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Relationship between Company Financial Leverage and Financial Performance Pre and During Covid-19 Era: Listed Bank Companies in Indonesia

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Abstract - **During the Covid-19 Pandemic, Indonesian companies, especially banks as a financial institution have been impacted in various ways. It might impact how their financing policies, reflected by the financial leverage, affect the company financial performance. Therefore it is important to understand the relationship between financial leverage and company performance of banks in Indonesia, before and during the Covid-19 pandemic in order to acknowledge the difference and the relationship between the two variables in the case of a very crucial commodity, the banking sector. Using the publicly available data from the Indonesian Stock Exchange, the data from the 43 listed bank companies is collected, and analyzed using the Pearson correlation coefficient moment. Based on the empirical evidence, it is concluded that financial leverage has a different impact on the various measurements of the company performance. Regarding the Covid-19 pandemic impact, it also shows a different relationship between the two variables pre, and during the pandemic era on some of the measurements. So, the findings can be a supporting information for the banks in Indonesia to consider their financing policies, by determining the financial leverage, considering the current worldwide pandemic. The variety of relationships between the two variables also reflect how previous researchers have done and concluded in previous studies.**

Keywords - ***bank, financial leverage, company financial performance, covid-19, pearson correlation coefficient.***

I. INTRODUCTION

Background

Bank Companies, as a financial institution, has been highly dependent and influenced by the current condition, Covid-19 Pandemic. To support, via an article by CNN Indonesia (2020) [37], the Chairman of Board of Commissioner of Indonesian Finance Service Authority (Otoritas Jasa Keuangan) stated that banks in Indonesia are in a controlled condition due to the fundings and liquidity exposed to the banks. By that fact, the impact on the economy will influence how financial institutions such as the Bank Industry decides on their financial decision will be analyzed in this paper. It is supported by the fact that Bank Industry in Indonesia has been delivering and financially supporting other industries in Indonesia. Bank Industry in Indonesia is considered as the industry with the highest assets compared with other financial institutions in Indonesia. And it is considered that the banking industry will contribute largely in continuous and sustainable development in Indonesia (Otoritas Jasa Keuangan (2016)) [40]. To add, according to Indonesian Financial Service Authority (OJK), a bank has the function of assembling and distributing funds for the community in order to aim for equalization of development and its result. Banking is also one of the pillars of economic growth and national stability to improve people's living standards from the financial sector, especially during the Covid-19 Era where sectors in Indonesia have been drastically impacted by it (Djalante, Riyanti et al. (2020)) [48]. Therefore, this research intends to financially analyze the Industry in Indonesia since the industry itself has a high importance as mentioned above.

We also know that Covid-19 has infected and will continue to infect millions of people all over the world. The economic impact by the virus founded in November 2019 is predicted to be large. Based on the research of Djalante, Riyanti et al. (2020) [48] it is expected to be severe, reducing the economic growth rate projected for 2020 from about 5% to between 4.2% and –3.5%. Based on the article by DBS Bank Asia (2020) [31], the role of the bank is very significant to support post-pandemic economic recovery. It stated that banks should be “part of the solution not part of the problem.”. Since then, banks have taken steps and taken complimentary roles to support the government to prevent financial sector stress to take impact on the real economy. The keyword and point about the policy is that banks are cued by the government on their policies based on the articles before. Therefore, as the bank should be part of the solution, this research will be aimed to be able to advise from the result on how the bank should approach their funding, calculated from the financial leverage.

The purpose of this research is to analyze the relationship between company financial leverage and financial performance in the case of listed bank companies in Indonesia. Moreover, how Covid-19 pandemic might impact the different results of the relationship between the two variables. Financial leverage is the ratio of used debt in order to acquire additional assets. Basically, there are two main sources to acquire assets for companies; debt and equity. Therefore, it can be used to calculate and control the amount of assets by borrowing money to cause returns on the owner’s investment. And as the dependent variable,

company financial performance on the other hand will be measured by standard variables commonly applied in empirical research. Adopting the measurement used by André Köster, Jochen Zimmermann (2017) [5], there are five major performance measures that will be used in this research ; Return on Assets(ROA), Profit Margin, Return on Equity (ROE), Average Daily Return, and Annual Return.

This relationship measurement has been used by various researchers and they have also found various relationships between leverage and company performance. Both bank industries and non-bank industries have been using similar measurement and researching on the relationship between financial leverage and company performance. However, none of them has been analyzing the relationship between financial leverage and company performance of the bank companies in Indonesia. Moreover, as explained above, the economic impact of Covid-19 pushed the need of this research to further understand the change of impact of debt-to-equity ratio policy on the company financial performance regarding the Covid-19 Pandemic.

Research Question

1. How is the relationship between company financial leverage and financial performance in the case of listed bank companies in Indonesia pre-Covid-19 Era?
2. How is the relationship between company financial leverage and financial performance in the case of listed bank companies in Indonesia during the Covid-19 Era?
3. Do COVID-19 show a different relationship between financial leverage and financial performance in the case of listed bank companies in Indonesia?

Research Aim and Objectives

The main objective of this research is to study the difference between how financial leverage has an effect on financial performance in pre and at The Covid-19 Era by taking the case of Listed Bank Companies in Indonesia. How bank companies will pursue their source of funds after Covid-19 era will be essential for an effective and efficient system which will be valued by the company financially. It will also show how Covid-19 will change the impact of financial leverage to the performance of the bank companies.

Research Limitation

This study will mainly focus on the relationship between company financial leverage and company performance. So, based on the variables, the independent variable that influences the relationship is the financial leverage. Also, the measurements to measure how it is impacted is measured by the financial ratios that explain the performance of the company. These variables will furtherly be analyzed and later in this research will be concluded whether it has a strong impact, and how the impact will be. Either negative or positive.

Regarding the population and sample used in this study, the researcher is studying the relationship between the two variables in the case of listed bank companies in Indonesia. Any other unlisted bank or financial institution will not be included in the research. The reason is that listed bank companies can provide the required data publicly. Also, data is taken from the First Quarter to the Third Quarter of 2019 and 2020 for pre, and during the Covid-19 Pandemic since as will be mentioned in the next chapter, it can give and show the true picture of the relationship in the two eras. Also, the way Covid-19 impacts the relationship between the two variables of listed bank companies will be analyzed by how they show differences between the two conditions, pre and during the Covid-19 era.

Research Contribution and Significance

Previous researchers have been analyzing the impact of financial leverage on the company's financial performance in different industries across the world. One of the examples is the research by Ur Rehman (2013) [54] that found out that there are various relationships between the financial performance indicators and the financial leverage. However, none of the previous research has analyzed the bank companies in Indonesia. Moreover, the bank industry as mentioned above held a large amount of services compared to other financial services. Also, the impact of Covid-19 pandemic on the approach and how the performance might be impacted by the source of funds will also be analyzed using the financial leverage. Moreover, the bank industries. In the contrary, bank industries as mentioned above held a large amount of services compared to other financial services. Therefore, this research will be very helpful for bank companies to manage their ratio policies following the findings in this research. In addition, in the research aspect, this study will be able to enrich the literature banks on the topic since it brings new commodities from the measurement system, especially in Indonesia.

II. LITERATURE REVIEW

Bank Companies During Economic Crisis

In the study “The Global Economic Crisis and Its Impact on Bank Lending in Indonesia” by Yudaruddin, Rizky (2017) [58] , The researcher analyzes the impact of global financial crisis in 2008 and 2009. The researcher adds that the Asian financial crisis of 1997-1998 and the global financial crisis of 2008 made economic growth of East Asian countries experiencing a decline in economic growth. Although in 2008 and 2009, countries in East Asia looked more ready to encounter the global economic crisis than when the Asian financial crisis.

Another research by Chen, Sichong (2013) about Bank dependence and financial constraints on investment: Evidence from the corporate bond market paralysis in Japan, researchers have recognized that they need to find measurements that have the power on predicting bank performance during bad times in the economy. As an effect of the Japanese Economic Crisis, the researcher shows that market leverage has significant predictive power for the bank performance measured in buy-and-hold stock returns during the crisis, even after controlling for a variety of other indicators reflecting the bank's characteristics and financial conditions. The results are various across alternative model specifications, methodology, and intervals. Although the study finds that both market leverage and financial leverage seem to be positively related to the performance associated with the announcement of systemic failures, the financial leverage would lose its predictive power once the researcher controls market leverage. Some other researchers have concluded some new measures to help predict bank performance during the recent crisis (e.g.,Acharyaet al., 2010; Knaup and Wagner, 2009) [42].

Wheelock and Wilson (2000) [56] also conclude that the banks with lower financial leverage ratios have a higher probability of failure using the data of US commercial banks from 1984 to 1993. Previous studies have been the link between leverage ratios and bank performance without taking into account the macroeconomic environment in which the prediction exercise was conducted (Chen, Sichong, 2013), similar to the study by Chen, Sichong (2013) that analyzed the potential differences between normal times and crises, we focus on the impact of leverage ratios in a economic crisis context, more specifically the Covid-19 Pandemic.

Mirzaei, Ali (2018) investigates the impact of the global financial crisis to the level of market power of banks in the UAE. Using a different method, the Lerner index and exploring the evolution of power of the market over time, the study concluded that the financial crisis had a negative effect on UAE banks, which lost a degree of their market power. Furthermore, bank-level market power during the crisis period appears to have varied significantly with respect to certain bank characteristics.

Various studies have analyzed the different relationship between both similar variables of research. Both the study of Berger and Bouwman, 2013 [11] and Beltratti and Stulz, 2012 have found different results on how the leverage of a company may impact bank performances during an economic crisis. Berger and Bouwman, 2013 [11] found that banks with higher debt-to-equity ratio have a better performance, in terms of the survival and market shares. On the other hand is the research by Beltratti and Stulz, 2012 [9]kunt, supported by similar studies by Demirgüç-Kunt et al., 2010.

As also one of the performance measurements on this research, stock price has been related with the company financial performance by previous researchers. Fama and French (1997) [20] find that higher market leverage has a positive impact on stock returns on average. However, they only analyze non-financial corporations since it has higher leverage ratios than the financial firms. To support, Mehran and Thakor (2011) [2] analyze the banking industry, and also find that book leverage ratios and bank stock market value are related in a positive way.

Research by Coleman Nicholas, (2015) [14], Brazil's government banks substantially increased lending following the collapse in September 2008. Banks in Brazil with a high share of government banks received more loans and experienced better employment outcomes compared to banks with a low share of government banks. While increased government bank lending mitigated an economic downturn, the research found that this strategy reduced productivity growth. The journal by Sobreira, Rogério (2010) [52] supports by explaining that In the beginning of the crisis, the majorities of the economic agents and authorities thought that the country could face some sort of decoupling since some fundamentals of the macroeconomic were very good. What the researcher saw, in contrast, was that the Brazilian economy was not decoupled, and expectations faced a huge downfall soon after the bankruptcy of Lehman Brothers on September 15th. Compared to the Covid-19, this economic crisis might have similar impact which will be explained furtherly in the next sub-chapter of literature review although having a different cause of crisis.

In another study by Hsieh, Meng-Fen (2020), `121although using a different measurement to study the impact of the impact of the financial crisis on banks, This study examines foreign bank lending during crises by using individual banks in Asian and Latin American countries during the period 1987-2013. The research reveals that, in a crisis period, Asian banks with a higher level of foreign ownership tend to have less lending. Nevertheless, during crises banks consistently increase their lending in order to support their borrowers; To add, in Latin America, crises stimulate foreign banks to lend more.

Covid-19

The research by Djalante, Riyanti , et al. (2020) [48] stated after the initial and subsequent reports of infections, Indonesia started to realize the direness of the situation, and has since issued various policies and actions to tackle Covid-19, including appointing 100 domestic general hospitals as Referral Hospitals (Rumah Sakit Rujukan) on March 3, 2020. This is considered as the “date” that Covid-19 outbreak started in Indonesia. Therefore, This research will refer to that date as the Covid-19 Era in Indonesia.

Based on the result of research by Andryushin, S.A. (2020) [6] in the new financial problem triggered by the COVID-19 pandemic, central banks are beginning to lose their operational and financial independence, and monetary issues (including credit) in the real economy. The research shows how financial institutions, in the case of the research, the central bank is affected by the pandemic. Moreover, this situation of the central bank might have an impact on how banks approach their financial decision, which will be analyzed furtherly in this research.

Research Variables

Financial Leverage

Regarding the previous researchers have defined the leverage in different ways. Research by Lin, et al. state that financial leverage is total debt divided by total debt added by book value of equity. Similar to that is the definition by Di Pietro et al. that stated that financial leverage is the total financial debt to total debt plus equity. The research by Vo and Kini et al. however stated a different definition since they used both book and market value of leverage. Another different equation by Bărbuță-Mișu et al and Lassala et al. which define the leverage as the ratio of total liabilities to the shareholders funds/equity. Similar but added is the definition of financial leverage by Denis and McKeon which are the same with Lassala et al. plus the market value of equity. Financial leverage, indicates how the utilization of the proportion of debt and preferred equity is being done by a company in order to finance the existing assets within the company. Basically, it is applied by enterprises aimed not to their cost, but to gain higher on fixed charges funds (Enekwe et al., 2014).

As a part of business strategy on the relationship between leverage and firm a firm must choose between product differentiation strategy or low-cost strategy. For low-cost strategy, a firm's relation between financial leverage and its performance will be affected. Low-cost strategy firms will benefit more from the leverage in order to be more efficient because they are more monitored by the lenders. On the other hand, product differentiation firms invest more in research and development activities in order to be able to convey with their competitors' innovations. O'Brien (2003) finds that business strategy and financial leverage affect the company performance. On the other hand, Jermias (2008) [27] expects that the relationship between leverage and performance would be more negative for product differentiators than cost leaders.To summarize, empirical evidence provides different results in studying the relationship between the financial leverage and firm performance in a developed economy.

Financial Performance

There are previous researchers that have defined their thoughts about company performance. Almajali et al. (2012) [4] stated that in terms of definition and measurement, performance is a difficult concept. And to add, Iswatia and Anshoria (2007) [25], performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop a competitive advantage. André Köster, Jochen Zimmermann (2017) [5], define that there are five major performance measures that will be used in this research ; Return on Assets(ROA), Profit Margin, Return on Equity (ROE), Average Daily Return, and Annual Return. All of the measurements are analyzed and considered as the best measurement to measure the performance of the listed bank companies. Although, the research by André Köster, Jochen Zimmermann (2017) [5] does not show any urgency to use both Average Daily Return and Annual Return since both shows the same figure, with an addition that the daily return is divided by the number of working days in a year.

Previous researchers also focus on capital structure and specific financial ratios, such as return on assets (ROA) and return on equity (ROE) to measure the financial performance of the company. (Nguyen, 2019; Irfan & Zaman, 2014) [24]. ROA is defined as how efficient an organization is with the use of its assets (Pointer, Lucille V; Khoi, Phan Dinh. 2019) [45]. To compare both measurements, previous researchers have been splitting their conclusions into different ways. Some researchers propose. Some found that ROA as a better measure of profitability (Athanasoglou, Brissimi, & Delis 2008; Staikouras & Wood, 2004) while others show that ROE is a better measure (Mbekomize & Mapharing, 2017; Goddard, Wilson, & Molyneux 2004). Regarding the bank profitability, recent studies identify several key predictors in the Vietnamese banking market. Nguyen (2019) [34] identifies three macroeconomic variables; competition, GDP, and inflation as negative predictors of ROA and ROE by assessing the market competition effects in the Vietnamese Bank. Most of the internal variables are not key predictors of bank profitability, including bank size, liquidity, equity capital, non performing debt, and mergers and acquisitions according to Nguyen (2019) [34].

Foundings on Related Previous Research on Similar Relationship

Obradovich and Gill (2013) [36] had researched on the Impact of Corporate Governance and Financial Leverage on the Value of American Firms. 333 listed firms on New York Stock Exchange (NYSE) were selected as the sample regarding the research. The variables in the research by Obradovich and Gill is taking firm value as dependent variable and CEO Duality, Board Size, Audit Committee and Financial Leverage as dependent variables. The result shows that larger board size negatively impacts the value of American firms and CEO duality, audit committee, financial leverage, firm size, return on assets and insider holdings positively impact the value of American firms.

The research of Zhao and Wijewardana (2012) [10] also analyzed financial leverage, firm growth and financial strength of 62 listed companies in the stock exchange in Sri Lanka. In this study, financial ratios such as the ratios of long-term debt to total assets, long-term debt to fixed assets, total long-term debt and short term receivable facilities to equity capital and total long-term debt and short-term receivable facilities to total assets were used as measures of financial leverage. Comparing it to company sales growth, the research concluded a positive impact between both dependent and independent variables. Another study by Pachori and Totala (2012) [41] took seven automotive public companies as samples. They analyze the influence of financial leverage on shareholders return and market capitalization. They take the conclusion that there is no significant impact of financial leverage on shareholders' return and market capitalization.

Another research on the same variables focused on leasing companies in Sri Lanka by Achchuthan and Jasinthan (2012) [26] showed that only operating leverage has a significant effect on the financial performance of leasing companies in Sri Lanka. The outcomes explained that there is no main difference was found between financial leverage and financial performance.

The previous studies' results remain unclear in determining this relationship. Another example, Fama and French (2002); Ramachandran and Candasamy (2011); ; Goyal (2013); Saeed, et al. (2018); Nawaz et al. (2011); and David and Olorunfemi (2010) [39] conclude that the relationship between the two variables, financial leverage and company financial performance is positive. On the other hand, other researchers such as Quang and Xin (2014); Mireku et al. (2012) [33]; Krishnan and Moyer (1997); Muritala (2012) [38]; and Mohamad and Abdullah (2012) find that the relationship goes the other way.

Research Object: Bank Companies in Indonesia

Using the sources and methodology of previous research, this research will focus on the bank industry in Indonesia, focusing on the listed companies in Indonesian Stock Exchange website. Based on the listed data in Indonesian Stock Exchange (IDX), there are 43 listed companies that can be analyzed. Explained by Indonesian Financial Services Authority (Otoritas Jasa Keuangan (OJK) www.ojk.com [36] , as the highest financial institution in terms of assets, Bank Industry, consist of public bank, government-owned bank, and Islamic-based bank will provide more valid data to be analyzed in this research as there is sufficient amount of listed company that will provide the needed data. The research by Blankespoor, Elizabeth [12], et al. (2013) found that financial leverage measurement explains significantly more variation and accuracy for banks. Therefore, it supports this research which also uses financial leverage of the bank companies as the independent variable.

As part of the researched object in this research and additional supporting information, according to Supriyono, R A; Herdhayinta, Heyvon (2019), The Regional Development Bank (BPD Bank) is expected to be a strong, highly competitive bank, which will contribute to the growth and even distribution of sustainable regional economies. A review by the Financial Service Authority (OJK) [37] of the BPD Bank's business growth indicates that The regional development bank has lower competitiveness relative to other commercial banks. Another research by Prima Agro, Putra (2018) stated that Banks can be said to be healthy (in performance) if they can maintain the security and money of the people stored in the bank, develop well, and be able to contribute meaningfully to the development of social economy. According to the same research, the majority of Conventional Commercial Banks listed at Bank Indonesia obtain ROA values above 1, 25%, and there is an analysis of ROA ratios with the predicate of a fairly healthy bank owned by the State Savings Bank (Persero) in 2014 of 1.12%. Also, the other type of banks included in this research, Islamic Bank, Basically, able to achieve competitive advantages in terms of ROA. The research by Setyawati, Irma (2019) sees a positive value added in terms of competitive advantage of the Islamic Banks in Indonesia.

III. METHODOLOGY

Data collection

As a quantitative research, secondary data will be used and analyzed. This research will consist of two types of variables. Dependent variable which financial performance will be taken a part of, and also independent variable which is the financial leverage. Both variables will be collected by using the annual report of the listed bank companies at the Indonesian Stock Exchange (IDX). To separate between the pre and during the Covid-19 Pandemic era, the pre pandemic era uses the Q3 report of 2019, which shows the accumulation from Q1 until Q3. While the pandemic era uses the third quarter in 2020 of the company financial report, accumulation from Q1 until Q3 in 2020. The Third Quarter (Q3) is used by both periods to match the availability of data from the year 2020. This data is publicly available.

Sampling Design

Since there are 43 listed bank companies in the Indonesian Stock Exchange (IDX), all of the listed companies will be analyzed in this research.

Statistical Techniques

Statistical Techniques Descriptive statistics are used in this research for the behaviour of variables in this study to be discussed and summarized. The large number of observations from the 43 samples of data are reduced in order to gain interpretable numbers such as averages and percentages. This is the general acceptance that financial leverage affects the financial performance of the companies. Correlation analysis statistical technique is also used to find out the relationship between the variables. In this research, simple correlation or furtherly stated as the Pearson correlation will be used. Based on the definition by methods.sagepub.com [50], Simple correlation is a measure used to determine the strength and the direction of the relationship between two variables. In this research, the independent variables, financial leverage, will be connected to the dependent variable by simple correlation, connecting to the five different variables of measurement of the company financial performance. By using the simple correlation, the author aims to find a narrow correlation that will be able to define which financial performance is impacted positively, and which does not. Therefore, this research is using The Pearson correlation coefficient, also known as the product moment correlation coefficient, which is measured on a scale with no units and can take a value from −1 through 0 to +1 (Sedwick, Philip;2012).

According to the research by Marie-Therese Puth et al. (2014) [46] about Effective use of Pearson's product moment correlation coefficient, the coefficient (ρ) is calculated as the ratio of covariance between the variables to the product of their standard deviations. Pearson correlation coefficient tells us the direction of a relationship. Once it is computed, represented by the value of ρ, the coefficient ρ > 0 will indicate a positive relationship, ρ < 0 will indicate a negative relationship while ρ = 0 indicates nonexistence of any relationship. Pearson correlation coefficient also mathematically ensures that the numerical value of ρ ranges from -1.0 to +1.0. This will reflect on the strength of linear relationship between the variables. The closer the coefficient is to +1.0 or -1.0, the greater the strength of the linear relationship. The formula based on the research by Marie-Therese Puth et al. (2014) [46] to calculate the value of ρ which is stated by the symbol r are explained below:

$$\overline{X} = \frac{1}{N}\sum_{i=1}^{N} X_i,$$

$$\overline{Y} = \frac{1}{N}\sum_{i=1}^{N} Y_i,$$

$$r = \frac{\sum_{i=1}^{N}\{(X_i - \overline{X})(Y_i - \overline{Y})\}}{\sqrt{\sum_{i=1}^{N}(X_i - \overline{X})^2}\sqrt{\sum_{i=1}^{N}(Y_i - \overline{Y})^2}}.$$

Pearson Correlation Coefficient Formula

These following range guidelines are based on the article of Lyndsay T. Wilson (2020) [18] and supported by the research by Marie-Therese Puth et al. (2014) [46] will be used in this research:

TABLE I
Range Guideline of Pearson Correlation Coefficient

Value of ρ	Strength of Relationship
-1.0 to -0.5 or 1.0 to 0.5	Strong
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.3 to -0.1 or 0.1 to 0.3	Weak
-0.1 to 0.1	None or Very Weak

However, there are some considerations about the method and why this research is taking this statistical approach. ρ is a measure of linear relationship. Small value of p indicates nonexistence of a linear relationship, or at the very best, a weak relationship. Therefore, it is possible that a nonlinear relationship exists. To add, Correlation coefficient is a way of exploring a potential linear relationship between the values of the two variables; both describe features of a scatter plot. These two methods are often used interchangeably.

The research by Marie-Therese Puth et al. (2014) [46] also stated that the key to functional dependence and main consideration for using this statistical method is that there is an asymmetry between the variables, and it makes biological sense to explore whether the dependent variable is a function of the independent variable, but the converse does not make sense. For example, if some research wants to analyze the relationship between the amount of study and grades, it will be a valid relationship since it can biologically be connected and related to each other. And in the case of this research, the relationship between the financial leverage and financial performance of a company has been proofed and done in various commodities and also similar service businesses as the bank, the object analyzed in this research.

In addition to the previous statement, the sense of the relationship must exist in the first place. In this research, the similar relationship between the two variables have been proved and studied by previous researchers. Also, ρ should not be used to make claims about a cause and effect relationship. Put differently, by examining the value of ρ, we can only conclude that variables X and Y are related. Therefore, this method is the best option to use in this research since this research is mainly concerned with the relationship between financial leverage and company financial performance.

Variables

Independent Variables

In this research, we use financial leverage as the independent variable. It is stated by debt-to-equity ratio. Financial leverage indicates how the companies used the proportion of debt and preferred equity in order to finance the existing assets within the company. Basically, financial leverage applied by enterprises aims to gain higher on fixed charges funds rather than their cost. (Daryantoa, Wiwiek Mardawiyah; Samibid, Sudarmawan;Siregar, Dera Julianti Siregar; 2018) [16]. Financial leverage is counted by total liabilities/equity. The independent variable, financial leverage is calculated by the total liabilities divided by the shareholders equity (Ur Rehman, Syed Syah (2013)) [54].

Dependent Variables

As mentioned in the introduction, there are 4 measurements to measure financial performance which will act as the dependent variables. Shown below are the four measurements used, completed with the formula and source of performance;

TABLE II
inancial Performance Measurement used in this research.

Measure	Origin	Definition
ROA	Accounting	Net Income/Total Assets
Profit Margin	Accounting	Net Income/Net Sales
ROE	Accounting	Net Income/Common Equity
Annual Return	Market	Annual Return

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The first financial performance measure is the return on assets (ROA). Based on the research Curry et al. (2008) [15], ROA is a widespread measure in empirical research to capture the profitability of the bank. Being the ratio of net income and total assets, which is a widespread measure in empirical research to capture bank's profitability. The next one, which is a comparable measure based on the research of André Köster and Jochen Zimmermann (2017) [5], the profit margin captures not only the firm's operating efficiency, but also reflects its market position and characteristics. The last and third accounting measure which calculates the ratio of earning and value of equity's return on capital used in a business unit is the return on equity (ROE) (André Köster and Jochen Zimmermann (2017)) [5].

Not only that to measure it with an Accounting origin measurement, we also analyze it with Market origins. The theory of efficient capital markets stated by André Köster and Jochen Zimmermann (2017) [5] suggests that the market return is a good measure to determine the market's assessment of corporate performance. From the statement before, this research uses the stock return as a market-based measure. Stock returns are measured by daily and annual return basis capturing the investor's assessment and portfolio allocation.

The dependent variable financial performance consists of 4 measurements. The four performance measures are calculated by these following formulas, adopted from the research of André Köster and Jochen Zimmermann (2017) [5], which present an additional variable of average daily return. However since the previous research was not showing significant reasons on having both Annual and Average Daily Return, this research only adopt four of the five which are:

1. Return on Assets

Return on Assets : Net Income/Total Assets

26408576. Profit Margin

Profit Margin : Net Income/Net Sales

26399488. Return on Equity

Return on Equity : Net Income/Shareholders Equity

26402944. Annual Return : Common Stocks

Net income in the formula is collected from the total profit of the financial statements, after deducted by interest and tax. As for net sales is collected from the total income, collected from the company's financial statements.

IV. RESULTS

Data Collection

Samples

As mentioned before, data is collected from 43 listed bank companies in Indonesian Stock Exchange (IDX). The listed bank companies are as follows below:

TABLE III

Listed Bank Companies used in this research

NO	Bank Code	Bank Name
1	AGRO	Bank Rakyat Indonesia Agroniaga Tbk.
2	AMAR	Bank Amar Indonesia Tbk
3	ARTO	Bank Jago Tbk.
4	BABP	Bank MNC Internasional Tbk.
5	BACA	Bank Capital Indonesia Tbk.
6	BBCA	PT Bank Central Asia Tbk
7	BBHI	Bank Harda Internasional Tbk.
8	BBKP	Bank Bukopin Tbk.
9	BBMD	Bank Mestika Dharma Tbk.
10	BBNI	Bank Negara Indonesia (Persero) Tbk.
11	BBRI	Bank Rakyat Indonesia Tbk
12	BBSI	Bank Bisnis Internasional Tbk
13	BBTN	Bank Tabungan Negara (Persero) Tbk.
14	BBYB	Bank Neo Commerce Tbk.
15	BCIC	Bank Jtrust Tbk
16	BDMN	Bank Danamon Indonesia Tbk.
17	BEKS	Bank Pembangunan Daerah Banten Tbk.
18	BGTG	Bank Ganesha Tbk.
19	BINA	Bank Ina Perdana Tbk
20	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten Tbk
21	BJTM	Bank Pembangunan Daerah Jawa Timur Tbk.
22	BKSW	Bank QNB Indonesia Tbk.
23	BMAS	Bank Maspion Indonesia Tbk.
24	BMRI	Bank Mandiri (Persero) Tbk.
25	BNBA	Bank Bumi Arta Tbk.
26	BNGA	Bank CIMB Niaga Tbk.
27	BNII	Bank Maybank Indonesia Tbk.
28	BNLI	Bank Permata Tbk
29	BRIS	Bank BRI Syariah Tbk.
30	BSIM	Bank Sinarmas Tbk.
31	BSDW	Bank of India Indonesia Tbk.
32	BTPS	PT Bank BTPN Syariah Tbk.
33	BVIC	Bank Victoria International Tbk.
34	DNAR	PT Bank Oke Indonesia Tbk.
35	INPC	Bank Artha Graha Internasional Tbk.
36	MAYA	PT Bank Mayapada Internasional Tbk.
37	MCOR	PT Bank China Construction Bank Indonesia Tbk.
38	MEGA	Bank Mega Tbk.
39	NISP	PT Bank OCBC NISP Tbk.
40	NOBU	PT Bank Nationalnobu Tbk.
41	PNBN	PT Bank Pan Indonesia Tbk.
42	PNBS	PT Bank Panin Dubai Syariah
43	SDRA	PT Bank Woori Saudara Indonesia 1906 Tbk.

Data is collected from their financial statement of the third quarter (Q3) which is publicly available. From the statements datas are collected, including:

1. Total Liabilities
2. Shareholders' Equity
3. Net Income
4. Total Assets
5. Net Sales
6. Common Stocks

The figures will furtherly be analyzed using the financial ratios, both accounting and market based, adopted from the research by André Köster and Jochen Zimmermann (2017) [5] about bank capitalization and bank performance: a comparative analysis using accounting- and market-based measures.

Data Collection Result

Table 1 shows the result of financial leverage collected from the company's financial performance before the Covid-19 Pandemic Era, and calculated with the formula stated previously.

TABLE IV
Result of Financial Leverage of Companies Before The Covid-19 pandemic Era

Mean	Maximum	Minimum	Variance	Standard Deviation	Observation
5.5510	18.2034	0.3274	13.838	3.7199	43

Financial Leverage is calculated by dividing total liabilities to total equity. The Leverage indicates how much portion of capital structure is being financed by debt. In listed bank companies of Indonesia, calculated and collected from the Indonesian Stock Exchange (IDX) from the period Q1 until Q3 2019, the result is presented on the table above.

Table 2 shows the result of company financial performance, measured by the financial ratios

TABLE V
Result of Financial Performance of Companies Before The Covid-19 pandemic Era

	Mean	Maximum	Minimum	Variance	Standard Deviation	Observation
Annual Return	163,001,779,470	3,481,887,603,000	120,625	3.1518E+23	561408681319	43
ROA	0.0100	0.2923	-0.0612	0.00215	0.00463	43
Profit Margin	0.0365	0.4085	-1.7198	0.111	0.333	43
ROE	0.0193	0.1390	-0.3347	0.0062	0.0789	43

Below presented in the table are the result of financial leverage collected from the company's financial statement during the Covid-19 Pandemic Era, and calculated with the formula stated previously.

TABLE VI
Result of Financial Leverage of Companies During The Covid-19 pandemic Era

Mean	Maximum	Minimum	Variance	Standard Deviation	Observation
5.2479	13.7349	0.3444	9.0903	3.0150	43

The table below shows the result of company financial performance, measured by the financial ratios

TABLE VII
Result of Financial Performance of Companies During The Covid-19 pandemic Era

	Mean	Maximum	Minimum	Variance	Standard Deviation	Observation
Annual Return	155932061815	3481887603000	120625	3.0677E+23	553874693949	43
ROA	0.01864	0.27505	-0.01445	0.003130	0.05594	43
Profit Margin	0.09254	0.44171	-0.47741	0.027398	0.16552	43
ROE	0.0307	0.1810	-0.19752	0.00438	0.06618	43

Data Analysis

Pre Covid-19 Pandemic Era

Based on the Pearson product moment correlation, the interrelationship between the independent variables and intra relationship between the dependent variables are shown in the table below:

TABLE VIII
Relationship between independent and dependent variables Before Covid-19 Era based on Pearson Product Moment Correlation

	Financial Leverage	Annual return	ROA	Profit Margin	ROE
Financial Leverage Return	1	0.1151	0.0325	0.02612	0.1326
ROA	-	1	0.89523	0.1636	0.20408
Profit Margin	-	-	1	0.4077	0.31771
ROE	-	-	-	1	0.42954
ROE	-	-	-	-	1

During Covid-19 Pandemic Era

Based on the Pearson product moment correlation, the interrelationship between the independent variables and intra relationship between the dependent variables from the Covid-19 Pandemic Era are shown in the table below:

TABLE IX
Relationship between independent and dependent variables During Covid-19 Era based on Pearson Product Moment Correlation

	Financial Leverage	Annual return	ROA	Profit Margin	ROE
Financial Lever	1	0.07495	0.0234	0.0932	0.1375

	Financial Leverage	Annual return	ROA	Profit Margin	ROE
age Return					
ROA	-	1	0.578524	0.153021	0.11297
Profit Margin	-	-	1	0.4077	0.4141
ROE	-	-	-	1	0.7719

Interrelationship between Variables

Below are presented the interrelationship between the independent variables (financial leverage) and the dependent variables (company financial performance) using the Pearson Product Correlation Coefficient analysis.

TABLE X
Interrelationship between independent and dependent variables of Bank Companies in Indonesia

Independent Variables	Dependent Variables	Pearson Product Correlation Coefficient		Type of Relationship		Strength of Relationship	
		Pre	During	Pre	During	Pre	During
Financial Leverage	Annual Return	-0.115	-0.0749	-	-	Very Weak	Very Weak
	ROA	-0.0325	0.0235	-	+	Very Weak	Very Weak
	Profit Margin	0.0261	-0.0932	+	-	Very Weak	Very Weak
	ROE	-0.1326	-0.1376	-	-	Weak	Weak

Based on the table above we can conclude that Covid-19 Pandemic has an impact on the relationship between the two variables. Especially the impact on the relationship between Leverage and ROA and also the profit margin. The relationship changes between the two variables in terms of the direction of the relationship, from negative to positive and vice versa. However, for the Annual Return and ROE, it shows a similar relationship.

Intra Relationship of the Dependent Variables

Below are presented the relationship between the dependent variables (company financial performance) using the Pearson Product Correlation Coefficient analysis.

TABLE XI
Intrarelationship between dependent variables of Bank Companies in Indonesia

Dependent Variables 1	Dependent Variables 2	Pearson Product Correlation Coefficient		Type of Relationship		Strength of Relationship	
		Pre	During	Pre	During	Pre	During
Annual Return	ROA	0.8952	0.5785	+	+	Strong	Strong
	Profit Margin	0.1636	0.153	+	+	Weak	Weak
	ROE	0.2041	0.1129	+	+	Weak	Weak
ROA	Profit Margin	0.4077	0.40773	+	+	Moderate	Moderate
	ROE	0.31771	0.4141	+	+	Moderate	Moderate
Profit Margin	ROE	0.4295	0.7719	+	+	Moderate	Strong

Different from the interrelationship between the two variables, the intra relation only shows that there is a difference in the strength of the relationship between pre and during Covid-19 Era. Especially between the Annual Return and Profit and ROE and Profit Margin and ROE.

V. CONCLUSION

Result and Conclusion

Based on the three research questions stated above, we can conclude that the correlation coefficient between the financial leverage and performance shows different directions before the Covid-19 Pandemic Era. The relationship between the financial leverage and Annual Return, ROA, and ROE shows a negative relationship. Meaning that when the figure of the leverage goes up, the performance measurement mentioned before goes the other way. On the other hand, is the relationship between the Leverage and Profit margin where it shows a positive relationship. However, the other consideration other than the direct relationship that must be considered is also the strength of the relationship.

The strength of the relationship between the financial leverage and selected performance shows a weak to very weak relationship. This means that the relationship shows a low correlation between the variables. Meaning that the growth of the independent variable will bring weak to very weak impact towards the dependent variables.

During the covid-19 Era, similar to the pre Covid-19 Era, there are various directions of relationship between the financial leverage and company performance. The relationship between the financial leverage and Annual Return, Profit Margin, and ROE it shows negative direction of relationship. With the same translation as the pre-pandemic Era, it means that when the financial leverage goes down, the performance of the company, measured by

the ratio analysis, goes up, and vice versa. This result is similar to the previous researchers, which also have different and various direction and strength of the relationship as mentioned above on the Literature Review
Also can be concluded that the strength of the relationship between the financial leverage and selected financial performance shows a Weak to Very Weak relationship. It indicates that the change in the independent variable will not affect largely the dependent variable.
Based on the empirical evidence of the Pearson correlation coefficient done above, we can conclude that the covid-19 pandemic has an impact on the relationship between the independent variables, financial leverage, and two of the four measurements of the company's financial performance. Those measurements are the ROA and Profit Margin. The Covid-19 changed the direction of the relationship pre, and during the covid-19 Era.

Recommendations and Practical Implications

The previous conclusion stated that the relationship between financial leverage and financial performance, measured by the financial ratios, varies between different financial performance measurements. Also, there are also presented and concluded how the Covid-19 Pandemic impacts the difference of the relationship between the two variables. Therefore, based on the findings related to the research question, the empirical findings can be used as a recommendation for listed banks in Indonesia on how they approach the financial leverage decision and policy in order to improve or adjust the financial performances. For instance, if banks have the purpose to improve the Return on Assets, as an effect by the Covid-19 pandemic, they should increase the ratio of financial leverage. It is the contrary of the condition before the Covid-19 pandemic since previously both variables have negative relationships.
Other than the recommendation, The researcher can recommend multiple recommendations for future related research since there are still some aspects that can be improved for educational research purposes. The first one is regarding the financial performance measurements. The empirical evidence in this research shows that there is a weak to very weak relationship between the financial leverac ge and selected financial performance of the bank companies in Indonesia. Future research may be able to try and aim for different measurements to figure measurements with stronger relationship to the financial leverage, or at the very least, test another hypothesis to support this research in the case of using different measurements.
The third one is that future research has the opportunity to start a research about the cause that creates a difference in the relationship between the financial leverage and financial performance, pre and during covid-19 Pandemic era. The findings in this research, of how the relationship changes during the covid-19 Pandemic era, will be available as a base and future literature review on how it has changed the relationships. Since this research is limited to how there is a difference between the two eras, future research may conduct supporting research on the other perspective such as mentioned in previous sentences, the more researched cause of the differences.
Finally, due to the Covid-19 Pandemic restrictions and regulations, this research is limited to secondary research data since face-to-face interviews and direct research is unavailable and hard to be conducted to the banks or even any other companies. Therefore, if possible, future research can be conducted using a more in- depth data collection method in order to find the other supporting findings and create a clearer picture of the impact of the covid-19 pandemic on the relationship between the financial leverage and company performance. Other research on different commodities, especially service commodities like the bank may also use the same act of research, which is the relationship between financial leverage and performance, pre and during the covid-19 pandemic era, to be applied.

Reflection

This research has been a very big learning experience for me. As a student who studies finance, most of the subject and courses focus on banks and financial institutions. Risks, financial policies until hedging strategies for banks and financial institutions. That is why this research is very related to the course that I studied in my bachelor degree. Moreover I have learned about the financing policies of companies, reflected in the financial leverage. Other than that is about measuring the company performance, using the financial ratios. Based on the two subjects that I have learned, this research is done so that I could figure how both subjects are implemented in real life condition.
Based on the research presented in this paper, I learned that the actual performance of a company can be measured based on the publicly available data that can be earned on a public website. Using the right tools and techniques, how companies are performing can be measured and analyzed. For example, when counting the Return on Assets, the number of sales and assets of the company is presented in the publicly available financial statements. It really reflects the condition where usually theoretically, all the figures and tables are given. This time, I really need to gather the needed information on my own, and also search and choose the right data. For instance, there is various information about the assets and liabilities. I need to pick and use the right information of assets and liabilities in order to find the precise value of the ratios.
The other reflection that I take in this research is that theoretically, having more debt than equity is more favourable since it will show a larger Return on Equity, that indicates a better performance. But by doing this research, I learned that it cannot be determined that easily since the direction of the relationship should be analyzed using proper statistical techniques. Also, it cannot be simply said that one factor is affecting the others in a positive or

negative way since the term financial performance cannot be stated as a whole thing since it is measured by several variables.

Overall, the whole idea of self-learning and finding our own ways to search and solve our problems are influencing my whole perspective of learning largely. I realize that I should be able to help myself and not depend on other parties, especially the teacher that is usually there to help us. But this time, they are just here to guide us. Meaning, any problem solving should be considered by yourself and understand that the whole risk will be taken also by yourself. I also learned how to pick a credible source to find the solutions to our problems. There are some articles that have been peer reviewed, and some are just not. That is why I think paper and books are more preferable and credible as a source and references.

Finally, and to conclude on what I reflect from this process, I am very grateful for this opportunity to actually learn and understand the implications of the material that I have learned in class. The learning and working method that I am guided to do is also one thing that I can reflect on and used in future chances.

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