

The Impact of Digital Bank Stock Prices on the Banking Sectoral Index in Indonesia

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ABSTRACT

This study aims to examine the relationship between digital bank stock prices and the banking sectoral index listed on the Indonesia Stock Exchange (IDX). Digital banks represent a relatively new segment in the banking industry, offering technology-based services that may contribute to stock market dynamics. This research applies a quantitative approach using weekly data from five digital banks (BBHI, AMAR, BBYB, BANK, and ARTO) and the banking sectoral index over the period September 2021 to December 2024. Due to the non-normal distribution of the data, the analysis employs the Spearman's rho correlation test. The results show a positive and statistically significant relationship between digital bank stock prices and the banking sectoral index, with a correlation coefficient of 0.581 and a significance value of 0.000. These findings indicate that movements in digital bank stock prices are moderately associated with movements in the banking sectoral index, although they do not fully explain its variation.

Key words: Stock Price, Digital Bank, Banking Sector Index, Indonesia Stock Exchange.

INTRODUCTION

Understanding stock price movements can assist investors in formulating more accurate investment strategies while also to get comprehend broader economic conditions. Stock prices reflect market sentiment and the performance of specific sectors (Putri & Pratama, 2024). This stock price information can be utilized to assess economic stability and forecast future economic conditions (Patriya, 2020). Industry-wide stock price information is collectively represented in stock price indices, which play a crucial role in helping investors understand, evaluate, and make informed decisions under bullish or bearish market conditions (Iman et al., 2020; Putri & Pratama, 2024). These indices also enable the identification of economic conditions and the performance of specific industrial sectors, as well as facilitate portfolio performance comparisons relative to market benchmarks (Murti et al., 2020) and the identification of investment trends occurring in the stock market (Patriya, 2020; Indrawati, 2021).

From a theoretical perspective, stock price movements and their relationship with sectoral indices can be explained through the Efficient Market Hypothesis (EMH). This theory states that stock prices reflect all available information in the market, so any new information—such as developments in digital banking, regulatory changes, or firm performance—will be quickly incorporated into stock prices

(Hidayat, 2019). Consequently, the emergence of digital banks as new players in the financial sector introduces additional information that may contribute to the dynamics of the banking sector index and influence how investors interpret market signals.

In addition, the Capital Asset Pricing Model (CAPM) provides a framework for understanding the relationship between individual stock returns and overall market returns through systematic risk (beta). According to portfolio and capital market theory, stock price movements are closely related to risk-return trade-offs and market performance (Handini & Astawinetu, 2020; Halim, 2024). Digital bank stocks, which are generally more volatile, may carry higher systematic risk compared to conventional banks, thereby contributing to fluctuations in the banking sector index as part of the broader market portfolio.

Furthermore, the Behavioral Finance perspective explains that investor decisions are not always rational but are often influenced by psychological factors such as sentiment, speculation, and herding behavior. In the context of digital banking, technological innovation and rapid industry transformation tend to attract strong investor attention, which may lead to increased volatility in stock prices (Hisam, 2024; Mutiasari, 2020). This behavioral response can strengthen the relationship between digital bank stock price movements and changes in the sectoral index, particularly in emerging and dynamic market environments. These theoretical perspectives provide a foundation for understanding how stock prices are aggregated into market indicators such as sectoral indices.

A stock index is composed of a group of selected stocks based on specific criteria by the index provider. These criteria typically include market capitalization, liquidity, financial performance, and industry sector classification (Hasbiah et al., 2022). To ensure relevance with current market conditions, the index composition is regularly reviewed and updated. The index management process involves evaluating listed stocks to determine which should be included or excluded from the index (Indrawati, 2021). In Indonesia, stock indices are administered by the Indonesia Stock Exchange (IDX), with the Composite Index (IHSG) serving as the primary benchmark. The IHSG reflects the performance of all listed stocks on the IDX (F. H. Putra et al., 2021; Herlianto & Hafizh, 2020). In addition to the IHSG, several other indices are maintained to represent specific market conditions or particular industry groups (IDX DAILY STATISTICS, 2024).

IDX specifically provides sectoral indices, one of them is the Financials Index. This index offers a detailed overview of industry-specific dynamics (IDX DAILY STATISTICS, 2024). Sectoral indices are subject to regular reviews and updates to ensure that they accurately reflect current market conditions. Companies must meet certain criteria—such as liquidity, market capitalization, and financial performance—to be included in the index (Muchtar, 2020; Bintari & Kusnandar, 2022; Kurniati et al., 2022). Among the various sectors, the banking sector is

particularly vulnerable to policy changes and economic fluctuations compared to other industries. This is due to its high dependence on interest rates, monetary policy, and government regulations, all of which frequently shift in response to economic dynamics (Tumbelaka et al., 2023). Macroeconomic conditions—such as inflation, economic growth, and unemployment—also significantly affect the performance of the banking sector (Hamdi et al., 2023; Tumbelaka et al., 2023).

In recent years, the banking index has undergone significant changes following the inclusion of digital bank issuers, particularly after the implementation of digital banking regulations (Abubakar & Handayani, 2022). These regulations have become a crucial factor driving adjustments in index composition (Assari et al., 2022), as the transformation of the banking industry—toward business models focused on technology—has led to increased operational efficiency (Rosa Indah et al., 2023). Even today, digital bank stocks tend to experience higher volatility compared to conventional banks due to earlier regulatory uncertainties and rapid technological advancements (Ary, 2023). Investors often adopt a cautious stance when new policies are introduced (Tirtawijaya & Wagiman, 2023). The pace of technological innovation compels digital banks to continuously evolve, which at times influences market expectations and investment decisions (Pramana & Suryani, 2024). One of the major risks faced by digital banks is cybersecurity, which can result in financial losses, data breaches, and service disruptions (Hardinata et al., 2024). Digital security threats and operational risks stemming from high reliance on technological infrastructure—which requires constant upgrades and maintenance—pose serious challenges. Technical disruptions and system failures can hinder bank operations (T.M et al., 2024; M. Ghozali et al., 2024; Tambunan & Nasution, 2023), affecting customer trust and operational performance, and ultimately influencing investor perception and stock price movements in the market. Such conditions have the potential to erode customer confidence and damage the overall reputation of the bank (Laksana et al., 2023).

The entry of digital bank issuers with technology-based business characteristics and various advantages (Rosa Indah et al., 2023) has encouraged conventional banks to undertake digital transformation in order to remain competitive amid shifting market demands and evolving consumer preferences (Linggadjaya et al., 2022). The presence of digital banks in the banking index has the potential to alter both the composition and movement of the index due to the high volatility of their stock prices. Digital banks have attracted the attention of investors who focus on technology and innovation sectors (Mutiasari, 2020). Nonetheless, to date, the banking sector in Indonesia remains dominated by conventional banks with large market capacities and significant firm sizes, such as Bank Central Asia (BCA), Bank Negara Indonesia (BNI), Bank Rakyat Indonesia (BRI), Bank Tabungan Negara (BTN), and Bank Syariah Indonesia (BSI), all of which are included in the LQ45 Index (Indonesia Stock Exchange [IDX], 2024). In contrast, no digital banks are currently represented in the index. This reflects the fact that the LQ45 Index continues to be dominated by stocks with high liquidity, large market capitalization,



and strong financial fundamentals. The transformation occurring within the banking sector is not only reshaping the competitive structure of the industry but also generating new dynamics in the capital market, particularly within the banking sectoral index (Purwanto & Perkasa, 2024). On the other hand, digital banks offer significant growth potential. However, their high stock price volatility, fundamental differences in financial performance, and relatively smaller market capitalization compared to conventional banks are critical aspects that warrant further examination.

Several studies have been conducted concerning activities on the stock exchange, particularly within the banking sector. Murti et al. (2020) concluded that all major international indices are correlated with fluctuations in Indonesia's financial stock index; however, the influence of capital markets differs between China and the United States, with the U.S. market exerting a relatively greater impact. Similarly, Iman et al. (2020) found that the DJIA, Nikkei 225, and Hang Seng Index (HSI) significantly affect the Indonesian Sharia Stock Index (ISSI). Tumbelaka et al. (2023) observed that exchange rates, inflation, and GDP growth have an impact on stock prices. With respect to digital banks, Ary (2023) found that the stock prices of digital banking institutions are primarily influenced by their own stock movements, which is also reflected in trading volume. Global market indices are known to influence those in Indonesia (Murti et al., 2020; Iman et al., 2020). Furthermore, Ary (2023) revealed that stock prices can be self-influencing, while subsequent findings by Tumbelaka et al. (2023) suggest that the stock prices of certain issuers are also influenced by other firms operating within the same industry group. However, there remains a gap in the literature regarding the extent to which an individual issuer can influence its corresponding sectoral index. Therefore, it is necessary to examine the effect of digital bank stock prices on their sectoral index, particularly considering that digital banks are relatively new entrants to the market and their numbers remain limited.

This study aims to answer the research question: "Do digital bank stock prices influence the sectoral index of the banking sector listed on the Indonesia Stock Exchange?" The primary objective is to examine the effect of digital bank stock prices on the sectoral index of the banking sector listed on the Indonesia Stock Exchange. This research is also expected to contribute to the financial literature and help investors better understand the dynamics of the capital market following the emergence of digital banks. The findings are anticipated to provide relevant information for investors, thereby supporting more strategic investment decision-making. Based on the aforementioned background, this study is deemed necessary and is titled: "The Impact of Neo Bank Stock Prices on the Banking Sectoral Index on the Indonesia Stock Exchange."

RESEARCH METHOD

This study employs a quantitative research method with an associative approach (Sugiyono, 2024; Sari et al., 2024). The purpose of this approach is to examine the



relationship between digital bank stock prices and the banking sectoral index listed on the Indonesia Stock Exchange (IDX).

The population of this study consists of all digital bank stock prices listed on the IDX and the banking sectoral index during the observation period from September 2021—following the implementation of OJK Regulation No. 12/POJK.03/2021—until December 2024. The sampling technique used is purposive sampling with the following criteria: (a) the issuer must have been listed on the IDX at the time the regulation was enacted, and (b) the issuer must be actively traded during the observation period. Based on these criteria, the selected sample includes five digital banks: BBHI, AMAR, BBYB, BANK, and ARTO.

The variables in this study consist of one independent variable and one dependent variable. The independent variable is digital bank stock prices, measured using weekly closing prices of the selected issuers. Digital bank stock prices are represented as a composite measure of selected issuers to reflect overall digital banking performance. The dependent variable is the banking sectoral index, measured using the weekly closing index value. All data are obtained from official publications of the Indonesia Stock Exchange (www.idx.co.id).

Data analysis is conducted through descriptive statistics to provide an overview of the data distribution, followed by a normality test using the Kolmogorov-Smirnov test. If the data are not normally distributed (p -value < 0.05), a non-parametric statistical method is applied.

To examine the relationship between variables, this study uses the Spearman's rho correlation test. This method is appropriate for non-normally distributed data and is used to measure the strength and direction of the relationship between two variables (Sarumaha, 2023). The correlation coefficient ranges from -1 to +1, where values closer to +1 indicate a stronger positive relationship, values closer to -1 indicate a stronger negative relationship, and values near 0 indicate a weak relationship.

The level of significance is set at 0.05. A significance value (p -value) less than 0.05 indicates that the relationship between variables is statistically significant. The interpretation of the correlation coefficient refers to the classification guidelines, ranging from very weak to very strong relationships.

RESULT AND DISCUSSION

This section presents the results of the data analysis conducted to examine the relationship between digital bank stock prices and the banking sectoral index. The analysis begins with a descriptive overview of the data to illustrate general patterns and fluctuations observed during the research period from September 2021 to December 2024. This initial presentation is intended to provide a clearer understanding of the movement of both variables before proceeding to further statistical analysis. The tabulated data serve as the basis for identifying trends, variations, and potential associations between digital bank stock prices and the banking sectoral index throughout the observation period.

Data Description and Tabulation



The tabulation of data in Table 2 presents a sample of weekly observations of the banking sectoral index and digital bank stock prices during the research period from September 2021 to December 2024. This tabulated data is intended to provide an initial overview of the movement and fluctuation patterns of both variables over time. By presenting the data in a structured format, it becomes easier to observe general trends and variations that may indicate a relationship between digital bank stock prices and the banking sectoral index.

Table 2: Sample of Data Tabulation

Date	Banking Index	Stock Price	Date	Banking Index	Stock Price
03/09/2021	1394	21838	05/05/2023	1386	5686
10/09/2021	1381	22582	12/05/2023	1379	6054
17/09/2021	1386	24540	19/05/2023	1375	5731
24/09/2021	1397	24801	26/05/2023	1377	5445
01/10/2021	1405	23473	31/05/2023	1368	5435
08/10/2021	1468	21207	09/06/2023	1368	6935
15/10/2021	1511	21890	16/06/2023	1378	6641
22/10/2021	1549	24530	23/06/2023	1393	6811
29/10/2021	1538	25696	27/06/2023	1418	6923
05/11/2021	1534	26254	07/07/2023	1414	6935
12/11/2021	1554	27682	14/07/2023	1432	7110
19/11/2021	1570	28579	21/07/2023	1434	6857
26/11/2021	1522	26277	28/07/2023	1433	6864
03/12/2021	1520	26942	04/08/2023	1421	6211
10/12/2021	1560	29379	11/08/2023	1424	6004
17/12/2021	1554	28840	18/08/2023	1419	6072
24/12/2021	1540	29797	25/08/2023	1412	5799
30/12/2021	1527	28383	01/09/2023	1416	5713
07/01/2022	1590	34084	08/09/2023	1395	5583
14/01/2022	1596	29510	15/09/2023	1389	5455
21/01/2022	1602	30185	22/09/2023	1398	5493
28/01/2022	1567	26235	29/09/2023	1401	5217
04/02/2022	1583	27385	06/10/2023	1395	4960
11/02/2022	1607	25875	13/10/2023	1387	4541
18/02/2022	1626	26141	20/10/2023	1357	4498
25/02/2022	1627	26565	27/10/2023	1356	4371
04/03/2022	1622	26015	03/11/2023	1375	4763
11/03/2022	1603	25294	10/11/2023	1368	4920
18/03/2022	1626	25700	17/11/2023	1398	5270
25/03/2022	1611	24286	24/11/2023	1435	6427
01/04/2022	1614	24406	01/12/2023	1436	6828
08/04/2022	1605	24282	08/12/2023	1402	6287



14/04/2022	1584	23464	15/12/2023	1449	6481
22/04/2022	1614	23010	22/12/2023	1443	6057
28/04/2022	1636	22247	29/12/2023	1458	6186
13/05/2022	1465	17160	05/01/2024	1492	6549
20/05/2022	1497	17103	12/01/2024	1524	6683
27/05/2022	1508	17254	19/01/2024	1508	6609
03/06/2022	1519	17051	26/01/2024	1519	6297
10/06/2022	1489	16046	02/02/2024	1495	5907
17/06/2022	1489	16793	07/02/2024	1503	5865
24/06/2022	1468	16302	16/02/2024	1524	5757
01/07/2022	1468	15420	23/02/2024	1513	5236
08/07/2022	1468	16197	01/03/2024	1517	5364
15/07/2022	1408	16000	08/03/2024	1517	5487
22/07/2022	1473	16757	15/03/2024	1509	5341
29/07/2022	1500	17679	22/03/2024	1509	5374
05/08/2022	1524	18432	28/03/2024	1529	5438
12/08/2022	1524	17604	05/04/2024	1476	5150
19/08/2022	1526	16502	19/04/2024	1428	4612
26/08/2022	1500	15482	26/04/2024	1406	4500
02/09/2022	1520	14777	03/05/2024	1395	4583
09/09/2022	1514	13882	08/05/2024	1376	4616
16/09/2022	1513	13066	17/05/2024	1414	4650
23/09/2022	1505	12614	22/05/2024	1371	4793
30/09/2022	1486	11550	31/05/2024	1353	4764
07/10/2022	1485	11696	07/06/2024	1352	4616
14/10/2022	1431	9257	14/06/2024	1303	4133
21/10/2022	1491	10002	21/06/2024	1338	4250
28/10/2022	1489	9592	28/06/2024	1365	4558
04/11/2022	1475	9446	05/07/2024	1375	4413
11/11/2022	1501	10974	12/07/2024	1401	4604
18/11/2022	1505	11309	19/07/2024	1400	4594
25/11/2022	1495	9969	26/07/2024	1396	4871
02/12/2022	1480	8729	02/08/2024	1413	4993
09/12/2022	1430	7731	09/08/2024	1407	5034
16/12/2022	1451	8371	16/08/2024	1436	4995
23/12/2022	1421	7977	23/08/2024	1472	5261
30/12/2022	1415	7777	30/08/2024	1473	5236
06/01/2023	1373	6919	06/09/2024	1536	5157
13/01/2023	1356	7022	13/09/2024	1535	5151
20/01/2023	1394	7260	20/09/2024	1558	5377
27/01/2023	1428	7442	27/09/2024	1541	5523
03/02/2023	1434	7807	04/10/2024	1500	4994



10/02/2023	1428	6957	11/10/2024	1511	5075
17/02/2023	1428	6886	18/10/2024	1542	5138
24/02/2023	1405	6382	25/10/2024	1545	5174
03/03/2023	1405	6574	01/11/2024	1516	5149
10/03/2023	1394	6410	08/11/2024	1477	4886
17/03/2023	1365	5819	15/11/2024	1453	4609
24/03/2023	1390	6070	22/11/2024	1454	4879
31/03/2023	1386	6031	29/11/2024	1456	4765
06/04/2023	1390	6042	06/12/2024	1463	4809
14/04/2023	1398	5946	13/12/2024	1443	4685
18/04/2023	1390	5769	20/12/2024	1382	4286
28/04/2023	1386	5655	27/12/2024	1397	4397

Note: Digital bank stock price (X) represents a composite measure of selected digital banking stocks, namely BBHI, AMAR, BBYB, BANK, and ARTO. The table displays a sample of the dataset, while the complete dataset consists of 172 weekly observations used in the analysis.

Based on Table 2, it can be observed that both the banking sectoral index and digital bank stock prices experienced fluctuations throughout the observation period. The banking sectoral index shows relatively stable movements compared to digital bank stock prices, which tend to fluctuate more significantly. These variations reflect the dynamic nature of digital banking stocks, which are often associated with higher volatility. The observed patterns provide an initial indication of a potential relationship between the two variables, which will be further examined through statistical analysis in the following sections.

Descriptive Statistic

The descriptive statistics of the variables used in this study are presented in Table 3. The banking sectoral index (Y) has an average value of 1,464.03 with a standard deviation of 74.898, indicating relatively stable movements during the observation period. The index reached its highest value of 1,636 and its lowest value of 1,303, resulting in a range of 333. These figures suggest that the banking sector index experienced moderate fluctuations and maintained a relatively consistent trend over time.

In contrast, digital bank stock prices (X), represented as a composite measure of selected issuers (BBHI, AMAR, BBYB, BANK, and ARTO), exhibit higher variability. Among the individual stocks, BBHI and ARTO show the highest levels of dispersion, as reflected in their large ranges and standard deviations. BBYB also demonstrates considerable fluctuation, although to a lesser extent. Meanwhile, AMAR and BANK display relatively lower variability compared to other digital banks. Overall, the descriptive statistics indicate that digital bank stock prices tend to be more volatile than the banking sectoral index.

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Error	Std. Deviation Statistic
Index (Y)	172	333	1303	1636	1464.03	5.711	74.898
bbhi (X)	172	9435	715	10150	2532.15	152.578	2001.039
amar (X)	172	474	191	665	295.73	5.842	76.621
bbyb (X)	172	2586	214	2800	836.54	52.031	682.376
bank (X)	172	2430	800	3230	1483.02	44.920	589.124
arto (X)	172	17390	1610	19000	6135.20	392.331	5145.368
Valid (listwise)	N172						

The banking sectoral index recorded an average value of 1,464.03 with a standard deviation of 74.898, indicating relatively stable movements during the observation period. The index ranged from a minimum of 1,303 to a maximum of 1,636, suggesting moderate fluctuations and a consistent overall trend.

Meanwhile, the stock prices of digital banking issuers—represented by BBHI, ARTO, BBYB, BANK, and AMAR—demonstrated higher variability. BBHI and ARTO exhibited the highest volatility, followed by BBYB, while AMAR and BANK showed relatively lower fluctuations. Overall, digital bank stock prices tend to be more volatile, as reflected in their wider range and higher standard deviation compared to the banking sectoral index.

Normality Test

The normality test was conducted using the Kolmogorov–Smirnov test to determine whether the data follow a normal distribution. The results of the test are presented in Table 4. The significance value (Asymp. Sig. 2-tailed) is 0.009, which is lower than the threshold of 0.05. This indicates that the data are not normally distributed. Since the normality assumption is not fulfilled, a non-parametric statistical method is applied. Therefore, this study employs the Spearman’s rho correlation test to examine the relationship between digital bank stock prices and the banking sectoral index (Ghozali, 2018; Sarumaha, 2023).

Table 3: The Result of Normality Test
One-Sample Kolmogorov-Smirnov Test

	Unstandardized Residual
N	172
Normal Parameters ^{a,b} Mean	.0000000
Std. Deviation	56.08656116



Most Extreme Absolute	.080
Differences Positive	.080
Negative	-.054
Test Statistic	.080
Asymp. Sig. (2-tailed)	.009c

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

Inferential Statistical Analysis (Spearman’s Rho)

The inferential statistical analysis in this study was conducted using the Spearman’s rho correlation test to examine the relationship between digital bank stock prices and the banking sectoral index. The results of the analysis are presented in Table 5.

Based on Table 5, the Spearman’s rho correlation coefficient is 0.581 with a significance value of 0.000. Referring to the correlation coefficient interpretation guidelines, this value falls within the range of 0.40–0.59, indicating a moderate relationship. The significance value, which is lower than 0.05, shows that the relationship is statistically significant.

These results indicate that there is a positive and significant relationship between digital bank stock prices and the banking sectoral index during the observation period. This means that increases in digital bank stock prices tend to be associated with increases in the banking sectoral index, although the strength of the relationship is moderate.

It is important to note that the Spearman’s rho test measures only the strength and direction of the relationship between variables and does not imply causality or predictive capability. Therefore, the findings of this study should be interpreted as an association rather than a cause-and-effect relationship (Sarumaha, 2023).

Tabel 4: The Result of Spearman Rho

Correlations		Y	X	
Table 4	Spearman's rho Y	Correlation Coefficient	1.000	
		Sig. (2-tailed)	.581**	
		N	.000	
	X	Correlation Coefficient	.581**	1.000
		Sig. (2-tailed)	.000	.
		N	172	172

** . Correlation is significant at the 0.01 level (2-tailed).

shows that the Spearman’s rho correlation coefficient is 0.581 with a significance



value of 0.000. Based on the interpretation guidelines presented in Table 1, this value falls within the interval of 0.40–0.59, indicating a moderate and statistically significant relationship (Sarumaha, 2023). This result suggests that digital bank stock prices and the banking sectoral index move in the same direction during the observation period.

It is important to note that the Spearman's rho test measures only the strength and direction of the relationship between variables and does not imply causality or predictive capability (Sarumaha, 2023). Therefore, the findings of this study should be interpreted as an association rather than a cause-and-effect relationship.

These findings are supported by previous studies indicating that stock price movements are related to market dynamics and investor behavior (Ary, 2023). In the Indonesian context, the sectoral index is influenced by market capitalization and trading activity, meaning that fluctuations in individual stocks—including digital banks—can be associated with movements in the overall index.

CONCLUSION

Based on the results of the analysis, it can be concluded that the data are not normally distributed, as indicated by the significance value of 0.009 (< 0.05) from the Kolmogorov–Smirnov test. Therefore, a non-parametric approach using the Spearman's rho correlation test was applied. The results of the Spearman correlation analysis show a coefficient of 0.581 with a significance value of 0.000, indicating a moderate and statistically significant positive relationship between digital bank stock prices and the banking sectoral index during the observation period. This finding suggests that movements in digital bank stock prices are associated with movements in the banking sectoral index. However, this study only identifies the strength and direction of the relationship and does not imply causality. Therefore, digital bank stock prices cannot be interpreted as a determining factor but rather as one of the variables associated with the dynamics of the banking sectoral index. For future research, it is recommended to incorporate additional variables such as trading volume, market capitalization, or macroeconomic indicators to provide a more comprehensive understanding of the factors associated with sectoral index movements.

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