The Impact of STI, N225, and DJI Indices on IHSG with IDX30 Index as the Mediating Variable: A Study of the Indonesia Stock Exchange from 2012 to 2023

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Abstract:

Researchers took the title The Effect of STI Index, N225 Index, DJI Index on IHSG with IDX30 Index as an Intervening Variable on the Indonesia Stock Exchange for the 2012-2023 Period. The number of samples is based on the number of companies listed in each index. The analysis method used is quantitative using SEM. The results showed 1) STI has a positive and significant effect on IHSG; 2) N225 has a negative and insignificant effect on IHSG; 3) DJI has a positive and significant influence on IHSG; 4) STI has a positive but not significant effect on IDX30; 5) N225 has a positive but not significant effect on IDX30; 6) DJI has a positive but not significant effect on IDX30; 7) STI has an positive and insignificant effect on IHSG through IDX30; 8) N225 has an negative and insignificant effect on IHSG through IDX30; 9) DJI has an positive and insignificant effect on IHSG through IDX30; 10) IDX30 has a positive and significant effect on IHSG.

Keywords: *STI, N225, DJI, IDX30, IHSG*

1. Introduction

Investment, the allocation of funds in the present with the anticipation of higher future returns, is a fundamental aspect of financial markets. As markets evolve, the alignment of stock prices with market information signifies the formation of more perfect market conditions. With Indonesia's economic growth increasingly intertwined with the global economy, the correlation between the Indonesian capital market and foreign capital markets has gained significance since investors were allowed to purchase stocks listed on the Indonesia Stock Exchange (IDX) in the 1980s (Adnyana et al., 2022).

Financial performance plays a crucial role in determining a company's value and capital structure. Studies have shown that improved financial performance leads to an increase in company value (Andini et al., 2021). However, the movement of the Indonesia Stock Exchange Composite Index (IHSG) is influenced by various macroeconomic factors. Empirical evidence suggests that economic issues at the macro level significantly affect stock prices (Nurwulandari et al., 2020). Macro-level economic indicators such as Gross Domestic Product (GDP), inflation, interest rates, and the exchange rate have been identified as key variables affecting the capital market (Tandelilin, 2010; Blanchard, 2013).

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In 2021, statements by the Indonesian Foreign Minister in Japan indirectly indicated that indices such as the Strait Times Index (STI) and the N225 Index have implications for the IHSG due to economic cooperation between Indonesia and Singapore and Japan's status as a significant consumer of energy materials exports. The United States, with its Dow Jones Industrial Average, serves as a crucial reference point for many investors, given its status as an advanced economy and the world's largest. Multinational corporations listed on the Dow Jones often operate globally, including in Indonesia.

The introduction of the IDX30 Index in 2012, comprising highly liquid companies, attracted researchers' attention to the potential impact of this new benchmark index on global stock indexes and commodity prices. The research gap identified from previous studies further underscores the complexity of this phenomenon, stimulating interest among researchers to delve deeper. This study aims to address this research gap by analyzing data from 2012 to 2023 and employing theoretical approaches such as Price Theory, Contagion Effect Theory, Asymmetry Information Theory, Signaling Theory, Efficient Market Hypothesis, and Market Theory to provide insights into this multifaceted phenomenon.

The novelty of this research lies in its focus on the dynamics between the IHSG and various global indices, including the STI, N225, and Dow Jones Industrial Average. While previous studies have explored the relationship between macroeconomic factors and stock market movements, few have delved into the specific impact of these global indices on the IHSG. By examining this relationship, this study aims to contribute to a deeper understanding of how international economic dynamics influence the Indonesian stock market.

Furthermore, the urgency of this research stems from the increasing interconnectedness of global financial markets and the growing importance of Indonesia in the international economic landscape. As Indonesia's economy continues to grow and integrate with global markets, it becomes crucial to understand the factors driving the fluctuations in the IHSG. This research seeks to address this need by shedding light on the influence of key global indices on the IHSG, thereby providing valuable insights for investors, policymakers, and other stakeholders in the Indonesian financial market.

In addition to its academic significance, this research also holds practical implications for investors and policymakers. By identifying the factors driving the movement of the IHSG, investors can make more informed decisions regarding their investment portfolios. Policymakers can use the findings of this research to formulate policies aimed at enhancing the stability and resilience of the Indonesian stock market in the face of global economic fluctuations. Overall, this study aims to contribute both theoretical insights and practical recommendations to the field of finance and economics.

2. Theoretical Background

Price Theory delves into the intricate dynamics of pricing mechanisms within markets, exploring how the prices of goods and services interact and influence each other. This theory encompasses both spatial and vertical dimensions of pricing, considering variations in prices across different markets as well as the interactions between producers, distributors, and consumers (Adnyana et al., 2022). Meanwhile, the Contagion Effect Theory sheds light on the phenomenon where the impact of an event in one country spreads to neighboring countries, highlighting the interconnectedness and cooperative relationships between nations (Samosir & Sihombing, 2023). This theory underscores how economic shocks or developments in one country can reverberate across borders, affecting global financial markets.

Moreover, the Asymmetry Information Theory examines the role of privileged information held by managers or insiders within companies, particularly regarding the future prospects of the firm. These insiders signal to investors through financial reports, influencing investment decisions and market dynamics (Hasanudin, Andini, & Safitri, 2021). In a similar vein, Signaling Theory investigates how market prices serve as signals to investors, prompting them to make decisions such as buying or selling stocks based on perceived market conditions (Hasanudin, 2021). This theory underscores the importance of investor responses to market signals in shaping market behavior and efficiency.

Lastly, the Market Efficiency Hypothesis posits that an efficient market is characterized by stock prices that reflect all available information, whether public or private, across different levels of efficiency (Jumintang & Utami, 2022). This hypothesis delineates various forms of market efficiency, including weak form, semi-strong form, and strong form, each representing different degrees to which stock prices incorporate information. By examining these theoretical frameworks, researchers aim to deepen their understanding of market dynamics, investor behavior, and the factors influencing stock price movements in both domestic and global contexts.

In recent years, the advent of advanced technology and the proliferation of digital platforms have introduced new dimensions to market dynamics. These developments have led to the emergence of novel theories and models aimed at explaining the intricacies of modern financial markets. For instance, the integration of artificial intelligence and machine learning algorithms into trading platforms has revolutionized market analysis and decision-making processes (Pagora et al., 2023). Additionally, the rise of cryptocurrencies and blockchain technology has introduced new asset classes and alternative investment opportunities, prompting researchers to explore their impact on traditional financial markets (Santoso & Setyowati, 2023). By incorporating these contemporary factors into their analyses, researchers strive to provide a comprehensive understanding of market behavior and identify emerging trends that may shape future investment strategies.

Furthermore, the COVID-19 pandemic has brought unprecedented challenges to global financial markets, disrupting economic activities and reshaping investor sentiments. Studies examining the impact of the pandemic on stock market volatility, investor behavior, and government interventions have become increasingly prevalent (Susila, 2022). The pandemic has also accelerated digital transformation efforts across various industries, leading to increased reliance on remote work, online transactions, and digital communication platforms (Halim, 2021). As a result, researchers are keen to investigate how these shifts in behavior and market dynamics may influence long-term investment trends and the overall resilience of financial markets in the face of future crises.

In light of these developments, researchers are motivated to explore innovative methodologies and interdisciplinary approaches to address contemporary challenges in financial market analysis. Collaborations between economists, computer scientists, and industry professionals have become instrumental in developing sophisticated analytical tools and predictive models to navigate the complexities of modern financial ecosystems (Santoso & Setyowati, 2023). Moreover, the increasing availability of big data and advanced analytics techniques has opened up new avenues for conducting empirical research and deriving actionable insights into market behavior (Jumintang & Utami, 2022). By embracing interdisciplinary collaboration and leveraging cutting-edge technologies, researchers can enhance their capacity to forecast market trends, identify investment opportunities, and mitigate risks in an ever-evolving financial landscape.

3. Methodology

The research methodology employed a descriptive and verificative quantitative approach. The data sources for this study were secondary data obtained from the Indonesia Stock Exchange, finance.yahoo.com, and investing.com. Data for the study were collected based on the closing prices per December for each variable from 2012 to 2023. The collected data were then subjected to testing using SEM AMOS statistical analysis. The framework of the model in this study is as follows.
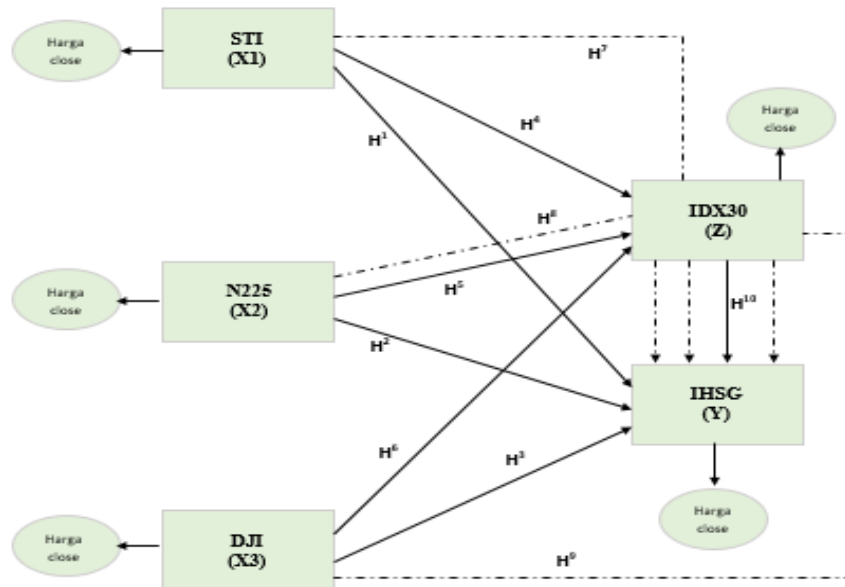
Figure 1. Research Framework
Source: Primary Data Processed, 2024

Based on the framework model in the previous slide, the hypotheses formulated in this study are as follows:

H1: The STI Index directly and significantly influences IHSG positively.

H2: The N225 Index directly and significantly influences IHSG positively.

H3: The DJI Index directly and significantly influences IHSG positively.

H4: The STI Index directly and significantly influences IDX30 positively.

H5: The N225 Index directly and significantly influences IDX30 positively.

H6: The DJI Index directly and significantly influences IDX30 positively.

H7: The STI Index indirectly and significantly influences IHSG positively through IDX30.

H8: The N225 Index indirectly and significantly influences IHSG positively through IDX30.

H9: The DJI Index indirectly and significantly influences IHSG positively through IDX30.

H10: IDX30 directly and significantly influences IHSG positively.

4. Empirical Findings/Result

Godness of Fit Indices

Model feasibility testing (goodness of fit) determines whether a tested model is suitable for analysis. In describing the GoF in research, only a few are used as references that the model in this study is already feasible. Setyo Wijanto (2008) stated that in the GoF test, there are many criteria with each criterion on its own feasibility scale, but not all criteria need to be taken in the GoF test. Here are the results of the GoF in this study.

Table 1. *Goodness Of Fit Index*

GOF	*Cut Off Value*	Hasil AMOS	Kesimpulan
GFI	> 0.90	1.000	*GOF*
NFI	> 0.90	1.000	*GOF*
CFI	> 0.90	1.000	*GOF*
IFI	> 0.90	1.000	*GOF*
ECVI	ECVI default model < ECVI saturated dan independence model	Default model: 2.727 Saturated model: 2.727 Independence model: 7.463	*GOF*
AIC	AIC dan CAIC default model < AIC dan CAIC saturated dan independence model	AIC: Default model 30.000 Saturated model 30.000 Independence model 82.088. CAIC: Default model 52.274 Saturated model 52.274 Independence model 89.512.	*GOF*

Source: Primary Data Processed, 2024

Based on Table 2, it can be seen that the GoF results in this study have met the established cutoff value. This means that the model in this study is a good fit and can proceed to the next stage.

Hypothesis Testing

Table 2. Hypothesis Test for Direct Effect

			Estimate	S.E.	C.R.	P
IHSG	<---	STI	.343	.186	1.847	.065
IHSG	<---	N225	-.122	.117	-1.037	.300
IHSG	<---	DJI	.469	.108	4.358	*
IDX30	<---	STI	.422	.569	.741	.458
IDX30	<---	N225	.142	.365	.389	.697
IDX30	<---	DJI	.168	.334	.505	.614

Source: Output SEM (2024)

The Significance Based on Table 2 can be explained as follows:

1. STI to IHSG has an estimated value of 0.343 and a P-value of 0.065, indicating that STI has a positive and significant influence on IHSG.
2. N225 to IHSG has an estimated value of -0.122 and a P-value of 0.300, meaning that N225 has a negative and insignificant effect on IHSG.
3. DJI to IHSG has an estimated value of 0.469 and a P-value of * (0.00001), indicating that DJI has a positive and significant influence on IHSG.
4. STI to IDX30 has an estimated value of 0.422 and a P-value of 0.458, meaning that STI has a positive and insignificant effect on IDX30.
5. N225 to IDX30 has an estimated value of 0.142 and a P-value of 0.697, indicating that N225 has a positive and insignificant effect on IDX30.
6. DJI to IDX30 has an estimated value of 0.168 and a P-value of 0.614, meaning that DJI has a positive and insignificant effect on IDX30.
7. IDX30 to IHSG has an estimated value of 0.420 and a P-value of * (0.00001), indicating that IDX30 has a positive and significant influence on IHSG.

Table 3. Hypothesis Test for Indirect Effect

Variable	T-Statistic	P-Value	Error	Results	
STI >> IDX30 >> IHSG	0.752	0. 451	0.084	p-value > 0.05	Rejected
N225 >> IDX30 >> IHSG	-0.678	0.492	0.060	p-value > 0.05	Rejected
DJI >> IDX30 >> IHSG	0.792	0.428	0.062	p-value > 0.05	Rejected

Sources: Sobel Test (2024)

Based on Table 3, the following explanations can be provided that STI's influence on IHSG via IDX30 has a t-statistic value of 0.752 and a p-value of 0.451 > 0.05, indicating that STI has a positive but not significant effect on IHSG via IDX30. N225's influence on IHSG via IDX30 has a t-statistic value of -0.678 and a p-value of 0.492 > 0.05, indicating that N225 has a negative and not significant effect on IHSG via IDX30. DJI's influence on IHSG via IDX30 has a t-statistic value of 0.792 and a p-value of 0.428 > 0.05, indicating that DJI has a positive but not significant effect on IHSG via IDX30.

Coefficient of Determination

Table 4. *Squared Multiple Correlations*

Variable	Estimate
IDX30	.492
IHSG	.965

Source: Output SEM , 2024

Based on the above Table 4, it can be interpreted that the estimated value of IDX30 is 0.492, meaning that the variables STI, N225, and DJI can explain 49.2% of the variance in IDX30, while 50.8% of the variance is explained by other factors. The estimated value of IHSG is 0.965, meaning that the variables STI, N225, DJI, and IDX30 can explain 96.5% of the variance in IHSG, while 3.5% of the variance is explained by other factors.

Regression Equation
The structural equation in this study is divided into two equations as follows:

First Equation:
IDX30 = 0.422 STI + 0.142 N225 + 0.168 DJI
From the equation above, it can be explained as follows:
1. The regression coefficient of STI is 0.422. This means that if STI increases by 1%, IDX30 will increase by 0.422%.
2. The regression coefficient of N225 is 0.142. This means that if N225 increases by 1%, IDX30 will increase by 0.142%.
3. The regression coefficient of DJI is 0.168. This means that if DJI increases by 1%, IDX30 will increase by 0.168%.

Second Equation
IHSG = 0.343 STI - 0.122 N225 + 0.469 DJI + 0.420 IDX30
From the equation above, it can be explained as follows:
1. The regression coefficient of STI is 0.343. This means that if STI increases by 1%, IHSG will increase by 0.343%.

2. The regression coefficient of N225 is -0.122. This means that if N225 decreases by 1%, IHSG will decrease by 0.122%.
3. The regression coefficient of DJI is 0.469. This means that if DJI increases by 1%, IHSG will increase by 0.469%.
4. The regression coefficient of IDX30 is 0.420. This means that if IDX30 increases by 1%, IHSG will increase by 0.420%.

5. Discussion

The positive and significant influence of STI on IHSG underscores the interconnectedness of global economies, where movements in one country's stock market can affect others due to investor sentiment and capital flows. This aligns with the contagion effect theory, as highlighted by Situngkir (2019), indicating the relevance of STI for investors analyzing the Indonesian market. However, it's important to consider that the economic ties between Indonesia and Singapore, although significant, may not always translate into substantial impacts on IHSG through STI, as suggested by Adnyana et al. (2022).

Conversely, the negative and insignificant influence of N225 on IHSG suggests that economic conditions between Japan and Indonesia may not be closely linked. Despite Japan's global economic influence, the lack of significant impact on IHSG through N225 could be attributed to various factors, including the preferences of Japanese investors and the divergent economic trajectories of the two countries, as observed by Hartayu & Paramita (2023).

The positive and significant influence of DJI on IHSG reflects the interconnectedness of global financial markets and the impact of external factors on Indonesia's capital market. This is consistent with Sri & Azib's (2021) findings, indicating the importance of considering global economic conditions, particularly those influenced by the US market, when analyzing IHSG movements.

When considering the influence of these indices on IDX30, the results suggest mixed findings. While bilateral cooperation between Indonesia and Singapore may positively influence IDX30, its significance remains limited due to the dominance of domestic investors, as noted by Adnyana & Nurwulandari (2022). Similarly, despite Japan's economic ties with Indonesia, IDX30's influence on IHSG through N225 is insignificant, possibly due to the specific preferences of Japanese investors and the composition of IDX30 companies.

Overall, while IDX30 exhibits a positive and significant influence on IHSG, it does not fully mediate the effects of STI, N225, or DJI on IHSG. This underscores the complex nature of Indonesia's capital market, influenced by a myriad of factors beyond the scope of individual stock indices. These findings emphasize the importance of considering various macroeconomic factors and global market dynamics in analyzing IHSG movements and investment decisions.

6. Conclusions

In summary, the study findings reveal several key conclusions. STI exhibits a positive and significant effect on IHSG, suggesting that lower STI index values correspond to higher IHSG values. N225 shows a negative and non-significant effect on IHSG, indicating that higher N225 index values do not significantly impact IHSG. DJI demonstrates a positive and significant effect on IHSG, with lower DJI index values associated with higher IHSG values. STI has a positive but non-significant effect on IDX30, while N225 and DJI exhibit similar positive but non-significant effects on IDX30. IDX30 has a positive and significant effect on IHSG, where higher IDX30 values correspond to higher IHSG values.

Recommendations: Maintain cooperation with Singapore and attract foreign investors, particularly from Singapore, to influence STI index movement towards IHSG. Collaborate with Japan to simplify terms for Japanese investors, stimulating N225 index movement towards IHSG positively. Ensure economic and political stability to stabilize the exchange rate and consider adding Singaporean companies to the IDX30 index to attract foreign investors. Enhance cooperation with Japan to improve IDX30 index performance through exports. Tighten government policies for efficiency and effectiveness, particularly in budget matters, to stimulate public investment and domestic consumption. Maintain stable inflation rates, exchange rates, and credit interest rates to boost investor confidence and improve stock performance in IDX30, ultimately impacting IHSG positively.

References:

Adnyana, I. M., & Nurwulandari, A. (2022). Pengaruh harga emas dunia, STI index, N225 index, KS11 index, DJI index, terhadap IHSG dan dampaknya pada indeks IDX30 Bursa Efek Indonesia (2012-2020). *Fair Value: Jurnal Ilmiah Akuntansi dan Keuangan*, *4*(7), 2733-2743.

Andini, N., Hasanudin, & Ari Jatmiko Setiyo Budi. (2020). Analysis of the Influence of Interest Rate, Exchange Value, World Gold Prices, Dow Jones Index, AEX Index, DAX Index, and Shanghai Index on LQ45 Index in Indonesia Stock Exchange 2012–2018. *Journal of Applied Business and Economics (JABE), 7*(2), 135-145.

Andini, N., Yudi Wibowo, & Hasanudin. (2021). Effect of Liquidity, Profitability, Firm Size on Firm Value with Capital Structure as Intervening Variable. *Jurnal Ilmiah Akuntansi, 4*(2), 257-271. https://doi.org/10.33096/atestasi.v4i2.835.

Evi, T., & Pramesworo, I. S. (2021). Combined Share Price Index (IHSG) In Indonesia Stock Exchange Affected By Regional Asia Southeast Exchange Index. *International Journal of Research and Innovation in Social Science (IJRISS)*.

Halim, S. (2021). The Effect of Dow Jones Islamic Market World Index, Foreign Exchange, Foreign Investment and Domestic Investment with the Intervening

Composite Stock Price Index on the Indonesian Sharia Stock Index. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah*, *13*(2).

Hasanudin. (2021). The Effect of Inflation, Exchange, SBI Interest Rate, and Dow Jones Index on JCI on IDX 2013-2018. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal), 4*(2), 2063-2072. https://doi.org/10.33258/birci.v4i2.1896.

Hasanudin, & Anugrah Kumaruza. (2020). Effect of Interest Rates, Rupiah Currency Exchange Rates, World Gold Prices, and Dow Jones Index on Stock Prices of Property and Real Estate Companies with Inflation as Moderating. *Journal of Social Studies, 1*(1). https://doi.org/10.37010/fcs.v1i1.276.

Hasanudin, Andini, N., & Ronika Kris Safitri. (2021). The Influence of Investment Knowledge, Motivation, and Capital Market Training on Investment Decisions Mediated by Investment Interest: A Study of Mercu Buana University Students. *Jurnal Ilmiah MEA (Manajemen, Ekonomi, dan Akuntansi), 5*(3), 494-512.

Hasanudin, Dipa Teruna Awaloedin, & Fera Yulianti. (2020). The Influence of Current Ratio, Debt to Equity Ratio, and Net Profit Margin on Stock Returns in Telecommunication Service Sub-Sector Companies Listed on the Indonesia Stock Exchange for the Period 2012-2018. *Jurnal Rekayasa Informasi, 9*(1). e-ISSN 2685-8231, p-ISSN 2252-7354.

Hasanudin, H., Andini, N., & Safitri, R. K. (2021). The Influence of Investment Knowledge, Motivation, and Capital Market Training on Investment Decisions Mediated by Investment Interest. *Jurnal Ilmiah Manajemen, Ekonomi, & Akuntansi (MEA), 5*(3), 494-512. https://doi.org/10.31955/mea.v5i3.1575.

Jumintang, F., & Utami, K. (2022). Analysis of efficient market anomaly on stock returns on Indonesia's composite stock price index and global stock price index. *International Journal of Business Ecosystem & Strategy (2687-2293)*, *4*(1), 57-67.

Pagora, D. A., Supu, I. S., Memah, P. Y., & Manangkabo, R. (2023). The effect of NIKKEI and crude oil on market indices during COVID-19 in Indonesia. *The Contrarian: Finance, Accounting, and Business Research*, *2*(1), 1-5.

Santoso, A. W., & Setyowati, E. (2023, October). The Movement of Jakarta Composite Index (JCI) During the COVID-19 Pandemic from January 2020 to December 2021. In *International Conference on Economics and Business Studies (ICOEBS-22-2)*(pp. 1009-1020). Atlantis Press.

Samosir, T., & Sihombing, P. (2023). Analysis of the influence internal and external factors on the performance of IDXV30. *JPPI (Jurnal Penelitian Pendidikan Indonesia)*, *9*(3), 1824-1835.

Susila, M. R. (2022). Causal influence between the JSX composite index and the FTSE straits times index in time series. *Jurnal Ekonomi Pembangunan*, *20*(02), 113-123.