

EFFECT OF NON-PERFORMING LOANS, INTEREST INCOME MARGIN, EFFICIENCY LEVEL AND NON-INTEREST INCOME ON STOCK VALUE (Banking Industry Study Listed in IDX 2013-2017)

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Abstract– This study aims to test whether the influence of non-performing loans, interest income margins, efficiency and non-interest income on the value of shares. The dependent variables in this study were stock value while the independent variables in this study were non-performing loans, interest income margins, efficiency levels and non-interest income. The method used is a multiple linear regression analysis method. The samples in this study were 28 banking companies selected with purposive sampling method. It can be concluded that variabel non-performing loans have a negative but insignificant effect on the value of the shares. Interest income margins have a positive and significant effect on the value of shares. The level of efficiency indicates negative and significant to the value of the stock. Non b ungaincome has a positive and significant effect on the value of the shares.

Keywords: Non-Performing Loans, Interest Income Margin, Efficiency Level, Non-Interest Income and Stock Value

I. Introduction

The Banking Industry plays an important role for economic development as a financial intermediary or intermediary for overfunding parties with parties in need of funds. With its role known as the financial intermediation function, banking becomes one of the links in a country's financial system. As a financial institution with the main ability to carry out financial intermediation, banking can be called as one of the industries that is able to convert savings into investment. With its strategic function, it is not surprising that banks get great attention from the government because banking is a business that is loaded with risks and failures that occur in the banking system can have a fatal impact on the economy as a whole (referred to as systemic risks).

To realize a stronger Indonesian banking system, efforts must be made in various fields, especially to address the challenges faced by banks in recent years. These challenges are the low capacity of banking credit growth, the structure of the bank n which is not optimal, the fulfillment of public needs for banking services that are assessed by the public is still lacking, bank supervision that still needs to be improved, banking capabilities that are still weak, profitability and operational efficiency of unsustainable tires, customer protection that still needs to be improved, and the development of information technology.

This banking condition encourages the parties involved in it to conduct an assessment of the health of the bank. One of the parties who need to know the performance of a bank is the investor, because the better the performance of the bank, the security guarantee on the funds invested by

investors is also greater. By using the financial ratio, investors can find out the performance of one bank. Based on banking literature, several factors that affect the bank's performance are NPL(Non Performing Loan),NIM (NetInterest Margin),BOPO (Operating Expenses against Operating Income), and Non-Interest Income (Fee Based Inc.ome).

The main target of a company that has gone public or listed on the Indonesia stock exchange, is to generate profit in order to increase the prosperity of the owner or shareholders through an increase in the value of shares which can describe the company's value. An increasingly complex business environment requires a financial manager in a company to be able to perform its functions in managing finance properly and as efficiently as possible. The measure used to assess a financial manager's ability to manage acompany's finances is to see an increase in the value of a share or an increase in shareholder wealth reflected in the value of the shares. One indicator of stock value is the Price To Book Value (PBV) ratio.

Based on the description above, the author is interested in conducting research on the national banking industry listed on the Indonesia Stock Exchange (IDX). The reason the authors chose this industry as the object of research is because the banking industry is one of the indexes that participate in the capital market, and so that the results of this research can be accounted for. Researchers used national banking as a research object with a five-year research period in the period 2013-2017. Researchers use company value variables because researchers want to see if those variables can be affected by non-performing loans, interest income margins and efficiency rates.

II. LITERATURE REVIEW

2.1. Research Review

The first study by Anita Julianty (2018) The purpose of this study was to find out the effect of bank health level on the bank's corporate value (PBV) and the size of the bank as a moderation variable in banking subsector companies listed on the Indonesia Stock Exchange. The results showed that NPL has a negative and significant effect on the company's value (PBV).

The second study by Walandouw et al. (2017) This study aims to analyze the influence of capital structure and financial performance on the value of the company. Independent variables used in this study are capital structure as measured by debt to equity ratio (DER) and finance performance as measured by return on assets (ROA) and nonperforming loans (NPL) and dependent variables that is the value of the company as measured by price to book value (PBV). The results showed that NPL negatively affects the value of the company, as well as the capital structure and financial performance simultan have a significant effect on the value of the company.

The third study by Catriwati (2017) The purpose of this study was to test and analyze the influence of CAR, ROA, LDR, NIM, NPL and Asset Growth on the share price (PBV) of the company. Double Linear Analysis to test statistically hypothesized models, as well as to determine the extent to which the proposed model is used consistent with sample data. The results showed that partially Net Interest Margin (NIM) has a positive and significant effect on the Share Price while Non Performing Loan (NPL), and Asset Growth has no effect on the share price (PBV).

The fourth study by Putu and Sayu (2016) This study aims to determine the variable level of bank health as measured by risk profile, Good Corporate Governance (GCG), Return On Assets (ROA), Net Interest Margin (NIM) and Capital Adequacy Ratio (CAR) against the share price of banking companies on the Indones Stock Exchange in the period 2012-2014. Using non-participating observation methods. The population of this research is all banking companies registered in the IDX period 2012-2014. By using purposive sampling obtained samples as many as 15 banking companies. The analysis used in this study was multiple linear regression analysis. The result of this research is that NIM has a negative and insignificant effect on the share price.

The fifth study by Y. Nino., S. Murni., J.R. Tumiwa (2016) with the title Analysis of the influence of Company Size, Capital Structure, Non Performing Loan, Capital Adequacy Ratio, and Return On Equity on The Share Price of Banking Companies in the LQ45 Index in the 2011-2015 observations. The population in the LQ45 index is 45 companies. The sample from this study consisted of 5 (five) Banking companies in the LQ45 Index in 2011-2015 observations. With purposive sampling as a sampling method. The analysis method used is multiple regression

analysis, regression analysis to test the influence of free variables on bound variables. The results of the study were the size of the company and Non Performing Loan partially had a positive influence on the Share Price, while the Size perbusiness, Capital Structure, Non Performing Loan, Capital Adequacy Ratio, and Return On Equity simultaneously had an influence on the Share Price.

The sixth study by Halimah and Komariah (2017) aims to find out the influence of ROA, CAR, NPL, LDR, and BOPO partially and simultaneously on the Company's Value. The sample of this research is Commercial Bank Go Public there are 25 Commercial Banks listed on the Indonesia Stock Exchange from 2011 to 2015 using purposive sampling method. The analyst method is on this research is multiple linear regression analysis. The results showed that NPL and BOPO have a negative and insignificant effect on the Company's Value.

The seventh study by shahfitri (2018) The purpose of this study was to analyze the influence of ROA, ROE, BOPO, NIM and social responsibility companies on the value of the company. Banking samples contained in the IDX period 2011-2015 with the title Roa Influence, ROE, BOPO, NIM and Corporate Social Responsibility (CSR) on the value of the company in the banking industry contained in the IDX period 2011-2015, the sample amounted to 43 banks, but based on the completeness of the data alone 13 banks. Independent variables are ROA, ROE, BOPO, NIM and corporate social responsibility (CSR), while dependent variables are corporate value (PBV). Data analysis consists of multiple linear regressions using SPSS for windows version 16.00. The result of the study is BOPO, NIM has a significant influence on the value of the company. With its influence only 57% while 43% is influenced by other factors.

The eighth study by Respati (2018), CAMEL Method (Capital, Assets, Management, Income, and Liquidity) was used to measure bank value. It consists of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Operating Expenses of Operating Income (BOPO), Return on Assets (ROA), and Loan to Deposit Ratio (LDR). Meanwhile, the Price to Book value (PBV) ratio is used to analyze the financial performance of the company's value. In this study, the methodology used in the study was the analysis of data panels using fixed effects. The results of the panel's data regression estimates also show that Operating Income Operating Expenses (BOPO) have a positive and significant effect on Price to Book Value (PBV).

The ninth study conducted by Ramadhani Khalid (2015) on "Impact of Non Interest Income on Banking Performance in Tanzania" suggested that Non-Interest Operating Income has a positive influence on the bank's performance/ profit.

The tenth study conducted by Fiordelisi and Molyneux (2009) on Determining shareholder value in European banking, this paper examines determinants of shareholder value creation for a large sample of European banks between 1998 and 2005. It uses a dynamic data panel model in which bank shareholder value is a linear function of various bank-specific, industry-specific and macroeconomic variables. We show that shareholder value has a positive relationship with changes in cost efficiency, as well as economic returns related to changes in revenue efficiency. Credit losses, market risk and liquidity and leverage were also found to substantially affect the bank's performance. These results are strong for a variety of different model specifications. Opinions and efficiency improvements are also positively related to capital costs so that the increase in profit seems partially offset by higher capital costs so that the estimated revenue efficiency in the EVA model is not statistically significant (at 10% or less) although they remain positive. Similarly, increased cost efficiency shows a positive impact on economic returns (i.e. not statistically significant at a confidence level of 10% or less) and negatively impacts the cost of capital opportunities resulting in substantially significant positive relationships with the size of our share holder value.

2.2. Bank Understanding

According to law No. 10 of 1998 which contains the principles of Banking, banks are financial institutions whose main business is to provide credit and services in payment traffic and money circulation. Financial institutions here are all bodies that through their activities in the field of finance, withdraw money from the community and channel it to the community.

It can be concluded that the main function of the bank is to raise funds from the community and distribute them as loans to the community. Banking has a strategic position, namely as a support for the smooth payment system, implementation of monetary policy and achievement of financial system stability, so that a healthy, transparent and accountable banking is required.

2.3. Banking Financial Statements

The Bank has an obligation to provide transparency of its financial condition or performance to the user community, namely investors, depositors and other stakeholders, as an investment decision-making tool. The bank's financial statements published at provide periodic information about the bank's overall condition including the development of the bank's own business. Therefore, banking financial statements are the main means of communicating financial information, both to parties inside and outside the banking company (Ross 2015). And According to Cashmere (2018) financial statements are reports that show the financial condition of the company at this time or in a certain period.

2.4. Banking Financial Performance

Financial performance is an analysis conducted by a company to assess the extent to which a company has implemented using financial implementation rules properly and correctly. Like by making a financial statement that meets the standards and provisions in SAK (Financial Accounting Standards) or GAAP (General Accepted Accounting Principle), and others Irham (2010).

2.5. Stock Value

Fahmi (2012: 81) stated that stocks are one of the most in demand capital market instruments by investors, because they are able to provide an attractive rate of return. A share is a paper clearly listed at face value, company name, and followed by the rights and obligations described to each holder. For companies that have gone public, the value of shares will be reflected in their market value.

Based on the definition of corporate value described above, it can be attributed to a theory called signaling theory, which signaling theory self emphasizes the importance of information issued by the company to investment decisions of outside companies (investors). Another sense is that the value of the company is investment expenditure that gives a positive signal from the investment to the manager about the company's future growth, thereby increasing the share price as an indicator of the company's value. The high value of shares becomes the desire of the owner of the company, because with a high value shows the prosperity shareholders are also high (Sitepu, 2015). Based on its function, the value of a stock is divided into three types:

1) By Value

Par value / par value is the value listed on the stock for accounting purposes.

2) Base Price

Base price is the initial price to determine the base value, used in the calculation of the stock price index. The base price will change according to the actions of the issuer. For new shares, the base price is the initial price.

3) Market Price

Market price is the price on the real market and is the price of a stock in the ongoing market. Or if the market is closed, then the market price is the closing price. Here is the stock value formula:

$$PBV = \frac{\text{PRICE PER SHARE}}{\text{BOOKVALUE PER SHARE}} \dots (2.1)$$

2.6. Non Performing Loan

NPL is a ratio to measure the ability of banks in maintaining the risk of failure to return credit by debtors. Non-performing loans are defined as risks associated with the client's possible failure to pay his obligations or the risk that debt is unable to pay off his debts. NPL reflects credit risk, the smaller the NPL the less credit risk borne by the bank. Banks in providing credit must conduct an analysis of the ability of the debtor to pay back his/her rent. After credit is given the bank is obliged to monitor the use of credit as well as the ability and compliance of debtors in fulfilling their obligations. The Bank must carry out an in-depth analysis before deciding to approve or reject the loan application from the prospective Debtor. This is intended so that there are no problems with the

credit that has been disbursed. However, even if the bank has done a careful analysis, the risk of non-performing loans may also be spelled in. There is not a single bank in the world that does not have non-performing loans, because it is impossible for all the loans disbursed all smoothly. According to Ismail (2013) efforts to solve non-performing loans by rescheduling, reconditioning, restructuring, combination, and execution. In order for the bank value to this ratio, Bank Indonesia determines the criteria for npl net ratio below 5%. Npl ratio calculation according to Cashmere (2013) is as follows:

$$NPL = \frac{KREDIT\ BERMASALAH}{TOTAL\ KREDIT} \dots (2.2)$$

2.7. Interest Income Margin (Net Interest Margin)

NIM is the ratio between net interest income to outstanding credit. Net interest income derived from interest received from loans provided is deducted by interest expense from the source of funds collected. Bank funds consist of 3 types, namely: (1) funds from own capital, (2) loan funds from other banks and (3) funds from the public. NIM demonstrates the bank's ability to generate income from interest by see the bank's performance in disbursing credit, considering that the bank's operating income depends heavily on the difference in interest (spread) of the disbursed credit. According to Pandia (2012), that Net Interest Margin (NIM) is a ratio used to measure the ability of bank management in managing its productive assets to generate net interest income. Net interest income is derived from interest income minus interest expense. The greater the NIM achieved by a bank, it will increase the interest rate on productive assets managed by the bank concerned, so that the bank's profit will increase.

In this case the interest rate determines the amount of NIM. The higher NIM shows the more effective the bank in the placement of productive assets in the form of credit, thus increasing the company's profit. A good NIM is above 5%. NIM can be calculated according to SENO.13/24/DPNP - October 25, 2011 as follows:

$$NIM = \frac{PENDAPATAN\ BUNGA\ BERSIH}{TOTAL\ KREDIT} \dots (2.3)$$

2.8. Efficiency Level (BOPO)

According to Rivai, et al (2013) BOPO is a comparison between operating expenses and operating income in measuring the level of efficiency and ability of banks in carrying out their operations. The smaller the BOPO ratio, the better, because the banks in the area can cover their operating expenses with their operating income. The standard ratio of operating expenses and operating income (BOPO) according to Bank Indonesia Circular Letter Number 6/23/DPNP dated May 31, 2004, is 94%-96%. BOPO ratio formula, namely: is as follows:

$$BOPO = \frac{BIAYA\ OPERASIONAL}{PENDAPATAN\ OPERASIONAL} \dots (2.4)$$

2.8. Non Interest Income (FBI)

According to Cashmere (2014) there are various types and kinds of fee-based income products. These types are remittances (transfers), clearing, inkaso, safe deposit boxes, bank cards (ATM cards), bank notes (foreign exchange), travellers cheque, letter of credit (L/C), bank guarantees and bank references, provide services in the capital market, receive deposits such as trick list payments, telephones, taxes, tuition fees, water accounts, and ONH deposits, and make payments such as salaries, pensions, bonuses, gifts, and dividends. The types of services mentioned above, in the financial statements of banking profit and loss are included in the post or component other operating income or non interest income (other interest income), which consists of:

1. Provision, commission and fee
2. Foreign exchange transaction income
3. Increase in securities
4. Other income

There are several banking service products that produce fee-based income and understanding based on the literature obtained, namely:

a. Transfer

Transfer According to Cashmere (2014) is a remittance service through the bank either in the city, out of town or out country. The length of delivery depends on the means used to send. Then the amount of shipping costs is also very dependent on the means used. Types of transfer tools are as follows:

1. Outgoing transfer is the transfer of money on the orders of the customer or certain parts of the bank for the benefit of other parties at another bank or the bank's own branch.
2. Income transfer is the remittance received from another branch of the bank itself or from another bank for the benefit of the customer himself or the recipient of funds at the bank itself.

b. Wesel

Money Order is a proof of remittance letter, which consists of:

- a. Proof of remittance letter by mail /mail transfer
- b. Proof of remittance by telegram.
- c. Proof of remittance by phone/telex.
- d. With such a variety of transfer tools and given the growing needs of the community the bank seeks to offer wider facilities to customers and prospective customers in terms of remittances. The facility becomes more widespread with availability a also transfer services from and out of the country.

c. Inkaso (Collection)

According to Kasmir (2014) is a bank service to collect warrants from abroad. The length of the collection of the warrant and the amount of the bill charged to the customer it depends the bank concerned. Usually the billing length ranges from 1 week to 4 weeks.

d. Safe Deposit Box

According to Cashmere (2014) Is the services of banks given to its customers. This service is also known as safe counter. The opening of SBD was carried out with two key efforts, one held by the bank and the other held by the customer.

e. Clearing

According to Kasmir (2014) is a service to settle interbank receivables by handing over the securities to be disbursed at the clearing house. This clearing house was established and coordinated by Bank Indonesia every working day. Clearing participants are banks that have obtained permission from Bank Indonesia.

f. Letter of credit (L/C)

According to Cashmere (2016) A facility or service provided to customers in order to facilitate and facilitate the flow of goods (export-import) including domestic goods (between islands). Lc's use is to accommodate and resolve the difficult from the buyer (importer) in his trade transactions. The opening of LC by importers is done by the customer through a bank called opening bank or issuing bank while the exporter bank is the payment bank against the goods being exchanged.

g. Credit card

It is a means of payment in lieu of cash or cheques. This card provides the facility to use money up to a certain limit based on certain considerations set by the bank, usually based on the customer's income and position/reputation.

h. Deposit Account Payment Fund (payment point)

Is a payment from the public intended for certain tax advantages, usually giro owned by companies whose payments are made through banks.

i. Bank Guarantee

It is any form of guarantee that or guarantee received or given by the bank resulting in payment to the party receiving the guarantee if the guaranteed party defaults or injured the promise.

j. Buying and Selling or Trading Of Foreign Currencies

To conduct foreign exchange transactions must maintain a current account at a correspondent bank abroad and in the implementation of foreign exchange buying and selling transactions.

k. Commercial Paper

It is an unsecured promissory issued by the company to obtain short-term fund and sold to investors who invest in money market instruments.

l. E-channel mobile banking dan internet banking

Is a banking service through message and internet by cooperating with telecommunication provider companies in Indonesia

2.9. Fee Based Income in Bank Profit and Loss Statement

Because the understanding of fee-based income is non-interest operating income, the elements of operating income that enter it are:

1. Commission and provision revenue.
2. Income from foreign exchange transactions.
3. Other operating income.

According to IAI in SAK described in PSAK No. 31 (2015) which states that fee-based income is a reward obtained by banks for providing services by banks. The fee ratio calculation is as follows:

$$FBI = \frac{PENDAPATAN\ NON\ BUNGA}{PENDAPATAN\ BUNGA} \dots (2.5)$$

III. RESEARCH METHODS

This research is classified as basic research because it aims to develop or understand the problem in depth and without wanting to apply the results and not pay attention to the direct usefulness is practical. This research uses a quantitative approach. Quantitative approach is an approach that uses data in the form of numbers in statistical analysis.

Quantitative research is a research method based on the philosophy of positivism, used to research on a certain population or until 1, sampling techniques are generally done randomly, data collection using research instruments, data analysis is quantitative / statistical with the aim to test the hypothesis that has been determined (Sugiyono, 2016).

This research is classified as causal-comparative research because it is a type of research with problem characteristics in the form of a causal relationship between two or more variables. According to Emzir (2010) comparative causal research conducted in five stages namely, (1) formulating the problem, (2) determining the group that has the characteristics to be studied, (3) comparison group selection, (4) data collection, and (5) data analysis.

The population in this study was a banking sector company listed on the Indonesia Stock Exchange period. Listed company is a public company whose shares are sold on the main stock exchange, a company will be required to provide extensive information about its activities.

The method used in collecting samples based on population results is to use purposive sampling method, namely sampling with certain criteria, so that the sample yang taken later in accordance with the purpose of research in solving research problems and can provide more representative value.

The criteria for the selection of samples of banking companies in the IDX to be examined in this study are as follows:

1. Banking Companies registered with IDX consecutively during the period (2013-2017).
2. Banking companies in Indonesia that made a profit during the research period (2013-2017).
3. Publish financial information in one rupiah.
4. The necessary information and data are available for analysis.
5. Not a company with a "Gocap" share price.

The data used in this study is secondary data, namely data obtained by researchers by not

measuring lang sung from the objects studied, but researchers using the form of banking financial statements for the period 2013-2017 listed on the Indonesia Stock Exchange. In this study, the data included Non-Performing Loans (NPL), Interest Income Margin (NIM), Tingkat Efficiency (BOPO) and Non-Interest Income (FBI) as independent variables and firm value as dependent variables. Data sources are obtained from direct observations of the Indonesia Stock Exchange website(<http://www.idx.co.id>),the ok stock website (<https://www.sahamok.com>) and the websites of each company listed on the Indonesia Stock Exchange (IDX).

3.1. Operational Variables

Variable operationalization is necessary to determine the type, indicators, and scale of the related variables in the study, so that hypothesis testing can be done correctly according to the research title on the influence of bad credit, interest income margin, efficiency rate and non-interest income on stock value.

A. Bound Variables (Dependents)

According to Sugiyono (2016), the definition of dependent variable is a variable that is influenced or that becomes a result, because of the existence of free variables. Dependent variables or tied to this research are Stock Value with Price TO Book Value (PBV) proxy in accordance with the formula below:

$$PBV = \frac{PRICE\ PER\ SHARE}{BOOK\ VALUE\ PER\ SHARE} \dots (3.1)$$

B. Variable Bebas (Independent)

Sugiyono (2016) stated that independent variables are variables that affect or cause changes or the onset of dependent variables. Independent variables used in this study are credit Problematic, Interest Income Margin and Efficiency Level, among others:

1. Non Performing Loan

NPL is a ratio used to measure the bank's management ability to manage non-performing loans provided by banks. Credit risk received by the bank is one of the risks of the bank's business, resulting from the non-payment of credit provided by the bank to the debtor. This ratio can be measured using the formula:

$$NPL = \frac{KREDIT\ BERMASALAH}{TOTAL\ KREDIT} \dots (3.2)$$

2. Net Interest Margin

NIM is a ratio used to measure the ability of bank management to generate interest by looking at the bank's performance in disbursing credit, considering that the bank's operating income depends heavily on the difference in interest from the disbursed credit. This ratio can be measured using the formula:

$$NIM = \frac{PENDAPATAN\ BUNGA\ BERSIH}{TOTAL\ KREDIT} \dots (3.3)$$

3. Efficiency Level (BOPO)

Operating Expenses to Operating Income (BOPO) is the ratio used to determine that the bank's management has used all of its production factors effectively and efficiently. Bopo ratio shows efficiency in running its core business based on the amount of funds collected, the smaller the BOPO ratio indicates the more efficient a bank is in carrying out its business activities, so that in the management of its business the Bank will increase profit and vice versa. This ratio can be measured using the formula:

$$BOPO = \frac{BIAYA OPERASIONAL}{PENDAPATAN OPERASIONAL} \dots (3.4)$$

4. Non Interest Income (FBI)

Fee Based Income is non-interest operating income earned by banks in exchange for or commissions or financial services that have been provided to customers. Although the contribution of fee-based income in bank income at this time is not meaningful enough, but need to be developed considering that fee-based income has a different character to interest income. Cashmere (2013) reveals fee-based income is the profit gained from transactions provided in the services of other banks using the formula:

$$FBI = \frac{Net\ Interest\ Income}{Net\ Interest\ Income + Interest\ Income} \dots (3.5)$$

Table 3.1 Operationalization of Research Variables

No	Variable	Variable Definitions	Measurement	Scale
1.	Stock Value		$PBV = \frac{PRICE\ PER\ SHARE}{BOOK\ VALUE\ PER\ SHARE}$ (2.1)	
2.	Credit Problematic (proxied with NPL)	Credit ratio credit non-performing that Channeled.	$NPL = \frac{KREDIT\ BERMASALAH}{TOTAL\ KREDIT}$ (2.2)	Ratio
3.	Margin Income Flowers (diproksikan with NIM)	Ratio Income net interest against the average – average assets Productive.	$BOPO = \frac{BIAYA\ OPERASIONAL}{PENDAPATAN\ OPERASIONAL}$ (2.3)	Ratio
4.	Level Efficiency (diproksikan BOPO)	Cost Ratio Operational Against Income Operational	$NIM = \frac{PENDAPATAN\ BUNGA\ BERSIH}{TOTAL\ KREDIT}$ (2.4)	Ratio

5.	Non Interest Income (proxied with the FBI)	commissions for financial services that have been provided to customers	$FBI = \frac{PENDAPATAN\ NON\ BUNGA}{PENDAPATAN\ BUNGA}$ <p style="text-align: center;">(2.5)</p>
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3.2. Data Analysis Methods

Data analysis methods in financial statements are used to measure, know and describe the influence of non-performing loans, interest income margins, efficiency levels and non-interest income on the value of the study shares of banking industry companies listed in the IDX 2013-2017. In this research, the analysis method used is data panel analysis assisted by Microsoft Excel program and econometric views (Eviews) software, because the analysis done by Eviews program is not only a regular statistical problem, but also able to solve quite complex econometric cases.

A. Data Panel Regression Analysis

According to Basuki and Prawoto (2016:275) panel data is a combination of cross section data and time series data, where the same cross section units are measured at different times. Data panels have the following opportunities:

- a. Te Pat panel data in studying data dynamic by analyzing cross section data in several periods. Thus it can be interpreted that the panel data is used to obtain information on how individuals condition at a certain time compared to their conditions at other times.
- b. Data that cannot be observed through both pure time series and pure cross section data is capable of being detected and measured using panel data.
- c. Data panel can provide more informative, more varied data, code rate between low variables, degree of freedom most large and more efficient by combining time series data and cross section data.

This test was carried out to facilitate the understanding of the variables used in the study. To test the strength of determinant variables (Non-Performing Loans (NPL), Interest Income Margin (NIM) Efficiency Level (BOPO) and Non-Interest Income (FBI)) against firm value, then in this study used multiple regression analysis with the least square equation (ordinary least square - OLS) with the basic model as follows:

$$PBV = \alpha + \beta_1 NPL_{i,t} + \beta_2 NIM_{i,t} + \beta_3 BOPO_{i,t} + \beta_4 FBI_{i,t} + E_{i,t}$$

Description:

FV	: Firm Value
α	: Intercept or Constant
$\beta_1, \beta_2, \beta_3, \beta_4$: Independent variable coefficient
$NPL_{i,t}$: Non Performing Loan / Non-Performing Loan in the company i period t
$NIM_{i,t}$: Net Interest Margin / Interest Income Margin banks i period t
$BOPO_{i,t}$: Efficiency Level in bank i period t
$FBI_{i,t}$: Non-Interest Income / interest income

B. Descriptive Statistical Test

The data used in this research is non-performing loans, interest income margin, efficiency level and non-interest income against the value of shares. This research in analyzing data using Eviews 10 program.

C. Uji Hausman

Hausman Test is a test used to choose the best model between fixed effect model or random effect model. Hausman's test is based on the idea that least squares dummy variables (LSDV) in fixed effect method and Generalized Least Square (GLS) in Random effect method is efficient while Ordinary Least Square (OLS) in Common Effect method is inefficient. Namely by testing hypotheses in the form of:

H0 : $E(C_i | X) = E(u) = 0$ or there is a random effect model

H1 : fixed effect model

Hausman Test statistics follow the distribution of ChiSquare statistics with a degree of freedom (df) of the number of free variables. The zero hypothesis is that the right model for panel data regression is the Random effect model and the alternative hypothesis is that the right model for panel data regression is the Fixed effect model. If Hausman's statistical value is greater than Chi-Square's critical value then hypothesis no is rejected which means the right model for panel data regression is the Fixed effect model. On the contrary, if Hausman's statistical value is less than the critical value of Chi-Squares then hypothesis zero is accepted which means that the right model for panel data regression is the Random effect model. In the method of estimating the regression model by using panel data can be done, among others:

1. Fixed Effect Model (FEM)

This model assumes that differences between individuals can be accommodated from their interception differences. Fixed effect model is a technique of estimating panel data by using dummy variable to capture intercep difference. Intercep between companies, intercep differences can occur due to differences in work culture, managerial, and incentives. In addition, this model also assumes that the regression coefficient remains between the company and the time. This approach with dummy variables is known as least square dummy variables (LSDV). Fixed effect Model equation can be written as follows:

$$Y_{it} = X_{it}\beta + C_i + \dots + \epsilon_{it}$$

Where:

C_i = dummy variable

2. Random Effect Model (REM)

This model estimates panel data where interference variables may be interconnected between time and between individuals. In random effect model intercep differences are accommodated by the error terms of each company. The advantage of using the Random effect model is to eliminate heteroskedastisity. This model is also called the Generalized Least Square (GLS) technique. As the estimastor, the following forms of equations are:

$$Y_{it} = X_{it}\beta + V_{it}$$

Where $V_{it} = C_i + D_i + \epsilon_{it}$

C_i is assumed to be ifat independent and identically distributed (iid) normal with mean 0 and variance σ_c^2 (cross section component) discusses is normal with the mean 0 and variance σ_s^2 's (time series error σ component).

D. Classic Assumption Test

This classic assumption test is carried out in order to obtain a responsible regression model. Hidayat (2017) stated that the classic assumption test is an analysis conducted to assess whether in a linear esi regr model ordinary least square (OLS) there are problems of classical assumptions.

IV. RESULTS AND DISCUSSIONS

4.1. Data Analysis Methods

4.1.1 Descriptive Statistics

Derivative statistical analysis is done before testing the hypothesis. This analysis is necessary to look at the sample characteristics of the data used in this study. Descriptive statistics in question include sample count (n), um and minimum max values, standard deviation and sample mean. Data obtained from financial statements contained on the Indonesia Stock Exchange website from 2013-2017 with variable non-performing loans, interest income margins, efficiency levels, and non-interest income. The results of this research descriptive statistical analysis are shown in the following table:

Table 4.1. Descriptive Statistical Analysis

	PBV	NPL%	NIM%	BOPO%	FBI
Mean	1.455205	1.706357	5.481664	84.71729	0.121706
Median	1.185143	1.550000	5.155000	83.95500	0.083597
Maximum	4.273279	6.370000	12.70000	235.2000	0.708039
Minimum	0.260629	0.000000	1.220000	18.62000	0.006885
Std. Dev.	0.858072	1.226007	2.066789	20.85242	0.099435

Source : Processed secondary data

Table 4.1 shows that the amount of data used in the study is 140 banking company data. The value of shares or PBV that has an average value (mean) of 1.455205 this indicates that the value of saham is quite good because it has a value above the number one. The median is estimated at 1.185143. Standard deviation of 0.858072. Maximum value of 4.273279 at Bank Central Asia Tbk (BCA) in 2014 and minimum value of 0.260629 at Bank Artha Graha Internasional Tbk Tbk in 2016.

Non-performing loans have an average value (mean) of 1.706357% with a median value of 1.550000%. Standard deviation is estimated at 1.226007 % with a maximum value of 6.370000% at Bank Bukopin Tbk in 2017 and a minimum of 0 at Bank Bumi Artha Tbk in 2013.

Interest income margin has an average value (mean) of 5.481664% with a median value of 5.155000%. Standard deviation is 2.066789%. Maximum value of 12.70000% in Bank Tabungan Pensiunan Nasional Tbk in 2013 and minimum value of 1.220000 at Bank QNB Indonesia Tbk in 2017.

The efficiency level has an average value (mean) of 84.71729% with a median value of 83.95500%. Standard deviation is 20.85242%. Maximum value of 235.2000% in Bank Of India Indonesia Tbk in 2016 and minimum value of 18.62000 at BANK MNC Internasional Tbk in 2017.

Non-interest income has an average value (mean) of 0.121706 with a median value of 0.083597. Standard deviation of 0.099435. Maximum value of 0.708039 at Bank Woori Saudara Indonesia Tbk in 2014 and minimum value of 0.006885 at Bank Mayain Internasional Tbk in 2016.

4.1.2 Classic Assumption Test

A. Multikolinieritas

This multi-linearity test to test and find out if in the processed regression model found a correlation or relationship between independent variables. Testing the problem multikolinieritas can be seen from the table below:

Table 4.2 Multicollinearity Test

correlation	PBV	NPL	It	BOPO	FBI
PBV	1.000000				
NPL	-0.107789	1.000000			
It	0.347917	-0.225122	1.000000		
BOPO	-0.210742	0.325227	-0.332800	1.000000	
FBI	0.033350	0.03335	-0.045004	-0.137283	1.000000

Source : Secondary data has been processed.

The table above can be seen the value of correlation coefficient between variables less than

0.8 thus the data in this study can be identified no multicollinearity problem.

Variance Inflation Factors

Included observations: 140

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
NPL	0.003596	3.370062	1.141989
It	0.001282	9.352671	1.156779
BOPO	1.35E-05	21.83645	1.238994
FBI	0.494273	2.590841	1.032666

Source : Secondary data that has been processed.

Based on the multicollinearity test results shown in the table above, According to Gujarati (2009) as a rule of thumb, if the VIF of the variable exceeds 10, which will happen if R exceeds 0.90, the variable is said to be very collinear. It can be seen in the Table of Tolerance Value and VIF that from three free variables can be known VIF value less than 10 and Tolerance value greater than 0.1, then it can be concluded that the regression model not occur multicollinearity problem.

B. Heteroscedasticity Test

The heteroscedasticity test aims to see images of interference or residuals that appear in regression functions do not have the same variance. The regression model can be said to be good if it has a constant residual variance where it does not supply changes despite the changing independent variables. The results of this study can be seen as follows:

Table 4.3 Heteroscedasticity Test period

Panel Period Heteroskedasticity LR Test

Equation: EQ01_PBV_CEM

Specification: PBV C NPL NIM BOPO FBI

Null hypothesis: Residuals are homoscedastic

	Value	Df	Probability
Likelihood ratio	0.583390	28	1.0000

Source : Secondary data has been processed

Table 4.3 is the result of a period heteroscedasticity test inferred that the probability value is $1.0000 > 0.005$ (greater than 0.005) which means that there is no heteroscedasticity.

Table 4.4 Cross-section Heteroscedasticity Test

Panel Cross-section Heteroskedasticity LR Test

Equation: EQ01_PBV_CEM

Specification: PBV C NPL NIM BOPO FBI

Null hypothesis: Residuals are homoscedastic

	Value	Df	Probability
Likelihood ratio	146.6231	28	0.0000

Source : Processed secondary data

Based on the results from table 4.4 shows that the cross-section heterosexastiity test with a probability value of $0.0000 < 0.005$ (less than 0.005) which means that the test has heterosexitiity.

C. Correlation Test

A. Correlation auto test

In the regression model means that there is a correlation between the sample members sorted by time correlated. To find out the existence of autocorrelation in a regression model is done through testing against in other Durbin Watson test (DW Test). The test is done by comparing calculated D values with dL and dU in DW tables. The following are the dL and dU values as well as the autocorrelation criteria.

Grade:

- dL= 1.6507
- dU - 1.7984
- 4 — dL = 2,3493
- 4 - dU - 2.2016

Table 4.5 Autocorrelation Test

Mean dependent var	0.377301
S.D. dependent var	0.436571
Sum squared resid	25.28185
Durbin-Watson stat	1.280717

Source : Processed secondary data

Below are the correlation test results that describe the position of the tested results, as follows:

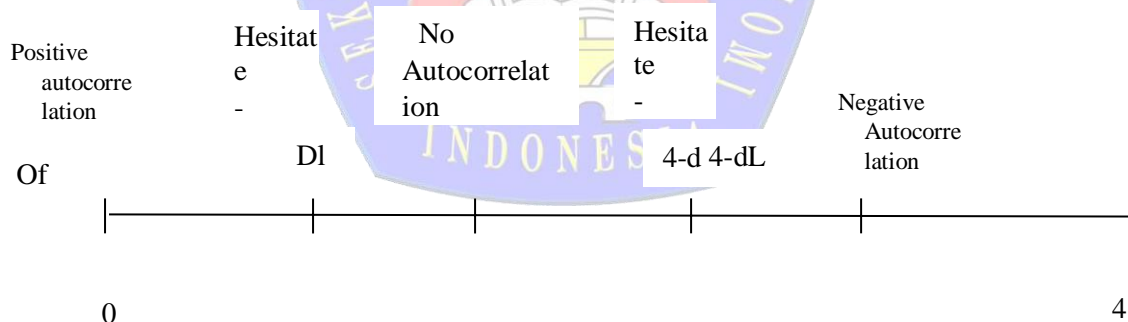


Figure 4.2. Autocorrelation Test Results
Source : Processed secondary data and DW table

Based on the results of the data processor obtained Durbin-Watson Statistical value of 1.280717, the number of $n = 140$ obtained with the value $dL = 1.6507$, dU value = 1.7984, value $(4-dU) = 2,2016$ and the value of $(4-dL) = 2.3493$. Dw statistic value is below dL value, meaning H_0 rejected or H_1 received which means there is autocorrelation that is positive autocorrelation.

a. Uji Cross Section

Table 4.6. Cross Correlation test results

Test	Statistic	d.f.	Prob.
------	-----------	------	-------

Breusch-Pagan LM	516.8506	378	0.0000
Pesaran scaled LM	5.049947		0.0000
Pesaran CD	4.289894		0.0000

Source : Processed secondary data

Table 4.6 can be seen that the value breush-pagan LM $0.0000 < 0.005$ indicates that there is a cross correlation relationship. To solve the problem of heteroskedastisitas in fixed effect method is done estimation by using weighting white cross section.

D. Uji Hausman

Hausman Test test is done to determine which model is right between fixed effect and random effect. Hausman test is done in random effect model. Hypotheses for hausman test as follows:

H0 : $E(C_i | X) = E(u) = 0$ or occur random effect model

H1 : fixed effect model

$\alpha = 5\%$

If H₀ is rejected it will occur if the profitability value(p-value) < 0.05 which means the best model to be selected is a fixed effect if the profitability value (p-value) > 0.05 then the decision is H₀ received which means random effect is chosen to do the calculation. Hausman test can be defined as statistical testing to choose whether a Fixed Effect or Random Effect model is most appropriate to use. Here are the results of hausman test:

Table 4.7 Hausman Test Results

Correlated Random Effects - Hausman Test

Equation: EQ02_PBV_RANDOM

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.782543	4	0.7757

Source : Data sekunder that has been processed

Table 4.7 shows the results of hausman test, where the probability value(p-value) in cross-section random is 0.7757 (over 0.05 as significant degree) then H₀ is received which means choosing random effect as the best method.

4.1.3 Regression Analysis

A. Random Effect Model (REM)

Table 4.9 Data Panel Results with Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.552195	0.228506	2.416546	0.0170
NPL	0.001028	0.033802	0.030408	0.9758
It	0.134482	0.023807	5.648762	0.0000
BOPO	0.001126	0.001946	0.578482	0.5639
FBI	0.564459	0.268929	2.098915	0.0377

Effects Specification			
		S.D.	Rho
Cross-section random		0.726898	0.7351
Idiosyncratic random		0.436349	0.2649
Weighted Statistics			
Root MSE	0.424953	R-squared	0.045701
Mean dependent var	0.377301	Adjusted R-squared	0.017425
S.D. dependent var	0.436571	S.E. of regression	0.432750
Sum squared resid	25.28185	F-statistic	1.616256
Durbin-Watson stat	1.280717	Prob(F-statistic)	0.173734
Unweighted Statistics			
R-squared	0.116458	Mean dependent var	1.455205
Sum squared resid	90.42526	Durbin-Watson stat	0.358074

Source : Processed secondary data

Although Hausman's test results showed that REM was the appropriate regression model for this study, the F test results showed a probability value (P) of 0.17374 (above 0.05) meaning that the null hypothesis, the entire coefficient was = 0 could not be rejected. In other words, the REM regression model has a low degree of validity. Based on the explanation above, this study decided on fem regression model to test the hypotheses develop din the study.

This decision is supported by the opinions of Gujarati and Porter (2009) who stated that the coefficients calculated by FEM regression are always consistent, although the appropriate model is pool or random model. While the coefficient of yang is calculated by rem regression model will be inconsistent if the corresponding model is fem model. Thus, Gujarati and Porter hinted that the FEM regression model than the REM regression model is "safer".

B. Fixed Effects Model (FEM)

Table 4.10 Data Panel Results with Fixed Effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.002822	0.154893	6.474283	0.0000
NPL	-0.012738	0.009580	-1.329623	0.1864
It	0.092503	0.026692	3.465605	0.0008
BOPO	-0.001449	0.000583	-2.485768	0.0145
FBI	0.738202	0.246347	2.996594	0.0034
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
Root MSE	0.372203	R-squared	0.915305	

Mean dependent var	2.071312	Adjusted R-squared	0.890995
S.D. dependent var	1.023575	S.E. of regression	0.423772
Sum squared resid	19.39494	F-statistic	37.65052
Durbin-Watson stat	1.981016	Prob(F-statistic)	0.000000

Unweighted Statistics

R-squared	0.795003	Mean dependent var	1.455205
Sum squared resid	20.98026	Durbin-Watson stat	1.553407

Sumber : Secondary data that has been processed

Table 4.9 shows the results of estimation model regression panel data in this study selected Fixed effects model as the best model, with the equation as follows:

$$PBV = 1.002822 - 0.012738NPL_{it} + 0.092503NIM_{it} - 0.001449BOPO_{it} + 0.738202FBI_{it}$$

From table 4.9 above it is known that NPL has a negative and insignificant effect on the value of shares. While the other variables are: BOPO has a negative and significant effect, and NIM and FIB have a positive and significant effect.

4.1.4 Hypothesis Testing

A. Test t

Statistical test t is used to determine the effect of each independent variable on dependent variables. T test can be done by comparing probability (p- value) with a significant level of 0.05 ($\alpha = 5\%$). The hypothesis of the t test is:

$$H_0 : \text{No significant effect} \quad H_1 : \text{Significant effect}$$

Table 4.10 shows the influence of each independent variable on non-performing loans, interest margin, efficiency rate and non-interest income on stock value dependent variables can be described as follows:

1. Non-performing loans (NPLs) are independent variables that show negative but insignificant with a probability value of $0.1864 > 0.05$.
2. An interest income margin (NIM) is an independent variable that represents positive and significant with a probability value of $0.0008 < 0.05$.
3. Tingkat efisiensi (BOPO) is an independent variable that indicates negative and insignificant with a probability value of $0.0145 < 0.05$.
4. Non-interest income (FBI) is an independent variable that shows positive and significant probability value of $0.0034 < 0.05$.

B. Determinant Coefficient Test (R^2)

Table 4.9 above Adjusted value R^2 is 0.890995 rounded 0.891 or 89.1% dependent variable is affected by independent variable, and the remaining 10.9% is influenced by other factors outside the model. The coefficient of determinant ran (R^2) aims to know or measure how well the regression line has. In other words, to measure how large the proportion of variations that occur in dependent variables.

4.1.5 Results Achievement

A. Effect of Non-Performing Loans (NPLs) on The Value of Shares

Based on table 4.10 Non-performing loans (NPLs) is an independent variable that indicates that non-performing loans have a negative but insignificant effect on the value of shares that obtained a probability of 0.1864 or > 0.05 .

The discovery of a negative link between the NPL and the value of the shares indicates that the bank must maintain the quality of credit collectability provided so as not to get stuck . This indicates that the high level of non-performing loans will lower the value of the shares as well as vice versa. if the level of non-performing loans is low, then the value of the shares will rise. This finding

also supports the theory of non-performing loans which states that as long as the company is able to lower or control non-performing loans followed by good management will increase the value of shares.

The results of this study are in accordance with the research of Halimah and Komariah (2017) which stated that NPL has no significant effect on the value of shares.

B. Effect of Interest Income Margin (NIM) on the value of shares

Based on table 4.10 Interest income margin (NIM) is an independent variable indicating that NIM has a positive and significant effect of 0.0008 or < 0.05 .

This result indicates that if the value of a high NIM will increase the value of the stock, so that a high NIM followed by good management can increase higher profit. This can be a good indicator to attract investors who will invest in banking sector stocks.

The results of this study are in accordance with research by Catriwati (2017) which stated that NIM has a significant effect on the value of

C. Effect of Efficiency Level (BOPO) limited apstock value

Based on Table 4.10 the efficiency level (BOPO) is an independent variable indicating, a negative and significant relationship at the rate of $0.0145 < 0.05$.

Research proves that there is a negative relationship between BOPO and stock value. Researchers argue that in general banks manage costs efficiently so as to maximize the company's profits. This is demonstrated by the theory that the smaller the BOPO value, the greater the efficiency generated by the company. Therefore, the bank needs to make improvements in the management of the company's efficiency management of operational costs.

D. The effect of Non-Interest Income (FBI) on the value of shares.

Based on table 4.10 Non-interest income (FBI) is an independent variable that indicates that the FBI variable has a positive and significant effect of $0.0034 < 0.05$.

Based on the results at the level of research shows that the FBI rate is greater than the cost then the bank will benefit. Researchers argued that the positive and significant relationship of the banking company has a wider market share (users, checks, current accounts, lc and others). So that this can be used by investors as a consideration in investing.

The results of this study are in accordance with the research of Fiordelisi and Molyneux (2009) which stated that the FBI variable has a positive and significant effect on the value of the stock.

V. CONCLUSIONS AND SUGGESTIONS

5.1. Infers

Based on the description, the results of research and data analysis that have been described in previous chapters on the influence of non-performing loans (NPLs), non-interest income margin (NPL), efficiency level (BOPO) and non-interest income (FBI) on the value of shares in banking sector companies in the IDX period 2013-2017 can be concluded among others as follows:

1. Non-performing loans (NPLs) negatively affect the value of shares, but are not significant. This negative relationship indicates that, increasing non-performing loans will lower the value of stocks. And vice versa. The increase in the NPL requires banks to reserve the elimination of credit assets that can reduce the company's profit. This decrease in profit has the potential to depress the value of the shares of related banks.
2. Interest income margin (NIM) has a significant positive effect. This means that if NIM increases, the value of the shares will increase. This can be a good indicator to attract investors who will invest in banking sector stocks.
3. The level of efficiency (BOPO) indicates negative and significant. From the results of the study there is a negative relationship between BOPO and the value of shares. This means that if BOPO increases, the value of the shares decreases.

4. Non-interest income (FBI) has a positive and significant relationship to the value of the shares. An increase within the FBI would reduce the bank's reliance on interest income. The FBI's increase was positively reported by the capital market through an increase in the value of the shares.

5.2. Advice

5.2.1. Advice for Banking Companies

1. Banks are advised to improve operational cost efficiency and increase NIM and non-interest income. the company so as to increase the value of the shares.
2. Banks are advised to manage non-performing loans so as to help reduce the cost of eliminating credit assets (due to bad) to maintain the value of shares.
3. Banks are advised to cooperate with other Financial/Non-Financial Institutions of the Bank.

5.2.2. Advice for Investors

Investors and potential investors should pay attention to the efficiency of management in order to improve the operational efficient of banks (BOPO), net interest income (NIM), non-performing loans (NPLs), interest noon income (FBI) in selecting banking sector stocks.

5.2.3. Advice for Academics and subsequent researchers

It is expected that this research can serve as a reference and basis for further researchers regarding the value of shares in banking companies. In the next study if going to do research with the same topic is expected to add variable to the value of the stock and can research period up to more than the period that researchers did in this researcher.

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