

The Determinant of Price Earning Ratio: Evidence from the Indonesian Banking Sector

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Abstract

Banking plays an important role in developing a country's economy. In addition to conducting the banking intermediation function, it is also required to create profits. To create profits, capital is needed through the Indonesian capital market. Investors buy banking shares in the hopes of obtaining dividends and capital gains. Even though investors buy blue chip shares, the investment risk remains. Therefore, investors must understand the concept of Price Earning Ratio (PE ratio or PER) to minimize the risk when buying and selling blue chip and non-blue chip banking shares. This study is about the factors that influence the PE ratio of blue chip and non-blue chip banking shares in Indonesia. This study uses data from 2007 to 2016 with a sample of sixteen banks listed on the Indonesia Stock Exchange (IDX) consisting of four blue chip banks and twelve non-blue chip banks. The results of this blue chip model study show that cost to income ratio, loan to deposit ratio, net interest margin, dividend payout ratio, non-performing loan, loan to asset ratio, inflation, and interest have a significant effect on PE ratio with R-squared 0.80. The results of this non-blue chip model study show that return on assets, cost to income ratio, loan to deposit ratio, non-performing loan, loan to asset ratio, inflation, and interest have a significant effect on PE ratio with R-squared 0.67.

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Introduction:

Banking is one of the financial sectors that has an important role in building a country's economy. Banking has a role in carrying out the banking intermediation function, namely by collecting public funds and channeling loans to the public. In addition to carrying out the intermediation function to move the economy of a country, banks must also be able to create healthy performance so as to generate profits. To create profits, banks need capital by conducting an initial public offering in the Indonesian capital market.

In the capital market, banking shares are divided into two groups, namely: blue chip banking shares and non-blue chip banking shares. Blue chip shares are the leading stocks listed in

the LQ-45 stock group. Blue chip banking shares since 2007 are shares of PT. Bank Rakyat Indonesia (Persero) Tbk, PT. Bank Mandiri (Persero), Tbk, PT. Bank Negara Indonesia (Persero), Tbk, and PT. Bank Central Asia, Tbk. Twelve non-blue chip banking shares since 2007 are shares of PT. Bank Danamon Indonesia Tbk, PT. Bank CIMB Niaga Tbk, PT. Bank Bukopin Tbk, PT. Bank NISP OCBC Tbk, PT. Bank Pan Indonesia Tbk, PT. Bank Victoria International Tbk, PT. Bank Mayapada Internasional Tbk, PT. Bank Bumi Artha Tbk, PT. Bank Capital Indonesia Tbk, PT. Bank Mega Tbk, PT. Bank Himpunan Saudara 1906 Tbk, and PT. Bank Artha Graha International Tbk.

Blue chip shares are names used in world capital markets to show the best or the best stocks. According to the Indonesia Stock Exchange (IDX), what is referred to as blue chip shares are stocks that have high demand and generate high profits (capital gains and or dividends) and have other characteristics, namely: having a healthy financial performance, high stock liquidity, transacted at a reasonable price, and the movement or fluctuations in stock prices on the market are reasonable.

Since banking is a high-risk business, it is necessary to conduct research on PE ratio of blue chip and non-blue chip banking share so that investors better understand the difference in PE ratio of blue chip banking and non-blue chip banking shares as a tool for decision making in order to buy shares (undervalued) or sell shares (overvalued) and to find out what factors influence the PE ratio of banking shares in the Indonesian capital market.

It is estimated that the factors that influence the PE ratio of banking stocks are: a) fundamental factors (ROA, CIR, LDR, NIM, DPR, CAR, NPL, LAR); b) risk factors (Beta); and c) macroeconomic factors (inflation rates, interest rates, exchange rates, and economic growth).

This research is also to find the most appropriate PE ratio prediction so that investors better understand the different risks of investing in banking stocks blue chip and non-blue chip in the Indonesian capital market.

Jones (1991) states that PE ratio is one of the important aspects of interest to analysts and financial managers. Gibson (1992) states that companies with high growth possibilities usually have a large PE ratio, while low growth companies usually have a low PER.

Molodovsky (1953, Nov.) was the scientist who first created the theory of PE ratio (A Theory of Price-Earning Ratios). By applying the concept of future earnings strength (future earnings power) which is an average profit of ten years, this study

uses it as a basic earnings power. PE ratio is a multiplier to utilize the power of profit. Molodovsky (1953, May) stated that the high PE ratio of a stock shows the low profit earned by the company compared to future earnings power estimates. While the low PE ratio of a stock shows the high profit earned by the company compared to future earnings power estimates.

Whitbeck and Kisor (1963) stated that PE ratio was influenced by Dividend Payout Ratio (DPR), earnings per share growth (growth rate in earnings per share), and standard deviation of changes in earnings per share (standard deviation in EPS change). The results showed that PE ratio had a positive relationship with DPR and earnings per share growth (growth rate in earnings), and PE ratio had a negative relationship to the standard deviation of changes in earnings per share (EPS).

Murphy and Stevenson (1967) in their study states that there is no relationship (correlation) between PE ratio and earnings growth rate.

Malkiel and Cragg (1968) continued Whitbeck's and Kisor's research by adding Beta as an independent factor affecting PE ratio. The results showed that PER had a positive relationship with Dividend Payout Ratio and the growth rate of earnings per share (growth rate in earnings), and PER had a negative relationship to the stock Beta (risk).

Basu (1977) concluded that the portfolio of stocks with low PE ratio has a greater return than the portfolio of stocks with high PE ratio. On the contrary, the stock portfolio with high PE ratio has a smaller return than the portfolio of stocks with low PE ratio. In addition PE ratio can be used to predict future stock investment results (future stock investment yield).

Beaver and Morse (1978) state that PE ratio reflects the profit structure (profit) that is duration (durative) and temporary (temporary) from the current surplus. So PE ratio reflects the proportion of temporary profit to current surplus

and profit capitalization probability called change of future earnings (change of future earnings). Because long-term earnings can predict future profits, then PE ratio is an earnings growth index. They stated that there is a negative relationship between PE ratio and current year's earnings growth (current year's earnings growth).

Reinganum (1981), and Cook and Rozeff (1984) state that PE ratio is influenced by non-systematic risk (unsystematic risk) and firm size (firm size).

Keown, Pinkerton and Chen (1987) state that PE ratio can be used to select or choose a portfolio.

Tseng (1988) states that a stock portfolio that has a low PE ratio turns out to have a high risk, whereas a stock portfolio that has a high PE ratio has a low risk.

Ou and Penman (1989) state that there is a negative relationship between the prediction of PE ratio and earnings prediction accounting information, meaning that if the prediction of PE ratio increases, then accounting information for profit predictions decreases, and vice versa.

Jaffe *et al.* (1989) found that stocks that have high PE ratio generally have low returns. On the other hand, those who have low PE ratio generally have high returns.

Constand, Freitas, and Sullivan (1991) state that PE ratio has a positive relationship to earnings growth, dividend growth, risk, and ownership structure. Furthermore PE ratio has a negative relationship to the Dividend Payout Ratio, land value (land holdings), foreign investment, and special accounting reserves.

Gibson (1992) says that the PE ratio ratio is seen by investors as a measure of the ability to generate future earnings from a company. Investors can consider these ratios to sort out which stocks will be able to provide large profits in the future, with consideration if companies with high growth usually have a large PE ratio; low growth companies usually have a low PE ratio.

Materials and Methods:

This is quantitative research. The data collection method is using secondary data from 2007 until 2016 obtained from the Indonesian Capital Market Directory, Bank of Indonesia, and Indonesia Stock Exchange. The observed period of financial data listed on the Stock Exchange during the ten (10) years ie from 2007 to 2015.

Multiple Regression Analysis

Analysis in this study uses a regression model with Data Panel (Gujarati, 2003).

Testing the hypothesis in this study uses the model:

a. Blue Chip Stock Regression Model (BC)

$$\begin{aligned} \text{LnPER} = & \alpha + \beta\text{BC1ROA} + \beta\text{BC2CIR} + \\ & \beta\text{BC3LDR} + \beta\text{BC4NIM} + \beta\text{BC5DPR} + \\ & \beta\text{BC6CAR} - \beta\text{BC7NPL} + \beta\text{BC8LAR} + \\ & \beta\text{BC9Beta} - \beta\text{BC10INF} - \beta\text{BC11INT} - \\ & \beta\text{BC12LnER} + \beta\text{BC13EG} + e \end{aligned}$$

Where:

LnPER : Y (endogenous variable) Banking Shares of BC

α : Constants

e : Variables Disruptors (error term)

$\beta\text{1BC1} - \text{BBC13}$: Exogenous variable regression coefficients (X1- X13)

b. Non-Blue Chip Stock Regression Model (NBC)

$$\begin{aligned} \text{LnPER} = & \alpha + \beta\text{NBC1ROA} + \beta\text{NBC2CIR} + \\ & \beta\text{NBC3LDR} + \beta\text{NBC4NIM} + \beta\text{NBC5DPR} + \\ & \beta\text{NBC6CAR} - \beta\text{NBC7NPL} + \beta\text{NBC8LAR} + \\ & \beta\text{NBC9Beta} - \beta\text{NBC10INF} - \beta\text{NBC11INT} - \\ & \beta\text{NBC12LnER} + \beta\text{NBC13EG} + e \end{aligned}$$

Where:

LnPER: Y (endogenous variable) Shares Banking of NBC

α : Constants

e : Variable Disruptors (error term)

$\beta\text{1NBC1} - \beta\text{NBC13}$: Exogenous variable regression coefficients (X1- X13)

Variable Operations

PER : Stock Price : Earning Per Share

ROA : Earning After Tax : Total Asset

CIR : Operating Cost : Operating Income

LDR : Total Loan : Third Party Fund Total
NIM : (Interest Income - Interest Cost) : Earning Assets
DPR : Dividend Per Share : Earning Per Share
CAR : Equity : Risk Weighted Assets
NPL : Problem Loan : Total Loan
LAR : Total Loan : Total Asset
Beta : Increase in Individual Stock Prices : Increase in Price Index
Stock
INF : Inflation rate shows the average increase the price of goods and services in Indonesia.
INT : Shows the average interest rate for Bank Certificates Indonesia (SBI) one month per year.
ER : Shows the daily average exchange rate of the Rupiah against the US Dollar (USD) per year.
EG : Shows an increase in Gross Domestic Product (GDP) per year.

Hypothesis:

The hypothesis in this study can be formulated as follows:

H1 : Return on Assets (ROA) has a positive effect on PER.

H2 : Cost to Income Ratio (CIR) has a positive effect on PER.

H3 : Loan to Deposit Ratio (LDR) has a positive effect on PER.

H4 : Net Interest Margin (NIM) has a positive effect on PER.

H5 : Dividend Payout Ratio (DPR) has a positive effect on PER.

H6 : Capital Adequacy Ratio (CAR) has a positive effect on PER.

H7 : Non-Performing Loans (NPL) has a negative effect on PER.

H8 : Loan to Asset Ratio (LAR) has a positive effect on PER.

H9 : Beta (Systematic Risk) has a positive effect on PER.

H10: Inflation rate (INF) has a negative effect on PER.

H11: Interest rates (INT) have a negative effect on PER.

H12: Exchange Rate (ER) has a negative effect on PER.

H13: Economic Growth (EG) has a positive effect on PER.

Results and Discussion

Based on the calculation results obtained by the blue chip and non-blue chip banking stock regression models in the Indonesian Capital Market as follows:

Blue Chip Stock Model (BC) :

$$\text{LnPER} = - 3.06 + 18.78\text{ROA} + 3.59\text{BOPO} - 3.0\text{LDR} - 6.36\text{NIM} + 1.01\text{DPR} - 0.72\text{CAR} - 16.16\text{NPL} + 1.69\text{LAR} + 0.007\text{BETA} - 18.89\text{INF} + 23.10\text{INT} + 1.17\text{LnKURS} + 24.74\text{EG} + e$$

This blue chip stock model have eight significant variables as follows : (a) significant 0.01 for the LDR variable (0.0001), NPL (0.0027), and INF (0.0001); (b) 0.05 significant for the CIR variable (0.0495), NIM (0.0493), DPR (0.0304), LAR (0.0152), and INT (0.0195).

From the 13 exogenous variables there are 9 exogenous variables that support the hypothesis, namely: ROA, CIR, NIM, DPR, NPL, LAR, Beta, INF, and EG. This model has R-squared 0.80 with a statistical F probability of 0.0000.

Based on the above model, there are six exogenous variables that have a significant influence and support the hypothesis as follows : CIR, NIM, DPR, NPL, LAR, and INF.

The classic assumption test shows the following: (a) the normality test produces the Probability of Jarque-Bera (JB) $0.69 > 0.05$ which indicates data is normally distributed; (b) multicollinearity test produces a correlation between LAR and LDR which indicates an indication of multicollinearity; (c) the autocorrelation test produces Durbin-Watson (DW) of 2.31 which indicates no indication of

autocorrelation; (d) based on scattered plot images, scattered points showing no indication of heteroscedasticity in this model.

Non-Blue Chip Stock Model (NBC) :

$$\text{LnPER} = 2.92 - 19.73\text{ROA} + 1.63\text{BOPO} + 2.57\text{LDR} - 2.94\text{NIM} + 0.05\text{DPR} - 0.11\text{CAR} + 6.56\text{NPL} - 4.65\text{LAR} + 0.002\text{BETA} - 10.27\text{INF} + 6.54\text{INT} - 0.18\text{LnKURS} - 2.6\text{EG} + e$$

This non-blue chip stock model have seven significant variables as follows : (a) significant 0.01 for the LDR variable (0.0008), LAR (0.0001), and INF (0.0030); (b) 0.05 significant for the ROA (0.0227), CIR (0.0207), and INT (0.0283); and (c) 0.1 significant for the NPL (0.0710).

From 13 exogenous variables, there are 6 exogenous variables that support the hypothesis, namely: CIR, LDR, CAR, Beta, INF, and LnER. This model has R-squared 0.67 with a statistical F probability of 0.0000.

Based on the above model, there are three exogenous variables that have a significant influence and support the hypothesis as follows : CIR, LDR, and INF.

The classic assumption test shows the following: (a) the normality test produces the probability of JB $0.425 > 0.05$ which indicates that the data is normally distributed; (b) multicollinearity test produces a model where there is no correlation between independent variables above 0.90 which indicates no indication of multicollinearity; (c) autocorrelation test produces DW 1.879 which indicates there is no indication of autocorrelation; (d) based on the White test this model has a Prob. Chi-Square $0.2442 > 0.05$ which indicates there is no indication of heteroscedasticity.

Analysis:

The ROA has a significant positive effect on PE ratio of non-blue chip banking stock. The results of this study are consistent with the results of Adhitama and Sudaryono (2005) which states that the ROA variable has a significant positive

effect on the PE ratio in Indonesian capital market. The ROA has a positive and insignificant effect on PE ratio of blue chip banking stock.

The CIR has a significant positive effect on the shares of blue chip and non-blue chip banking shares. The results of this study are in accordance with the results of the research of Permatasari and Yonowati (2016) which states that the CIR variable has a significant positive effect on the PER of banking shares in the Indonesian capital market.

The LDR has a significant negative effect on the Blue Chip banking stock PE ratio. The results of this study are in accordance with the results of the research of Permatasari and Yonowati (2016) which states that the LDR variable has a significant negative effect on the PE ratio of banking shares in the Indonesian capital market. However, the LDR has a significant positive effect on the PE ratio of non-blue chip banking shares.

The NIM has a negative and significant effect on the blue chip banking stock PE ratio. The results of this study are in accordance with the results of the research of Permatasari and Yonowati (2016) which states that the NIM variable has a not significant positive effect on the PE ratio of banking shares in the Indonesian capital market. However, the NIM has a negative effect and insignificant to the PE ratio of the non-blue chip banking shares.

The DPR has a significant positive effect on the PE ratio of blue chip banking stock. The results of this study are consistent with the results of the research of Whitbeck and Kisor (1963) and the results of the research by Mpaata and Sartono (1997) which state that the DPR has a positive effect on PE ratio. However, the DPR has a positive influence that is insignificant to the PE ratio of the non-blue chip banking shares.

The CAR has a insignificant negative effect on the PE ratio of blue chip stock. The results of the research by Syanas and Harmadi

(2008) state that CAR has a significant positive effect on the PE ratio of banking shares in the Indonesian capital market. However, CAR has a negative effect on PE ratio of non-blue chip banking shares.

The NPL has a significant negative effect on PE ratio of the Blue Chip banking stock. The results of this study are in accordance with the results of the study of Arlina Susanto and IGB Wiksuana (2014) which states that NPL has a negative effect that is not significant to the PER of banking shares in the Indonesian capital market. However, the NPL has a positive effect that is not significant to the PE ratio of the non-blue chip banking shares.

The LAR has a positive and significant influence on the PE ratio of blue chip banking stock. The results of this study are not in accordance with the results of the research of Adhitama and Sudaryono (2005) which states that the LAR variable does not have a significant effect on the PE ratio of banking shares in the Indonesian capital market. However, LAR has a significant negative effect on the PE ratio of non-blue chip banking shares.

The Beta has no significant positive effect on the PE ratio of blue chip and non-blue chip banking shares. The results of this study are consistent with Basu's (1977) research stating that low PE ratio stock portfolios have low Beta and high returns, whereas high PER stock portfolios have high Beta and low returns.

The inflation rate (INF) has a significant negative effect on PE ratio of the blue chip banking stock and non-blue chip banking shares. Fama and Schwert (1977) and Chen, Roll and Ross (1986) state that there is a negative relationship between inflation rate with stock price. The results of the study by Fika Azmi (2013) show that the inflation rate has a negative effect that is not significant on the company's shares on the IDX.

The interest rate (INT) has a positive and significant influence on the PE ratio of the blue chip and non-blue chip banking shares. The

research of Syanas and Harmadi (2008) states that the interest rate has a positive and insignificant effect on the PER of banking shares on the IDX. Research by Fika Azmi (2013) shows that the interest rate has a significant positive effect on the PE ratio of the company's shares on the IDX.

The Exchange Rate (ER) has a insignificant positive effect on the PE ratio of blue chip banking shares. Researchers Momeni, Behroozi, and Anbavi (2015) state that there is a significant positive relationship between the exchange rate and earnings per share (earnings per share). Benjamin M. Tabak (2006) says that there is a significant relationship between the stock price and the exchange rate. However, the exchange rate has a insignificant negative effect on the PE ratio of the non-blue chip banking shares.

The Economic Growth (EG) has a insignificant positive effect on PE ratio of the blue chip banking stock. Satya and Girija's (2003) research shows that economic growth has a positive influence on financial and banking stock prices in the Australian capital market. Research by Rita, Prihartono, and Perwito (2015) shows that partially economic growth has a significant positive effect on banking stock returns in the Indonesian Capital Market. However, EG has a insignificant negative effect on the PE ratio of non-blue chip banking shares.

Conclusion

Based on the above model, exogenous variables that have a significant influence and support the hypothesis are : (a) blue chip stock models are : CIR, NIM, DPR, NPL, LAR, and INF; (b) non-blue chip stock models are : CIR, LDR, and INF. These exogenous variables are important to be considered by investors as well as used to predict the PE ratio of blue chip and non-blue chip banking share.

This model can be used to predict the PE ratio of blue chip and non-blue chip banking shares by investors in the Indonesia Stock

Exchange, because each model has a goodness of fit of 0.80 and 0.67.

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