



The Influence of Bank Risk and Bank Internal Factors on Stock Prices in the Indonesian Banking Industry

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Abstract: This study examines the influence of risk and internal bank factors on banking companies listed on the Indonesia Stock Exchange. Banking risk is measured by Non-Performing Loans, while internal bank factors such as Book to Market Ratio, Return on Equity, Price/Earnings to Growth Ratio, Debt to Equity Ratio, Earnings per Share, Bank Size, and Institutional Ownership Percentage are tested through panel data regression to determine their effect on stock price changes in 37 conventional banking companies listed on the Indonesia Stock Exchange from 2018 to 2022. Based on Model Selection Test, the Fixed Effect Model was found to be the most appropriate model for testing. The results of the study conclude that non-performing loans, book to market ratio, earnings per share, and bank size have a negative and significant impact on stock prices. Meanwhile, return on equity, price/earnings to growth ratio, debt to equity ratio, and institutional ownership do not affect stock prices. This study provides a broader overview of the factors influencing stock

prices in banking companies listed on the Indonesia Stock Exchange. Therefore, in maximizing their stock prices, banking companies need to pay attention to factors that significantly affect stock prices.

Keywords: Book to Market Ratio, Debt to Equity Ratio, Non-Performing Loan, Price/Earnings to Growth Ratio, Return On Equity

Introduction

The banking industry is one of the sectors that severely affected by the pandemic (Soko & Harjanti, 2022). It's reflected on the value of Non-Performing Loans (NPL) that increases along with the vicinity of the outbreak in Indonesia. The NPL value at the start of the Covid-19 Pandemic was 2.79% and reached its peak in August 2021 at 3.35% (OJK, 2021). A higher NPL is interpreted as a negative signal to company performance (Martiningtiyas, Muchtar, Ristiqomah, Rahman, 2022).

The negative impact of the Covid-19 Pandemic on the Company's performance can also be seen in the data of firm's stock price. Data from the Indonesian Stock Exchange shows that the Composite Stock Price Index (IHSG) value plunged from the initial phase of the pandemic of IDR 6,300 to IDR 3,900 in just three months. This indicates that the majority of shares in the index experienced a decline in performance (Aliani, Al-kayed, Boujlil, 2022).

Table 1. Stock Price of the 5 Largest Bank

No	Bank	Price per Jan '20	Price per Mar '20	Percent Decrease
1	BBTN	IDR 2.159	IDR 840	-61%
2	BBNI	IDR 9.000	IDR 3.600	-60%
3	BMRI	IDR 7.412	IDR 4.600	-38%
4	BBRI	IDR 4.500	IDR 2.810	-37%
5	BBCA	IDR 34.000	IDR 23.675	-30%

Source: Indonesia Stock Exchange (2023)

Even though there were significant fluctuations, the number of investors during the pandemic significantly increased. The number of investors doubled from 1,5 million investors in pre-pandemic to 3 million in post-pandemic (KSEI, 2023). This phenomenon is allegedly caused by the downturn of the real sector and the expectation that the stock sector will improve with the potential for capital gains when stock prices rebound in the future (Harahap, 2022).

One of the popular stock investment techniques to get maximum capital gain, namely the "value investing" technique, which was introduced by Graham (1949) in the book "The Intelligent Investor" generally focuses on identifying shares whose prices are considered too low compared to their real value. The assumption is that shares that are priced too low will have much higher prices in the future. Referring to this phenomenon, identifying the factors that influence the price of a share is important for investors.

Factors such as Non-Performing Loan (NPL), Book to Market Ratio (BV/MV), Return on Equity (ROE), Debt-to-Equity Ratio (DER), Earning per Share (EPS), Firm Size, Institutional Ownership (IO) known as factors that has impact on a firm stock price. While it has been extensively studied, inconsistencies between one study to others if it's not always happened, are not uncommon. Other factors, such as Price/Earnings to Growth Ratio (PEGR) has not been so much studied, so it has potential as area in the future research, including in the present study.

Research conducted by Santoso & Firdausy (2021) found that NPL had a negative effect on stock prices. But it contradicts with Ziliwu & Wibowo (2020) which found that there was no significant effect of NPL on share prices. Rubaiyath & Lalon (2022) studied the impact of BV/MV on stock price and found a negative and significance relationship. On the other hand, research conducted by Wagle (2021) found that the book value to market value ratio had a positive and significant impact.

Another research conducted by Hartono, Wijaya, Hartono, Dizar, Magetsari, Anggara, Sujono (2021) found that other factor such as ROE had a positive and significant effect on stock prices while research by Fathihani (2020) found the opposite. Another factor, such as PEGR has been studied by Rubaiyath & Lalon (2022). It's the only research that we found so far that focus on the impact of PEGR on stock price. It's found that PEGR does not have a significant relationship with stock prices.

Debt-to-Equity Ratio has been studied by Ramadhani & Muchtar (2023) resulting

negative and significance effect while Yanto, Christy, Cakranegara (2021) found it has positive and significance effect. Ginting & Sagala (2021) that studied the impact of EPS on stock price found it has significance impact on stock price while Fathihani (2020)'s research is not.

In Nasution & Sari (2020), it's found that firm size is one of the factors that has positive and significance impact on stock price. However, Gharaibeh & Jaradat (2021) found that this factor had a negative effect on firm size on stock prices. Lastly, it's found that institutional ownership in the research conducted by Irfani & Anhar (2019) has positive and significance impact on stock price. But, Ermanda & Puspa (2022) found that institutional ownership has negative impact.

The discussion in previous paragraph showed how study on factor that influence stock price is important, especially in post-pandemic world. While some factors have been extensively studied, it has inconsistency result. One factor, i.e. PEGR, is still rarely studied. Referring to this, this study tried to conduct research with the title "The Influence of Risk and Internal Bank Factors on Share Prices in the Indonesian Banking Industry" to get more accurate results regarding the factors that influence the share prices of banking companies in Indonesia.

Literature Review

According to Priantono, Hendra, Anggraeni (2018), share prices can be used as a very important factor because they can show the success of the company's overall achievements. How the stock price change can be reflected in the variable changes in market price of stock (CMPS), namely fluctuations in the value of certain shares traded on the financial market during a certain period.

How a stock price is formed is still in the matter of debate. Signal theory that proposed by Spence (1973) focus on information asymmetry. As assumed in this theory, there's an imbalance of information between the manager and stock holder. This information imbalance can lead to uncertainty and pricing errors in financial markets. Share prices will be formed effectively if this information asymmetry can be eliminated, namely through signals provided by the company. But how signals is projected and which signal is categorized as strong or weak signal is still in the matter of debate.

Another theory, Efficient Market Hypothesis (EMH) that first introduced by Fama & French (1992) explain the stock price formation through different lens. EMH theory assumed that stock price is formed according to information that incorporated to the market. As consequence to this premise, the EMH theory is classified into three. Those are weak EMH, semi-strong EMH, and strong EMH, that depends on the assumption of how much information is incorporated to the market.

The Influence of Non-Performing Loan on Stock Price

A non-performing loan (NPL) is a sum of borrowed money whose scheduled payments have not been made by the debtor for a period of time (Saeidi P, Saeidi s, Gutierrez, Streimikiene, Alrasheedi, Saeidi S P, Mardani, 2021). Research conducted by

Fatma (2020) found NPL have a negative effect on stock prices because it negatively impact on bank performace. It is supported by Nugroho & Rachmaniyah (2020), Ziliwu & Wibowo (2020), Nasikin & Yuliana (2022), and Latif, Murni, Tawas (2021). In contrast, Harahap & Hairunnisah (2017), Nino et al. (2016), and Latif et al. (2021) found that NPL have a significant and positive effect on stock prices. Based on this, the hypothesis proposed is as follows:

H1: Non-Performing Loan (NPL) has significant impact on stock price.

The Influence of Book to Market Ratio on Stock Price

Book to Market Value Ratio provides an illustration of the extent to which the market assesses a company based on the value of assets recorded in the books by comparing two main aspects of the company's financial position: book value and market value (Harahap, 2009). Study conducted by Khomidah & Setiawan (2022) and Mansyur, Mus, Rahman, Suriyanti (2020) found that BV/MV has negative impact on stock price. It's supported by Farooq, Rehman, Khan, Bilal (2021), Gharaibeh & Jaradat (2021), Rubaiyath & Lalon (2022), Bratamanggala (2018), and Saifi (2017) which found it has negative and significant effect on stock prices. The only study that contradicts those view was Che Wu, Huang, Wang, Zhong (2018). Based on this, the hypothesis proposed is as follows:

H2: Book to Market Ratio has a significant impact on stock prices

The Influence of Return on Equity on Stock Price

ROE is a financial ratio used to assess how effectively a company utilizing its shareholder equity to generate profits. A study that conducted by Sahlan & Syaroni (2020) and Christia, Nurmala, Noviyanti, Hutagalung (2021) found ROE has positive and significant impact on stock price. Those study are supported by Yulia & Rusli (2022), Imansyah & H. Mustafa (2021), and Amalia, Sutiman, Nazir (2022). But, Sobana (2021) and Nugroho, Purwito, Fatonah, Susanti (2022) contradict to previous result which found ROE has a negative impact on share prices. Based on this, the hypothesis proposed is as follows:

H3: Return on Equity (ROE) has a significant impact on stock prices

The Influence of Price/Earnings to Growth Ratio on Stock Price

The Price/Earnings to Growth (PEG) ratio is a financial ratio used to assess the stock valuation of a company by taking into account the growth of earnings per share. This ratio combines the approach of the price to earnings ratio (PER) with the possibility of company growth in the future (Rubaiyath & Lalon, 2022). So far, the study that focus on PEGR impact on stock price is conducted by Rubaiyath & Lalon (2022). It's found that PEGR has no significant impact to stock price. Based on this, the hypothesis proposed is as follows:

H4: Price/Earnings to Growth Ratio (PEGR) has a significant impact on stock prices

The Influence of Debt-to-Equity Ratio on Stock Price

Debt to equity ratio is a ratio that provides an overview of the extent to which a company uses debt to fund its operations compared to the funds provided by shareholders. A study conducted by Juwita & Diana (2020) found that DER has a negative effect on stock

prices. It supported by Wulansari, Sulastri, Widiyanti, Adam (2023), Amalia et al. (2022) and Christia et al. (2021). On the other hand, Akhmadi et al. (2022) found DER has a positive and significant effect on stock prices. It supported by Asmirantho & Somantri (2017) and Yandra (2019). Based on this, the hypothesis proposed is as follows:

H5: Debt to Equity Ratio (DER) has a significant effect on stock prices

The Influence of Earning per Share on Stock Price

Earnings per share describes the amount of income common shareholders generate for each share. A study conducted by Asikin, Saudi, Roespinoedji (2020) found that EPS has positive impact on stock prices. It supported by Amaliyah et al. (2017), Lusiana (2020), Choiriyah et al. (2021) and Harlan & Wijaya (2022). But, study conducted by Rahmadewi & Abundanti (2018) contradict to those view. It supported by Mahendra, Lutfi, Dekrijanti, Agnesia (2023) and Acharya & Pradhan (2019). Based on this, the hypothesis proposed is as follows:

H6: Earning Per Share (EPS) has significant impact on share prices

The Influence of Firm Size on Stock Price

Firm Size is an indicator that can be measured as total assets of a bank. A study conducted by Damayanti (2023) shows that company size has a positive effect on share prices. It supported by Gharaibeh & Jaradat (2021), Rubaiyath & Lalon (2022), Sumarna & Agustini (2022) and Novita, Djazuli, Choiriyah (2022). Contradict to these finding, Darami, Shahidan, Romli (2022) and Ashraf & Cugtai (2021) found Firm Size has negative impact on stock price. Based on this, the hypothesis proposed is as follows:

H7: Company Size (SIZE) has a significant impact on share prices

The Influence of Institutional Ownership on Stock Price

Institutional Ownership (IO) is the percentage of ownership of shares owned by a company or certain institution. Study conducted by Pongkorung, Tommy, Tulung (2018) found that institutional ownership has a positive effect on stock prices. It supported by Al-Dhamari, Al-Wesabi, Farooque, Tabash, El Refae (2023), Nur, Ibrahim, Sonjaya, Ridhwansyah, Taotubun (2022), Song, Yeon, Lee (2021) and Imtiaz, Ahmad, Karim (2019). However, study by Bali et al. (2017), Dumrongwong (2020) and Park & Song (2018) found that institutional ownership has a negative effect on stock prices. Based on this, the hypothesis proposed is as follows:

H8: Institutional Ownership (IO) has a significant impact on stock prices.

Research Method

The population of this study is 47 banking companies listed on the Indonesia Stock Exchange from 2018 to 2022. Sampling was carried out using a purposive sampling method. The financial data used is taken from banking company annual reports. The final sample consisted of 155 firm-year observations.

This research applies a quantitative research approach using secondary data. The data processing technique used is panel data regression using Eviews 9.0 data processing software and follow the model below:

$$CMPS_{it} = \alpha + \beta_1 NPL_{it} + \beta_2 BV/MV_{it} + \beta_3 ROE_{it} + \beta_4 PEGR_{it} + \beta_5 DER_{it} + \beta_6 EPS_{it} + \beta_7 SIZE_{it} + \beta_8 IO_{it}$$

The equation model from this research will test the relationship between the independent variables NPL, BV/MV, ROE, PEGR, DER, EPS, SIZE and IO on the dependent variable CMPS. The operational definitions of each variables in the equation model are explained in the Table 2.

Table 2. Operational Definition of Each Variable

Variable	Formula	Source
CMPS	$CMPS = \frac{Harga\ Penutupan_t - Harga\ Penutupan_{t-1}}{Harga\ Penutupan_{t-1}} \times 100\%$	Rubaiyath & Lalon (2022)
NPL	$NPL = \frac{Total\ Kredit\ Bermasalah}{Total\ Kredit\ Book\ Value}$	Nasikin & Yuliana (2022)
BV/MV	$BV/MV = \frac{Market\ Price\ Per\ Stock}{Earning\ After\ Tax}$	Rubaiyath & Lalon (2022)
ROE	$ROE = \frac{Total\ Equity}{PER}$	Rubaiyath & Lalon (2022)
PEGR	$PEG = \frac{Pertumbuhan\ EPS\ tahunan}{jumlah\ liabilitas}$	Rubaiyath & Lalon (2022)
DER	$Debt\ to\ Equity\ Ratio = \frac{jumlah\ ekuilitas}{Earning\ After\ Tax}$	Rubaiyath & Lalon (2022)
EPS	$Earning\ per\ Share = \frac{Number\ of\ shares\ outstanding}{Company\ Size}$	Rubaiyath & Lalon (2022)
SIZE	$Company\ Size = Ln\ Total\ Asset$	Rubaiyath & Lalon (2022)
IO	$Institutional\ Ownership = \frac{Jumlah\ Saham\ Institusi}{Jumlah\ Total\ Saham}$	Rubaiyath & Lalon (2022)

Source: Compiled from various Sources (2024)

Result and Discussion

Descriptive Statistical Test. Table 3 provides an illustration that the independent variable Stock Price (CMPS) has an average value of 0.2315 with a standard deviation value of 1.2845. A standard deviation value that is greater than the average value indicates that there is a large difference between the highest value of CMPS. The highest CMPS is 8.0000, an increase 800% of stock price, by BCIC in 2018 and the lowest value of -0.7843, a drop 78% of stock price, by BBKA in 2021.

Descriptive statistic of independent variable data generally is consistent, with low standard deviation values and the distance between the highest and lowest values is not too contrast. However, there are exceptions to the PEGR and EPS variables. The PEGR standard deviation value of 13.8849 is greater than its mean of 1.6700, as can be seen from the distance between the lowest PEGR value of -18.2200 (AGRO in 2020) and the highest value of 144.8700 (BNBA in 2021). This indicates that the profit growth value of banking companies is quite volatile in the year under observation.

The EPS standard deviation value of 214.1892 also has higher value than the mean value of 111.4200. This is reflected in the lowest EPS value of -133.8800 (AGRO in 2021) and the highest lowest value of 1,158.79 (BBCA in 2019). This data illustrates that the value of the profit level and the number of shares outstanding is fluctuating between firm in every year of observation.

Table 3. Descriptive Statistic

Variable	Observation	Mean	Maximum	Minimum	Std. Dev.
CMPS	155	0,2315	8,0000	-0,7843	1,2845
NPL	155	0,0313	0,1705	0,0000	0,0243
BVMV	155	1,2075	6,2159	-0,1166	0,9535
ROE	155	0,0251	0,3646	-1,2392	0,1392
PEGR	155	1,6772	144,8775	-18,2227	13,8849
DER	155	5,0325	13,5844	0,8186	2,3259
EPS	155	111,4241	1158,7910	-133,5857	214,1892
SIZE	155	13,6624	15,2994	12,5707	0,7517
IO	155	0,7963	1,0000	0,3960	0,1783

Source: Output Eviews 9.0 (2024)

Model Specification Test. The model selection test in this research consists of Chow Test and Hausman Test.

Chow Test. This test determines the best model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Table 4 shows that the value of Prob. Cross-section F is 0.0367 which is less than 0.05. This indicates that the best model between the Common Effect Model and the Fixed Effect Model is the Fixed Effect Model.

Tabel 4. Chow Test

Dependent Variable	Chi-Square	Probability
CMPS	10,2335	0,0367

Source: Output Eviews 9.0 (2024)

Hausman Test. This test determines the best model between the Fixed Effect Model (CEM) and the Random Effect Model (REM). In Table 4 it is known that the value of Prob. of 0.0000. This means that the value of Prob. $(0.0000) < 0.05$, so the best model between the Fixed Effect Model and Random Effect Model is the Fixed Effect Model (FEM). From these two tests, it can be concluded that the most suitable model for this study is Fixed Effect Model (FEM).

Table 5. Hausman Test

Dependent Variable	Chi-Square	Probability
CMPS	45,9345	0,0000

Source: Output Eviews 9.0 (2024)

Discussion

In the present study, the sample data which consist of panel data of 155 firm-years of banking companies was regressed using panel data regression using Eviews 9.0. Based on the results of the model selection analysis, the most suitable model is the Fixed Effect Model (FEM). The results of the FEM test can be seen in Table 6 for the F test. It can be interpreting from this table that the independent variables from this research simultaneously have a significant effect on the dependent variable. This is indicated by the probability value in the F test of 0.0000 which is smaller than 0.05.

Table 6. Hasil Uji F

Dependen Variable	Probability
CMPS	0,0000

Source: Output Eviews 9.0 (2024)

Apart from that, based on FEM test on Table 7 for the Goodness of Fit Test can be interpret that the goodness of fit (adjusted R-squared) value from this panel data regression test is 0.4459. This indicates that the independent variable in this study is able to explain 44.59% of the dependent variable. Meanwhile, the remaining 55.41% is explained by other variables.

Table 7. Hasil Uji Goodness of Fit (Adjusted R2)

Dependen Variable	R ²	Adjusted R ²
Harga Saham	0,5769	0,4439

Source: Output Eviews 9.0 (2024)

According to the results of panel data regression analysis using the Fixed Effect Model (FEM), there are four dependent variables that partially have a significant effect on stock prices. The four independent variables are NPL, BV/MV, EPS and SIZE, all of which have a negative and significant effect on share prices.

Table 8. Summary of t-Test

Independent Variable	Coefficient	Probability
Constant	26,5601	-
NPL	-4,4404	0,0000
BV/MV	-0,5110	0,0277
ROE	-0,6638	0,2945
PEGR	0,0013	0,7022
DER	0,1123	0,2592
EPS	-0,0039	0,0017
SIZE	-1,8769	0,0233
IO	1,7871	0,3050

Source: Output Eviews (2024)

The research findings of a negative and significant influence of NPL on stock prices are in line with research by Nugroho & Rachmaniyah (2020), Ziliwu & Wibowo (2020), Nasikin & Yuliana (2022), and Latif et al. (2021). A high NPL value indicates that the bank faces a high risk of default, which will ultimately reduce the cash flow and profits generated by the Company. For this reason, NPL can act as a signal for investors in making investment decision.

The negative and significant influence of NPLs on stock prices indicates that the findings in this research are in line with signaling theory. This proves that investors are risk averse which results in lower share prices. This significant influence is due to the NPL representing the credit risk borne by the Company. Credit is the main source of income for companies operating in the banking sector, so share prices will be sensitive to sentiment related to credit risk from companies in that sector. A higher NPL value indicates that banking risk is greater. As a result, investors will be more careful and this will result in share prices falling.

The BV/MV variable which has a negative and significant effect in this research is also supported by the research results of Rubaiyath & Lalon (2022), Gharaibeh & Jaradat (2021), Wadud (2017). In the context of signaling theory, a low BV/MV value is a positive signal given by the company. A low BV/MV value indicates that there is optimism about the Company's future growth and the small risks that may accompany the Company.

The results of testing the sixth hypothesis carried out in this study show that the earnings per share (EPS) variable has a negative and significant effect on share prices. The results of this research, although not in line with research from Rubaiyath & Lalon (2022), are in line with research by Rahmadewi & Abundanti (2018), Mahendra, Lutfi, Dekrijanti, Agnesia (2023), and Acharya & Pradhan (2019) who found that the greater the The profit for each share of a company will have an impact on reducing the share price of a banking company.

In the context of signaling theory, the larger or smaller the EPS value will be a positive or negative signal for investors to make investment policies. The negative influence of EPS on share prices is caused by investor confidence in the company's performance being reduced. One of the reasons for this is the Covid-19 pandemic (Liu, Manzoor, Wang, Zhang, Manzoor, 2020). Like companies in other sectors, the banking industry also faces obstacles, one of which is increasing banking risk, namely an increase in non-performing loans (Zainuri & Bawono, 2022). Due to the unclear direction of the Covid-19 Pandemic when the sample range for this research was taken, it resulted in a decline in share prices, even though there was an increase in the EPS value.

According to the results of testing the seventh hypothesis, it is known that the bank size variable has a significant and negative effect on stock prices. The results of this research are not in line with the research of Rubaiyath & Lalon (2022), but the findings of this research are in line with the research of Darami, Shahidan, Romli (2022) and Ashraf & Cugtai (2021) who found that the value of bank size is measured by the natural logarithm of total assets of a company can predict the negative influence of the size of the share price in a company.

If a firm has large asset but not good asset management, it will have a negative impact

on the company's performance (Homaidi, Almaqtari, Yahya, Khaled, 2020). For example, a bank with a large size, in this case having high total assets, if it has quite large balances of receivables and unproductive assets such as repossessed assets (AYDA), it will be a costly to store and manage these assets. The results of this research show that bank size is seen as a negative signal for investors. Even though large sizes have the potential to have better resources to be able to compete, investors pay more attention to the risks posed by large asset values. As a result, the larger the size of the banking company, the lower the share price. Furthermore, larger banks also often deal with stricter regulations and more complex operations which add complexity for manager to manage its asset management (Ando, Alvero, Xiao, 2022).

Conclusion

The purpose of this study is to determine the factors that influence stock prices in the banking companies listed on the Indonesian Stock Exchange. Based on the results of the panel data regression, it is known that four of the eight independent variables have a negative and significant effect on stock price, those are NPL, BV/MV, EPS, and Bank Size. This finding can be used as guidance for manager for company policy and investor for decision making in the future, so that an optimum share price or return of investment can be achieved. However, this study also has several limitations, such as not consider the impact of the Covid-19 Pandemic and being limited to companies in the banking sector only.

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