

# The Effect of Financial Performance on Firms Value on Banking Companies Listed on Indonesia Stock Exchange from 2017 until 2021

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## Abstract:-

**Purpose:** The purpose of this paper is to analyze the significance relationship between variables used as indicators of banks' financial performance, namely the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) towards the banks' value, measured by the Price to Book Value (PBV), from the year 2017 until 2021, specifically in Indonesia.

**Design/methodology/approach** – This paper is using a quantitative analysis approach with correlation research strategy and the type of data used in this research is time-series and cross-section data that are secondary data, namely the financial indicators of the banking companies sourced from financial databases. The population of this research is banking companies that are listed under the Indonesia Stock Exchange (IDX). Purposive sampling technique is used in this research, and 13 companies are collected for data analysis. This research applied panel data regression analysis, using Random Effect model.

**Findings** – The results show that there is a significant and positive relationship between the ROA and the NIM towards the PBV of the banking companies. Meanwhile, there is no significant influence of the Capital Adequacy Ratio (CAR), Operational Efficiency Ratio (OER), and Non-Performing Loan ratio (NPL) toward the PBV of the companies.

**Originality** – The managers of the banking companies can seek to focus on optimizing the profitability of the companies to aim for higher company value, due to the positive and significant relationship results between the ROA and NIM to the PBV.

**Keywords:-** Company Value, Panel Data Regression, Price to Book Value, Profitability, Random Effect Model.

## I. INTRODUCTION

The financial market in Indonesia has played a significant role in supporting the country's economic growth in recent years. Its importance in facilitating businesses with access to finance, which then will be the support to the businesses growth, is the results of the financial market's role as the platform to bridge between the capital provider and the capital users or the businesses. This way, the financial market makes financial intermediation more efficient. It improves the efficiency and volume of investments, as well as economic growth and development, by increasing the mobilization of

savings. Fabozzi and Drake [1], defined the financial market as a market where financial instruments are being exchanged or traded. He also then mentioned the three main functions of financial markets from the economic perspective, which are price discovery, liquidity, and the reduction of transaction costs.

This paper will be discussing one sector of the financial market, called the capital market. The capital market, as defined by Fabozzi and Drake [1] is a market where long-term financial instruments are issued by companies and governments. Equity, being one of the types of capital market securities, reflects ownership interests in the form of shares of stock. The share price can be used to determine the company's value. A decrease in the stock price in the market usually corresponds to also a decrease in the company's value, and vice versa. Investors' perceptions of a company's ability to earn and grow profits in the future are reflected in its stock price. The state and financial situation of each firm, which frequently fluctuates over time, might impact the rise and drops of stock prices [2].

As reported by the Financial Services Authority or the Otoritas Jasa Keuangan (OJK) of Indonesia [3], in their press release at the end of 2021, the performance of the Indonesian Capital Market during 2021 showed stable and improving performance as reflected in, among other things, market stability, trading activity, the number of funds raised and the number of retail investors which reached a record high. The chairman of the OJK, Wimboh Santoso [3], said that for almost two years, the Indonesian Capital Market has made various achievements that have become provisions for driving the economic recovery of the country. As of December 29, 2021, the composite index of the Indonesia Stock Exchange (IDX Composite) has increased by 10.40% compared to last year to date. Moreover, the stock market capitalization also gained an increase of 18.72% or has reached IDR 8.275 trillion compared to last year to date. According to OJK [4], 55 of the 192 public offering activities in 2021 involved new issuers. In terms of demand, OJK [4] recorded a large growth in the number of Capital Market investors in 2021. The number of investors as of December 29, 2021 was 7.48 million, a 92.70% growth from the end of 2020, when it was just 3.88 million. Director of Capital Market Regulation of the OJK, Edi Broto Suwarno, is optimistic that the trend of national capital market growth will continue in 2022 [5]. One of the reasons is the increasing number of corporations or small and medium enterprises (SMEs) that use the capital market as a source of business financing.

Along with financial markets, banks also played their role to offer a system for transferring and allocating funds to the most profitable possibilities. Unlike financial markets that propose a direct finance system, banks on the other hand, act as the indirect financing or as the financial intermediaries which intermediates between the borrowers and lenders. The OJK [6] defines a bank as a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and/or other forms in order to improve the people's standard of living. Both banking and capital markets are under OJK's area of supervision in Indonesia's financial services sector, along with non-banking financial institutions.

There were approximately 1,481 rural banks and 107 commercial banks available back as of November 2021, reported by the Financial Services Authority or the OJK [7]. The OJK regulates the market, while the Bank Indonesia (BI), Indonesia's central bank, is in charge of foreign exchange monitoring and payment systems. The six largest banks, either private-owned or state-owned, in Indonesia as of the end of the first quarter in 2021 by the total assets are Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Central Asia (BCA), Bank Negara Indonesia (BNI), Bank Tabungan Negara (BTN), and Bank CIMB Niaga. Four of these six largest banks are Indonesia's state-owned banks, namely Bank Mandiri, BRI, BNI, and BTN. There is also another state-owned syariah bank in Indonesia with their assets accounted to be 141.3 billion Rupiahs less than BTN.

Aside from banks' main services to collect and distribute funds from the public, several banks also have gone public by participating in the capital market and trading their shares to the public to raise their capital. As of March 2022, there are already 45 banks that are listed in the Indonesia's stock exchange. Thirty of the publicly traded banks are listed under the Main Board, and 15 of them are listed under the Development Board. The Main Board is for prospective issuers and large-company issuers with a track record, while the Development Board is for corporations that have not yet met the Main Board's listing standards or are in the process of reorganisation. Another board that is established on Indonesia's stock exchange is the Acceleration Board, whose purpose is to encourage more small and medium companies (SMEs) to perform an initial public offering (IPO) to generate funding for their expansion.

With the growing trend in Indonesia where more companies started to seek capital through the capital market by listing their companies for their shares to be traded publicly, it is the financial management of the companies' goal to maximize the companies' current value per share of the existing stock [8]. Moreover, with the economic theory objective of every company to maximize its shareholder's wealth, banks that trade their shares publicly also hold on to the same objective, which could be achieved through maximizing the company's share value. The value of a company becomes extremely essential as a measurement for assessing the benefits to shareholders and investors [9], in order for them to decide whether to sell or buy a certain stock [10]. With Indonesia's investing climate having been showing a significant growth in its number of investors and

transactions, it is becoming more and more relevant to analyses the factors that could influence a company's shares value.

Several studies have shown that financial performance of a company has an effect on the value of the company [2, 11, 12]. The financial performance of a firm is a measure of its success in terms of revenue and overall operating costs, debt structure, assets, and investment returns [13]. A further analysis on this financial performance would then be done to review the company's efficiency in doing their business. The technique of determining a firm's operating and financial characteristics from accounting and financial statements is known as financial performance analysis. The analyst then strives to assess the firm's liquidity, profitability, and other indicators to ensure that the business is run in a sensible and regular manner, with sufficient returns to shareholders to preserve the firm's market value at the very least. [14]. According to Rhamadana and Triyonowati [15], financial statements are analyzed in order to explain the numbers in the financial statements to make them relevant to the users. Furthermore, by evaluating the financial statements, the company's financial performance can be evaluated from year to year, and the analysis' results may be utilized to evaluate the company's success. It is also stated in their research that financial ratio analysis is one of the analytical tools that can be used for financial statement analysis.

In spite of the fact that there has been several research and studies conducted to analyses the effect of financial performance of companies on its companies' value in many industries, there is still a lack of research on this topic, specifically, on the banking industry in Indonesia. This paper would then further analyses and discuss the effect of the firm's financial performance toward its value, in the scope of the banking industry in Indonesia.

## II. RESEARCH OBJECTIVES

There are several objectives which this paper and the researcher hopes to achieve. The first objective of this paper is that it is hoped that this paper could generally provide the readers of this paper knowledge regarding the significance of the financial performance effects towards the value of a company, which in this case, is towards banks. This paper is aimed to find out whether there are significant impacts of financial performance, which is measured by Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operating Expenses to Operating Income ratio or Operating Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan (NPL) ratio towards the Price to Book Value (PBV) of the bank. Moreover, it is hoped that the readers would be enlightened on how these factors affect the banking industry in Indonesia. The next objective that the researcher is hoping to achieve is that this paper could reach the public investors and traders in Indonesia's capital market, so that it could provide them knowledge on how financial performance of banks could affect their value in the market and whether the value of the banks truly reflects the company's financial performance or not. It is hoped that this knowledge could help the investors or traders in doing fundamental analysis of the listed banks in Indonesia Stock Exchange. Furthermore, the researcher also

hoped that this paper could provide banks in Indonesia that are listed in the Indonesia's stock exchange with new information and knowledge on how significant the financial performance of their bank could affect the bank's value. In addition, it is hoped that this knowledge could help the managers of the banks to identify their bank's position in the market and also to identify which aspect in their financial performance could be improved, in order to increase their value in the market. The knowledge will be described and explained in the following sections, through necessary research and analysis.

### III. LITERATURE REVIEW

#### A. Financial Performance

To better understand the context of this paper, this section will be presenting theoretical backgrounds that are extracted from scientific journals and articles with related topics of the paper. The first variable that will be discussed is financial performance. A company's financial performance is a way to describe the financial condition of the company within a certain period as a result of the decision-making process of the management of the company [15, 16]. The financial condition of the company being mentioned is the company's ability to earn profits regarding on the aspects of providing funds and distributing funds, which can be measured by several indicators such as capital utilization, capital adequacy, efficiency, debt structure, liquidity, and profitability [2, 12, 13, 15-17].

Several researchers mentioned that financial performance of a company is frequently used as a general indicator to estimate the company's overall financial health throughout a period of time [2, 17, 18]. Moreover, as the outcome of numerous individual decisions taken by the management of the company on a regular basis [19], financial performance relied heavily on management's policies, methods, and the actions taken to achieve the organizational goal of the company [13, 20]. Therefore, financial performance could also reflect how well the company is operating their business in order for the management to fulfil their responsibilities to the principal in following the regulations in the applicable financial management standards in a proper and correct way to achieve the company's goal [16, 21].

Rhamadana and Triyonowati[15] in their research stated that financial performance can be used as a means of meeting the demands of information of internal and external stakeholders of a company, and one type of these investors are investors. Many of these investors are considering financial performance as one of the crucial factor in determining stock investment and using financial performance report of a company to help them make investment decisions [2, 18]. This statement is also supported in [22] and Jihadi et al. [2] in which they stated that the stock price in the stock market is determined by the financial performance of the company, and that the better the financial performance is, the higher the stock price will be, which also lead to higher company value. According to Harningsih, Agustin and Setiawan[18], investors will be attracted by high company value, which is driven by a good financial performance of the company.

From the descriptions mentioned above, we can conclude that financial performance of a company represents the financial condition of the company, which can be measured by several financial indicators such as capital utilization, capital adequacy, efficiency, solvency, liquidity, and profitability. Financial performance is also a measure of the company's financial health as a measurement towards the management's actions in fulfilling their responsibilities and a form of communication to the stakeholders of the company, in order to achieve the company's goals. These goals can be achieved through a good financial performance that will lead to higher value of the company that will attract investors to invest in the company.

#### B. Firms Value

The primary goal of the management of the company is to maximise the shareholder's wealth [23-25] through the value of the company [18, 22, 26, 27]. The value of the firm is very essential, since it can be used as an economic measure of the firm's management success [28, 29] and the performance of the firm [30], to make sure that the most effective and efficient use of resources is implemented [23]. Several researchers mentioned that the value of the firm is the investor and the market's perception of the company's success level [2, 18, 26, 27].

The investor's perception, therefore, is reflected through the share or stock price [2, 18, 22, 27, 28, 29, 31], which is driven by the company's trading activity (supply and demand) in the capital market [18], as a reflection of the market response to the company [28]. Moreover, other researchers also mentioned that the value of the firm comprises share value and debt or liabilities value compared to the value of the firm's assets [23, 27, 32]. The value of the firm also indicates the ability of the firm to create value in relation to profits [24] and firm's ability to provide dividends to their investors [21].

Due to its relevance to the company's performance, the firm value became a very important aspect for investors and the public to make their investment decisions, to assess whether the business is attractive enough to invest in [9, 18, 22, 23, 26, 30, 31]. The investors keep a close eye on the movements of the stock price, because then it will affect the value of the firm, which reflects the likelihood of the company to grow in the future, which is then translated into the willingness of the investors to invest in the company [23, 30, 33]. A firm with a high stock value gives a positive signal for the public, since it will also affect the firm's value, and that investors tend to invest their money in a firm that has a good firm's value [21, 23, 24, 26-28]. The higher the demand of the firm's shares, the higher the stock price will be, which also has an impact in the increase of the market confidence in the company [21, 23, 26, 29, 35]. It means that the investors are willing to spend their money more on the company as an investment, in the hope of getting a higher profit in the future [2, 27, 30].

There are several ways to measure the value of the company, one of the approaches is by using ratio analysis, which will be used to measure the firm's value in this paper. There are also several ratio analyses that could be used to value the shares of the company, they are price to book value



(PBV) [2, 9, 11, 12, 21, 30, 34], price earnings ratio (PER) [9, 34, 35], Tobin's Q ratio [24, 31, 36, 37], market book ratio (MBR) [9], dividend payout ratio [9, 17], market value added ratio (MVA) [34], and dividend yield ratio [9].

The ratio that will be used to measure the value of the company in this paper would be price to book value (PBV). The price to book value ratio compares the market price per share of a company to its book value per share. The price to book value ratio is used as a measurement to determine whether or not the stock of a company is overvalued or undervalued. A low price to book value ratio indicates that the stock of the company is undervalued, which usually would be attractive to investors as a long-term investment. However, a low price to book value ratio can also mean that there is a decreasing trend in the company's fundamental performance. To make the price to book value ratio more relevant, it should be compared to the company's peers and the industry the company is operating in. From this comparison then, it could be analyzed how the company performance compared to its peers and whether the company's performance deviated from the industry. There are two purposes that the price to book value have, which are to assess if the company's stock is now being traded at a price that is acceptable in comparison to its historical average, still inexpensive, and/or still pricey. The second purpose is that it is used to identify the company's stock current high or low price based on the expected fair price for the following year [38].

According to Gitman and Zutter [10] in their book, the formula to calculate the price to book value is:

$$\text{Price to Book Value Ratio (PBV)} = \frac{\text{Market Price per Share}}{\text{Book Value per Share}} \quad (1)$$

The market value of the company reflects the market's expectation on the company. Companies with high growth often show high price to book value ratio (more than 1.0), while companies that are facing fundamental problems show low price to book value ratio (less than 1.0). Nevertheless, to decide whether a price to book value is "good" or not, peer and industry comparison is still needed, and that other ratios might also be necessary to justify the price to book value of the company.

### C. The Effect of Financial Performance on Firms Value

As explained in the previous section, according to theories, financial performance of a company can influence its value and become an aspect to be considered by investors to make investment decisions. As Chabachib et al. [29] explained in their paper regarding signal theory, companies that earned high profits suggest favourable prospects in the future of the company, which is translated into positive reactions from investors responding to a signal from the company, increasing the company's value. This is in line with the statement by Handayani et al. [22] which stated that investors have been using financial performance as an indicator when valuing a company as seen by the stock value listed in the Indonesia Stock Exchange.

These theories are also supported in [29, 30], and Harningsih, Agustin & Setiawan[18], in which they stated that companies with high profits sent a positive signal and showed good prospects, increasing investor's trust. This way, the investors will be interested in buying the company's stock, resulting in an increase in the company's stock price, and that is how the company could gain capital in the form of shares. Handayani et al. [22] also made similar statements in their paper, in which they said that investors typically opt for companies that have the best performance to invest their money in, which makes financial performance become a factor that the company must take into account in order to maintain their high price of their stock to appeal to investors. According to Utomo, Kumalasari & Machmuddah[17], this tendency of investors to opt for companies that have better financial performance is due to the fact that it will produce a higher rate of return that the investors will gain, either in the form of dividends or capital gains.

Hence, the better the financial performance of a company, the higher the value of the company will be and worse financial performance will lead to a decrease in the company's value [18]. Moreover, another researcher in [21] also mentioned how the application of financial management can help the company to optimize their value by allowing one financial decision to influence other financial decisions, which then will subsequently have an impact on the firm's value.

Financial performance itself has several aspects in it, so that it could have an influence on the firm's value. Pascareno & Siringoringo[39] stated that liquidity, utilisation, profitability, and investment shareholders' ratio are some of the variables covered by financial performance that are measured as ratios. In addition, Widyastuti[12] in her paper that analyzes liquidity, activity, leverage, and financial performance, mentioned that financial performance can be measured by return on assets (ROA), net profit margin (NPM), and return on equity (ROE).

There is much research and studies done by researchers around the world regarding the impact of financial performance on the value of the firm. Previous research and studies done most of the time considered profitability, liquidity, solvency and activity ratios of the company as the variables that represent the financial performance of the companies. Several ratios including return on equity (ROE), return on assets (ROA), net profit margin (NPM), operating profit margin (OPM), cash ratio, current ratio, debt to equity ratio (DER), debt to asset ratio (DAR), return on capital employed (ROCE), total assets turnover ratio (TATO), and inventory turnover ratio (ITO). For the firm's value measurement, several ratios and indicators that past researchers have used are including price to book ratio (PBV), Tobin's Q ratio, earnings per share (EPS), price earnings ratio (PER), book value per share (BVPS), dividend payout ratio, market value added (MVA), dividend yield ratio, and market to book ratio (MBR).

For the profitability measurement of the companies that are measured by ROE, several researched showed that ROE has a positive significant effect towards the value of the company, that is measured by PBV [12, 29, 40], MBV [28], Tobin's Q ratio [12, 26, 28, 33], and PER [12, 35]. However, other studies [11, 23, 38] concluded that the ROE of the company has a negative significant impact towards the firm's value, measured by PBV and Tobin's Q ratio. There are also a few studies [36, 37, 39] that showed insignificance, where the ROE does not affect the value of the company.

For profitability that is measured by ROA, almost all the results from previous research and studies showed that ROA has a positive significant effect on the value of the company that is measured by MBV [28], Tobin's Q ratio [2, 12, 18, 23, 24, 28, 36], PBV [2, 12, 21, 27, 38], dividend payout ratio [17], and PER [12]. However, according to the research done by Ratih and Setyarini[32], ROA does not have an effect on the value of the company that is measured by Tobin's Q ratio.

Another measurement of profitability, by calculating the company's profit margin, have also used by researchers and showed a positive significant influence of NPM towards PBV [11, 12], PER [12], and Tobin's Q ratio [12]. Kristi and Yanto[31] also have the same result when they analyse the effect of OPM to Tobin's Q ratio, which showed a positive and significant influence. Ayuba et al. [23] also conducted a research on the effect of profitability on the company's value by using ROCE and Tobin's Q ratio as an indicator of profitability and firm's value respectively. The study showed that ROCE does not have an influence towards the value of the company.

Past research and study that analyse the effect of liquidity of companies towards their value have varied results. For liquidity that uses cash ratio as their indicator, a research done by Pascareno and Siringoringo [39] showed insignificance of the ratio towards the value of the firm, meaning that cash ratio does not affect the firm's value, measured by Tobin's Q ratio. Similar results also showed in a research done by Chabachib et al. [29] and Harahap, Septiani&Endri[11], in which they analysed the effect of current ratio towards PBV, and showed results of insignificance. However, according to several other research, they found that current ratio has a positive significant influence towards the PBV [2]) and Tobin's Q ratio [2, 24] of the company. Opposite results are shown in other studies where the current ratio of the company has a negative significant influence towards the company's PBV [27, 30] and Tobin's Q ratio [31].

As well as liquidity, past research and studies that analysed the impact of a company's leverage toward the company's value also showed varied results. Several research showed that DER does not have an effect towards the value of the company that is measured by Tobin's Q ratio [34, 39] and PBV [29, 34]. Another similar result shown in Devita et al. [34], where they concluded that DAR also does not have an effect towards PBV. A couple of research showed that there is a negative significant effect of DER [37] and DAR significant [31] towards the Tobin's Q ratio of the company. Opposite results found in several research, where DER has a positive significant effect towards the Tobin's Q ratio [2, 26] and the

PBV [2] of the company. According to Harahap, Septiani, and Endri[11], DAR also has a positive significant effect towards PBV of the company.

Lastly, past papers that used activity ratio as an indicator of financial performance showed that activity ratios have a positive significant effect towards the value of the firm. These results showed that TATO has a positive significant influence towards the PBV [11] and the Tobin's Q ratio [24, 31] of the company. Moreover, in a research done by Jihadi et al. [2], they showed that the ITO has a positive significant effect towards the PBV and Tobin's Q ratio of the company.

The results mentioned above regarding the studies that analyzed the effect of financial performance towards the firm's value were conducted in various industries, ranging from manufacturing companies [28, 35, 36, 40], mining companies [18, 32, 33], basic and chemical industry [30], property and real estate companies [26, 34], consumer goods companies [12, 29], cable companies [11], industrial companies [24], financial industries [17, 22, 23, 38, 39], and across industries [2, 21, 27, 31, 37].

The focus of this study will be on the financial industry, specifically the banking industry in Indonesia for the period of 2017 until 2021. From the literature review that the researcher has done, there are still a few numbers of research that used banking industries as the subject of the research, and past papers that discuss similar topics regarding the financial performance effects towards firm's value, with financial industry as the subject also only used a few variables as a measurement of the financial performance of the companies. Therefore, this paper aims to explore more about the effect of the financial performance in the banking industry in Indonesia and use more variables as a measurement of the financial performance of the banks.

#### *D. Financial Performance Indicators in Banking Industry*

There are several indicators that can be used to measure the financial performance of banks. Banks, unlike other companies or corporations, have loans listed in their balance sheet and also as their biggest source of revenue. In terms of liabilities, customer deposits are the banks biggest source of liabilities. Past research and studies and the Indonesia Financial Services Authority (OJK) that discusses financial performance about banks have mentioned several ratios that can be used as the indicators of financial performance.

One of the ratios that are mostly used by previous research and studies [41-48] regarding financial performance of banks is the return on assets (ROA), where it measures the profitability of the bank in regards to their total assets. The second most used ratios from past research found is the return to equity (ROE), where it is also used as a profitability measurement for banks, but unlike ROA, ROE [41, 43, 45, 47-50] measured the banks' profitability in regards to their total shareholders' equity.

The next ratio that is also used in many scientific research and studies as an indicator of banks' financial performance is the capital adequacy ratio (CAR). Several research[42, 44, 46, 47, 50] used CAR as a measurement of the availability of the capital of the banks in regards to the

banks' risk-weighted assets. Non-performing loan (NPL) or non-performing finance (NPF) is another common ratio used by researchers [42, 44, 46, 48, 50] as an indicator of banks' financial performance as a measurement of the bank's credit risk.

Another common ratio that could be found in several research and studies [42, 44, 46, 50] as an indicator of the banks' financial performance is the operational efficiency ratio, where it measures the banks efficiency in operating their business. Loan to deposits ratio (LDR) is another ratio that is used in several research [42, 44, 46, 47] to measure the banks liquidity risk and an indicator of the banks' financial performance.

The next ratio that is also found in previous research and study [42, 48, 51] as an indicator of the banks' financial performance is the net interest margin (NIM), which it measures the bank's profitability and the growth of the bank. Other ratios that are used in research and studies about banks' financial performance are including the debt to assets ratio (DAR) [47, 48, 49], debt to equity ratio (DER) [42, 47], loan to assets ratio (LAR) [42, 47], equity to liability ratio (ELR) [47], equity to asset ratio (EAR) [47], net loan losses to average total loans [48], and loan loss reserve to total loans [48].

The independent regulatory body of the financial industry in Indonesia, the Indonesia Financial Services Authority (OJK) also set several indicators that they mentioned in their 2021 Banking Industry Profile Report to measure the banks' performance. In their report, the ratios that they used are: CAR, ROA, operational efficiency ratio, NIM, net operating margin (NOM), and cash ratio. This paper will then adopt several ratios that are mentioned above, from past research journals and papers, and also from the OJK, to be used as the measurement of the banks' financial performance. The indicators or the ratios of the banks' financial performance that are going to be used in this paper are including Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL).

#### a) Capital Adequacy Ratio (CAR)

The first ratio that is going to be used as a measurement of the banks' financial performance in this paper is the Capital Adequacy Ratio (CAR). To get the CAR of the bank, the bank's capital is divided by the bank's risk-weighted assets. This ratio is necessary for banks to guarantee that they have enough capital as a cushion to withstand losses before going bankrupt. The OJK [7] defined the capital adequacy ratio as a ratio that is obtained from dividing the capital of the bank to its risk-weighted assets, with a threshold set by the BIS (Bank for International Settlements) of at least 8%. The higher the CAR of the bank, the lower the risk for the bank. There are two kinds of capital that can be used in CAR, which are tier 1 capital and tier 2 capital. The core capital of the bank is included in tier 1 capital where it is made up of the bank's retained earnings, bank's equity capital, and bank's ordinary shares capital, and tier 2 capital is made up of bank's reserves

such as asset revaluation reserves, undisclosed reserves, general loan reserves, and also subordinated term debt and hybrid capital instruments. Due to time limitations for data collection, the capital that will be used in this paper is only the tier 1 capital to calculate the CAR. Below, is the formula used to calculate the CAR according to the OJK [7]:

*Capital Adequacy Ratio (CAR) =*

$$\frac{\text{Bank's Capital}}{\text{Risk-weighted Assets}} \quad (2)$$

#### b) Return on Assets (ROA)

The next ratio that is going to be used in this paper as a measurement of the banks' financial performance is the Return on Assets (ROA). ROA is one of profitability ratios that measures the ability of the banks to gain profits with respect to its total assets. Similar definition was also stated by the OJK [7], where they defined the ROA as one form of profitability ratio to measure the company's ability to generate profits by using the total existing assets. The formula that is used to calculate ROA is:

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}} \quad (3)$$

#### c) Operational Efficiency Ratio (OER)

The Operational Efficiency Ratio (OER) is one of the efficiency ratios that is going to be used in this paper as a measurement of the banks' financial performance. The ratio is also known in Indonesian as the Biaya Operasional pada Pendapatan Operasional (BOPO). As mentioned in its name, the OER measures the efficiency of the banks in their operational activity by comparing its operational costs to operating income. The OJK [7] also defined (BOPO) as a measurement of efficiency as measured by the ratio of operating expenses to operating income. The formula that is going to be used to calculate OER is:

$$\text{Operational Efficiency Ratio (OER)} = \frac{\text{Operational Costs}}{\text{Operational Income}} \quad (4)$$

#### d) Net Interest Margin (NIM)

The next ratio that this paper is going to be used as a measurement of banks' financial performance is the Net Interest Margin (NIM), one of the profitability ratios. NIM is used to compare between how much interest the bank earns on its loans and how much interest the bank pays out on its deposits. This ratio is also one of the indicators that could measure the bank ability to generate profits and also the growth of the bank. The OJK [7] defined NIM as an indicator of bank profitability obtained from the ratio of Net Interest Income to the average Total Average Earning Assets. The formula to calculate the NIM of the bank is:

$$\text{Net Interest Margin (NIM)} = \frac{\text{Net Interest Income}}{\text{Average Earning Assets}} \quad (5)$$



## e) Non-Performing Loan ratio (NPL)

The last ratio that is going to be used as a measurement for the banks' financial performance is the Non-Performing Loan ratio (NPL). A non-performing loan is a type of loan that the borrower has defaulted on because they have failed to make the scheduled payments for a certain length of time. The NPL ratio then measures the bank's credit risk by looking at the bank's NPL with respect to its total loans. The OJK [7] defined NPL or non-performing finance (NPF) as loans or financing that has substandard, doubtful, or bad quality as referred to in the provisions of the legislation regarding the assessment of the asset quality of commercial banks and the OJK provisions regarding the assessment of the asset quality of Islamic commercial banks and sharia business units. The formula used to calculate NPL is:

$$\text{Non - performing Loan Ratio (NPL)} = \frac{\text{NPL of the bank}}{\text{Total Outstanding Loans}} \quad (6)$$

## E. Hypothesis Development

After reviewing previous research and studies regarding the effect of financial performance as explained in the literature review above, the researcher concluded that it requires more comprehensive research on the effect of financial performance towards the bank's value in the banking industry in Indonesia, by integrating more variables in the

financial performance of the banks, which are Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL). Therefore, following hypotheses for this study are formulated as below and also can be seen in Figure 1:

- **H<sub>1</sub>**: There is a simultaneous effect of Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.
- **H<sub>2</sub>**: There is an effect of Capital Adequacy Ratio (CAR) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.
- **H<sub>3</sub>**: There is an effect of Return on Assets (ROA) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.
- **H<sub>4</sub>**: There is an effect of Operational Efficiency Ratio (OER) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.
- **H<sub>5</sub>**: There is an effect of Net Interest Margin (NIM) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.
- **H<sub>6</sub>**: There is an effect of Non-Performing Loan ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

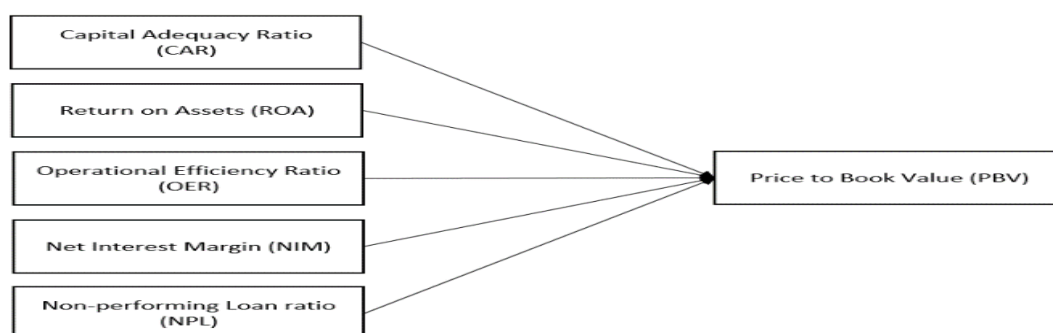


Fig. 1: Research Thinking Framework (Source: Researcher Data)

## IV. RESEARCH DESIGN AND METHODOLOGY

## A. Research Design

This research will use the positivism paradigm approach as the research philosophy. In the positivism paradigm, the research is done objectively based on the data available in the field. The research will be using a deductive approach and therefore hypotheses will be developed and tested using quantitative methods of analysis. In this case, there will be several financial measurements, which are the financial ratios or indicators that would be used to analyze the financial performance of the banking industry in Indonesia. The deduction approach will be used in this research theory development by formulating several hypotheses based on theories and previous research done with similar topics to answer the research questions. The research strategy that is used in this study is correlational research where the researcher explores associations or the relationships between the independent variables, which are the financial performance of the banks, measured by the financial ratios, and the

dependent variable, which is the value of the banks, measured by the Price to Book Value (PBV).

The exploration is done without modifying any of the independent variables and then the relationships of the independent variables (financial performance ratios) on the dependent variable (value of the bank) are going to be assessed. The intensity and/or direction of the relationship between the independent and dependent variables is represented by a correlation strategy which might have either a positive or negative direction, as well as the significance between them. The correlation strategy is needed in this research due to the necessity to identify whether there is a relationship between the independent variables and the dependent variable, or whether the dependent variable is somehow affected by the independent variables, either partially or simultaneously, positively or negatively, without any manipulation to the independent variables.

### B. Research Sample and Data

The object for this research is the banking industry in Indonesia, which consists of banks listed on the Indonesia Stock Exchange (IDX). The sampling method for this research is purposive sampling, with the sample criteria are (1) banking companies that are listed on IDX from 2017 until 2021 under the Financials sector and the Main board, (2) complete financial data that is necessary specifically for this research. From 53 companies that are listed on IDX under the Financials sector and the Main board, the ones that are listed from the

year 2017 until 2022 are a total of 30 banking companies. However, there are only 23 banking companies from 30 banking companies that have complete financial data for this research, and after further initial analysis of the data, 10 of the banking companies' data have outliers in it, so that the companies have to be removed from the data analysis. Therefore, the sample size of this research, based on the criteria above, is narrowed down into 13 banking companies that are listed on IDX, as listed in Table 1 below:

No.	Company's Ticker	Company's Name
1.	BBNI	Bank Negara Indonesia (Persero) Tbk., PT
2.	BBRI	Bank Rakyat Indonesia (Persero) Tbk.
3.	BBTN	Bank Tabungan Negara (Persero)
4.	BDMN	Bank Danamon Indonesia Tbk.
5.	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten Tbk.
6.	BJTM	Bank Pembangunan Daerah Jawa Timur
7.	BNGA	Bank CIMB Niaga Tbk.
8.	BNII	Bank Maybank Indonesia Tbk.
9.	BSIM	Bank Sinarmas Tbk.
10.	BTPN	Bank BTPN Tbk.
11.	MCOR	Bank China Construction Bank Indonesia Tbk., PT
12.	PNBN	Bank Pan Indonesia Tbk.
13.	SDRA	Bank Woori Saudara Indonesia 1906 Tbk.

Table 1: Research Sample of 13 Banking Companies Listed on Indonesia Stock Exchange from 2017 until 2021

(Source: Researcher Data)

### C. Data Analysis Method

After the collection of data, the data will then be processed and analysed using the Panel Data Regression Model [11, 24, 25, 31, 35, 37] with the help of a statistical software called Eviews student version 12. The use of panel data regression model is due to the type of data, which is a combination of both cross-section type data, which in this case is the data from 23 banking companies, and time series type data, which in this case is the data from the year 2017 until 2021. The independent variables that are used are the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) of the banking companies. Whereas, the dependent variable for this research is the Price to Book Value (PBV) of the banking companies.

Before doing the hypotheses test, there are several tests needed to be conducted to choose the right data regression model for the data. To choose the panel data estimation model that fits, it is required to do a Model Fit Test, which include several tests, including the Chow Test, the Hausman Test, and the Lagrange Multiplier test. These tests needed to be conducted to determine which panel data regression model between the common effect, the random effect, or the fixed-effect model that fits with the data, so that it can be used to do

the partial hypothesis testing for each of the independent variables towards the dependent variable. Whereas the simultaneous hypothesis testing ( $H_1$ ), where the simultaneous effect of the set of the independent variables towards the dependent variable, is going to be analyzed using the f-test. After choosing the right model to test the hypotheses, there are also several tests that are required to validate the data used in this research. These tests are called the classical assumption test, where it is a statistical test that is used to determine the relationship between the variables. The classical assumption test includes normality test, autocorrelation test, multicollinearity test, and heteroscedasticity test.

## V. FINDINGS AND DISCUSSION

### A. Data Description

To have a simpler and better understanding of the data that have been collected, the following sample characteristics are employed in this research based on descriptive statistical analysis, which are mean, median, maximum value, minimum value, the standard deviation, and the coefficient of variation for both the dependent variable and the independent variables. Table 2 below shows the descriptive statistical results from the observations on the banking companies that are listed on the Indonesia Stock Exchange from the period 2017 until 2021.



	PBV	CAR	NIM	NPL	OER	ROA
<b>Mean</b>	1.152154	20.22708%	5.716769%	3.611538%	55.16631%	1.244308%
<b>Median</b>	0.950000	20.13000%	5.410000%	3.770000%	53.10000%	1.270000%
<b>Maximum</b>	2.760000	35.94000%	9.300000%	7.940000%	82.07000%	2.580000%
<b>Minimum</b>	0.380000	13.64000%	2.840000%	0.400000%	40.36000%	0.020000%
<b>Std. Dev.</b>	0.594271	4.56744	1.703646%	1.658684	9.857359	0.645596
<b>Coeff. of variation</b>	0.515791	0.225808	0.298009	0.459274	0.178684	0.518839
<b>Observations</b>	65	65	65	65	65	65

Table 2: Results of Descriptive Statistics Test (Source:Data Processed, 2022)

As seen on Table 2 above, there are a total of 65 observations from the 13 samples of the banking companies with each bank consisting of a 5-year period of observation. Based on Table 2 above, it can be seen that the banking companies have an average of 1.152 for their price to book value (PBV). Meaning that, the average value of the banking companies' price is 1.152 times of their book value. The lowest PBV from the data sample is 0.38, which is from PT. Bank Pan Indonesia, Tbk., while the highest value of the PBV is from Bank SinarmasTbk. with 2.76. Other than that, the middle value (median) of the PBV of the banking companies is found at 0.95. The standard deviation for the PBV of the banking companies is 0.594, with the coefficient of variation is 0.516. The standard deviation shows how the PBV of the banking companies deviate from the mean, and from the coefficient of variation, it can be seen that the PBV has a slightly higher variation compared to other series of data.

The lowest value of the capital adequacy ratio (CAR) of the banking companies is 13.64% which is gained from Bank Tabungan Negara (Persero), while the highest CAR from the data is 35.94% which came from Bank China Construction Bank Indonesia Tbk., PT. The average CAR that the banking companies in Indonesia have from the period of 5 years is 20.227%. The standard deviation of the CAR of the banking companies is 4.567, with the coefficient of variation of 0.226. These figures show that the data series of the CAR of the banking companies have relatively lower fluctuation compared to PBV, and other data series in general.

As for the net interest margin (NIM) data series, the lowest value is 2.84% which came from Bank Tabungan Negara (Persero), while the highest value of the NIM is from Bank Danamon Indonesia Tbk. with 9.3%. The average value of the NIM of the banking companies in Indonesia from 2017 until 2021 is 5.717%, meaning that the banking companies in Indonesia, in average, are able to generate 5.717% of net interest income from their average earning assets. The standard deviation from the NIM data series is 1.704 with 0.298 of coefficient of variation. Similar to the CAR data series of the banking companies, the NIM data series of banking companies in Indonesia also have low variation with more data being closer to the mean compared to PBV and some other data series.

The next data series is the non-performing loans ratio (NPL) with the lowest value from the data series is 0.4% from Bank BTPN Tbk., while the highest value of the NPL is 7.94% came from Bank SinarmasTbk. On average, the banking companies in Indonesia for the last 5 years have an average NPL of 3.612%. This means that the banking companies in Indonesia, on average, reported a non performing loans proportion of 3.612% from their gross loans. Besides that, it can also be seen that the standard deviation of the NPL data series is 1.659 with the coefficient of variation of 0.459. These figures show that the NPL data series has a relatively high variation, where the data are more spread out compared to other data on the table.

Operating efficiency ratio (OER) or the cost to income ratio is the next ratio on the table with the lowest value being 40.36% from PT. Bank Pan Indonesia, Tbk., while the highest value is 82.07% came from Bank China Construction Bank Indonesia Tbk., PT. The average value of the OER of the banking companies in Indonesia for the 5-year period is 55.166%, meaning that on average, the banking companies in Indonesia's costs made up more than a half or 51.166% of their income. The standard deviation for this data series is 9.857 with the coefficient of variation of 0.179. These figures show that the OER data series of the banking companies in Indonesia has a relatively low fluctuation, which in fact is also the lowest among the other data series, showing that the OER data series has lower variation.

The last data series from the table is the return on assets (ROA) with the lowest value from the data is 0.02% from Bank SinarmasTbk., while the highest is from Bank Rakyat Indonesia (Persero) Tbk. with 2.58%. On average, the banking companies in Indonesia from the year of 2017 until 2021 have an average ROA of 1.244%, meaning that on average, the banking companies in Indonesia are able to generate net income as much as 1.244% from their total assets. The standard deviation for the ROA data series is 0.645 with the coefficient of variation being 0.519. These figures show that the ROA data series has a relatively more varied data compared to other data series on the table, and also having the highest coefficient of variation, showing that the ROA data series has the highest fluctuation among the data series in this table.

**B. Panel Data Regression Model Selection Test****a) Chow Test**

The Chow test is conducted to determine between the Common Effect model, also known as the pooled Ordinary Least Squares (OLS) model, or the Fixed Effect model that is the most appropriate to use in estimating the panel data. The hypotheses for the Chow Test is as described below:

$H_0$ : Common Effect model or pooled OLS is the appropriate model

$H_a$ : Fixed Effect model is the appropriate model

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.544251	(12.47)	0.0000
Cross-section Chi-square	80.245721	12	0.0000

Table 3: Redundant Fixed Effects Tests - Likelihood Ratio or Chow Test Results (Source:Data Processed, 2022)

As seen on Table 3 above, the value of the probability is 0.000, which is  $<0.005$  or less than 5%. This means that the null hypothesis should be rejected, and the alternative hypothesis should be accepted. In conclusion, based on the Chow Test result, the best model between the Common Effect model and the Fixed Effect model is the Fixed Effect model, as also stated in the alternative hypothesis that it should be accepted, where it is stated that the Fixed Effect model is the appropriate model.

**b) Hausman Test**

The Hausman test is conducted to determine between the Random Effect model or the Fixed Effect model that is the most appropriate to use in estimating the panel data. The hypotheses for the Hausman Test is as described below:

$H_0$ : Random Effect model is the appropriate model

$H_a$ : Fixed Effect model is the appropriate model

If the value of the probability is  $<0.05$  or less than 5%, then the null hypothesis is rejected, and accept the alternative hypothesis. And if the value of the probability is  $>0.05$  or greater than 5%, then the null hypothesis is accepted. If the Hausman Test result rejects the null hypothesis, then the best model to use is the Fixed Effect model. And if the Hausman Test result accepts the null hypothesis, then the best model to use is the Random Effect model. Table 4 below is the result for the Hausman Test processed using EViews student version 12.

Test Summary	Chi-Sq. Statistics	Chi-Sq. d.f.	Prob.
Cross-section random	4.69228	5	0.4546

Table 4: Correlated Random Effects Tests - Hausman Test Results (Source:Data Processed, 2022)

As seen on Table 4 above, the value of the probability is 0.4546 or 45.46%, which is  $>0.005$  or greater than 5%. This means that the null hypothesis should be accepted, and the alternative hypothesis should be rejected. In conclusion, based on the Hausman Test result, the best model between the Random Effect model and the Fixed Effect model is the Random Effect model, as also stated in the null hypothesis that should it be accepted, where it is stated that the Random Effect model is the appropriate model.

$H_0$ : Common Effect model or pooled OLS model is the appropriate model

$H_a$ : Random Effect model is the appropriate model

If the value of the probability is  $<0.05$  or less than 5%, then the null hypothesis is rejected, and accept the alternative hypothesis. And if the value of the probability is  $>0.05$  or greater than 5%, then the null hypothesis is accepted. If the Lagrange Multiplier (LM) Test result rejects the null hypothesis, then the best model to use is the Random Effect model. And if the Lagrange Multiplier (LM) Test result accepts the null hypothesis, then the best model to use is the Common Effect model or pooled OLS model. Table 5 below is the result for the Lagrange Multiplier (LM) Test processed using EViews student version 12.

**c) Lagrange Multiplier (LM) Test**

The Lagrange Multiplier (LM) Test is conducted to determine between the Random Effect model or the Common Effect model (pooled OLS) model that is the most appropriate to use in estimating the panel data. The hypotheses for the Lagrange Multiplier (LM) Test is as described below:

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	36.54212	0.258007	36.80013
	(0.0000)	(0.6115)	(0.0000)

Table 5: Correlated Random Effects Tests - Hausman Test Results (Source:Data Processed, 2022)

As seen on Table 5 above, the value of the probability is 0.0000 for cross-section and both random effects, which is  $<0.005$  or less than 5%. This means that the null hypothesis should be rejected, and the alternative hypothesis should be accepted. In conclusion, based on the Lagrange Multiplier (LM) test result, the best model between the Random Effect model and the Common Effect model is the Random Effect model, as also stated in the alternative hypothesis that it should be accepted, where it is stated that the Random Effect model is the appropriate model.

### C. Classical Assumption Test

There are four classical assumption tests that are going to be conducted in this research before the hypothesis testing is conducted. These tests include the normality test, autocorrelation test, multicollinearity test, and heteroscedasticity test.

#### a) Normality Test

The objective of the normality test is that it is used to see if the residual variables in the regression model are distributed normally. The normality test in this research is conducted with the Jarque-Bera test using EViews student version 12. The hypotheses for the normality test is as described as below:

$H_0$ : Residuals are normally distributed

$H_a$ : Residuals are not normally distributed

If the value of the probability of the Jarque-Bera is  $<0.05$  or less than 5%, then the null hypothesis is rejected, and accept the alternative hypothesis. And if the value of the probability of the Jarque-Bera is  $>0.05$  or greater than 5%, then the null hypothesis is accepted. If the normality test result rejects the null hypothesis, then the residual variables in the regression model are not distributed normally. And if the normality test result accepts the null hypothesis, then the residual variables in the regression model are distributed normally. Figure 2 below is the result for the normality test processed using EViews student version 12.

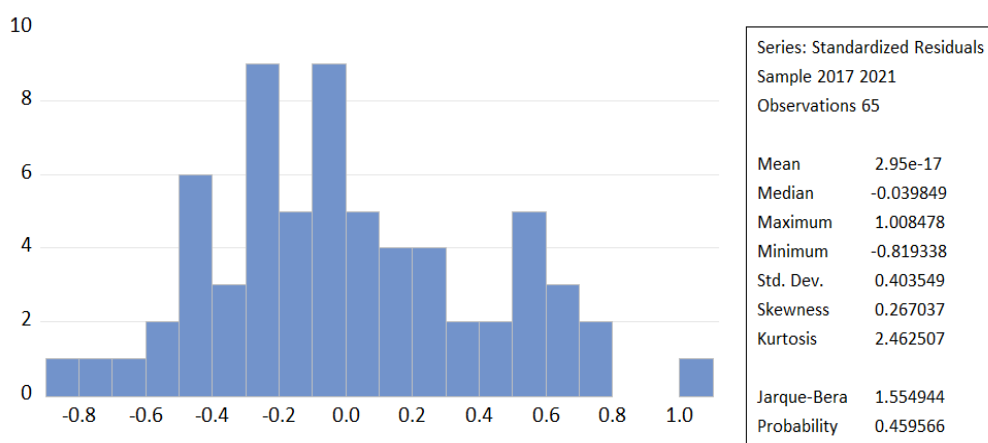


Fig. 2: Normality Test Results (Source: Data Processed, 2022)

As seen on Figure 2 above, the value of the probability of the Jarque-Bera is 0.459566 or 45.96%, which is  $>0.005$  or greater than 5%. This means that the null hypothesis should be accepted, and the alternative hypothesis should be rejected. In conclusion, based on the normality test result, the residual variables in the regression model are distributed normally, as also stated in the null hypothesis that it should be accepted, where it is stated that the residuals are normally distributed.

#### b) Multicollinearity Test

The objective of the multicollinearity test is that it is used to see if there is a correlation between the independent variables in the data of the regression model. The multicollinearity test in this research is conducted with the Variance Inflation Factor (VIF) test using EViews student version 12. The hypotheses for the multicollinearity test is as described as below:



$H_0$ : There is multicollinearity issue between the regression model

$H_a$ : There is no multicollinearity issue between the regression model

If the value of the centered VIF is less than or equal to 10, then the null hypothesis is rejected, and accept the alternative hypothesis. And if the value of the centered VIF is  $>10$  or greater than 10, then the null hypothesis is accepted. If

Variable	LOG_CAR	NIM	NPL	OER	ROA
Centered VIF	1.020672	1.236717	1.294065	1.21917	1.493823

Table 6: Multicollinearity Test Results (Source:Data Processed, 2022)

As seen on Table 6 above, the value of all of the centered VIF is less than 10. This means that the null hypothesis should be rejected, and the alternative hypothesis should be accepted. In conclusion, based on the multicollinearity test result, the independent variables in the regression model do not have multicollinearity issues, as also stated in the alternative hypothesis that it should be accepted, where it is stated that there is no multicollinearity issue between the regression model.

#### c) Autocorrelation Test

The objective of the autocorrelation test is that it is used to see if there is a relationship between the residuals in the  $t$  period and  $t-1$  period of the data in the regression model. The multicollinearity test in this research is conducted with the Durbin-Watson test using EViews student version 12. The hypotheses for the autocorrelation test is as described as below:

$H_0$ : There is no first-order correlation between the residuals

$H_a$ : There is first-order correlation between the residuals

The Durbin-Watson value of the model is going to be compared with the Durbin-Watson lower and upper critical values table, according to Farebrother[52] and Savin and White [53] at 1% significance level. The Durbin-Watson value is then first check for the positive autocorrelation, where if the Durbin-Watson value is less than the lower critical value, then the conclusion is to reject the null hypothesis due to the presence of positive autocorrelation, and if the Durbin-Watson value is greater than the upper critical value, the null hypothesis should be accepted, due to no presence of positive autocorrelation. However, if the Durbin-Watson value lies between the lower critical value and the upper critical value, then the result of the test is inconclusive.

After checking the positive autocorrelation, the negative autocorrelation then should also be tested. Unlike in the positive autocorrelation test, in the negative autocorrelation test, the value that is going to be compared with the lower and upper critical value is the 4 - Durbin-Watson value. If the 4 - Durbin-Watson value is less than the lower critical value, then the conclusion is to reject the null hypothesis, due to the presence of negative autocorrelation, and if the 4 - Durbin-Watson value is greater than the upper critical value, the null

hypothesis should be accepted, due to no presence of negative autocorrelation. However, if the Durbin-Watson value lies between the lower critical value and the upper critical value, then the result of the test is inconclusive. Table 7 below is the result for the autocorrelation test processed using EViews student version 12.

Model Summary	
	Durbin-Watson
Model 1	1.383753

Table 7: Autocorrelation Test Results (Source:Data Processed, 2022)

As seen on Table 7 above, the Durbin-Watson value for the regression model in this research is 1.383753. Based on the table, the lower bound (dL) of the Durbin-Watson critical value for  $n=65$  and  $k=5$  at 1% significance level is 1.254, and the upper bound (dU) of the Durbin-Watson critical value is 1.604. For the positive autocorrelation test, since the Durbin-Watson value of the model is 1.383753 is between the dL and dU or  $1.254 < 1.384 < 1.604$ , then the result for the positive autocorrelation test for the regression model in this research is inconclusive. For the negative autocorrelation test, the value of 4 - Durbin-Watson value of the regression model is  $4 - 1.383753 = 2.616$ . Since the value of 4 - Durbin-Watson value is 2.616, where the value is greater than the dU or  $2.616 > 1.604$ , the conclusion for the negative autocorrelation test is that there is no negative autocorrelation found in the regression model, which means that the null hypothesis for the multicollinearity test can be accepted, with caution needed since the result for the positive autocorrelation is inconclusive, so that the result for the regression model needed to be treated with caution.

#### d) Heteroscedasticity Test

The objective of the heteroscedasticity test is that it is used to determine if the variance of all data in the regression model differs from the residuals value. The heteroscedasticity test in this research is conducted with the White test using EViews student version 12. The hypotheses for the heteroscedasticity test is as described as below:

$H_0$ : Homoscedasticity is present the regression model

$H_a$ : Heteroscedasticity is present the regression model

If the value of the probability of the test is  $<0.05$  or less than 5%, then the null hypothesis is rejected, and the alternative hypothesis is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the null hypothesis is accepted. If the heteroscedasticity test result

rejects the null hypothesis, then there is heteroscedasticity issue in the regression model. And if the heteroscedasticity test result accepts the null hypothesis, then the regression model is free from heteroscedasticity or homoscedasticity is present in the regression model. Table 8 below is the result for the heteroscedasticity test processed using EViews student version 12.

Variable	LOG_CAR^2	LOG_NIM^2	LOG_NPL^2	LOG_OER^2	LOG_ROA^2
Prob.	0.3377	0.1845	0.4794	0.7102	0.6160

Table 8: Heteroscedasticity Test Results (Source:Data Processed, 2022)

As seen on Table 8 above, the value of all of the probability of all the variables (CAR, NIM, NPL, OER, ROA) are  $>0.05$  or greater than 5%. This means that the null hypothesis should be accepted, and the alternative hypothesis should be rejected. In conclusion, based on the heteroscedasticity test result, residuals in the regression model for this research are distributed with equal variance, meaning that the regression model is free from heteroscedasticity issue, as also stated in the null hypothesis that it should be accepted, where it is stated that there is homoscedasticity is present in the regression model.

#### e) Hypothesis Testing

The testing for the hypothesis ( $H_1 - H_6$ ) is going to be done through several testing methods from the selected panel data regression model that has been done in the previous section. The hypothesis testing includes the simultaneous test with F-test, independent T-test with Random Effect model, and the coefficient of determination with adjusted R-Square.

##### a) Simultaneous Test (F-Test)

The objective for the simultaneous test is to check if all of the independent variables, namely the CAR, NIM, NPL, OER, and ROA simultaneously or at the same time influence the dependent variable or the PBV of the

banking companies. The simultaneous test in this research is conducted with the F-test using EViews student version 12 from the Random Effect regression model results. The result for the simultaneous test is specifically to test the first hypothesis ( $H_1$ ) of this research, which stated as below:

**$H_1$ :** There is a simultaneous effect of Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the  $H_1$  of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the  $H_1$  of this research is rejected. If the simultaneous test result accepts the  $H_1$  of this research, then there is a simultaneous effect of all the independent variables on the dependent variable. And if the simultaneous test result rejects the  $H_1$  of this research, then there is no simultaneous effect of all the independent variables on the dependent variable. Table 9 below is the result for the simultaneous test processed using E Views student version 12.

Weighted Statistics	
F-statistic	5.789308
Prob(F-statistic)	0.000205

Table 9: Simultaneous Test Results (Source:Data Processed, 2022)

As seen on Table 9 above, the value of the probability of the F-statistic is 0.000205, which is less than 0.05 or 5%. This means that the value of the probability of the F-statistic is significant, and that there is a simultaneous effect between the independent variables and the dependent variable of this research, so that the  $H_1$  of this research can be accepted. From this simultaneous test result, we can conclude that there is a simultaneous effect of Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

##### b) Panel Data Regression Model Test (Random Effect Model)

Based on the Model Fit Test that has been done in the previous section, the most appropriate regression model to analyses the data and test the hypotheses in this research is the Random Effect model. The hypothesis testing in this section is done by doing the individual or partial T-test on each independent variable towards the dependent variable. The hypotheses that are going to be tested in this section are  $H_2$  until  $H_6$  of this research, as described below:

**H<sub>2</sub>:** There is an effect of Capital Adequacy Ratio (CAR) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

**H<sub>3</sub>:** There is an effect of Return on Assets (ROA) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

**H<sub>4</sub>:** There is an effect of Operational Efficiency Ratio (OER) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

**H<sub>5</sub>:** There is an effect of Net Interest Margin (NIM) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

**H<sub>6</sub>:** There is an effect of Non-Performing Loan ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

Table 10 below is the result for the Random Effect regression model, processed using EViews student version 12.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.094092	0.71446	-1.53136	0.1310
LOG_CAR	-0.159865	0.177742	-0.89942	0.3721
NIM	0.102088	0.036477	2.798700	0.0069
NPL	0.020579	0.029358	0.700979	0.4861
OER	0.011478	0.006855	1.674277	0.0994
ROA	0.246055	0.088900	2.767776	0.0075

Table 10: Random Effect Model Results (Source:Data Processed, 2022)

The estimated coefficients for the regression model are explained in the “Coefficient” column as seen on Table 10 above. The coefficients quantify the marginal influence of each of the independent variables on the dependent variable by keeping all other variables constant. The coefficient of the regression for each of the independent variables will be used to formulate the Random Effect regression model equation. The Random Effect regression model for panel data for this research will be formulated as follows:

$$PBV = -1.094092 - 0.159865 \log(CAR) + 0.102088 NIM + 0.020579 NPL + 0.011478 OER + 0.246055 ROA + u_i + \varepsilon_{it} \quad (7)$$

The analysis of the effects of each individual variable to the dependent variable will then be discussed below.

- a. The Effect of Capital Adequacy Ratio (CAR) towards Price to Book Value (PBV)

The second hypothesis in this research that is going to be discussed is the effect of one of the independent variables, which is the Capital Adequacy Ratio (CAR) on the banking companies' value, measured by Price to Book Value (PBV) in Indonesia for the last 5 years. The hypothesis is described as below:

**H<sub>2</sub>:** There is an effect of Capital Adequacy Ratio (CAR) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the H<sub>2</sub> of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the H<sub>2</sub> of this research is rejected. If the partial t-test result

accepts the H<sub>2</sub> of this research, then there is an effect of the Capital Adequacy Ratio (CAR) on the dependent variable, Price to Book Value (PBV). And if the partial t-test result rejects the H<sub>2</sub> of this research, then there is no effect of the Capital Adequacy Ratio (CAR) on the dependent variable, Price to Book Value (PBV). The value of the coefficient then shows whether the independent variable is affecting the dependent variable in a positive direction or negative direction.

As seen on Table 10, the coefficient value of the independent variable, CAR, is -0.159865, which shows a negative value that indicates the movement of the CAR and the PBV of the banking companies is in the opposite direction. However, the probability value of the t-statistics is 0.3721 or 37.21%, which is  $>0.05$  or greater than 5%. This means that the influence of CAR does not significantly affect the banking companies' value, or that the changes in the CAR of the company does not also change the PBV of the banking companies, and that H<sub>2</sub> of this research is rejected. Although several research [43, 44, 46, 47, 50] used CAR as the measurement of banking companies' financial performance, this research shows that it does not necessarily have an impact towards the value of the companies. The banking companies can have a good CAR which shows lower risk of the companies to go bankrupt but also a low value of the company. There seems to be only a little research that discusses the effect of the capital adequacy of banks towards its value, and that the researcher was not able to find one that could support or contradict this hypothesis result.



b. The Effect of Return on Assets (ROA) towards Price to Book Value (PBV)

The third hypothesis in this research that is going to be discussed is the effect of one of the independent variables, which is the Return on Assets (ROA) on the banking companies' value, measured by Price to Book Value (PBV) in Indonesia for the last 5 years. The hypothesis is described as below:

**H<sub>3</sub>:** There is an effect of Return on Assets (ROA) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the H<sub>3</sub> of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the H<sub>3</sub> of this research is rejected. If the partial t-test result accepts the H<sub>3</sub> of this research, then there is an effect of the Return on Assets (ROA) on the dependent variable, Price to Book Value (PBV). And if the partial t-test result rejects the H<sub>3</sub> of this research, then there is no effect of the Return on Assets (ROA) on the dependent variable, Price to Book Value (PBV). The value of the coefficient then shows whether the independent variable is affecting the dependent variable in a positive direction or negative direction.

As seen on Table 10, the coefficient value of the independent variable, ROA, is 0.246055, which shows a positive value that indicates the movement of the ROA and the PBV of the banking companies is in the same direction. Moreover, the probability value of the t-statistics is 0.0075 or 0.75%, which is  $>0.05$  or greater than 5%. This means that the influence of ROA significantly affects the banking companies' value, or that the changes in the ROA of the company also change the PBV of the banking companies, and that H<sub>3</sub> of this research is accepted. Every increase in the ROA of the banking companies will also increase the value of the company by 0.246 or 24.6%.

This is in line with the results of a research done by Mursalim et al. [28] on manufacturing companies in Indonesia, in which they concluded that the profitability of the company, measured by ROA affects the company value, measured by Market to Book Value (MBV) and Tobin's Q ratio significantly in a positive direction. Same results are also achieved by Harningsih, Agustin & Setiawan [18], Rusmanto & Lisal [36], Widyastuti [12], [24], and Jihadi et al. [2], in which they found that the ROA affects companies' value, measured by Tobin's Q ratio positively and significantly.

Ilmi, Kustono & Sayekti [21], Ifada et al. [27], Widyastuti [12], and Jihadi et al. [2] also found positive and significant value of ROA towards the

PBV of companies in their research. In research regarding financial industries, Ayuba et al. [23] also concluded in their research that analyses the effect of financial performance, capital structure and firm size of insurance companies in Nigeria on the firm's value, that the financial performance that is measure by ROA and ROE has a positive and significant effect towards the insurance companies' value, measured by Tobin's Q ratio. In more recent research, Akbar [38] also found that the ROA of banking companies that are listed on the Indonesia Stock Exchange has a positive and significant influence towards the PBV of the companies. Utomo, Kumalasari & Machmuddah [17] also concluded that financial performance of baking companies in Indonesia, measured by ROA has a positive and significant effect on the firms' values. However, this results contradicts with a research about the effect of financial performance of public listed companies in Indonesia on the firm's value by Ratih & Setyarini [32], in which they concluded that the financial performance of the companies, measured by ROA, has no effect towards firm's value, measured by Tobin's Q ratio.

c. The Effect of Operating Efficiency Ratio (OER) towards Price to Book Value (PBV)

The fourth hypothesis in this research that is going to be discussed is the effect of one of the independent variables, which is the Operating Efficiency Ratio (OER) on the banking companies' value, measured by Price to Book Value (PBV) in Indonesia for the last 5 years. The hypothesis is described as below:

**H<sub>4</sub>:** There is an effect of the Operating Efficiency Ratio (OER) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the H<sub>4</sub> of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the H<sub>4</sub> of this research is rejected. If the partial t-test result accepts the H<sub>4</sub> of this research, then there is an effect of the Operating Efficiency Ratio (OER) on the dependent variable, Price to Book Value (PBV). And if the partial t-test result rejects the H<sub>4</sub> of this research, then there is no effect of the Operating Efficiency Ratio (OER) on the dependent variable, Price to Book Value (PBV). The value of the coefficient then shows whether the independent variable is affecting the dependent variable in a positive direction or negative direction.

As seen on Table 10, the coefficient value of the independent variable, OER, is 0.011478, which shows a positive value that indicates the movement of the OER and the PBV of the banking companies

is in the same direction. However, the probability value of the t-statistics is 0.0994 or 9.94%, which is  $>0.05$  or greater than 5%. This means that the influence of OER does not significantly affect the banking companies' value, or that the changes in the OER of the company does not also change the PBV of the banking companies, and that  $H_4$  of this research is rejected. This results contradicts with several past research that also discusses the effect of the efficiency ratios towards the companies' value. Harahap, Septiani and Endri[11] conducted a research on the effect of financial performance of cable companies in Indonesia towards its value and concluded that the efficiency of the companies, measured by total assets turnover (TATO) has a positive and significant effect on the firm's value. Kristi and Yanto[31] and Mohammed and Al Ani [24] also found the same results in their studies, in which they analysed the effect of TATO on listed companies' value in Indonesia and Oman respectively. Moreover, Jihadi et al. [2] also found a positive and significant effect of the efficiency ratio of the companies, measured by inventory turnover (ITO), on the value of Indonesia companies that are listed in the Indonesia Stock Exchange, measured by PBV and Tobin's Q ratio. The contradictory results may result from different measurements used in previous research and recent research and the industries of the observed companies in the research. The research also was not able to find previous research regarding the influence of efficiency of banking companies, measured by the cost to income ratio or OER towards its value.

d. The Effect of Net Interest Margin (NIM) towards Price to Book Value (PBV)

The fifth hypothesis in this research that is going to be discussed is the effect of one of the independent variables, which is the Net Interest Margin (NIM) on the banking companies' value, measured by Price to Book Value (PBV) in Indonesia for the last 5 years. The hypothesis is described as below:

**H<sub>5</sub>:** There is an effect of Net Interest Margin (NIM) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the  $H_5$  of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the  $H_5$  of this research is rejected. If the partial t-test result accepts the  $H_5$  of this research, then there is an effect of the Net Interest Margin (NIM) on the dependent variable, Price to Book Value (PBV). And if the partial t-test result rejects the  $H_5$  of this research, then there is no effect of the Net Interest Margin (NIM) on the dependent variable, Price to Book Value (PBV). The value of the coefficient then shows whether the independent variable is affecting the dependent variable in a positive direction or negative direction.

As seen on Table 10, the coefficient value of the independent variable, NIM, is 0.102088, which shows a positive value that indicates the movement of the NIM and the PBV of the banking companies is in the same direction. Moreover, the probability value of the t-statistics is 0.0069 or 0.69%, which is  $>0.05$  or greater than 5%. This means that the influence of NIM significantly affects the banking companies' value, or that the changes in the NIM of the company also change the PBV of the banking companies, and that  $H_5$  of this research is accepted. Every increase in the NIM of the banking companies will also increase the value of the company by 0.102 or 10.2%.

This is in line with the results of a research done by Widyastuti[12] on food and beverage companies in Indonesia, in which they concluded that the financial performance of the company, measured by net profit margin (NPM) affects the company value, measured by PBV, Tobin's Q ratio and Price to Earnings Ratio (PER) significantly in a positive direction. Same results are also achieved by Harahap, Septiani and Endri[11], in which they found that the NPM of cable companies in Indonesia that are listed on the Indonesia Stock Exchange affects the companies' value, measured by PBV, positively and significantly. Similar result is also achieved in a research that discusses the effect of financial factor, measured by one of the profitability margin, which is the Operating Profit Margin (OPM) of listed companies in Indonesia Stock Exchange on its value, in which Kristi and Yanto[31] concluded that the OPM of the companies positively and significantly affecting the firm's values, that are measured by Tobin's Q ratio. However, the researcher was not able to find past research or studies that analyzed specifically the effect of the Net Interest Margin (NIM) of banking companies towards its value.

e. The Effect of Non-Performing Loans ratio (NPL) towards Price to Book Value (PBV)

The sixth and last hypothesis in this research that is going to be discussed is the effect of one of the independent variables, which is the Non-Performing Loans ratio (NPL) on the banking companies' value, measured by Price to Book Value (PBV) in Indonesia for the last 5 years. The hypothesis is described as below:

**H<sub>6</sub>:** There is an effect of Non-Performing Loans ratio (NPL) on the Price to Book Value (PBV) in the banking industry in Indonesia from 2017 until 2021.

If the value of the probability of the test is  $<0.05$  or less than 5%, then the  $H_6$  of this research is accepted. And if the value of the probability of the test is  $>0.05$  or greater than 5%, then the  $H_6$  of this research is rejected. If the partial t-test result

accepts the  $H_6$  of this research, then there is an effect of the Non-Performing Loans ratio (NPL) on the dependent variable, Price to Book Value (PBV). And if the partial t-test result rejects the  $H_6$  of this research, then there is no effect of the Non-Performing Loans ratio (NPL) on the dependent variable, Price to Book Value (PBV). The value of the coefficient then shows whether the independent variable is affecting the dependent variable in a positive direction or negative direction.

As seen on Table 10, the coefficient value of the independent variable, NPL, is 0.020579, which shows a positive value that indicates the movement of the NPL and the PBV of the banking companies is in the opposite direction. However, the probability value of the t-statistics is 0.4861 or 48.61%, which is  $>0.05$  or greater than 5%. This means that the influence of NPL does not significantly affect the banking companies' value, or that the changes in the NPL of the company does not also change the PBV of the banking companies, and that  $H_6$  of this research is rejected. Although several research [43, 44, 46, 48, 50] used NPL or Non-Performing Finance (NPF) as the measurement of banking companies' financial performance, this research shows that it does not necessarily have an impact towards the value of the companies. The banking companies can have a good NPL ratio which shows lower credit risk of the banking companies, but also a low value of the company. There seems to be only a little research that discusses the effect of the credit risk of banking companies, measured by NPL or NPF towards its value, and that the researcher was not able to find one that could support or contradict this hypothesis result.

However, another measurement to assess the credit risk of companies such as Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER) were used in several past research and studies that also analyzed the effect of them towards the companies' value. The results for these research and studies are varied, from negative to positive significant value to no significance of it towards the firm's value. Devita et al. [34] and Chabachib et al. [29] concluded in their research that the DER of companies does not affect or have 0 significance towards the value of the company, measured by Tobin's Q ratio and PBV respectively. Oktarina[26] and Jihadi et al. [2] found in their research that DER has a positive and significant effect towards companies' value, measured by Tobin's Q ratio. On the other hand, Setiawanta et al. [37] and Kristi and Yanto[31] concluded in their research that the value of the company, measured by Tobin's Q ratio is negatively and significantly affected by DER and DAR respectively. A research conducted by Pascareno & Siringoringo[39] analyzed the financial performance of insurance and banking companies listed in the Indonesia Stock Exchange,

using DER as one of the measurements, found the same result of this research, where they found no effect of DER towards the value of the companies, measured by Tobin's Q ratio.

#### c) Coefficient of Determination (Adjusted R-Squared)

The coefficient of determination test or the adjusted R-squared test is a test that is used to determine how well the dependent variable's variation can be explained by the regression model. In other words, the coefficient of determination test is used to determine how much the independent variables in the regression model can simultaneously influence the dependent variable. The value of the adjusted R-squared shows the magnitude of the ability of the independent variables to simultaneously explain the dependent variable. Table 11 below is the result for the coefficient of determination test or the adjusted R-squared test processed using EViews student version 12.

Weighted Statistics	
R-squared	0.329138
Adjusted R-squared	0.272285

Table 11: Coefficient of Determination Results

(Source: Data Processed, 2022)

As seen on Table 11 above, the value of the adjusted R-squared is 0.272285 or 27.2285%. This figure means that all of the independent variables in the regression model in this research, which are the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) contributes 27.2285% of influence towards the Price to Book Value (PBV) simultaneously. Whereas, the rest of 72.7715% influence towards the PBV of banking companies in Indonesia for the last 5 years is influenced by other variables that are not discussed or examined in this research.

## VI. CONCLUSION

The results of this research showed that there is a positive and significant effect of the Return on Assets (ROA) and the Net Interest Margin (NIM) towards the Price to Book Value (PBV) of the company ( $H_3$  and  $H_5$  are accepted). This indicates that an increasing value in ROA or NIM would also increase the PBV of the company. Both ratios being indicators of the companies' profitability shows the significance of the profitability of the company, specifically the ROA and NIM towards the public's response to the market, as reflected through the PBV of the company. However, there is no evidence found in the results of this research where the Capital Adequacy Ratio (CAR), Operational Efficiency Ratio (OER), and Non-Performing Loan ratio (NPL) has an effect towards the PBV of the company ( $H_2$ ,  $H_4$ , and  $H_6$  are rejected). This means that the changes in the companies' CAR, OER, and NPL does not necessarily influence the value of the company. Hence, managerial implications to the listed banking companies and public investors in Indonesia Stock Exchange (IDX) can be concluded from this research is that the



profitability of the banking companies, especially the NIM and the ROA of the companies, have a significant effect towards the changes of the values of the company, measured by the PBV.

This research also found that there is a simultaneous effect of financial performance that is measured by Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL) towards the values of the banking companies in Indonesia, measure by the Price to Book Value (PBV) from the year 2017 until 2021 ( $H_1$  is accepted). This means that the better the company's financial performance measured by the indicators in this research, the higher the value of the company is. This happens because of the obligation for these listed banking companies to inform the public regarding their financial performance through their annual or financial report, which will then affect the public's confidence towards the companies that would then impact the value of the companies.

However, the effect of this financial performance that are measured by the indicators used in this research only simultaneously influence the value of the banking companies by 27.23%, where the rest of the factors that influence the PBV are lies on other indicators that are not examined or analyzed in this research, which could give an unexplored area for future research to be done. Hence, there are some limitations in this research that needed to be clarified for the readers, which are (1) the number of the banking companies that are used in this research is only 13 banking companies, (2) the variables to measure the financial performance of the banking companies are only Capital Adequacy Ratio (CAR), Return on Assets (ROA), Operational Efficiency Ratio (OER), Net Interest Margin (NIM), and Non-Performing Loan ratio (NPL), (3) the value of the banking companies is only measured by the Price to Book Value (PBV), and (4) the time range of the data that are analyzed in this research is limited to 5 years, from 2017 until 2021.

Therefore, several suggestions and recommendations are formulated for the purpose of future research surrounding this topic, such as (1) more samples of the banking companies can be used to increase the sample size or number of observations of the research, so that the data can be more robust, (2) other financial indicators can be taken into consideration as a measurement for the financial performance of the banking companies, (3) other valuation measurement can be used or added to test the effect of financial performance towards the banking companies value, (4) other indicators aside from financial indicators of the companies can also be taken into account, looking at the simultaneous degree of the independent variables in this research is relatively low, (5) older and newer data can also be used to increase the sample size of the time-series data, (6) comparative analysis with other sectors outside of the banking industry can also be done to compare the banking industry with other industry, and (7) comparative analysis with other countries in Asia, Southeast Asia, or other part of the world can also be done to compare the banking industry in Indonesia with other countries.

## COMPETING INTERESTS

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