it can be stated that all constructs met the reliability test requirements. It also shows that all indicators have a consistent and unified relationship when measuring the model constructs.

Coefficient of Determination (R^2)

R-squared measures the extent to which the independent variables in the model can explain the variability in the dependent variable. R-squared has a value between 0 and 1; the higher the value, the better the model explains the variation in the dependent variable.

Table 5. R Square Result

	R Square	R Square Adjusted
Y	0.891	0.888

Source: Data Processing Results, 2023.

The R-squared value of 0.891 shows that the contribution of Technical Factors in influencing Company Value is 0.891 or 89.1%, while variables outside this study influence 10.9%.

Q Square Value (Q^2)

Q-squared is a measure used to measure the predictive ability of a model to new data (out-of-sample). A positive Q-squared value indicates that the model has good predictive ability. A higher Q-squared value indicates how much the model can be generalized to new data. A positive Q-squared value indicates that the new model can make better predictions. Based on the results of data processing in the PLS application, the following Q Square calculation is obtained:

Table 6. Q Square Results

	Q^2 (=1-SSE/SSO)
Y	0.716

Source: Data Processing Results, 2023.

Discussion

Direct Influence of Technical Factors on Firm Value

The path coefficient for the relationship between technical factors (TE and TVA) and firm value was positive and statistically significant. This result supports Hypothesis 1 (H1), confirming that technical indicators such as tracking error and trading volume have a substantial effect on how firms are valued in the market.

These findings are in line with existing literature. For example, Marmoiton (2021) emphasized that a higher tracking error, when strategically managed, can signal active fund management and may be perceived positively by the market. Similarly, (Blume, 1994) argued that trading volume is a crucial determinant of investor interest and plays a key role in determining firm value through liquidity effects. High total volume activity suggests that a

firm's stock is liquid, tradable, and frequently monitored by investors, which enhances its attractiveness and perceived stability. Moreover, active trading is often seen as an indicator of firm relevance and market trust. When investors frequently buy and sell a stock, it creates an impression of transparency and responsiveness to market information, attributes that tend to increase valuation metrics like Tobin's Q.

Moderating Role of Consumer Confidence Index and Prompt Manufacturing Index

The interaction terms (X * Z) between technical factors and investor sentiment (CCI and PMI) were found to be significant, supporting Hypothesis 2 (H2). The results indicate that both CCI and PMI positively moderate the relationship between technical factors and firm value.

This finding aligns with behavioral finance theory, which suggests that investor reactions are not solely based on technical or fundamental analysis but are also shaped by emotional and psychological factors. During periods of strong consumer confidence and manufacturing expansion, investor optimism tends to enhance the impact of technical signals such as high trading volume or favorable tracking error. This reflects a market environment where sentiment can amplify price movements and firm valuation beyond their intrinsic values.

For instance, when the PMI index indicates robust manufacturing activity, basic material firms—being directly linked to production inputs are likely to experience increased investor interest. Similarly, a high CCI value suggests that consumers and investors have a positive economic outlook, which can boost confidence in future earnings, even for firms whose short-term fundamentals may not yet reflect such optimism.

These insights are supported by prior studies such as those by (Fisher & Statman, 2000), who highlighted the role of investor sentiment in asset pricing and firm valuation. In particular, Julia's research on Indonesian capital markets emphasized how macroeconomic sentiment can intensify or soften the effects of traditional indicators.

Theoretical Implications

The results contribute to a growing body of literature that integrates technical analysis, macroeconomic sentiment, and firm valuation. While classical finance models typically assume rational investors and efficient markets, these findings reinforce the importance of behavioral elements in understanding market outcomes. Particularly in emerging markets like Indonesia, where information asymmetry and regulatory shifts are common, the interplay between sentiment and technical indicators offers a richer framework for decision-making.

This study also supports the premise that firm value is a multi-dimensional construct influenced not only by internal financial performance but also by how external stakeholders perceive and react to macroeconomic signals. As such, investor sentiment serves as both a reflection and a driver of market dynamics, particularly in cyclical sectors such as basic materials.

Practical Implications

From a practical perspective, the findings offer several implications for market participants:

1. Investors and Asset Managers: Should consider combining technical indicators with macroeconomic sentiment measures when evaluating investment opportunities. Recognizing the amplifying role of CCI and PMI can lead to more informed and adaptive strategies.
2. Corporate Managers: Can leverage trading activity data and sentiment trends to better position their firms in the eyes of investors. This includes timing disclosures or investment announcements to coincide with favorable sentiment conditions.

3. Policymakers and Regulators: Should be aware of the psychological underpinnings of market behavior and incorporate sentiment monitoring in macroprudential oversight tools.

CONCLUSION

Technical Factors Have a Significant Influence on Company Value, Consumer Confidence Index and Prompt Manufacturing Index as Moderating Variables Strengthen the Influence between Technical Factors on Company Value. This study found a gap for further researchers to examine the Active Share variable in Technical Factors.

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