InFestasi
Vol. 22 (1) June 2026 | Page 87-99
ISSN 2460-8505 (Online)
ISSN 0216-9517 (Print)

Information Technology Investment and Banks' Stock Performance: An External Investor's Perspective

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ARTICLE INFORMATION
Received 31 March 2026

Revised 26 April 2026

Published 29 June 2026

Keywords:
IT investment, banking sector, external investor, and stock returns

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DOI:
https://doi.org/10.21107/infestasi.v22i1.33892

ABSTRACT
Information Technology (IT) investment in banks could influence investor perceptions of the bank's future prospects. IT investment in banks is often associated with service innovation, operational efficiency, increased competitiveness, and expanded market share. This study aims to empirically test the effect of IT investment in banks on stock market performance using unbalanced panel data and Fixed Effect Model (FEM) analysis. Furthermore, the sample used in this study was commercial banks listed on the Indonesia Stock Exchange, with the study period 2012-2022. The results show that IT investment in banks has been proven to have a positive impact on stock market performance. Banks with higher technology involvement tend to have strong stock returns. These findings have implications for banks to invest in IT not only to improve operational efficiency and expand service access, but also as a strategy to improve market performance. Furthermore, IT investment in banks can be used as an indicator for capital market investors in assessing banks' future prospects.

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INTRODUCTION

Stock prices in the capital market can reflect the market's assessment of an issuer in the future. Moodley et al., (2025) state that investor sentiment is a key determinant of stock market prices. This means that investor attitudes and perceptions are reflected in market prices through daily trading activity, which causes stock prices to rise or fall. Therefore, stock price movements are a crucial factor for investors to consider when making investment decisions. This is because stock prices reflect market confidence in the issuer's ability to generate profits and maintain future growth. One sector currently receiving attention in the capital market is the financial sector. In addition to its strategic role in the Indonesian economy, the financial sector has also made significant IT investments to continue its digital transformation in line with changes in technology and customer behavior.

Technological advances in the financial sector have led to a fundamental transformation in the banking industry. Financial services have evolved from traditional services to digital-based

services that are more efficient, fast, and inclusive. Financial service processes that previously required a person's physical presence can now be completed simply using a smartphone. Furthermore, payment methods have also undergone a transformation with the introduction of cashless payments using e-wallets, e-money, mobile banking, and QRIS (Quick Response Code Indonesian Standard). Digital transformation in the banking industry during the Covid-19 pandemic has accelerated digital transformation and encouraged digital-based services amidst social restrictions (Murinde et al., 2022; Tut, 2023). However, as time goes by, digital transformation is no longer an option but a necessity for banks. The goal is to continue to survive and thrive in order to achieve competitive advantage and differentiation amidst intense competition between banks and fintech companies (Ferreira et al., 2019). Therefore, technology adoption in banks has now become a means to achieve competitive advantage, enabling banks to continuously strive for efficiency, to maintain survival, and achieve excellence.

Over time, IT investment in banks can impact both internal (bank) and external (investors, capital markets, regulators, and the public). High IT investment in banks can lead to increased operational efficiency, expanded access to financial services, and improved ease, speed, and efficiency of financial services. Furthermore, IT investment in banks can impact external parties through signaling theory (Spence, 1973). IT investment in banks can be a positive signal to investors about the bank's future prospects. This is because banks that make massive IT investments offer higher growth potential, increased operational efficiency, product innovation according to customer needs, and broader service access capabilities. It can be concluded that from a bank's internal perspective, IT investment is beneficial for increasing efficiency to remain competitive, while from an external perspective, IT investment made by banks can provide a positive market signal regarding bank valuation. However, research on IT investment that can affect stock price performance is still limited. Most studies conducted examine the effect of IT investment on bank financial performance such as profitability (Cho & Chen, 2021; Kou et al., 2021; Wang et al., 2021), and bank risk (Li et al., 2025; Wang et al., 2020).

However, how IT investment can affect stock performance remains largely unexplored. Several studies have been conducted, including Liu & Li (2025), who examined the influence of financial technology in the context of Chinese companies, finding that companies with higher technology involvement tended to experience stronger stock returns. Furthermore, Ullah et al. (2025), in their study of companies listed on the Shenzhen and Shanghai stock exchanges, found a positive relationship between digital technology in banks and stock liquidity, indicating strong market interest in those stocks. Agarwal & Zhang (2020); Daragmeh et al. (2021) also found that IT investment, in the form of the introduction of mobile payments and blockchain technology in banks, positively impacted stock performance. Yordanov (2020) also found a positive effect of IT investment on bank stock prices in the long term in 33 commercial banks in France. Finally,Kim (2023) found high stock returns in companies exposed to new technologies.

Based on the explanation above, this study aims to empirically test the effect of IT investment on bank stock performance. This research is important because stock performance reflects the perspectives of external investors in the future. This study uses the perspective of external investors, namely capital market investors, because they often face asymmetric information related to corporate decisions. Information about IT investment in banks can serve as a signal for capital market investors because the many benefits of IT investment are intangible and only become apparent in the long term. Therefore, capital market investors often use IT investment spending as an early indicator to assess a bank's prospects. Therefore, this study aims to determine whether IT investment by banks can provide a positive signal that can increase stock prices.

Furthermore, this research focuses on the banking sector, as IT investment has become a

key strategy in the industry to improve efficiency and service quality. Consequently, investors now assess not only a bank's ability to generate profits but also its ability to adapt to technological developments and intensifying digital competition. The digital transformation of the Indonesian banking sector makes this research even more relevant in understanding how the market responds to banks' IT investments.

LITERATURE REVIEW

IT Investment in the Banking Industry

IT investment in the banking sector can provide a comparative advantage through increased knowledge of customer needs, higher customer satisfaction and retention (Mithas et al., 2012). Banks that invest intensively in IT may also have an advantage in expanding their customer base, as the bank's digital platform can drastically reduce the costs for customers to search for and switch to banks that offer better and more efficient services. According to Beccalli (2007), there are three types of IT investment, namely:

1. Computer Hardware: includes expenditures for commercial systems (including central processing units and basic peripherals, such as data storage devices, terminals, memory, and peripherals), single-user systems (workstations and personal computers), data communications (local area network hardware, wide area network hardware, analog modems, digital access);
2. Software: includes expenditures for packaged software, application solution software, application tools, system infrastructure software;
3. Services: expenditures for consulting services, implementation services, operational services, training and education, and support services.

Signaling Theory

Signaling theory is a theory in financial management that aims to reduce information asymmetry. This theory was first proposed by Spence (1973) in his research paper entitled "Job Market Signaling." This signaling theory initially explained the information asymmetry that occurs in the labor market. In this case, applicants have more information than employers seeking employment. Therefore, applicants can send signals in the form of curriculum vitae information to employers seeking employment. Companies can then review this curriculum vitae to reduce the information gap. Through curriculum vitae, companies can conduct initial employee assessments. Signaling theory was subsequently developed and applied in financial management, where it is linked to information asymmetry between management and investors.

According to Connelly et al. (2025), a signal is an action, attribute, or communication that conveys credible and valuable information to external parties. In signaling theory, there are two parties: a signaler and a receiver. The signaler sends a signal to the receiver to help reduce information asymmetry between the two parties. The receiver then provides feedback to the signaler (Brown et al., 2020). Signaling theory in financial management positions the company (management) as the party providing signals to investors to reduce information asymmetry. This is because internal parties (managers) have more information about the company's condition than external parties (investors). When information becomes imbalanced, external parties will have difficulty assessing the company's prospects or future condition. The signals sent by the company to reduce this information asymmetry can take the form of actions, policies, or information that indicate the company's quality or prospects.

Signals in signaling theory can be financial and non-financial. Financial signals can include information on profitability, dividends, capital structure, and all information related to financial statements, including IT investment expenditures. Furthermore, non-financial signals, according to Chiacchio et al. (2025), encompass various aspects of a company's social and environmental

responsibility that can attract stakeholders' attention. Therefore, non-financial reports can be seen as signals of a company's responsibility to society and the environment (Bae et al., 2023) and its ability to meet recipients' needs (Martínez-Ferrero et al., 2021). Thus, non-financial reports can provide positive signals to external stakeholders, fostering trust and credibility in the company.

IT Investment and Stock Returns

IT investments made by banks can provide a positive response from the market, which has the potential to increase share prices. Moolkham (2025) stated in his research that companies with high levels of technological maturity demonstrate superior shareholder returns compared to less technologically mature companies. This is because IT investments not only improve internal efficiency but also shape positive market perceptions of the company's future prospects. Liu & Liu, 2023) stated in their research that companies undergoing digital transformation are more likely to improve their efficiency and innovation potential, which is reflected in the capital market. This can be realized by increasing intrinsic value, which can potentially increase stock prices. Furthermore, Jiang et al., (2025) found that IT investments leading to digital transformation can effectively improve the quality of internal control and operational efficiency. Ren et al. (2024) stated that integration of digital technology into core processes, which effectively increases revenue growth while reducing expenses.

The positive relationship between IT investment and improved stock market performance is formed because IT investments can help businesses improve operational efficiency, which can directly impact profits and financial performance. Investors believe that banks that invest in advanced IT technology will be able to provide better, faster, and more personalized customer service. As a result, customers become satisfied and loyal, which in turn increases the bank's market share. Furthermore, investors believe that banks that adopt modern technology can better manage risks, such as fraud detection and regulatory compliance. Increased market confidence in banks' IT investments will impact stock prices and shareholder returns.

Thus, IT investment in its development not only transforms a bank's internal operational processes to be better and more efficient, but technology can also change the way market signals are generated. Therefore, disclosing information about a bank's IT investments to the public is crucial because it can send a positive signal to external investors. Huang & Hao (2025); Liu & Li (2025) stated in their research that capital markets can operate and develop based on information efficiency, investor decisions, and the issuer's ability to provide quality signals to the market, which can be enhanced through technology. Positive signals about IT investments in banks are indicators of bank performance and health that can influence investor decisions. Based on this explanation, the following hypothesis can be formulated:

H_1: *There is a positive relationship between IT investment and stock returns.*

RESEARCH METHOD

This study aims to examine the effect of IT investment on stock performance in commercial banks in Indonesia. The banking sector was chosen for this study because the banking industry is currently undergoing accelerated digital transformation. Thus, investors are increasingly paying attention to banks' technological capabilities as an indicator of future prospects. This study excludes Islamic commercial banks due to differences in operational principles, business models, levels of digitalization, and revenue mechanisms, and to achieve homogeneity in bank characteristics. The data used in this study is annual data with a research period of 2012–2022. Because the research period covers the COVID-19 pandemic, this study uses a COVID-19 control variable to control for the crisis caused by COVID-19, which could impact economic conditions and

capital markets. Therefore, a dummy variable is used with a value of 1 for the COVID-19 period of 2020–2022 and 0 otherwise. Furthermore, the sampling method used in this study was purposive sampling, resulting in the following sample size,

Table 1. Determination of Research Sample

No.	Information	Number of banks
1.	Number of banks that have specific IT investment information (hardware and/or software)	73
2.	Number of banks that have specific IT investment information (hardware and/or software) and have not gone public	36
	Number of banks studied	37

Source: Processed research, 2026

Barnewold & Lottermoser (2020) stated in their research that digital adoption information is related to spending on hardware and software. Therefore, this study uses hardware and/or software expenditure as a measure of IT investment compared to total assets as the independent variable. IT investment data available in annual financial reports, specifically in capital expenditures or bank financial statement notes. Furthermore, stock returns are the dependent variable whose data is obtained from annual reports. This study also adds bank-specific control variables such as Size, Loans, Equity, and LLP, as well as a macroeconomic control variable in the form of inflation (INF). Data on Size, Loans, Equity, and LLP were obtained from annual financial reports obtained from the Financial Services Authority (OJK-Otoritas Jasa Keuangan) website. Furthermore, this study uses inflation data obtained from the Central Bureau of Statistics (BPS-Badan Pusat Statistik) website.

This study uses a sample of commercial banks in Indonesia, ensuring they face the same inflation rate. However, inflation remains an important control variable because it is a macroeconomic condition that can affect the banking industry and capital markets in a country. Therefore, inflation in this study reflects changes in macroeconomic conditions over time, which can influence the research variables. The following are operational definitions of each variable used in the study,

Table 2. Operational Definitions of Variables

Variable Name	Variable Definition	Reference
Stock Return	$\text{Return} = \frac{P_t - P_0}{P_0}$	(Liu & Li, 2025)
IT intensity	$\text{INNTI1} = \frac{\text{IT investment expenditure}}{\text{Total assets}}$	(Hamdan et al., 2021)
	$\text{INTTI2} = \frac{\text{IT investment expenditure}}{\text{Loans} + \text{Deposit}}$	(Feng & Wu, 2018)
Size	Ln(assets)	(Kharabsheh, 2026)
Loans	The ratio of total loans to total assets	(Silva & Silva, 2026)
Equity	The ratio of total equity to total assets	(Chun & Ardaaragchaa, 2024)
LLP	The ratio of loan loss provision to total assets	(Chun & Ardaaragchaa, 2024)
INF	Inflation rate	(Kharabsheh, 2026)

Dcov	Dummy variable with the basis of the dummy variable is the year of the COVID occurrence, namely 2020-2022.

Source: Processed research, 2026

Based on the hypothesis proposed in the research, the following will explain the estimation model using panel data which is used to test the effect of IT investment on stock price performance as follows,

$$\text{Return}_{i,t} = \alpha + \beta_1 \text{INTTI}_{i,t} + \text{DCov}_t + \beta_2 \text{Size}_{i,t} + \beta_3 \text{Loans}_{i,t} + \beta_4 \text{Equity}_{i,t} + \beta_5 \text{LLP}_{i,t} + \beta_6 \text{INF}_{i,t} + \varepsilon_{i,t}$$

Based on this equation, the dependent variable in this study is Return, while the IT Investment variable is measured by IT investment intensity (INNTI1). Furthermore, the control variables in this study consist of Covid, Size, Loans, Equity, LLP, and Inflation.

This study uses unbalanced panel data modeling, where the number of observations from each bank during the study period is not equal. This is because IT investment data, in the form of software and/or hardware expenditures from some banks, is not always fully reported annually. Furthermore, this study uses panel data modeling because panel data has several advantages. Panel data modeling allows modeling that can control for unobserved heterogeneity across observation units, providing a more robust analysis of the factors influencing bank stock returns (Bhatia & Gulati, 2024; Molla et al., 2023). Furthermore, to determine the best estimation model from the panel data model, the Hausman test is used. The Hausman test is used to determine the estimation model used between the FEM (Fixed Effect Model) or REM (Random Effect Model). The results of the Hausman test indicate that the best model in this study uses the FEM (Fixed Effect Model). Therefore, this study uses the FEM estimation model. The analytical tool used in this study is STATA 17.

RESULT AND DISCUSSION

This section will explain the results of data processing, analysis, and discussion of the research findings, including descriptive statistics, correlations, hypothesis testing, analysis, and discussion. The descriptive statistics explained in this section relate to the collection, summary, and presentation of data, which can provide initial information regarding the variables used in the research. The following is a table of descriptive statistics for the research variables,

Table 3. Descriptive Statistics

Variables	Observation	Mean	SD	Min.	Max
Stock Return	277	0.2635	1.1177	-0.7768	7.5714
INTTI1	277	0.0011	0.0017	0.0000	0.0129
Size (million IDR)	277	218,640,852	368,431,476	837,124	1,992,544,687
Size (Ln)	277	17.4177	2.7571	6.8855	21.4127
Loans	277	0.6315	0.1068	0.2156	0.8115
Equity	277	0.1765	0.1038	0.0553	0.9251
LLP	277	0.0184	0.0137	0.0004	0.1112
INF	277	0.0392	0.0209	0.0168	0.0838

Source: Processed research, 2026

Based on Table 3, the average stock return is 0.2635 with a standard deviation of 1.1177, indicating significant variation among banks in the capital market. The minimum value is -0.7768, indicating that several banks have negative stock return. However, some banks also have a maximum stock

return of 7.5714. In general, stock returns during the COVID-19 pandemic caused the share prices of several banks to decline due to increased economic uncertainty and market panic. However, after COVID-19, bank share prices recovered and began to rise in line with digital adaptation and government stimulus policies.

Furthermore, IT investment, denoted by INNTI1, has an average value of 0.0011, where most banks have IT intensity ranging from 0.0000 to 0.0129. The very low IT intensity value in the banking industry is because bank assets are dominated by cash, loans, productive investments that can be very valuable. However, even though the value is very small, IT investment is very important for banks to improve bank efficiency and performance. The minimum INTTI value of 0.0000 is obtained from the financial report, which means the bank did not add software in the current period. However, in the following year, the bank reported adding software.

Next, the Size variable, which controls for differences in bank size, is the total assets of each bank. Based on Table 3, Size has an average value of 218,640,852 (in millions IDR), with a minimum value of 837,124 (in millions of rupiah) and a maximum of 1,992,544,687 (in millions IDR). This indicates that the research sample consists of banks with quite diverse asset values, ranging from small banks (min) to large banks (max). The standard deviation of Size is 368,431,476 (in millions IDR), indicating the variation in bank size. There is a significant difference between the highest and lowest Size values, causing the standard deviation of this variable to be very high. Therefore, transformation in the form of a natural logarithm helps to stabilize the data and facilitate analysis in regression.

Loans measures the extent of a bank's lending activity compared to total assets. Higher lending activity will impact stock performance. Based on Table 3, the average value of Loans is 0.6315. This means that, on average, bank credit activity reaches almost half of the bank's total assets. The minimum value of Loans is 0.2156, and the maximum value is 0.8115. The overall standard deviation of the Loans variable is 0.1068. Furthermore, the control variable Equity measures the level of bank capital compared to assets. This ratio also indicates the bank's solvency level, where a higher ratio means the bank has more equity to cover its assets compared to debt. Based on Table 3, the average value of Equity is 0.1765. This means that, on average, 17.65% of bank assets are financed by equity and the remainder is financed by liabilities. The minimum value of Equity is 0.0553, and the maximum value is 0.9251. The standard deviation of this variable is 0.1038.

Next, the LLP is obtained from Loan Loss Provisions compared to total loans. The LLP ratio is a measure of a bank's loan quality, reflecting its assessment of loan quality. A higher LLP means the bank sets aside more funds for loan loss reserves. Based on Table 3, the average LLP value is 0.0184. The minimum value of the LLP is 0.0004 and the maximum value of the LLP is 0.1112. Meanwhile, the standard deviation value of this variable is 0.0137. Finally, inflation is a proxy for a country's economic growth which can also impact the decline in the value of money or wealth. High inflation can cause macroeconomic instability, which impacts bank performance. Based on Table 3, the average inflation rate during the study period was 0.0392. The minimum inflation rate was 0.0168 in 2020, and the maximum was 0.0838 in 2013. This high inflation rate (8.38%) was due to rising fuel prices, rising food prices due to supply shortages, the Ramadan and Eid al-Fitr holidays, and a trade deficit. Furthermore, the standard deviation of this inflation variable was 0.0209, which fluctuated significantly due to the COVID-19 outbreak that began in 2020.

Table 4. Correlation Matrix

	INNTI1	Size	Loans	Equity	LLP	INF
INNTI1	1.0000					
Size	0.1171	1.0000				
Loans	0.0050	0.1982	1.0000			
Equity	0.1452	-0.1789	-0.3524	1.0000		
LLP	0.0158	0.2447	0.0173	-0.0958	1.0000	
INF	-0.0336	-0.0016	0.1901	-0.1364	-0.1540	1.0000

Source: Processed research, 2026

One way to detect multicollinearity problems is to look at the correlation coefficients between the independent variables in the correlation matrix. A correlation value greater than 0.8 indicates a serious multicollinearity problem. Based on Table 4, the correlation coefficient between the independent variables is below 0.8, indicating there is no strong correlation. Therefore, there is no serious multicollinearity problem between the independent variables.

The following describes the results of the hypothesis test on the empirical effect of IT investment on stock returns. Based on Table 5, the INTTI1 coefficient value is positive and significant at 1% alpha on stock return. This indicates that, on average, banks with higher financial technology involvement tend to experience strong stock returns. These results confirm the important role of IT investment in increasing returns and stabilizing stock prices. Therefore, the hypothesis stating that there is a positive and significant effect between IT investment and stock returns is accepted. The results of this study support the research of Agarwal & Zhang (2020); Liu & Li (2025); Ullah et al. (2025), which found that companies that tend to engage in proactive IT investments tend to experience stronger market valuations and better stock performance.

Banks that adopt modern financial technology or make significant IT investments offer the potential for higher growth, increased operational efficiency, product innovation tailored to customer needs, and broader service access. The use of modern technology in banking services can rapidly increase customer base and enable banks to reduce operational costs, thereby increasing profitability. Furthermore, banks that adopt fintech and connect with digital ecosystems such as e-commerce, e-wallets, QRIS, and other fintech services can have greater business growth potential. Therefore, stock investors anticipate IT investments made by banks because they can generate future profits.

Table 5. Hypothesis Test Results (Dependent Variable: Stock Return)

Variable	Coefficient	t statistics	P value
Intercept	12.4714	3.3900	0.0010***
INTTI1	179.0496	3.3000	0.0010***
Dcov	-0.0183	-0.0800	0.9330
Ln Size	-0.4976	-2.3400	0.0200**
Loans	-4.7033	-4.1900	0.0000***
Equity	-1.3289	-0.9000	0.3710
LLP	-8.2233	-1.0900	0.2750
INF	-9.7336	-2.9900	0.0030***
	R square		0.1590
	F stat		6.2600
	Prob (F-statistic)		0.0000
	Number of Observations		277

p-values in parentheses * p<0.1, ** p<0.05, *** p<0.01
(Source: Processed research, 2026)

Furthermore, the estimated coefficients on the control variables indicate that larger banks (Size)

and those with more loans actually have lower stock returns. These results support Prakoso et al. (2024), who also found a negative relationship between bank size and stock prices. This relationship can be explained by the argument that large banks offer more stability and security compared to high returns. This is because large banks tend to be in a mature stage, so their performance growth is limited and not aggressive, but tends to be stable. This is in contrast to small banks, which still have the potential to experience rapid growth, such as through digitalization trends or improved performance. Furthermore, small banks tend to have more affordable stock valuations, allowing them to increase their valuations when their performance improves.

The next control variable is Loans, which shows a negative coefficient on stock returns. This means that banks that provide more credit tend to have lower stock returns. These results support research by Devillard & Weill (2026), which found a negative relationship between loans and stock market prices. Investors perceive banks that provide more credit as having greater credit risk, which can ultimately lower profits and stock prices. Furthermore, banks that provide larger loans also tend to have higher liquidity risk. Therefore, stock investors prefer banks with healthy and high-quality credit growth over those with high but risky credit growth.

Finally, the macroeconomic control variable, INF, showed a negative relationship with stock returns. This result supports Nemati & Moghaddam (2026); Schnorpfeil et al., (2025); Zuhroh & Veronika (2021), who also found a negative relationship between inflation rates and stock returns. This means that high inflation is associated with low stock returns. High inflation rates tend to generate negative sentiment among investors. This is because high inflation causes loan interest rates to rise, making investment in bank stocks less attractive, leading to lower-risk investment instruments being chosen. Furthermore, high inflation can also increase credit risk due to decreased purchasing power, which in turn leads to lower business income. Consequently, businesses experience difficulty meeting their debt obligations, leading to higher credit risk.

In regression analysis, the "true model" remains unknown to the researcher, and they face choices between alternative model specifications (Huntington-Klein, 2022). Robustness testing allows researchers to explore the stability of the main estimation results with variations in model specifications. Robustness testing is a validity test of research results. This study uses an alternative measure of IT investment in the form of hardware and software expenditures compared to Loans and Deposit (INNTI2). This ratio measures IT investment relative to the bank's primary intermediary activities to support fund collection and distribution activities.

Table 5. Results of Hypothesis Testing using alternative IT intensity measurements

Variable	Coefficient	t statistics	P value
Intercept	13.0510	3.5500	0.0000***
INTTI1	204.7222	3.6000	0.0000***
Dcov	-0.0307	-0.1400	0.8870
Ln Size	-0.5269	-2.4800	0.0140**
Loans	-4.6491	-4.1700	0.0000***
Equity	-1.8273	-1.2100	0.2290
LLP	-7.4576	-0.9900	0.3210
INF	-9.9502	-3.0700	0.0020***
	R square		0.1660
	F stat		6.6000
	Prob (F-statistic)		0.0000
	Number of Observations		277

p-values in parentheses * p<0.1, ** p<0.05, *** p<0.01
(Source: Processed research, 2026)

Table 6 shows that the INNTI2 coefficient is positive and significant at α 1% on stock return. Furthermore, the control variable coefficients also show the same results as the previous analysis. Therefore, the robustness test results using INNTI2 as an alternative IT investment measure is proven to be robust in testing the hypothesis.

In conclusion, the results of this study support the Signaling Theory (Spence, 1973), which demonstrates that IT investment can increase stock returns. These results confirm those of (Huang & Hao, 2025; Liu & Liu, 2023; Liu & Li, 2025; Moolkham, 2025) which found a positive relationship between IT investment and stock performance. This means that investors view IT investment as a positive signal about a bank's future prospects. This is because banks that adopt modern financial technology or make massive IT investments offer higher growth potential. Through IT investment, banks can achieve operational efficiency, innovate product services according to customer needs, and increase access to broader services. The use of modern technology in banking services can rapidly increase the number of customers and enable banks to reduce operational costs, thereby increasing profitability. Furthermore, banks that adopt fintech and connect with digital ecosystems such as e-commerce, e-wallets, QRIS, and other fintech services can have greater business growth potential. Therefore, investors believe that IT investment in banks can improve efficiency, increase growth, and increase market share. Therefore, stock investors anticipate IT investments made by banks because they can generate future profits.

CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS

IT investment in banks can influence investors' perceptions of the bank's future prospects. This study aims to empirically test the effect of IT investment on stock price performance, as measured by stock returns. The sample used in this study was commercial banks listed on the Indonesia Stock Exchange (IDX). Empirical results show that banks with higher technology involvement tend to have strong stock returns. This indicates that the market positively assesses IT investments made by banks because they can offer higher growth potential, increased operational efficiency, product and service innovation according to customer needs, and broader service access capabilities. Thus, the results of this study support the Signaling theory, in which IT investment in banks is viewed by external investors as a positive signal about the bank's prospects and reflects management's belief that IT investments can provide long-term benefits.

This study has a weakness in the limited data on IT investments, specifically hardware and software additions reported by banks in their financial statements, during the current period. Consequently, this study only used a very limited sample of banks. Future research could examine the impact of fintech adoption in banks or announcements of digital bank transformations on stock market performance. This is because IT investments relate not only to hardware and software but also to services, specifically fintech or digital-based services. Furthermore, the development of fintech and digitalization in the banking industry has led to structural changes in banks, encompassing business models, cost structures, competition, revenue sources, and risks that can impact bank operations, which in turn influence investor behavior in the capital market

Declaration of Generative AI in Scientific Writing

This study used ChatGPT and a Google search without AI Mode to find initial research information. However, the author paraphrased and continued to search for and adjust relevant, up-to-date citations based on both sources. Furthermore, this study used Google Translate to translate this article. Author takes full responsibility for publication’s content.

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