The Effect of Profitability, Leverage, and Managerial Ownership on Earnings Management

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ABSTRACT

This study aims to determine the effect of profitability, leverage, and managerial ownership on earnings management in manufacturing companies listed on the Indonesia Stock Exchange in 2017-2019. This study used 30 manufacturing companies as a sample with the purposive sampling method. In this research, Microsoft Excel and EViews 12 was used to assist in data processing. The results of this study show that profitability has positive and significant effect on earnings management, leverage and managerial ownership has no effect on earnings management. This research can be useful for company management, investors, and creditors in dealing with factors that affect earnings management.

Keywords: *Profitability, Leverage, Managerial Ownership, Earnings Management*

1. INTRODUCTION

The performance and effectiveness of the company's operation within a certain period of time can be seen by looking at the company's financial statements. Financial statements contain company financial information that can be used by various parties in making economic decisions. Therefore, the presentation of the financial statements provided must contain information that is reliable. [1] says that in assessing the performance and responsibility of management, information about profit can be the main focus. Profit and loss information is often used as a benchmark for whether or not the performance of a company and management is good, as well as assisting external parties such as investors in assessing the investment risks that can be faced when investing in the company. This can trigger the managers to take action to stabilize, minimize, or maximize profits. Manipulation of financial statements, especially on company profit and loss information, is also known as earnings management. Profit information is often be the target of manipulation and make the financial information provided by the company irrelevant [2].

Earnings management is a condition where management intervenes in the process of stabilizing, increasing, and decreasing profits in the preparation of financial reports [3]. According to [4], not a few managers think that earnings management practices are legitimate and reasonable behaviour. However, this practice can have negative consequences because it tends to mislead users of financial statements in the decision-making process [2]. The action of earnings management can provide information that can mislead and tend to not show the actual condition of the company. Earnings management can be considered as an accounting scheme, especially if it is an attempt to change information by adjusting the numbers in the components of financial statements when compiling company's financial information [5].

There are various factors that can lead to earnings management, one of the factors is profitability. Profitability is a ratio related to the company's ability to generate profits or operating profits within a certain period of time and each company is expected to be able to maintain the business' profitability. Profit is an indicator of management's performance in managing the company's assets and used to measure of the effectiveness of the company's operations. Profitability can affect earnings

management because the investors and other users of financial statements tend to be interested on a large level company profitability, so this can encourage managers to practice earnings management [6]. Another factor that can affect earnings management is leverage. Leverage refers to the amount of debt used to fund the company's assets and business operations other than equity. This variable is considered to see and assess how well management manages the company's loan funds, so that if the amount of debt is greater than the assets owned, the company tends to have a large business risk [7]. Companies whose assets are mostly funded by debt tend to take action to increase profits due to high interest expenses [5]. Managerial ownership is also one of the factors that can affect earnings management. The separation of ownership and management of the company can be the cause of earnings management due to differences in interests between the owners and managers of the company. Managerial ownership is the company's shares rights by management who are active in making decisions within the company, such as managers, directors, or commissioners [8]. Managerial ownership is often associated as an effort to increase the value of a company because managers in addition to acting as manager as well as being the owner of the company's shares will directly take the consequences of the business decision so that managers will not take actions that only benefit themselves [9].

This research is expected to be useful for investors to consider the factors that can influence investment decisions in the company, for creditors to consider factors that can affect credit decisions and agreements, for company managers to be able to identify and shows the factors that can influence the behaviour of external parties in making decisions on granting funds so that companies can determine the strategy, for accounting standard makers to be able to identify factors that can trigger earnings management in financial statements so that accounting standard makers can determine regulations to minimize the occurrence of earnings management, and for the academy to be able to increase knowledge of the factors that can influence the company's earnings management and can be additional empirical evidence in conducting further research.

2. LITERATURE REVIEW AND HYPOTHESIS

2.1. Agency Theory

Agency theory explains the relationship between the principal and the agent, where the principal delegates a responsibility or authority in the company's decision making to the agent [10], which indicates that the principal is no longer involved in the operation of the business because it has been delegated to management and monitors the company through reports provided by agents. However, empirical facts stated that agents do not always act in accordance with what is desired by the principal [11]. Principals tend to expect good company performance and are able to provide satisfactory returns from agents. Meanwhile, agents tend to be wanting to maximize their own welfare, such as high bonus compensation, by covering the actual company results so that the company's condition looks good.

2.2. Signalling Theory

Signalling theory, [12] says that in order for investors to be willing and interested in investing in the company to the point of having an impact on increasing the company's share price, publishing adequate information about the condition of the company by managers is necessary because managers are more aware of the conditions of the company. The signal given by the company can be information about the company's performance that contains both positive (good) and negative (bad) values for the future. Information that can be a signal for interested parties, especially investors, is annual reports related to financial statements and non-accounting information. This theory also shows that a complete, precise, relevant, and accurate information issued by the company is very influential and important for investors because it can determine investment decisions.

2.3. Earnings Management

Earnings management can be defined as manager's effort to intervene company's profits in financial statements by utilizing alternative accounting methods and procedures with the aim of deceiving stakeholders [13]. [14] says that earnings management occurs when managers use judgement in financial reporting and draft company's transactions to alter financial statements to influence contract outcomes that rely on reported accounting figures or to mislead some stakeholders about the underlying economic performance of the company.

Earnings management actions are carried out in various ways by managers to achieve the desired results, some are trying to increase profits, making company profits look stable in each period, some are trying to reduce profits, and so on. Earnings management variable is measured using discretionary accruals (DA) proxy which is calculated by Modified Jones Model. The company will be seen doing income increasing if the value of discretionary accruals is positive. Meanwhile, if the discretionary accrual value is negative, it can be concluded that the company is doing income decreasing [15].

2.4. Profitability

Profitability is the ability of a company to create or make a profit. The profitability of the company can influence investors in entrusting the funds that will be invested in the company and can trigger earnings management practices by company managers. This is in line with the findings of [6] and [16]'s research that shows profitability has a positive effect on profit management. However, there are studies that show different results, which is profitability has negative affects earnings management [17].

2.5. Leverage

Leverage is a ratio that can show the size of a company's asset level funded by debt. Companies with high leverage can face a variety of risks, such as default and bankruptcy risk. Management can be triggered to cover high leverage ratios by performing opportunistic actions such as earnings management. Previous research conducted by [11] shows positive results between leverage and earnings management practices. In contrast to the result of research conducted by [18] which stated that leverage negatively affects earnings management.

2.6. Managerial Ownership

Managerial ownership is an opportunity for managers to co-own shares of the company and be active in company decision-making. Managers that have a low company's shares rate or does not own shares of the company can increase the opportunistic behaviour of managers. Previous research on managerial ownership is conducted by [19] found that managerial ownership has a positive influence on profit management. However, the research conducted by [20] state a different result, that managerial ownership has negative affects earnings management, [21] and [22] states managerial ownership has no influence on earnings management.

2.7. Hypothesis

2.7.1. The Effect of Profitability on Earnings Management

Profitability refers to the efficiency of a company's performance in generating profits from the cash used in operating business as well as the company's assets. The higher the profitability that the company has can trigger managers to carry out profit management with the aim of raising the value of the company and attracting the attention of investors to invest. Thus, the research hypothesis can be developed as follow:

H_1: Profitability has a significant positive effect on profit management.

2.7.2. The Effect of Leverage on Earnings Management

A high level of leverage can result in the high level of risk experienced by the company. In the event of an increase in profits, creditors can have confidence that the company will be able to pay the funds given, this could trigger earnings management actions by management. Therefore, the research hypothesis can be developed as follow:
H_2: Leverage has a significant positive effect on profit management.

2.7.3. The Effect of Managerial Ownership on Earnings Management

The amount of managerial ownership in a company can suppress opportunistic actions by managers. This is because the manager who owns shares in the company will bear the results of the decisions manager make. Managers who have company's shares will act in accordance with the owners and their shareholders. Thus, the research hypothesis can be developed as follow:
H_3: Managerial ownership has a significant negative effect on profit management.

3. RESEARCH METHODOLOGY

This research method in this study is quantitative research that used secondary data obtained from the Indonesia Stock Exchange. This research is done by observing the financial statements that were published by the company. Unit of analysis of this study is manufacturing companies listed during the period of 2017-2019. The sample selection method used in this research is non-probability sampling with purposive sampling method in manufacturing companies. The total number of samples that can be used in this research is 30 companies.

3.1. Operationalization of Variables

Earnings management (Y) is a practice implemented by managers to meet personal interests by the means of manipulating profits and reporting them into the financial statements of the enterprise. Earnings management can be measured using discretionary accruals proxies which calculations can be done using the modified jones model. The modified jones model formula can be calculated using the following steps:
1) $TA_t = NI_t - CFO_t$
2) $TA_t/A_{t-1} = \beta_{1j}(1/A_{t-1}) + \beta_{2j}(\Delta REV_t/A_{t-1}) + \beta_{3j}(PPE_t/A_{t-1}) + e$
3) $NDA_t = \beta_{1j}(1/A_{t-1}) + \beta_{2j}([\Delta REV_t - \Delta AR_t]/A_{t-1}) + \beta_{3j}(PPE_t/A_{t-1})$
4) $DA_{jt} = TA_{jt}/A_{t-1} - NDA_{jt}$

Whereas TA_t: Total accruals year t, NI_t: Net income year t, CFO_t: Cash flow from operating activities year t, NDA_t: Non-Discretionary accruals year t, A_{t-1}: Total assets year t-1, ΔREV_t: Change in revenue/sales year t minus year t-1, ΔAR_t: Change in account receiveables year t minus year t-1, PPE_t: The company's gross fixed assets year t, β_{1j}, β_{2j}, β_{3j}: Firm specific parameters.

Profitability (X1) is the company's ability to make a profit. Profitability can measure the efficiency and effectiveness of the company's operations in generating profits. Profitability variable in this study is measured with the following formula:

$$ROA = \frac{Net\ Income}{Total\ Asset}$$

Leverage (X2) shows the amount of debt owned by the company and shows how much risk the company has to deal over the debt. Leverage is the ratio between total liabilities and total assets of a company, where this ratio displays the amount of assets or operations of the company funded by debt. Leverage variable in this study uses the following formula:

$$DAR = \frac{Total\ Hutang}{Total\ Asset}$$

Managerial ownership (X3) is shares of the company owned by the manager in the company he manages, so the manager also acts as the owner of the company's shares. Managerial ownership can be calculated on a scale of the ratio through the percentage of shares acquired by the manager with the outstanding shares in the market. Managerial ownership in this study is measured by the following formula:

$$\text{Managerial Ownership} = \frac{\text{Shares Owned by Manager}}{\text{Total Outstanding Shares}}$$

3.2. Data Analysis Method

Analysis method used in this research is descriptive analysis and multiple regression analysis. This study is testing the hypothesis used to explain the effect of the independent variables on the dependent variable. The data must pass the classical assumptions in order to be used in testing of the hypothesis. The classical assumptions of this study are included in the multicollinearity test and heteroscedasticity test.

3.3. Panel Regression Analysis

Panel regression test is conducted to determine the effect of all the independent variables on the dependent variable with the equation as follows:

$$Y = \alpha + \beta 1\,X1 + \beta 2\,X2 + \beta 3\,X3 + e$$

Where in this equation, Y is earnings management, X1 is profitability, X2 is leverage, and X3 is managerial ownership.

4. RESULTS

The results of the multicollinearity test show that the overall value of the independent variable is below 0.85, so the regression model in this study is said to be free of multicollinearity. The heteroskedasticity test uses the Breusch-Pagan test, the results show a probability value of 0.4722. This value is greater than 0.05, so the conclusion can be drawn is that the data do not undergo heteroskedasticity.

The results of the influence test (t test) are carried out after the classical assumption test meets the requirements and obtains the following results:

Table 1. The Results of Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.084739	0.085931	-0.986128	0.3282
X1	0.653575	0.260505	2.508876	0.0150
X2	0.292808	0.161125	1.817273	0.0744
X3	-0.616998	0.344314	-1.791966	0.0784
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.532211	Mean dependent var		-0.034808
Adjusted R-squared	0.269592	S.D. dependent var		0.047963
S.E. of regression	0.040991	Akaike info criterion		-3.274333
Sum squared resid	0.095777	Schwarz criterion		-2.357736
Log likelihood	180.3450	Hannan-Quinn criter.		-2.904707
F-statistic	2.026554	Durbin-Watson stat		2.845842
Prob(F-statistic)	0.009894			

Based on the results of the evaluation in the table above, a regression equation can be obtained that will be used in this study, which is as follows:

$$Y = -0.084739 + 0.653575X1 + 0.292808X2 - 0.616998X3 + e$$

The test results in Table 2 of the regression analysis obtained that profitability showed a coefficient of 0.653575 and a significant value of 0.0150 which indicates that the higher the profitability value, the higher the level of earnings management practice by the company's managerial. Leverage has a coefficient value of 0.292808 and a significant value of 0.0744, this can be concluded that leverage cannot affect earnings management. Managerial ownership has a coefficient value of -0.616998 and a significant value of 0.0784, this result indicates that managerial ownership has no effect on earnings management.

The F test in this study shows the results of a prob(F-statistic) value at 0.009894. The value indicates that profitability, leverage, and managerial ownership have a joint effect on earnings management. The correlation of independent variables, namely profitability, leverage, and managerial ownership to the dependent variables of earnings management, was carried out determinant test (R). The adjusted R-Squared value in this study shows a value of 0.269592, which means that all the independent variables in this study only have 26.95% influence on earnings management.

5. CONCLUSIONS

This study examines the effect of profitability, leverage, and managerial ownership on earnings management in manufacturing companies listed on the Indonesia Stock Exchange for the period of 2017 to 2019. The results of this study show that high profitability can affect the practice of earnings management actions by managers. Leverage and managerial ownership in this study cannot affect the earnings management carried out by managers within the company.

This research is limited to data on manufacturing industry companies listed on the Indonesia Stock Exchange and the research data studied only represents a three-year period between the 2017-2019 period. In addition, the study is also limited to independent variables of profitability, leverage, and managerial ownership on the dependent variable of earning management. The suggestion for subsequent research is to add others variables that may have an effect on earnings management, expand the company's sample so that the research will not only be limited to the manufacturing companies, and add more period of research years.

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The Effect of Profitability, Risk, and Company Age on ESG Disclosure

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ABSTRACT

This study aims to determine the effect of profitability, risk, and company age on the ESG disclosure of manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The research uses quantitative methods and purposive sampling techniques with a sample of 41 companies that are included in the category of manufacturing companies. The processed data is secondary data from financial reports and sustainability reports obtained from the Indonesia Stock Exchange website and company websites. Data processing uses the IBM SPSS Statistics 28 application. The results show that company age has a positive and significant effect on ESG disclosure, while profitability has a negative and significant effect on ESG disclosure. Risk is known to have no significant effect on ESG disclosure.

Keywords: *ESG disclosure, profitability, risk, company age*

1. INTRODUCTION

Technological developments are factors that affect business activities around the world. Innovations in technology have a real impact on companies, both in developed and developing countries. Currently, companies can carry out the production process by utilizing technology-based tools such as machines, computers, and vehicles. The presence of technology provides an opportunity for companies to mass-produce and cheaply. The level of productivity increases and this allows the company to enjoy higher profits. On the other hand, consumers enjoy access and cheaper product costs so that the level of fulfilment of consumption and welfare can increase. On the other hand, increasing the company's production capacity in general has an impact on society and especially on the environment. The negative impact of the development of the manufacturing sector does not only stop at pollution. This heavy pollution then has an impact on the destruction of the habitat of biota in the river, because living things that live in the river cannot live properly under the water quality that is heavily polluted. In addition to river ecosystems, river pollution also has an impact on human life. The more polluted rivers, the less availability of clean water for the lives of Indonesian people. In addition, river pollution can cause air pollution that is disturbing to the surrounding community. River pollution can also cause a decrease in health levels due to the spread of bacteria and viruses. This is one of the factors that trigger collective concerns and encourage the public to seek solutions. The concept of environmental, sustainability, and governance (ESG) is closely related to non-financial factors related to environmental, social, and governance that can be implemented by organizations in their operational activities in order to create positive impacts on life.

The trend of increasing awareness and concern on environmental, social and governance (ESG) issues is already evident on a global scale. Environmental factors relate to the way a company uses energy, including the waste it produces. This factor is also related to the analysis of the impact created by the company's activities as a whole on environmental quality. Social factors relate to the way the company builds relationships with stakeholder groups, both those that are directly related to the company and those that do not have a direct relationship. The governance factor is related to the

strategy taken by the company to fulfil its obligations while still paying attention to business ethics and applicable regulations.

The ESG trend occurs especially among investors who place their capital in companies in the hope of getting commensurate returns. In addition to financial returns, investors also pay attention to the non-financial aspects of the company. Investors want to invest in companies that create good change in the world. The trend of ESG-based investment has increased both on a national and global scale. The company began to involve itself in ESG activities and disclosures. The Indonesia Stock Exchange as the regulator of the Indonesian capital market supports the implementation of environmental, sustainability, and governance (ESG) standards in view of the prevailing practice standards abroad and investors' attention to the company's commitment to implementing responsible and sustainable business practices. Some companies perform comprehensive ESG disclosures, but a number of other companies have not optimally disclosed ESG.

1.1. Related Work

Sharma et al. (2020) [1] through his research aims to determine the effect of financial performance and company characteristics on the level of ESG reporting in public companies listed on the Bombay Stock Exchange India in 2013-2016. The study found that profitability as measured by return on assets and return on equity has a positive and significant effect on ESG disclosure, while the risk variable as measured by debt-to-equity ratio is known to have a negative and significant effect on ESG disclosure. Another study conducted by Kilic & Kuzey (2019) [2] shows that company size, company age, profitability, and company status are factors that have a positive and significant impact on environmental disclosures made by companies. The existence of differences between previous studies is the reason for conducting further research on the factors that have an influence on ESG reporting. According to previous literature, there exist differences in the effect of a number variables on ESG disclosure. Rahman & Alsayegh (2021) [3] examined the factors that influence ESG reporting in a number of public companies in the Asian region for the period 2005-2017. The results showed that financial performance, level of profitability, leverage, and company size have an influence on the company's commitment to ESG reporting. Companies with financial performance, profitability, high leverage and large size have a tendency to report ESG. The results of this study are different from the research of Sharma et al. (2020) [1] who found a negative and significant relationship between leverage and ESG disclosure. Dewi & Yasa (2017) [4] conducted a study to identify the effect of company size, profitability, industry type, and environmental performance on environmental disclosures made by companies. This study shows that company size, industry type, and environmental performance have a positive effect on environmental disclosure. Profitability is known to have a negative effect on environmental disclosure. This finding is different from the research of Roestanto et al. (2022) [5] who found a positive influence between profitability and ESG disclosure.

1.2. Our Contribution

Other previous studies considered a variety of independent variables that may determine the level of ESG disclosure of a company. This study will consider profitability, risk, and company age as independent variables. The variable of profitability uses return on equity (ROE) as proxy, while risk uses debt to equity ratio (DER). This paper fills the research gap through the combination of variable independents and specific samples from manufacturing companies listed on the Indonesia Stock Exchange (IDX) as the population. Manufacturing companies conduct production of goods that ultimately impact society, thus adding a reason to engage in and disclose ESG activities. The study takes into account data from 2018-2020 as the more companies began to publish ESG disclosure in the form of sustainability report. Findings from this study adds to the limited exposure towards Indonesian ESG disclosure trend.

1.3. Paper Structure

In this paper, Section 2 describes the preliminary theories used in this paper which include legitimacy and stakeholder theories. Independent variables, which are profitability, risk, and company

age, and dependent variable will be described. The description is followed by hypotheses and conceptual framework. Section 3 describes the research method used in this study. Section 4 provides explanation on analysis findings. Finally, Section 5 concludes the study and suggestion for future research.

2. THEORETICAL REVIEW

2.1. Legitimacy Theory

The legitimacy theory proposed by Dowling & Pfeffer (1975) [6] which reveals that basically a company cannot stand alone. The existence of the company depends on the influence of the social system called society. Companies need to always carry out activities that are congruent with the values and norms accepted by the community. If there is a difference between the values, norms, and activities of the company and the community, there will be a threat to the legitimacy of the company. Gray et al. (1996) [7] suggested that the theory of legitimacy as a theory that describes how companies manage their activities by taking sides with external parties including the community. The elaboration of legitimacy theory explains that companies have an interest in adapting to society. The social contract between the company and the community creates obligations that must be fulfilled by the company. Therefore, from time to time the company will continue to strive to show efforts that are in favour of the community in order to gain legitimacy from the community. On the other hand, if the company does not reflect its commitment to carry out business activities in accordance with the values accepted by the community, the company will not accept the legitimacy of the community. This in turn can have a negative impact on the company. The company does not want to be in a threatened position, so the company will fulfil its obligations to gain legitimacy and survive in the long term. Through the theory of legitimacy, it can be found the relationship regarding the social contract between the company and the community. This relationship creates an interest for the company to fulfil its responsibilities and role for society. Companies that disclose ESG demonstrate the company's commitment to fulfilling social contracts with the community. Through the disclosure of ESG, the company declares the fulfilment of its responsibilities to the community. ESG disclosure is a tool that can show the company's efforts to improve the quality of people's lives and reduce the negative impact of business activities. The company always wants to adapt to the values, norms, needs and desires of the community. ESG disclosure is one way for companies to gain legitimacy from the public.

2.2. Stakeholder Theory

Stakeholder theory was originally developed by Freeman (1984) [8]. Freeman suggests the importance of values and morals in managing an organization. Stakeholder theory develops and becomes the basis used by organizations to carry out activities that accommodate all stakeholders. Stakeholder theory is one of the main theories in business ethics and is a widely used concept by organizations. Stakeholder theory can be used to understand the role of social responsibility as a company's efforts to fulfil its obligations to society as a whole, and not only limited to shareholders (Carroll, 1997) [9]. Carroll (1997) suggests that companies need to consider the interests of primary and secondary stakeholders. Parties included in the main stakeholder groups are individuals or groups who have direct relationships with the company, such as employees, customers and suppliers. Other stakeholders who do not have a direct relationship are included in the secondary stakeholder group, for example the community. Stakeholders can be a threat or an advantage to the company because each stakeholder has the ability to influence the company. The company will try to consider the interests of each stakeholder in making decisions, because the company needs positive support from all stakeholders. The company is expected to provide positive value to all stakeholders including the community, so that the company's existence can be assessed as good and well accepted in general. This can lead the company to a better direction because the company's existence is accepted and supported by the community. Therefore, the company will make decisions that provide added value to the community for the benefit and sustainability of the company itself in the community. Stakeholder

theory shows the importance of good treatment of stakeholders in the interests of the company. Each stakeholder has influence over the company, and stakeholder groups can help or hinder the company from achieving its goals. The company certainly wants the alignment of every stakeholder. Therefore, companies also need to show efforts in paying attention to the needs and desires of stakeholders. Business processes according to ESG standards and ESG disclosure are efforts to show that the company considers the interests of the wider community. The company's concern for the environment and sustainability is a positive value for all stakeholders, both primary and secondary stakeholders. For investors, ESG reporting is a positive indicator of fulfilling responsibilities and can influence investment decisions. Companies that implement and report ESG practices have a better image and foster investor confidence in management's ability to create profits and maintain a decent standard of living for stakeholders. For the government, ESG disclosure adds insight into the company's level of compliance. The number of companies that report ESG becomes a benchmark for the government to assess compliance with ESG standards and becomes the basis for making policies that encourage increased implementation of ESG standards. For the public, the disclosure of ESG is tangible evidence of the company's efforts to maintain the environment and the quality of life of the community. The community is a stakeholder group consisting of a large number, and support from the community can lead the company in a better direction.

2.3. ESG Disclosure

Environmental, social, and governance disclosure, or environmental, social, and governance (ESG) disclosure is a report made by an organization regarding the environmental, social, and governance impacts that have been achieved. ESG disclosure is one of the communication tools that helps companies to explain the risks and opportunities they are facing. The company can give confidence to stakeholders about the company's commitment to create a positive impact. ESG disclosure is carried out by issuing a document containing qualitative and quantitative disclosures of the environmental, social, and governance pillars. Disclosure of ESG aspects can be measured by the ESG disclosure score. ESG disclosure score is a number that represents the level of ESG disclosure by a company (London Stock Exchange Group, 2020) [10]. The ESG disclosure score is an indicator that provides insight into the company's compliance and commitment in practicing ESG standards in operational activities. The higher the ESG disclosure score obtained by a company, the more ESG components are practiced and reported by the company. Companies with high ESG disclosure values are companies that uphold the implementation of ESG standards in their business. Stakeholders who have an interest in a company can make an assessment through the company's ESG disclosure practices. Furthermore, the ESG disclosure score can be used as the basis for making decisions that are directly related to the company. A common example is investment decisions made by investors by considering financial and non-financial information. Because the ESG disclosure score is known to have a positive relationship with a number of company performance indicators, the ESG disclosure score can be included in the consideration of decision making.

2.4. Profitability

Profitability is defined as the company's ability to earn profits through sales, assets, and company capital (Husnan, 2001) [11]. Return on equity (ROE) is one of the other financial ratios that is still included in the category of profitability ratios. In general, a higher ROE value reflects a better ability to generate profits. In other words, the company can make a satisfactory profit by using a certain amount of capital. The company conducts business activities more efficiently. A negative ROE indicates that the company is experiencing a loss, or that the company's capital is negative. The ROE value is obtained by dividing the net income (loss) by the company's total capital, and the ROE value is usually expressed as a percentage. ROE serves as an indicator that reflects the good or bad performance of the company. Through the value of ROE, stakeholders can understand the extent to which management is able to generate profits with the capital they have. A higher ROE value reflects a better ability to generate profits. In accordance with the concept of thought put forward in the theory of legitimacy, the company will try to fulfil its obligations in its social contract with the community to gain legitimacy from the community. The company has a goal to achieve maximum profit. Companies

need acceptance and support from the community to survive and thrive. Therefore, ESG disclosure as an effort to fulfil corporate responsibility is carried out so that the company can operate with positive support from the community. Companies that can carry out their business activities in a conducive manner have the potential to make optimal profits. ROE is a useful financial indicator for company stakeholders because ROE is able to reflect how far the company's ability to operate efficiently using owner's capital. By knowing a company's ROE, stakeholders can make comparisons against other companies and make business decisions. Management that manages companies with high ROE have the flexibility to involve themselves in non-financial activities such as programs related to environmental, social and governance issues. Conversely, companies with low ROE are likely to direct their focus to increasing profitability in order to meet the interests of the owners of the company first. Such companies may not have the discretion to invest resources in activities related to ESG standards.

H_1: Profitability has a significant negative effect on ESG disclosure

2.5. Risk

Sassen et al. (2016) [12] interpret risk or risk as a potential loss to the value of the company caused by uncertainty about future results or events. Debt-to-Equity Ratio (DER) is a financial ratio that compares the proportion of a company's debt to capital or equity. The DER value is obtained by dividing the amount of debt owned by the company by the total company equity. The DER value of 1x reflects that for every 1 unit of currency of company debt, there is 1 unit of equity. In other words, the company has the same amount of debt and equity. Companies with a DER value of more than 1 are companies that have more debt than equity in their capital structure. Companies that have a positive DER value and below 1 are companies that have less debt than equity. DER can provide an overview of the company's financial health in general, along with the risks borne by the company. DER can provide an overview of the company's financial health in general, along with the risks borne by the company. Companies with a DER of more than 1 are companies that have more debt than capital. Therefore, a company with a DER of more than 1 has a higher responsibility and risk associated with its obligation to pay off debt and interest. If a company's DER level is below 1, this indicates that the company's total debt is lower than its capital and indicates that the company bears lower risk than companies with a DER value of more than 1. A positive DER and getting closer to 0 is the DER level of interest, because it shows the financial condition of the company with a lower level of debt. The company does not bear the burden of debt and interest that is too large, so the company has the flexibility to optimize productivity and profitability. Companies that use debt have obligations to stakeholders called creditors. Companies with high DER levels have a high burden, because the company needs to pay off debt and interest. Companies with high DER tend not to have the flexibility to invest in ESG standard business activities and report on ESG practices. In contrast, companies with low DER have a lower financial burden and higher flexibility to participate in business activities on a sustainable basis. This presentation is the basis for the conclusion that the relationship between DER and ESG disclosure is negative.

H_2: Risk has a significant negative effect on ESG disclosure

2.6. Company Age

The age of the company refers to the length of time the company operates which is calculated from the time the company starts operating. Companies that have been around for a long time, especially those that already have the status of a public company, will have higher demands to comply with applicable regulations. This includes demands for comprehensive disclosure of information, both mandatory information such as annual financial reports and voluntary disclosure of information. The company's stakeholders want the company to operate by prioritizing the values of transparency and accountability. The age of the company provides a reflection of the company's growth. Therefore, the age of the company can be a factor that affects disclosure. Companies with longer operating periods are considered as companies that have experienced further growth rates, so that stakeholders expect higher information disclosure compliance, including ESG disclosure. Companies with a longer age have a longer involvement with the community, so companies are more required to be able to prove

their commitment to maintaining their legitimacy. Therefore, the longer the age of a company, the higher the company's efforts to demonstrate its commitment, including by implementing and reporting ESG.

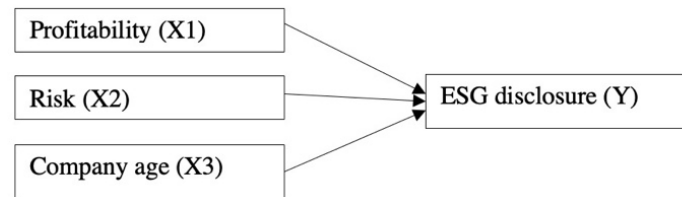H_3: Company age has a significant positive effect on ESG disclosure

Figure 1. Research Framework

3. RESEARCH METHODS

This study uses a descriptive research design. Descriptive research is research that aims to test hypotheses and find a description of the characteristics of the phenomenon under study. Descriptive research is used for studies related to data collection and processing to gain new insights. The results of descriptive research are in the form of information that helps users gain deeper knowledge about the object of research, as well as the basis for making better decisions. This study uses quantitative analysis methods. Quantitative analysis method is a method related to the collection and evaluation of measurable data or numerical data. The quantitative analysis method can provide an overview of the various characteristics of the research object and test the hypotheses that have been proposed previously. The sampling technique used in this study was purposive sampling, one of the non-probability sampling techniques. This study tested three independent variables against one dependent variable. The three independent variables tested are profitability as measured by return on equity (ROE), risk as measured by Debt-to-Equity Ratio (DER), and company age. The independent variable will be examined to determine the effect on the dependent variable. This study uses the dependent variable ESG disclosure. The sample selection criteria used are (1) manufacturing companies listed on the Indonesia Stock Exchange from 2018-2020, (2) companies that issue sustainability reports in 2018-2020, (3) companies that record net income in 2018-2020 and (4) companies that issue financial statements in Rupiah. There are 41 companies that meet all the criteria and these companies are the sample in this study. This study will use a sample with the four criteria mentioned. Data from 41 companies that meet all the criteria will be collected and processed to find empirical evidence and the relationship between the independent variable and the dependent variable. Data analysis was carried out using the IBM SPSS Statistics 28 application.

ESG disclosure refers to the disclosures made by the company in accordance with the Global Reporting Initiative (GRI) standard. Companies that report on each aspect will be given a score of 1, then the total score for company disclosure is divided into the total required aspects of 117 aspects.

ESG disclosure score = Total ESG disclosure : 117

Profitability is measured by Return on Equity (ROE). ROE is the ratio of net income divided over total equity.

$$ROE = \frac{Net\ Income}{Total\ Equity}$$

Risk is measured by Debt-to Equity (DER). DER is the ratio of total debt divided over total equity.

$$DER = \frac{Total\ Debt}{Total\ Equity}$$

Company age shows how long a company has been established and operating in years. The measurement of the company age variable is carried out as follows

Age = 2022 - the year company was founded

Table 1. Results of The Proxy for Each Variables

Variables	Scale	Measurement	Ref
ESG disclosure	Ratio	total ESG disclosure: 117	[1]
Profitability	Ratio	$ROE = \dfrac{Net\ Income}{Total\ Equity}$	[11]
Risk	Ratio	$DER = \dfrac{Total\ Debt}{Total\ Equity}$	[12]
Company age	Ratio	2022 - the year company was founded	[2]

4. RESULTS

Observational data comes from 41 public manufacturing companies for the 2018-2020 period with a total of 123 data. The three independent variables used are profitability with return on equity (ROE) proxy, risk with debt-to-equity ratio (DER) proxy, and company age. The dependent variable in this study is ESG disclosure with the proxy ESG disclosure score. The independent variable X1 or profitability with a return on equity (ROE) proxy shows a minimum value of 0.03. The maximum value is 1.534, the mean (mean) of the studied sample is 0.1769 with a standard deviation of 0.2669. The independent variable X2 or risk with a debt-to-equity ratio (DER) proxy shows a minimum value of 0.1. The maximum value is 10.7, the mean (mean) of the studied sample is 1.408 with a standard deviation of 1.3104. The independent variable X3 or the age of the company shows a minimum value of 5. The company with the highest age is 107 years. The average value (mean) of the studied sample is 45.66 with a standard deviation of 21.719. The independent variable Y or ESG disclosure with the proxy ESG disclosure score shows a minimum value of 0.0628 and a maximum value of 0.8581. The average value (mean) of the studied sample is 0.4892 with a standard deviation of 0.1903.

Four types of classical assumption test used in this study are normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. The results of the Kolmogorov-Smirnov One Sample normality test are 0.200 which is greater than the 0.05 significance level, proving that the data used in the study has a normal distribution. The results of the multicollinearity test have tolerance values of 0.448, 0.998, and 0.470 for X1, X2, and X3. The VIF value of each independent variable is 2.223, 1.002, and 2.231. The research regression model is free from multicollinearity. The results of the heteroscedasticity test are indicated by the value of Sig. on each of the independent variables profitability (X1), risk (X2), and company age (X3) of 0.390, 0.377, and 0.140 which is greater than the 0.05 significance level and indicates that the regression model in the study is free from heteroscedasticity. The autocorrelation test with the Durbin-Watson test is worth 1.760 indicating that the regression model in the study is free from autocorrelation.

This study's correlation value (R) is 0.877, closer to one than zero, meaning there is a reasonably strong correlation between the independent variables and dependent variable. The coefficient of determination (Adjusted R^2) of 0.764 or 76.4% means that all independent variables, namely profitability, risk, and company age affect the dependent variable of ESG disclosure by 76.4%. The dependent variable of ESG disclosure 23.6% is influenced by other variables not examined in this study.

Table 2. Results of Multiple Regression Analysis

Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(constant)	.105	.024		4.328	.000
X1	-.173	.047	-.242	-3.683	.000
X2	-.002	.006	-.019	-0.368	.714
X3	.009	.001	1.044	1.569	.000

Source: SPSS 28 data processing result

Based on the data from Table 2, the regression equation is as follows:
$$Y = 0{,}105 - 0{,}173\ X1 - 0{,}002\ X2 + 0{,}009\ X3 + \varepsilon$$

Note:
Y   : ESG disclosure
X1   : Profitability
X2   : Risk
X3   : Company age
ε   : Error term

4.1. Effect of profitability on ESG disclosure

The test results show the coefficient value of -0.173 and the t-test significance value of 0.000. The coefficient value -0.173 with a negative sign, states that the independent variable profitability has a relationship in the opposite direction to the dependent variable ESG disclosure. If the value of the independent variable profitability increases, then the value of the dependent variable ESG disclosure will decrease. Conversely, if the value of the independent variable profitability decreases, then the value of the dependent variable ESG disclosure will increase. The significance value of 0.000 is lower than the 0.05 significance level and provides an understanding that profitability has a significant effect on ESG disclosure. This test is the basis for the conclusion that Ha1 is rejected. Ha1 states that there is a positive influence between profitability and ESG disclosure. The results show that the independent variable profitability is known to have a negative and significant effect on the dependent variable of ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The results of this study are in accordance with the results of research conducted by Dewi & Yasa (2017) [4], but contradict the previous research conducted by Sharma et al. (2020) [1] and Rahman & Alsayegh (2021) [3] which showed a positive influence between profitability and ESG disclosure.

4.2. The effect of risk on ESG disclosure

The test results show the coefficient value of -0.002 and the t-test significance value of 0.714. The coefficient value -0.002 with a negative sign indicates that the independent variable risk has the opposite relationship with the dependent variable ESG disclosure. If the value of the independent variable risk increases, then the value of the dependent variable ESG disclosure will decrease. Conversely, if the value of the independent variable risk decreases, then the value of the dependent variable ESG disclosure will increase. The significance value of 0.714 is greater than the 0.05 significance level and provides an understanding that risk has no significant effect on ESG disclosure. This test is the basis for the conclusion that Ha2 is rejected. The independent variable risk is known to have no significant negative effect on the dependent variable of ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The results of this study are different from previous research conducted by Sharma et al. (2020) [1] proves that there is a negative influence between risk on ESG disclosure. The effect of risk with debt to equity ratio proxy on ESG

disclosure which is not negative and significant can be understood by stakeholder theory. Companies with financial obligations may choose to prioritize debt and interest payments over ESG disclosures. Companies also have other options to make comprehensive ESG disclosures to enhance reputation, prove commitment to stakeholders, or for other purposes. Flexibility in decision making causes no direct (negative) and significant influence between risk and ESG disclosure to be found.

4.3. The effect of company age on ESG disclosure

The test results show the coefficient value of 0.009 and the t-test significance value of 0.000. The coefficient value of 0.009 with a positive sign, states that the independent variable of company age has a direct relationship with the dependent variable of ESG disclosure. If the value of the independent variable of company age increases, the value of the dependent variable of ESG disclosure will increase. On the other hand, if the value of the independent variable of company age decreases, the value of the dependent variable of ESG disclosure will decrease. The significance value of 0.000 is lower than the 0.05 significance level and provides an understanding that the age of the company has a significant effect on ESG disclosure. This test is the basis for the conclusion that Ha3 is accepted. The independent variable of company age is known to have a positive and significant effect on the dependent variable of ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The results of this study are in accordance with previous research conducted by Kilic & Kuzey (2019) [2] and Roestanto et al. (2022) [5] which shows a positive influence between the age of the company on ESG disclosure.

5. CONCLUSIONS

This study was conducted to examine and obtain empirical evidence regarding the effect of profitability, risk, and company age on ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. This study uses secondary data derived from financial reports, annual reports, and sustainability reports published by companies that are accessed through the Indonesia Stock Exchange website and the company's official website. This study uses purposive sampling data collection techniques with predetermined criteria. 41 companies met all the criteria set and provided 123 data that could be tested. Data processing was carried out with the Microsoft Excel 2022 application while the testing was carried out with the IBM SPSS Statistics 28 application.

The test results show that profitability has a negative and significant effect on ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The test results contradict Ha1 which states that profitability has a positive effect on ESG disclosure, so Ha1 is rejected. The negative and significant effect between profitability and the proxy of return on equity and ESG disclosure can be understood through legitimacy theory. The company is involved with social contracts and always strives to fulfil its obligations in order to gain legitimacy from the community. Companies with low levels of profitability have a higher urgency to carry out activities that can benefit the community so that stakeholders continue to view the company in a favourable light. ESG disclosure is an effort that can be done by management to attract investors' attention. It is intended that investors remain interested in investing in the company even though the company does not generate satisfactory profits. ESG disclosure is the company's effort to show the company's commitment to the wider community so that the company's existence can be accepted.

Risk is known to have no significant negative effect on ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020 so Ha2 which states that risk has a negative effect on ESG disclosure is rejected. The effect of risk with debt-to-equity ratio proxy on ESG disclosure which is not negative and significant can be understood by stakeholder theory. The Company has relationships with various stakeholders, both internal and external stakeholders. Companies that have debt are obliged to pay debts and interest on a timely basis. The need to pay debts and disclose ESG practices to the public are two options that require company resources, time, money and manpower. The company is faced with two groups of stakeholders who have different desires. Creditors want their debts to be paid on time by the company. Communities want company commitments that provide benefits such as ESG activities and reporting. Companies with financial

obligations may choose to prioritize debt and interest payments over ESG disclosures. Companies also have other options to make comprehensive ESG disclosures to enhance reputation, prove commitment to stakeholders, or for other purposes. Flexibility in decision making causes no direct (negative) and significant influence between risk and ESG disclosure to be found.

Company age is known to have a positive and significant effect on ESG disclosure in manufacturing companies listed on the Indonesia Stock Exchange in 2018-2020. The test results are in accordance with Ha3 which states that the age of the company has a positive effect on ESG disclosure, so Ha3 is accepted.

This study has a number of limitations that can be reviewed for future research. Limitations in this study include (1) the limited research period for 3 years from 2018 to 2020, (2) the sample criteria are large enough so that the sample selection is limited to 41 companies, and (3) the scope of independent variables is limited to profitability, risk, and age of the company, without considering other variables that can have an influence on ESG disclosure.

This research suggestion is addressed to readers and research users to develop insight on the topic of ESG disclosure. This research is a reference that can be used for future research. Future research can consider observation periods in different and or longer periods of time. Further research can use a sample whose scope is more specific than the selection criteria for this research sample which only includes manufacturing companies listed on the Indonesia Stock Exchange. An example is the use of a sample of manufacturing companies that focus on the cigarette, consumer goods, or chemical sub-sectors. Research with a more diverse sample can provide more representative information on the topic of ESG disclosure. The use of different independent variables can also be considered in further research in order to be able to provide a better picture of the topic of ESG disclosure. Examples of independent variables that can be used are market performance, company size, type of industry, and company status as a public company. The suggestions given are expected to help develop an understanding of ESG reporting by companies in Indonesia.

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Woman of Board Directors, Leverage, Sales Growth, Institutional Ownership, and Earnings Management

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ABSTRACT

This study aims to determine the effect of the size of the female board of directors and commissioners, leverage, and sales growth with the moderating variable of institutional ownership on leverage on earnings management in the real estate and construction which listed on the Indonesia Stock Exchange for the 2017-2020 period. Data processing was carried out with Eviews. The sample was selected with purposive sampling method. The results showed that the size of the female board of directors and sales growth significantly negatively affected earnings management. The female board of directors can reduce earnings management because women in leadership positions in businesses are capable of making wise and moral decisions. The higher the sales growth, the lower the earnings management. Companies have a high sales growth rate means that the company's profit is also high. Managers are not motivated to increase profits because their interests of managers are the same as stakeholders' interests. Managers have the same information as stakeholders, so there is no information asymmetry. Leverage has no significant effect on earnings management. Leverage in earnings management has a significant negative impact on moderating institutional ownership.

Keywords: *Woman director, Leverage, Sales, Earnings management*

1. INTRODUCTION

Earnings management is carried out as an effort by the company's management to influence financial statement information so that investors are interested in the company [1]. In Indonesia, earnings management is possible because the corporate governance system is still ineffective. The management is driven to manage earnings in a way that results in big profits and bonuses. Investors find it challenging to trust the company because the data they use as a guide for investment does not accurately reflect actual results. Based on research on the earnings management phenomenon that happened in Indonesia in 2017, earnings management leverages the concept of discretionary accruals [2]. The estate firm PT Hanson International, which handles earnings from the sale of plots by raising the company's income, has a financial statement violation. Businesses must adhere to accounting rules while preparing financial statements. Female company leaders can control earnings management indications [3],[4]. Previous research on leverage on earnings management has found that leverage has a significant positive effect on earnings management in Kazakhstan for the 2010-2016 period [3]. In addition, there is sales growth with a significant positive effect on earnings management in Mexico with a 10-year research period [5].

Research from Adamu et al [6] on board size, board meeting frequency, board expertise, and female board directors with control variables such as growth, profitability, leverage, and firm age on earnings management in Nigerian Stock Exchange financial companies for the study period. 2011-2016. The research shows that board size, growth, and profitability have no significant effect on earnings management, while board meeting frequency, board expertise, and firm age have a

significant positive effect on earnings management. Leverage has no negative significant effect on the dependent variable. However, female board directors have a significant negative effect on earnings management.

The other study determined financial statements, board management, chair of management, auditor size, financial performance, firm size, leverage, and stock issuance on earnings management. Research conducted by Dang et al., [7] in companies listed on the Vietnam Stock Exchange other than banks and insurance in 2012-2016 resulted in financial statements, chair of management, financial performance, firm size, and stock issuance having a significant positive effect on earnings management. However, board management, auditor size, and leverage have a significant negative effect on earnings management.

This study intends to empirically investigate the role of institutional ownership, sales growth, and the presence of female board members in moderating the impact of leverage on profits management. In order to prevent decision-making errors that result in financial statements that do not accurately reflect actual conditions, the company will profit from this research by being able to pick the criteria for managers who are deserving of managing the company. Shareholders make better investment decisions for investors. For creditors, in order to take into account financing businesses. want scientists to be able to expand their body of information regarding money management.

2. LITERATURE REVIEW

2.1. Agency Theory

Jensen & Meckling proposed the agency theory about the interaction between shareholders and managers in 1976. The underlying premise is that a manager's self-interest may have an impact on their choices and actions. Since management has access to more accurate information than the principle, it is conceivable for management to engage in activities that will manage earnings [8].

2.2. Signalling Theory

According to signal theory, the corporation will send out a signal in the shape of good news from the expression of financial statements. The information is designed for the recipient, who then comprehends this notion and provides the company with greater knowledge of how to transmit information to potential investors in order to raise the share price of the company [9].

2.3. Asymmetric Information

Information asymmetry theory has similarities with agency theory, which means that there are differences in information views between managers and investors. Types of information asymmetry include: a) Adverse Selection. Managers are more knowledgeable about company growth than investors: b) Moral Hazard. Managers carry out activities that are unknown to investors and creditors [10].

2.4. Earnings Management

Earnings management according to Orazalin [3] is an accounting activity that has the aim of achieving the desired level of reported accounting profit. Managers have the freedom and choose to use accounting standards, so there is an interest in doing earnings management by ignoring the interests of investors [11]. According to Schipper [12], earnings management is an intervention that has a purpose such as the financial reporting process so that there is personal profit, so that the company's operational activities become more stable. Manipulation of the company's revenue amount through contracts depending on the figures using the Modified Jones Model.

2.5. Woman of Board Directors

As representatives for the management of the firm, which is made up of the board of directors, board of commissioners, audit committee, and directors, board members are executives who are appointed by shareholders. All of the board's directors make up the board of directors. The commissioners, as a single board, are all members in the meantime. The effectiveness of the board is significantly improved by having more female directors and commissioners. The reason is that having women on a board is thought to make a company more ethical and engaged, which can enhance the quality of its information [13].

2.6. Leverage

Leverage is the solvency ratio and as an illustration of how much the company's operational activities need to be financed with debt. According to Dang et al [7], the higher the leverage value, the greater the investor's risk and the greater the profit desired by the investor.

2.7. Sales Growth

Sales growth indicates a company's capacity to hold onto its financial standing while the economy and its industry grow. A manager's mindset regarding thinking in terms of maximizing profits can be formed through increased sales growth, which can give an overview of earnings that can increase [14].

2.8. Institutional Ownership

Institutional ownership is the number of institutional and institutional shares originating from outside the company. According to Boutseka [15], institutional ownership cannot directly monitor management decisions, but can through investors to monitor so that managers' decisions are appropriate [16].

3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

3.1. The Effect of Woman of Board Directors on Earnings Management

The Board of Directors is the body that oversees all business activities, as well as operations that adhere to excellent organizational management practices and good governance principles. Women in leadership positions in businesses are capable of making wise and moral decisions [4]. Companies led by women have a calm nature and are able to work well under pressure, so the company is more peaceful [17].

3.2. The Effect of Leverage on Earnings Management

Leverage is a measure used to quantify debt-financed businesses. Debt includes long-term leverage, so using leverage carries a considerable amount of risk. Companies with significant levels of leverage will control their earnings by managing higher profits to appear healthy and appealing to investors and avoid the possibility of insolvency [18].

3.3. The Effect of Sales Growth on Earnings Management

Sales growth affects earnings management because changes in sales levels are used to measure company performance [19]. Growth in sales is one way to gauge the volume of sales each year, and it's a crucial aspect of the business. High sales growth presents prospects for businesses to enhance their own worth in the hope that investors would increase their investment in the business. By influencing the increase in net income so that the net income disclosed in the financial statements is appealing to investors, this may result in earnings management methods [18].

3.4. The Effect of Leverage on Earnings Management with Moderated by Institutional Ownership

Institutional ownership will have the ability for good company monitoring. According to Angelina and Atiningsih [16], as a moderating variable, institutional ownership contributes to the relationship between leverage and earnings management. Companies with high leverage have an obligation to meet the information needs of owners, shareholders, and creditors.

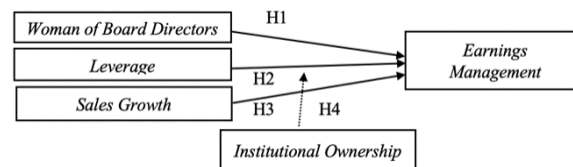The research model of this study is presented in Figure 1:

Figure 1. The Research Model

4. RESEARCH METHOD

This study uses research subjects from real estate and construction companies listed on the Indonesia Stock Exchange for the 2017-2020 period. The entire sample obtained 30 companies with a total of 120 data observations. This study uses purposive sampling with the fulfilment of several criteria, including: a) real estate and construction companies with audited financial statements as of the end of December 31; b) real estate and construction companies that have profits on the Indonesia Stock Exchange; c) real estate and construction companies that have institutional ownership. The following is the operationalization of each research variable:

a. Earnings Management (Y)

$$TACt = NIt - CFOt$$

$$\frac{TACt}{At-1} = \beta1\left(\frac{1}{At-1}\right) + \frac{\beta2(\Delta REVt - \Delta ARt)}{At-1} + \beta3\left(\frac{PPEt}{At-1}\right) + \varepsilon$$

$$NDAt = \beta1\left(\frac{1}{At-1}\right) + \beta2\left(\frac{\Delta REVt - \Delta ARt}{At-1}\right) + \beta3\left(\frac{PPEt}{At-1}\right)$$

$$DAt = \frac{TACt}{At-1} - NDAt$$

b. Woman of Board Directors (X1)

$$WBOD = \Sigma \text{ Woman on Board and Commissioner Size}$$

c. Leverage (X2)

$$LEV = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

d. Sales Growth (X3)

$$SG = \frac{\text{Revenue } t - \text{Revenue}(t-1)}{\text{Revenue}(t-1)}$$

e. Institutional Ownership (M)

$$IO = \frac{\text{Total kepemilikan saham institusi}}{\text{Total saham beredar}}$$

The following below is the moderating regression equation to be used:

$$EM = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4M + \beta5X2M + \varepsilon$$

Note:
EM = Earnings Management; α = Constant; β_{1-5} = Regression Coefficient; X1 = Woman of Board Directors; X2 = Leverage; X3 = Sales Growth; M = Institutional Ownership; ε = Error Term.

The research method used in this study is a combination of time series and cross-sectional data known as panel data (pooled data). There are three alternative models can be used to analyze the panel data: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Several tests are needed to select the most appropriate model: Chow Test, Hausman Test, and Lagrange Multiplier (L-M). According to the results, this research chose the Fixed Effect Model for data analysis.

5. RESULTS

Table 1. Descriptive Statistics Test Results

	Y	X1	X2	X3	M
Mean	-0.039736	2.216667	0.444278	0.117320	0.616566
Median	-0.016306	2.000000	0.467211	0.003695	0.655843
Maximum	0.455048	7.000000	1.106351	8.088210	0.999260
Minimum	-0.373756	1.000000	0.041537	-0.773813	0.000328
Std. Dev	0.104403	1.496120	0.198292	0.873353	0.243828

The dependent variable for the descriptive statistical test shown in Table 2 is earnings management (Y), with a mean value of -0.039736. The median result for descriptive statistics is -0.016306 after computation. The highest number is 0.455048. The minimal value for this study is -0.373756. While the earnings management variable (Y) standard deviation value is 0.104403, The mean value of the independent variable (X1) from female board directors is 2.216667. The obtained median value is 2,000,000. The maximum score for this study was 7,000,000. While the smallest figure obtained was one million. 1.496120 is the standard deviation. Mean and median values for the leverage variable (X2) are 0.444278 and 0.467211 respectively. The maximum and minimum values for this study are 1.106351 and 0.041537 respectively. Leverage yields the standard deviation of 0.198292. Growth in sales (X3), with a mean of 0.117320. The largest value received was 8.088210, with the median value being 0.003695. The minimal value for this study is -0.773813. The growth in sales' standard deviation is 0.873353. Institutional ownership (M), a moderating variable in this study, has a mean value of 0.616566. The obtained median value is 0.655843. The obtained minimum value is 0.000328, while the maximum value is 0.999260. The standard deviation is 0.243828.

The traditional assumption tests implemented are the multicollinearity test and the heteroskedasticity because panel data is being used. The results of the multicollinearity test indicate that all of the variables have correlation coefficient values of less than 0.80, indicating that there is no multicollinearity in this study and that regression testing may be performed on it. Heteroskedasticity test result after moderating effect is 0.7662. In this test, it can be concluded that there is no problem of heteroskedasticity.

The results of the Chow Test show that the Fixed Effect Model should be used because the probability value of the Chi-square cross-section following the moderating effect is 0.0000. The Hausman Test shows that the Fixed Effect Model should be used since the random cross-section has a probability value of 0.0000 after the moderating effect. These are the outcomes of moderating regression using a Fixed Effect Model, as shown in Table 2 as follow:

Table 2. The Results of Moderating Regression with Fixed Effect Model

Variable	Coefficient	Sig. Value	Results
Constants	-0.245909	0.0484	
X1	-0.039911	0.0128	H1 is accepted
X2	0.381876	0.0768	H2 is not accepted
X3	-0.046946	0.0000	H3 is not accepted
M	0.632940	0.0016	
X2M	-1.037869	0.0083	H4 is not accepted

The form of the moderating regression equation is as follows:

$$EM = -0.245909 - 0.039911\ X1 + 0.381876\ X2 - 0.046946\ X3 + 0.632940\ M - 1.037869\ X2\ M + \varepsilon$$

The F-test results reveal that the probability value of F-statistic is 0.000000, indicating that all independent variables regarded as independent variables also the moderating variable on leverage simultaneously affect the dependent variable significantly. According to the multiple determinant coefficient test, the adjusted R-squared value is 0.628695, indicating that all independent variables in this research have an effect toward dependent variable by 62.87%. Meanwhile, the remaining 37.13% is explained by variables that are not examined in this study.

The T-test shows that the effects of women on boards of directors (X1) has a probability value of 0.0128 and a coefficient of -0.039911, indicating a significant negative impact on earnings management and supporting H1. Leverage (X2) has a prob-value of 0.0768 and a coefficient of 0.381876, indicating that it does not have a statistically significant impact on earnings management but does have a positive impact. H2 is therefore not approved. Sales Growth (X3) displays a probability value of 0.0000 and a coefficient of -0.046946, indicating a strong adverse impact on profits management that involve the rejection of H3. H4 is rejected because there is a strong negative influence on earnings management and the moderating variable of Institutional Ownership (X3) on Leverage gives a coefficient value of -1.037869 and a test probability value of 0.0083 < 0.05.

6. DISCUSSIONS

Based on the findings obtained and generated from this study, authors concluded several discussions. Woman of board directors has a significant negative effect on earnings management which same with the other research from Adamu; Jusup and Sambuaga [6], [20]. On the other side, this research has a different results from Razak and Helmy [4] in which woman of board directors did not have a significant impact on earnings management. This study demonstrates that female board directors have low earnings management practices or can reduce earnings management actions, which is consistent with agency theory.

This study results that leverage does not have a significant effect on earnings management according to research by Anindya and Yuyetta; Yunietha and Palupi; Zuhair and Nurdiniah [14], [21], [22]. However, this study is not in line with Dang; Dewi and Wirawati; Wirianata [1], [7], [18] because it produces a significant negative effect. According to agency theory, high leverage results in high agency costs. However, the study's findings demonstrate that using leverage to finance a company's assets does not have a significant and positive impact on earnings management. Because of this, managers are less likely to use earnings management because the study's level of leverage is still safe and capable of covering debts.

Sales growth produces a significant negative effect and is in line with research from Destiana; Firnanti; Khanh and Thu [19], [23], [24]. However, contrary to the results of research from Tran and Dang [7] because it does not have a significant effect. According to agency theory, there are principles and agents who make separate decisions, which is contrary to this study. The conclusion of this study, however, is that the hypothesis is not supported since real estate and construction companies in Indonesia are experiencing sales growth, which may lower managers' motivation to control earnings. Sales increase will lessen the prevalence of managers' earnings management techniques. Managers no longer need to manipulate profitability if there is an increase in sales growth.

This study shows that leverage has a significant negative result with moderating institutional ownership on earnings management which is in line with research by Saraswati and Atiningsih [25]. However, the results differ from the research by Angelina and Atiningsih [16] which stated that the effect was significantly positive. In order to explain the issue of agents who exist due of conflicts of interest between managers and shareholders, this paper refers to agency theory. In order to avoid breaching debt covenants, management typically manages earnings. However, this study demonstrates that excessive leverage will induce institutional ownership to increase management oversight, which will result in fewer actions being taken for earnings management because of the increased management oversight and manager rethinking their approach to managing earnings. The manager is less motivated to control earnings if institutional ownership involvement is low.

7. CONCLUSIONS

Several conclusions could be taken from this study's data processing and testing results. First, H1 is accepted since the presence of women on the board of directors has a strong detrimental impact on earnings management. Second, H2 is rejected since leverage has a minor impact on managing earnings. Third, H3 is rejected because sales growth has a major negative impact on managing earnings. Last but not least, H4 is rejected because leverage significantly worsens earnings management when institutional ownership is a moderating element.

Due to time and resource constraints, there are still certain limitations with this research. The research term, which runs from 2017 to 2020, is only 4 years long. Construction real estate companies make up the sole segment of the research sample population. Additionally, a lot of businesses suffered losses in 2020, which resulted in a small number of samples for this study.

The following recommendations are based on the findings of this study and the limitations already mentioned: (i) For businesses, the research is anticipated to take into account the standards for managers in order to reduce earnings management actions; (ii) For investors, the research is anticipated to take into account the criteria for investors to decide whether to invest by looking at the company's financial statements whether there will be a possibility of doing earnings management; (iii) For creditors, it is prudent to lend money to businesses; and (iv) For literature studies, the research can provide knowledge about earnings management. Another idea is to extend the research population to include producers of raw materials or manufacturing industries, with a research duration of 5 to 10 years.

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FINANCIAL PERFORMANCE COMPARATIVE ANALYSIS BETWEEN CONSUMER GOODS AND REAL-ESTATE COMPANIES BEFORE AND DURING THE COVID-19 PANDEMIC

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ABSTRACT
This research aims to determine the difference in financial performance of consumer goods and real estate companies prior to and during COVID-19 outbreaks. The research period starts from December 2019 (prior to the COVID-19 outbreaks) and ends in December 2020 (during the COVID-19 outbreaks). The research design used in this study is descriptive research with purposive sampling methods. The total samples used in this study were 146 samples, processed using the Microsoft Excel and Statistical Package for the Social Sciences (SPSS) ver.26 software. This research used the Wilcoxon Signed Rank Test as its research model. The result of this research shows that there is a significant difference in the aspect of profitability, while in the aspect of liquidity and solvability, no significant difference was found between prior to the pandemic (2019) and during the pandemic(2020).

Keywords: Coronavirus disease 2019, financial performance, liquidity, solvability, profitability

1. INTRODUCTION

The Corona virus outbreak, also known as the COVID-19 virus (SARS-CoV-2) was discovered in late December 2019 in Wuhan, China. This COVID-19 virus has spread widely to almost all countries in the world. As the virus rapidly spread, the world health organization (WHO) has announced that the COVID-19 virus has been declared a global pandemic.

The case of the spread of COVID-19 first entered Indonesia on March 2, 2020. The Indonesian government swiftly made efforts to prevent the spread of the coronavirus by encouraging the entire community to practice physical distancing, use masks, wash their hands, cancel learning activities, and do work from home. The Indonesian government has also launched other policies, such as community activities limitations and large-scale social restrictions (PSBB) in various areas affected by the COVID- 19 pandemic.

This pandemic situation has had a direct impact on the condition of the Indonesian economy, which was still in good condition prior to. The financial success of a corporation is vital and deserves attention in the business world. Financial performance literally has a very broad meaning. Financial performance is the ability of a company to control and manage its resources. Rudianto [1] explained that financial performance is the result of managing company assets effectively and efficiently within a certain period of time that has been achieved by the organization. Financial performance is very much needed by management in knowing and evaluating to what stage the company's success rate has been obtained based on the financial activities that have been carried out within a certain period of time. Strategies, actions, and policies set by management to realize the goals of a company. Financial ratio analysis is one method that can be used by company management to evaluate a company's financial performance effectiveness. Harahap [2] explained, financial ratios are calculated by

comparing one account to another in the financial statements that have substantial and meaningful connections. According to Rhamadana and Triyonowati, financial ratio analysis is one of the most effective techniques for evaluating a company's financial performance [3].

The liquidity ratio, which measures a company's short-term liquidity capacity by comparing its current assets to its current debt, and the solvency ratio, which measures a company's ability to service all of its long-term debt, are two types of ratios that can affect a company's financial performance. Profitability ratios, in summary, are ratios that indicate a company's capacity to earn profits at a certain level of sales, assets, and share capital.

Economic and non-economic factors both have a significant impact on the financial success of the business [3]. The management can analyze the financial performance of a company by using these two factors. Economic elements affect the organization's financial performance, such as the inflation rate, fluctuations in exchange rates with foreign currencies, and interest rates. Meanwhile, non-economic factors that can affect financial performance include human resources, the environment, politics, social and culture, and natural disasters and disease outbreaks, as is currently happening.

The deterioration in financial performance induced by the Coronavirus disease 2019 deserves attention and further research to find out how the level of liquidity, solvency, profitability, and company activities were prior to and during the Coronavirus disease 2019. The comparison is expected to provide an overview to the parties who need it, such as the company's management as a basis for making decisions and policies that must be carried out in managing financial performance as well as possible so as not to experience a decline that can lead to company bankruptcy.

Based on the description above, this study was undertaken to evaluate whether there were discrepancies in the financial performance of consumer goods and real estate sectors prior to (in 2019) and during (in 2020) the Coronavirus disease 2019 that occurred in Indonesia.

Related Work

According to Daryanto, Rizki, and Mahardhika's research [4], there are substantial changes in the financial performance of the firm prior to to and during the COVID-19 epidemic. The Paired Sample T-test is employed in this study to conduct a comparison analysis, and the data are limited to a single property and real estate business, namely PT PP Properti.

Lowardi and Abdi's research [5] indicated a substantial variation in the financial performance of real estate enterprises prior to and during the COVID-19 epidemic. Lowardi and Abdi performed research on 42 real estate sector businesses registered on the Indonesian Stock Exchange. The Wilcoxon test was used to compare financial data prior to and during the COVID-19 epidemic.

Devi, Warasniasih, Masdiantini, and Musmini [6] discovered no significant variations in the financial performance of the firm prior to and during the COVID-19 epidemic. The findings of this investigation contradict those of Lowardi and Abdi [5]. The Wilcoxon Signed Ranked Test was used to collect data from 214 businesses across nine industrial sectors that are registered on the Indonesia Stock Exchange.

Based on the explanation of the problems and the inconsistency of the research results above,

the researcher wants to study the effect of the Coronavirus disease 2019 on the company's financial performance.

Our Contribution

This research was conducted because there were gaps in the findings of previous studies that used similar variables. So, this study was conducted to re-test the financial performance comparative analysis of consumer goods and real estate companies registered on the Indonesia Stock Exchange prior to and during the Coronavirus disease 2019.

Paper Structure

The rest of the paper is organized as follows. Section 2 explains the theoretical review that was used in this research. Section 3 explains the hypothesis that will be tested in this research. Section 4 explains the methodology used and the subject of the research. The results of tests that test the hypotheses will be shown in Section 5. Finally, Section 6 concludes the paper and presents directions for future research.

2. THEORETICAL REVIEW

Signaling Theory

Signaling Theory explains that investors have an attachment to the cues or signals given by the company as the owner of information [7]. The signal given contains information about the condition of a company and what the company does to realize the owner's expectations. The information provided by the company is very important because it is directly related to investment decision-making for potential business people and potential investors. Research related to signaling theory has yielded mixed results, and many have caused contradictions.

Financial Performance

The Indonesian Institute of Accountants defines financial performance as "a company's ability to manage and control its resources." Devi et al. [6] define a company's financial performance as "a form of achievement in financial aspects related to overall operating income and expenses, assets, debt structure, and investment returns." Financial performance is not confined to a single time period. This is because investors will continue to monitor the company's financial performance. Changes to the statement of financial position, income statement, statement of changes in capital, and statement of cash flows are included in this category.

Financial Ratio

Harahap [2] defines financial ratios as "a value obtained from comparing one item with other items in the financial statements." Meanwhile, according to Kasmir [8], financial ratios are "activities to compare the numbers contained in the financial statements by dividing one number with another." A financial ratio is a company performance analysis tool that explains the relationship between financial indicators that show changes in the financial condition of a company. Financial ratio analysis is one of the most effective ways to measure the financial performance of a company [3].

Liquidity Ratio

Kariyoto [9] defines the liquidity ratio as "one of the ratios that can measure the company's ability to pay obligations that will mature within one year (short-term liabilities)". The current ratio is a widely used ratio for determining a company's liquidity condition. It is derived by dividing current assets by current debt [10]. The current ratio may be used to evaluate a company's capacity to manage its assets in order to satisfy short-term obligations and secure future business continuity [11].

Solvability Ratio

The solvency ratio is one of several ratios used to determine how much of a company's assets are financed by debt. "Solvency ratio measures the ability of a company to meet all of its obligations, both long-term and short-term" [6]. Kasmir reveals how to calculate the solvency ratio using either the debt to asset ratio (DAR) or the debt to equity ratio (DER) [8]. A debt-to-asset ratio is a ratio that indicates how much debt is used to fund a business's assets. The debt-to-equity ratio is a ratio that indicates or quantifies the amount of capital required to service a company's obligations. Debtors, particularly long-term creditors, will be concerned about this DER ratio [12]. Ideally, the amount of capital owned by a company should be greater than the amount of debt it has.

Profitability Ratio

A "profitability ratio" is a metric used to evaluate a business's capacity to generate profit [8]. Profitability is a ratio that is used to determine a business's capacity to earn profits via standard business operations. This ratio gives an assessment of a company's management's efficiency and effectiveness over a certain time period.

Coronavirus Disease 2019

The definition of a pandemic, according to the KBBI, is "an epidemic that spreads simultaneously everywhere, covering a wide geographical area." The situation that has occurred in the last two years is the outbreak of the COVID-19 virus, which was first discovered in the city of Wuhan, China. The World Health Organization defines "coronavirus disease (COVID- 19) as an infectious disease caused by a newly discovered coronavirus." This virus spread very quickly and widely to all regions of the country and the world, which was later designated as a pandemic by the World Health Organization (WHO). The Coronavirus disease 2019 has had a detrimental effect on the global economy, including that of Indonesia, because it is believed to be capable of completely shutting down a country's economy. According to the Organization for Economic Cooperation and Development (OECD), the Coronavirus disease 2019 has increased the risk of a severe economic disaster. This is indicated by the termination of large-scale production, the decline in people's purchasing power, and the fall of the stock market, which then creates economic uncertainty. Various innovations aimed at defending public welfare are required during the present epidemic, since people's purchasing power will play a major role in driving and saving business growth and profitability as well as national economic growth.

3. RESEARCH HYPOTHESES

Differences in Liquidity Ratios prior to and during the Coronavirus Disease 2019

The Coronavirus disease 2019 that is endemic in Indonesia has affected various aspects of the company's financial performance, one of which is the issue of liquidity. The economic crisis that occurred during this pandemic caused a decline in sales in various industrial sectors. This is because people's purchasing power dwindled during the pandemic. When sales decline, this will have a direct impact on the general financial condition, including the value of its present assets. The cash component of current assets was considerably impacted by the drop in sales, as were trade receivables generated from credit sales. The company will have difficulty paying off its short-term debt due to limited cash due to a decrease in sales, so when current assets see a considerable reduction, the value of the company's current ratio will be affected. Based on the above conceptual framework, the hypotheses that can be formulated are as follows:

H1: A significant difference was found in the liquidity ratio of consumer goods sector companies prior to and during the Coronavirus disease 2019

H2: A significant difference was not found in the liquidity ratio of property and real estate sector companies prior to and during the Coronavirus disease 2019

Differences in Solvability Ratios prior to and during the Coronavirus Disease 2019

The solvency ratio indicates a business's capacity to meet all of its short- and long-term obligations. One type of solvency ratio that can be used is leverage, which is calculated by comparing the amount of debt and capital owned by the company. Generally, the value of debt must be lower than the capital owned by the company so that it can reflect that the company's financial condition is in a proportional portion. The significant decline in sales during the Coronavirus disease 2019 has affected the amount of profit and cash receipts that can be generated by the company. The decrease in the amount of cash during the pandemic will affect the disruption of the company's operational and non- operational activities. In conditions like this, companies tend to increase their debt, both short-term and long-term, to keep the company from going bankrupt during the pandemic. The addition of debt incurred by the company during the COVID-19 pandemic will increase the amount of debt beyond the capital owned by the company. Based on the above conceptual framework, the hypotheses that can be formulated are as follows:

H3: A significant difference was found in the solvability ratio of consumer goods sector companies prior to and during the Coronavirus disease 2019

H4: A significant difference was not found in the solvability ratio of property and real estate sector companies prior to and during the Coronavirus disease 2019

Differences in Solvability Ratios prior to and during the Coronavirus Disease 2019

The Coronavirus disease 2019 that has occurred since March 2020 in Indonesia has had a major impact on the decline in the company's net profit on an ongoing basis. The significant decline in net income was due to rising interest costs and weakening public purchasing power as a result of the implementation of large-scale social restrictions. The Indonesian government imposed restrictions on community activities. If the company's sales decline, the net profit generated will also decrease if the company is not able to minimize the costs incurred. Decreased sales also have an impact on the decline in company assets due to

reduced cash and trade receivables that can be generated by the company. The decrease in net profit, followed by a decrease in the company's total assets, resulted in the company's ROA value experiencing a significant decline during the Coronavirus disease 2019, when compared to prior to the pandemic. Based on the above conceptual framework, the hypotheses that can be formulated are as follows:

H5: A significant difference was found in the profitability ratio of consumer goods sector companies prior to and during the Coronavirus disease 2019

H6: A significant difference was not found in the profitability ratio of property and real estate sector companies prior to and during the Coronavirus disease 2019

4. METHODOLOGY

Population and Sample

Quantitative research design will be used in this research. This sort of research is referred to as comparative causal research, and the research data used are secondary financial statements from the corporation, which can be visited on www.idx.co.id. Observations will be made on the financial performance of real estate and consumer goods sector companies registered on the Indonesia Stock Exchange prior to and during the Coronavirus disease 2019. The population used in this study are real estate and consumer goods sector companies registered on the Indonesia Stock Exchange prior to the Coronavirus disease 2019 (in 2019) and during the Coronavirus disease 2019 (in 2020).

The population for this study is the consumer goods and real estate sector businesses that were registered on the Indonesia Stock Exchange prior to and during the Coronavirus disease 2019 (Year 2020). The reason for selecting the population above is that the researcher wants to examine and determine the variations in financial performance between these firms prior to and during the COVID-19 pandemic. The sample selection technique used in this study is purposive random sampling, with the following criteria for selecting the sample: (1) consumer goods and real estate sector companies registered on the Indonesia Stock Exchange, (2) active in reporting its annual financial statements successively during the research period of December 31, 2019 to December 31, 2020.The number of samples to be used in this study amounted to 146 companies. This sample consists of 60 samples of companies in the consumer goods sector and 86 samples of companies in the property and real estate sector. These companies have been registered on the Indonesia Stock Exchange (IDX) during the research period from December 31, 2019 to December 31, 2020.

Variable Operationalization

The variables used in this study include financial performance as a dependent variable that can be measured using the liquidity ratio using current ratio proxy by divide total current asset with total current liability, solvability ratio using debt to equity ratio proxy by divide total liability with total equity, and profitability ratio using return on asset proxy by divide net income with total asset. The independent variables used in this study is COVID- 19 Pandemic

5. RESULTS AND DISCUSSION

Normality Test

A normality test is used to determine whether or not the distribution of data or study variables is normally distributed. The Kolmogorov-Smirnov One Sample Test was employed in this work to estimate the significance value of normally distributed data. The normalcy test was conducted in this study with a significance level of 0.05. (5 percent). If the p-value is larger than 0.05 (5%) then the data are regularly distributed. In contrast, a p-value of less than 0.05 (5%) indicates that the data are not regularly distributed. The normalcy test is used to choose the appropriate t-test to utilize next. If the data are not normally distributed, the Wilcoxon Signed Rank Test should be employed (Non- Parametric Test). On the other hand, if the data are normally distributed, the paired sample T-test will be utilized (parametric test).

Table 1 Normality Test Result of Consumer Goods Industry

	Kolmogorov-Smirnov [a]		
	Statistics	df	Sig.
CR PRIOR TO COVID-19	0.205	########	0.001
CR DURING COVID-19	0.252	########	0.001
DER PRIOR TO COVID-19	0.150	########	0.002
DER DURING COVID-19	0.203	########	0.001
ROA PRIOR TO COVID-19	0.142	########	0.004
ROA DURING COVID-19	0.157	########	0.001

Based on the results of the Kolmogorov Smirnov one-sample normality test in Table 2 above, the value of the current ratio (CR) variable prior to COVID-19 was 0.001, and the current ratio (CR) during COVID-19 was 0.001. The debt-to-equity ratio variable (DER) prior to COVID-19 showed a value of 0.002 and during COVID-19 of 0.001, while the return on assets (ROA) variable prior to COVID-19 showed a value of 0.004 and during COVID-19 of 0.001. All significant values of the consumer goods sector company variables show a value of less than 0.05 (5%), so it can be concluded that all data on consumer goods sector companies in this study is not normally distributed. Therefore, the difference test that will be used in this study is the non-parametric Wilcoxon Signed Rank Test.

Table 2 Normality Test Result of Real Estate Industry

	Kolmogorov-Smirnov [a]		
	Statistics	df	Sig.
CR PRIOR TO COVID-19	0.333	86	0.001
CR DURING COVID-19	0.414	86	0.001
DER PRIOR TO COVID-19	0.362	86	0.001
DER DURING COVID-19	0.291	86	0.001
ROA PRIOR TO COVID-19	0.215	86	0.001
ROA DURING COVID-19	0.219	86	0.001

Based on the results of the Kolmogorov Smirnov one-sample normality test in Table 2 above, the sig. value of the current ratio (CR) variable prior to COVID-19 was 0.001 and the current ratio (CR) during COVID-19 was 0.001. The debt-to-equity ratio variable (DER) prior to COVID-19 showed a sig. value of 0.001 and during COVID-19 of 0.001. The return on assets (ROA) variable prior to COVID-19 showed a sig. value of 0.001. All values of the real estate sector company variables show a sig. value of less than 0.05 (5%), so it can be concluded that all data on property and real estate sector companies in this study is not

normally distributed. Therefore, the difference test that will be used in this study is the non-parametric Wilcoxon Signed Rank Test.

Wilcoxon Signed Rank Test

Because the data were not normally distributed, the hypothesis was tested using a non-parametric Wilcoxon Signed Rank Test. The purpose of this study was to ascertain whether there were substantial changes in the financial performance of consumer goods and real estate enterprises prior to and during the Coronavirus disease 2019.

Table 3 Wilcoxon Signed Rank Test of Consumer Goods Industry

	CR Prior to COVID19 – During COVID-19	DER Prior to COVID19 – During COVID-19	ROA Prior to COVID19 – During COVID-19
Z	-.876 [b]	-.125 [c]	-3.269 [c]
Asymp. Sig (2- tailed)	0.381	0.9	0.001

Based on Table 3, the current ratio (CR) was 0.381 both prior to and during COVID-19. Because the value is more than 0.05, H1 is rejected. This suggests that there is no discernible variation in the liquidity of consumer goods corporations prior to and during the Coronavirus disease 2019. The debt-to-equity ratio (DER) was 0.900 both prior to and during COVID-19. Because the result is more than 0.05, H3 is rejected. This explains why there is no discernible difference between the solvency of consumer products corporations prior to and during the Coronavirus disease 2019. The return on assets (ROA) variable has a value of 0.001 both prior to and during COVID-19. Because the significance level is less than 0.05, H5 is not rejected. This explains why there is a noticeable variation in the profitability of consumer products firms prior to and during the Coronavirus disease 2019.

Table 4 Wilcoxon Signed Rank Test of Real Estate Industry

	CR Prior to COVID19 – During COVID-19	DER Prior to COVID19 – During COVID-19	ROA Prior to COVID19 – During COVID-19
Z	-.919 [b]	-1.725 [c]	-5.350 [c]
Asymp. Sig (2- tailed)	0.358	0.085	0.001

Based on Table 4, the current ratio variable (CR) had a value of 0.358 both prior to and throughout COVID-19. This value exceeds 0.05, indicating that H2 was rejected. This explains why there was no discernible variation in the liquidity of property and real estate sector firms prior to and during the COVID-19 outbreak. The debt-to-equity ratio (DER) was 0.085 both prior to and during COVID-19. Because this number exceeds 0.05, it may be stated that H4 is rejected. The hypothesis is rejected, indicating that there is no discernible variation in the solvency of property and real estate firms prior to and during the Coronavirus disease 2019. The return on assets (ROA) variable had a value of 0.001 both prior to and throughout COVID-19. Because this result is less than 0.05, H6 is not rejected. This explains

why the profitability of property and real estate sector enterprises was significantly different prior to and during the Coronavirus disease 2019.

Discussion

Table 5 Hypothesis Test Result

No.	Description	Significance	Test Result
1	Difference in liquidity ratio prior to and during COVID-19 on consumer-goods industry	0.381	There is no significant difference
2	Difference in liquidity ratio prior to and during COVID-19 on real-estate industry	0.358	There is no significant difference
3	Difference in solvability ratio prior to and during COVID-19 on consumer-goods industry	0.900	There is no significant difference
4	Difference in solvability ratio prior to and during COVID-19 on real-estate industry	0.085	There is no significant difference
5	Difference in profitability ratio prior to and during COVID-19 on consumer-goods industry	0.001	There is a significant difference
6	Difference in profitability ratio prior to and during COVID-19 on real-estate industry	0.001	There is a significant difference

Non-Parametric test results of consumer goods and real estate sector companies registered on the Indonesia Stock Exchange (IDX) during 2019 (prior to COVID-19) and 2020 (during COVID-19) show that: The results of the Wilcoxon test on the liquidity variable proxied using the current ratio (CR) in consumer goods sector companies show no significant difference in liquidity for companies in the consumer goods sector prior to and during the Coronavirus disease 2019 (H1 rejected). Likewise, the results of research on liquidity variables proxied using the current ratio (CR) in real estate sector companies also show no significant difference in liquidity for companies in the real estate sector prior to and during the Coronavirus disease 2019 (H2 rejected). The condition of the Coronavirus disease 2019 that has occurred in Indonesia since March 2020 does not have a significant impact if compared to prior to Coronavirus disease 2019. Based on the results of the previous descriptive statistics, they also show that the value of the current ratio in consumer goods and real estate sector companies experienced an increase during the Coronavirus disease 2019. This demonstrates that the company still has a substantial amount of assets available to pay off its short-term debt. Consumer goods companies and real estate due to the pandemic conditions that occurred at the beginning of 2020 estimated that there will not add additional debt to expand the company in 2020. Both companies are more focused on the sustainability of operational activities that have been prepared so that they can be in accordance with the established plans. This pandemic condition has made managers give a signal to stakeholders that the company can continue to operate as effectively as possible to keep it running while looking at a more conducive situation for developing the company's business. The results of the research on the current ratio variable are in line with the research conducted by Lowardi and Abdi [5] and Devi et al. [6], which also shows that there is no significant difference in

liquidity levels prior to and during the Coronavirus disease 2019. However, the results of this study contradict the research obtained by Daryanto, Rizki, and Mahardhika [4], which showed that there was a negative and significant difference in liquidity prior to and during the Coronavirus disease 2019.

Furthermore, the results of the Wilcoxon test on the solvency variable, which is proxied using the debt-to-equityratio (DER), in consumer goods sector companies show nosignificant difference in solvency for companies in the consumer goods sector prior to and during the Coronavirus disease 2019 (H3 rejected). Similarly, the results of research on solvency variables, which are proxied using the debt-to-equity ratio (DER), in real estate sector companies, also show no significant difference in solvency for companies in the real estate sector prior to and during the Coronavirus disease 2019 (H4 rejected). The condition of the Coronavirus disease 2019 that has occurred in Indonesia since March 2020 does not have a significant impact on the company's solvency level when compared to prior to the Coronavirus disease 2019. Bad economic conditions during the Coronavirus disease 2019 have forced companies in the consumer goods, property, and real estate sectors to only focus on carrying out main operational activities in order to avoid bankruptcy as a result of the pandemic. The company also does not focus on adding short-term or long-term debt during the Coronavirus disease 2019, which is intended for development and expansion activities. The absence of a difference in DER prior to and during the Coronavirus disease 2019 shows that companies in the consumer goods and property and realestate sectors are still considered capable of financing their operational activities and paying all debts they owe during the pandemic using company capital, not debt financing. This condition makes company managers give a signal to stakeholders and business people that the company can continue to operate as effectively as possible in order to keep running while looking at a more conducive situation for the development and expansion of the company. The results of this study are in line with the research conducted by Devi et al. [6] and Lowardi and Abdi [5], who showed that there was no significant difference in solvency levels prior to and during the Coronavirus disease 2019. The results of this study differ from the research conducted by Daryanto, Rizki, and Mahardhika [4], which showed that there were significant differences in solvency prior to and during the Coronavirus disease 2019.

Next, the results of the Wilcoxon test on the profitability variable, which is proxied using the return on assets ratio (ROA) in consumer goods sector companies, show a differences in the consumer goods sector prior to and during the Coronavirus disease 2019 (H5 not rejected). Similarly, the results of research on profitability variables, which are proxied using the return on assets ratio (ROA) in real estate sector companies, also show differences in profitability for companies in the real estate sector prior to and during the Coronavirus disease 2019 (H6 not rejected). The Coronavirus disease 2019 that has plagued Indonesia since March 2020 has had a broad impact on the company's continuous decline in profitability. Factors that triggered the decline included the weakening of people's consumption power as a result of the implementation of large-scale social restrictions (PSBB) and the implementation of restrictions on community activities (PPKM). During the Coronavirus disease 2019, the company's production and operational activities were hampered, which resulted in the company's being ineffective because it still had to pay its fixed costs. The large number of expenses and interest that had to be paid by the company during the pandemic had a direct impact on the decline in the company's net profit. In addition, sales in consumer goods and property and real estate sector companies that experienced a decline also had an impact on declining company assets due to reduced cash and company accounts receivable. The decline in net profit followed by a decrease in the company's total assets resulted in the ROA value of companies in the consumer goods and property and real estate sectors experiencing a

significant decline during the Coronavirus disease 2019 when compared to prior to the Coronavirus disease 2019. This condition makes company managers give a signal to stakeholders and business people that the company's ROA has decreased during the COVID-19 pandemic. This signal can be interpreted by stakeholders and business people in making investment or business decisions. The results of the research on the ROA variable are directly proportional to the results of research conducted by Daryanto, Rizki, and Mahardhika [4]; Lowardi and Abdi[5]; Devi et al. [6] also showed that there was a significant difference in the level of profitability with ROA proxies for companies in the consumer goods and real estate sectors prior to and during the Coronavirus disease 2019.

6. CONCLUSION

The purpose of this study was to analyze differences in the financial performance of companies in the consumer goods, property, and real estate sectors prior to and during the Coronavirus disease 2019.

The subjects in this study were companies engaged in the consumer goods, property, and real estate sectors registered on the IDX during 2019–2020.

The results showed that there were no significant differences in the level of liquidity in consumer goods and property and real estate sector companies prior to and during the Coronavirus disease 2019. Furthermore, the results of research on the level of solvency in consumer goods and property and real estate sector companies also show that there are no significant differences prior to and during the Coronavirus disease 2019. However, the results of research on profitability variables in consumer goods and property and real estate sector companies show the opposite result, namely that there are significant differences in the periods prior to and during the Coronavirus disease 2019.

This research cannot be separated from many shortcomings and limitations, such as the research period, which is relatively short, only two years, the data sample used is only limited to the consumer goods and property and real estate sectors, and this study only uses three variables, namely liquidity, solvency, and profitability. Based on the shortcomings and limitations above, suggestions that can be used for further research include: conducting research for a longer period so that the results obtained are more accurate; expanding the research sectors that will be used as research samples; and being able to add research variables such as activity ratios and stock returns to the company to be studied.

The findings of this study are anticipated to serve as a source of pertinent information for investors and potential investors as they make financial decisions during the Coronavirus disease 2019 crisis. The findings of this study will also serve as a source of pertinent information for the government regarding the importance of providing appropriate tax incentives to industrial sectors influenced by the Coronavirus disease 2019 and can be used as reference material for further researchers who will conduct research related to performance. financial statements at the time of certain events.

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COMPARATIVE ANALYSIS OF FINANCIAL PERFORMANCE BEFORE AND DURING COVID-19 PANDEMIC

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ABSTRACT
Many industries around the world are impacted by COVID-19 pandemic. In this research, we aim to examine the impact of COVID-19 pandemic to firms' financial performance by analyzing whether there is significant difference between firms' profitability, liquidity, solvency, and activity before and during COVID-19 pandemic. This study uses purposive sampling method which resulted in 105 companies from food and beverages, telecommunication, transportation, tourism, restaurant, and hotel subsectors listed in Indonesia Stock Exchange from 2019 to 2020. We first divide the data into two period, 2019 for the period before COVID-19 pandemic and 2020 for the period during COVID-19 pandemic. Then, we uses paired samples t-test and Wilcoxon signed-rank test for hypothesis testing. The data is processed using IBM SPSS Statistics 26. The results indicate that the profitability and activity of food and beverages companies differ significantly, while liquidity and solvency do not. The solvency of telecommunication companies differs significantly, while profitability, liquidity, and activity do not. The profitability, solvency, and activity of transportation companies differ significantly, while liquidity does not. The profitability, liquidity, solvency, and activity of tourism, restaurant, and hotel companies differ significantly.

Keywords: COVID-19 Pandemic, Profitability, Liquidity, Solvency, Activity

1. INTRODUCTION

The COVID-19 pandemic is an event in which the coronavirus disease 2019 spreads widely and rapidly throughout the world. The first case of COVID-19 was discovered in Wuhan, China in December 2019. The disease caused by the SARS-CoV-2 virus is spreading rapidly throughout the world. This outbreak was officially designated by the World Health Organization (WHO) as a pandemic on March 11, 2020. The COVID-19 pandemic caused a health crisis and a global economic crisis. The International Monetary Fund (IMF) stated that the world experienced the worst recession since 1930 with an estimated global economic growth rate of minus 3.5%. The impact of the global recession in 2020 affected more than 92.9% of the countries in the world.

On March 2, 2020, Indonesia announced its first COVID-19 case. The COVID-19 pandemic is spreading rapidly to all provinces in Indonesia. Strict health protocols were implemented to prevent the spread of the 2019 coronavirus disease. Various policies were also set by the government to deal with the COVID-19 pandemic, namely Pembatasan Sosial Berskala Besar (PSBB) in 2020 which were replaced by Pemberlakuan Pembatasan Kegiatan Masyarakat (PPKM) in 2021. The implementation of various policies by the government has a major impact on society. Community activities are restricted due to the shutdown of public places and transportation routes. The drastic decline in community mobility has an impact on people's purchasing power and consumption. Statistics Indonesia, locally known as Badan Pusat Statistik (BPS) stated that Indonesia's household consumption was minus two point six three percent in 2020. The decline in purchasing power or public consumption led to a decline in company income in various industries. The decrease in income has a direct effect

on the performance of these companies. However, not all industries experienced a decline in performance. Several industries such as the food and beverages, pharmaceutical, textile, telecommunication, and logistic services industry are expected to benefit. The public and the state need to know the impact of the COVID-19 pandemic on companies in various industries that form the basis of the Indonesian economy. The increase or decrease in the financial performance of these companies will affect the country's economy as a whole.

The company's financial performance is one of the things that stakeholders consider when making decisions. Financial performance refers to how effectively and efficiently a company utilizes its resources to generate profits. According to Zheng et al. [1], financial performance determines the long-term growth and viability of the company so it is an important aspect of company performance. Financial performance can be assessed through financial statement analysis. Financial statement analysis using financial ratios is the best choice if stakeholders want to find out about the company's financial condition and development. In the analysis of financial statements, financial ratios are grouped according to the interests of management, investors, and creditors, into profitability, liquidity, solvency, and activity ratios. Many uncertainties in the midst of the COVID-19 pandemic have caused people to hesitate to invest. Having information about the company's financial performance in the midst of the COVID-19 pandemic can reduce public doubts and enable stakeholders to make the right decisions. Evaluation of the impact of the COVID-19 pandemic on the company's financial performance can help companies to take the right steps in dealing with the crisis.

Related Theory

Signaling Theory

Spence [2] explains about two parties who have access to different information in signaling theory. One party will decide whether or not to convey the information it has to the other party. The information will influence the recipient of the information when making a decision. Zhang and Wiersema [3] stated that management sends signals or information about the company in the form of financial statements. Management is assumed to have better information about the company's growth and development than external stakeholders. Information in published financial reports provides external stakeholders with an overview of the company's prospects. Signaling theory addresses the interpretation of signals by stakeholders whether as good or bad signals. An increase in financial performance is interpreted as a good signal while a decrease in financial performance is interpreted as a bad signal. The company will experience profit or loss depending on the decisions taken by external stakeholders based on signal interpretation. Elmarzouky et al. [4] stated that disclosure of information regarding COVID-19 associated with disclosure of performance can provide a signal to stakeholders and the market about the company's ability to deal with the COVID-19 pandemic.

Our Contribution

This paper presents some differences based on the research conducted by Daryanto et al. [5]. In contrast to the said research which used quarterly data for the 2019-2020 period, this study uses annual data for the 2019-2020 period. This study analyzes the financial performance of companies in several subsectors on the Indonesia Stock Exchange, in contrast to the research conducted by Daryanto et al. [5] which analyzes the financial performance of one company. This study is expected to be able to help companies, potential investors and creditors, as well

as the public to gain an understanding of the impact of the COVID-19 pandemic on the company's financial performance.

Paper Structure

The rest of the paper is organized as follows. Section 2 provides the conceptual definitions of the variables used in this paper, which include financial performance, profitability ratio, liquidity ratio, solvency ratio, activity ratio, and COVID-19 pandemic. Section 3 presents the hypotesis development in this study. Then, the methodology used in this study is explained in Section 4. Section 5 presents the results and discussion for this study. Finally, Section 6 concludes the paper and presents direction for future research.

2. CONCEPTUAL DEFINITIONS

Financial Performance

Nnamani et al. [6] stated that financial performance is a subjective measure of how well a company utilizes its assets to generate resources. The company's financial performance will be better if the company utilizes its assets effectively and efficiently. Devi et al. [7] stated that financial performance is strongly influenced by the strategies, actions, and policies implemented by management in order to achieve company goals. Financial performance reflects the company's financial condition based on predetermined standards, criteria and objectives. Stakeholders not only assess the performance and financial condition of the company in one period, but also assess changes that occur between periods. A company's financial performance can be seen in the financial statement, which includes statement of cash flow, statement of financial position, and income statement. The company's financial performance can be analyzed by calculating and interpreting financial ratios from financial statements as explained by Gitman and Zutter [8]. Fraser and Ormiston [9] stated that financial ratios are calculations performed to analyze and compare financial data. There are three ways to compare financial ratios, namely cross-sectional analysis, time-series analysis, and combined analysis. Miswanto et al. [10] stated that financial statement analysis using financial ratios is the best way to find out the company's financial condition. In the analysis of financial performance, financial ratios are categorized into profitability ratios, liquidity ratios, solvency ratios, and activity ratio.

Profitability Ratio

Brigham and Houston [11] explained that profitability ratio is a set of ratios that show the results obtained from asset and debt management by the company. The better the company manages its assets, liabilities, and equity to generate profits, the higher the company's profitability ratio.

Liquidity Ratio

Brigham and Houston [11] explained that liquidity ratio is a ratio that shows the relationship between cash and other current assets and the company's short-term liabilities. A high liquidity ratio reflects that the company is able to settle the company's short-term obligations with its current assets. However, a liquidity ratio that is too high indicates that the company is less effective and efficient in managing its current assets.

Solvency Ratio

Brigham and Houston [11] explained that solvency ratio is a ratio that measures how effective the company is in managing its debt. The use of debt as a source of financing has a greater risk than equity. The use of debt can provide benefits for the company if the interest expense can be covered. A high solvency ratio indicates that the company is having difficulty paying off debt.

Activity Ratio

Brigham and Houston [11] that activity ratio is a ratio that measures how effective the company is in managing its assets. The acquisition of too few assets can reduce the company's opportunity to earn income, on the contrary, the acquisition of too many assets can reduce the company's profit because of the large cost of capital. The more effectively and efficiently the company manages its assets, the higher the activity ratio.

COVID-19 Pandemic

The COVID-19 pandemic is an event that spreads the coronavirus disease 2019 around the world. Symptoms of this disease range from mild symptoms to severe symptoms that can lead to death. The government establishes health protocols and various policies that limit community activities to prevent the spread of this disease. The spread of this disease resulted in a crisis in the Indonesian economy and the world.

3. HYPHOTESIS DEVELOPMENT

Profitability Ratio and the COVID-19 Pandemic

The COVID-19 pandemic has caused a decline in people's purchasing power or consumption. The decrease in demand for products or services due to a decrease in people's purchasing power resulted in a decrease in the company's sales level. According to Santoso [12], the increase in the cost of goods sold occurred in companies, especially for those which obtained raw materials from China. A decrease in the company's sales level that is not accompanied by a decrease in expenses will result in a decrease in company profits. Rababah et al. [13] stated that a few industries had opportunities in the midst of the COVID-19 pandemic. Companies in these industries will experience an increase in demand which will trigger an increase in company profits. The company's profitability ratio will be affected by the increase or decrease in profit during the COVID-19 pandemic.

H_1: There is a significant difference in the profitability ratio of food and beverages companies before and during COVID-19 pandemic.

H_2: There is a significant difference in the profitability ratio of telecommunication companies before and during COVID-19 pandemic.

H_3: There is a significant difference in the profitability ratio of transportation companies before and during COVID-19 pandemic.

H_4: There is a significant difference in the profitability ratio of tourism, restaurant, and hotel companies before and during COVID-19 pandemic.

Liquidity Ratio and the COVID-19 Pandemic

Daryanto et al. [5] stated that the COVID-19 pandemic has made it difficult for companies to obtain cash. The decline in people's purchasing power due to the COVID-19 pandemic resulted in reduced cash inflows from sales. On the other hand, Khatib and Nour [14] stated that companies may increase cash to reduce operational risk due to the COVID-19 pandemic. According to Devi et al. [7], the decrease in purchasing power also causes a buildup of company inventories. The company's liquidity ratio will be affected by the increase or decrease in current assets owned by the company during the COVID-19 pandemic.

H$_5$: There is a significant difference in the liquidity ratio of food and beverages companies before and during COVID-19 pandemic.

H$_6$: There is a significant difference in the liquidity ratio of telecommunication companies before and during COVID-19 pandemic.

H$_7$: There is a significant difference in the liquidity ratio of transportation companies before and during COVID-19 pandemic.

H$_8$: There is a significant difference in the liquidity ratio of tourism, restaurant, and hotel companies before and during COVID-19 pandemic.

Solvency Ratio and the COVID-19 Pandemic

Lowardi and Abdi [15] stated that the COVID-19 pandemic has caused companies to increase debt to finance their operational activities. On the other hand, Devi et al. [7] stated that the decline in company performance during the COVID-19 pandemic resulted in doubts for creditors to provide loans. In accordance with signal theory, disclosure of company performance will provide a signal regarding the company's ability to handle the crisis in the midst of the COVID-19 pandemic [4]. This can influence the creditor's decision to provide loans to the company. The company's solvency ratio will be affected by the increase or decrease in debt levels during the COVID-19 pandemic.

H$_9$: There is a significant difference in the solvency ratio of food and beverages companies before and during COVID-19 pandemic.

H$_{10}$: There is a significant difference in the solvency ratio of telecommunication companies before and during COVID-19 pandemic.

H$_{11}$: There is a significant difference in the solvency ratio of transportation companies before and during COVID-19 pandemic.

H$_{12}$: There is a significant difference in the solvency ratio of tourism, restaurant, and hotel companies before and during COVID-19 pandemic.

Activity Ratio and the COVID-19 Pandemic

Devi et al. [7] stated that the COVID-19 pandemic resulted in a decrease in people's purchasing power. A decrease in people's purchasing power or consumption will cause a decrease in company income. Hevia and Neumeyer, in Sugiharto et al. [16] stated that work delays due to social restrictions during the COVID-19 pandemic caused a decline in company output. This results in reduced opportunities for the company to generate revenue. On the other hand, several industries experienced an increase in demand [1]. The increase in demand will result in an increase in the company's revenue. The company's activity ratio will be affected by the increase or decrease in revenue during the COVID-19 pandemic.

H₁₃: There is a significant difference in the activity ratio of food and beverages companies before and during COVID-19 pandemic.

H₁₄: There is a significant difference in the activity ratio of telecommunication companies before and during COVID-19 pandemic.

H₁₅: There is a significant difference in the activity ratio of transportation companies before and during COVID-19 pandemic.

H₁₆: There is a significant difference in the activity ratio of tourism, restaurant, and hotel companies before and during COVID-19 pandemic.

4. METHODOLOGY

Population, Sample, and Sample Selection Technique

All companies included in the food and beverages, telecommunication, transportation, tourism, restaurant, and hotel subsectors consistently listed on the Indonesia Stock Exchange from 2019 to 2020 constitute the population of this study. The sample in this study was selected using the purposive sampling method with several criteria, namely: (1) Companies that are consistently listed on the Indonesia Stock Exchange in 2019-2020, (2) Companies that issue financial statements consistently from 2019-2020, and (3) Companies that present financial statements as of December 31. Based on these criteria, samples of 105 companies consisting of 29 companies in the food and beverages subsector, 6 companies in the telecommunication subsector, 39 companies in the transportation subsector, and 31 companies in the tourism, restaurant, and hotel subsector was obtained.

Data Collection Technique

All data was collected from the company website, the Indonesia Stock Exchange website (www.idx.co.id), and the IDN Financials website (www.idnfinancials.com). The data was processed using IBM SPSS Statistics 26.

Variable Operationalization

Financial performance is the dependent variable in this study. Financial performance is analyzed by several ratios, namely profitability ratios, liquidity ratios, solvency ratios, and activity ratios. The profitability ratio used is return on assets. The profitability ratio is calculated by dividing net income divided by total assets (Daryanto et al., 2021). The liquidity ratio used is the current ratio. The liquidity ratio is calculated by dividing current assets divided by current liabilities (Daryanto et al., 2021). The solvency ratio used is the debt to assets ratio. The solvency ratio is calculated by dividing total debt divided by total assets (Daryanto et al., 2021). The activity ratio used is asset turnover. The activity ratio is calculated by dividing sales revenue divided by total assets (Daryanto et al., 2021).

The data collected will be tested for each subsector. The normality test was carried out on the data for each subsector. The normality test used for this research is the Shapiro-Wilk test because the sample for each subsector is smaller than 50. The normality test is carried out to determine the test used in hypothesis testing. If the difference in paired data (before and during the COVID-19 pandemic) is normally distributed, hypothesis testing is carried out using paired samples t-test. If the difference in paired data (before and during the COVID-19 pandemic) was not normally distributed, the hypothesis was tested using the Wilcoxon signed-ranks test.

5. RESULTS AND DISCUSSION

Descriptive Statistics

Below are the results of descriptive statistics for each subsector.

Table 1 Descriptive Statistics Results

	N	Minimum	Maximum	Mean	Std. Deviation
Food and Beverages Companies					
ROA BEFORE COVID19	29	-1.369320	0.607168	0.05163824	0.306988659
ROA DURING COVID19	29	-0.154406	8.302364	0.33827176	1.537917403
CR BEFORE COVID19	29	0.023173	12.633702	2.56014931	2.583100711
CR DURING COVID19	29	0.011482	98.634346	5.77751438	18.041081912
DAR BEFORE COVID19	29	0.065126	2.182957	0.51652403	0.459782492
DAR DURING COVID19	29	0.073567	8.207719	0.70268576	1.455052058
AT BEFORE COVID19	29	0.052222	2.240315	1.03024352	0.552791912
AT DURING COVID19	29	0.000000	2.319754	0.85541776	0.542838656
Telecommunication Companies					
ROA BEFORE COVID19	6	-1.484914	0.124733	-0.22926867	0.618530820
ROA DURING COVID19	6	-3.510104	0.119716	-0.59330850	1.431119180
CR BEFORE COVID19	6	0.000405	1.380183	0.54721850	0.475838075
CR DURING COVID19	6	0.002422	1.153136	0.49465683	0.388320614
DAR BEFORE COVID19	6	0.396986	973.406455	162.71495550	397.156127991
DAR DURING COVID19	6	0.510458	3461.977648	577.53180683	1413.084104906
AT BEFORE COVID19	6	0.252719	0.692995	0.50507633	0.174404786
AT DURING COVID19	6	0.243197	3.226271	0.89820867	1.146110025
Transportation Companies					
ROA BEFORE COVID19	39	-0.576034	0.251374	-0.00261979	0.119345234
ROA DURING COVID19	39	-0.453019	0.148910	-0.04961654	0.119154138
CR BEFORE COVID19	39	0.133217	11.721851	1.64664662	2.106064162
CR DURING COVID19	39	0.034831	6.723407	1.35527882	1.313305055
DAR BEFORE COVID19	39	0.030345	1.947414	0.51796246	0.333795660
DAR DURING COVID19	39	0.121994	3.138601	0.60536151	0.516216306
AT BEFORE COVID19	39	0.169682	2.567402	0.64016049	0.578277895
AT DURING COVID19	39	0.088539	2.146186	0.47328908	0.428249926
Tourism, Restaurant, and Hotel Companies					
ROA BEFORE COVID19	31	-0.174768	0.260471	0.01304535	0.074257696
ROA DURING COVID19	31	-0.257469	0.019722	-0.05820719	0.058753701
CR BEFORE COVID19	31	0.500357	39.129482	3.12083274	6.813409838
CR DURING COVID19	31	0.055773	140.245199	6.09418774	24.974243962
DAR BEFORE COVID19	31	0.005899	0.725594	0.36546913	0.178649979
DAR DURING COVID19	31	0.001453	0.815296	0.40413926	0.219006857
AT BEFORE COVID19	31	0.011683	2.951800	0.53549368	0.749647609
AT DURING COVID19	31	0.000580	1.549975	0.28049074	0.395401568

The average profitability ratio during the COVID-19 pandemic has increased compared to the period before the COVID-19 pandemic in Food and Beverages subsector, while it decreased in Telecommunication, Transportation, and Tourism, Restaurant, and Hotel subsectors. The average liquidity ratio during the COVID-19 pandemic has increased compared to the period before the COVID-19 pandemic in Food and Beverages, Tourism, Restaurant, and Hotel subsectors, while it decreased in Telecommunication and Transportation subsectors. The

average solvency ratio during the COVID-19 pandemic has increased compared to the period before the COVID-19 pandemic in Food and Beverages, Telecommunication, Transportation, and Tourism, Restaurant, and Hotel subsectors. The average activity ratio during the COVID-19 pandemic has decreased compared to the period before the COVID-19 pandemic in Food and Beverages, Transportation, and Tourism, Restaurant, and Hotel subsectors, while it increased in Telecommunication subsector.

Normality Test

Based on the results of the normality test for each subsector, it is concluded that all data are not normally distributed, except for the activity ratio in food and beverages companies and the liquidity ratio in telecommunication companies which have Sig. value greater than 0.05.

Hypothesis Testing

Below are the results of hypothesis testing for each subsector.

Table 2 Hypothesis Testing Results

Subsector	Variable	Paired Samples T-Test Sig. (2-tailed)	Wilcoxon Signed-Ranks Test Asymp. Sig. (2-tailed)
Food and Beverages Companies	ROA DURING COVID19 – ROA BEFORE COVID19	0.001	0.018
	CR DURING COVID19 – CR BEFORE COVID19		0.469
	DAR DURING COVID19 – DAR BEFORE COVID19		0.304
	AT BEFORE COVID19 – AT DURING COVID19		
Telecommunication Companies	ROA DURING COVID19 – ROA BEFORE COVID19	0.296	0.173
	CR BEFORE COVID19 – CR DURING COVID19		
	DAR DURING COVID19 – DAR BEFORE COVID19		0.028
	AT DURING COVID19 – AT BEFORE COVID19		0.753
Transportation Companies	ROA DURING COVID19 – ROA BEFORE COVID19		0.001
	CR DURING COVID19 – CR BEFORE COVID19		0.089
	DAR DURING COVID19 – DAR BEFORE COVID19		0.005
	AT DURING COVID19 – AT BEFORE COVID19		0.001
Tourism, Restaurant, and Hotel Companies	ROA DURING COVID19 – ROA BEFORE COVID19		0.000
	CR DURING COVID19 – CR BEFORE COVID19		0.014
	DAR DURING COVID19 – DAR BEFORE COVID19		0.002
	AT DURING COVID19 – AT BEFORE COVID19		0.000

Based on the results of hypothesis testing, there are significant differences in profitability ratios before and during the COVID-19 pandemic in food and beverages (sig. = 0.018), transportation (sig. = 0.001), tourism, restaurant, and hotel companies (sig. = 0.000), but there is no significant difference in telecommunication companies (sig. = 0.173). The significant difference experienced by the said subsectors is because of the impact of COVID-19 pandemic in people's mobility and consumption power which cause a decrease in companies depending on people's mobility such as transportation, tourism, restaurant, and hotel companies. The food and beverages companies experienced an increase because of panic buying done by people during pandemic. On the other hand, the profitability ratio of telecommunication subsector do not differ significantly because the rise in individual customers is being offsetted by the drop in corporate customers because of the restriction of activity implemented by the government during COVID-19 pandemic.

There is a significant difference in the liquidity ratio before and during the COVID-19 pandemic in tourism, restaurant, and hotel companies (sig. = 0.014), but there is no significant difference in food and beverages (sig. = 0.469), telecommunication (sig. = 0.296), and transportation companies (sig. = 0.089). The significant difference in the said subsector is caused by the decrease of the current assets, such as cash and receivables, obtained by company during pandemic, while there is no decrease in current liabilities. Hence, the liquidity ratio decreased during pandemic. The liquidity ratio in food and beverages, telecommunication, and transportation do not differ significantly because the company choose to focus on the continuity and stability of the company during pandemic so there is no significant changes made with the current assets and liabilities during pandemic. The other reason is because of the creditors' reluctance in providing fund for the companies during this uncertain period.

There are significant differences in solvency ratio before and during the COVID-19 pandemic in telecommunication (sig. = 0.028), transportation (sig. = 0.005), tourism, restaurant, and hotel companies (sig. = 0.002), but there is no significant difference between companies. food and beverages (sig. = 0.304). The difference in solvency ratio of telecommunication companies is mainly caused by the liabilities obtained to improve the infrastructure because of the high demand of better connection during pandemic, while the differences in liquidity ratio of transportion, tourism, restaurant, and hotel companies are caused by the lack of increase in assets and the liabilites accumulated because the companies have difficulty in settling their debt during COVID-19 pandemic. On the other hand, the food and beverages companies are able to maintain their solvency during pandemic and didn't increase a significant amount of debt due to the uncertainties during COVID-19 pandemic, so the solvency ratio do not differs significantly.

There was a significant difference in the activity ratio before and during the COVID-19 pandemic in food and beverages (sig. = 0.001), transportation (sig. = 0.001), tourism, restaurant, and hotel companies (sig. = 0.000), but there was no significant difference in telecommunication companies (sig. = 0.753). The significant difference in activity ratio of food and beverages, transportation, tourism, restaurant, and hotel companies is because of the restriction in people's mobility and activity during pandemic. It caused the ineffectiveness and inefficiency of food and beverages companies in using their resources resulting in the decrease of output generated by the companies during pandemic. As for the difference in transportation, tourism, restaurant, and hotel companies, the restriction in people's mobility caused the decrease in the usage of the companies' services during COVID-19 pandemic. The activity ratio of telecommunication companies do not differ significantly because of the offset

of the increase in individual customers' demand by the decrease in corporate customers' demand.

6. CONCLUSION

Based on the results of this study, it can be seen that differences in financial performance before and during the COVID-19 pandemic varied between subsectors. Whether or not there are differences in financial performance as measured by profitability ratios, liquidity ratios, solvency ratios, and activity ratios, it depends on how much impact the COVID-19 pandemic has on the subsector and the decisions taken by the company in dealing with the COVID-19 pandemic. Companies that experience a significant positive or negative impact due to the COVID-19 pandemic will have differences in the ratio of profitability, liquidity, solvency, and activity before and during the COVID-19 pandemic, while companies that are affected are small or are able to maintain their performance in the midst of the COVID-19 pandemic. 19 does not have a significant difference in the ratio of profitability, liquidity, solvency, and activities. The company's decisions and strategies in dealing with the crisis in the midst of the COVID-19 pandemic, such as adding distribution channels, developing new products and services, reducing operational time, temporarily stopping its business, and so on can affect the company's performance in the midst of the COVID-19 pandemic.

The limitations of this research are the small number of subsectors studied and also the short period of the research used. Further research can be carried out by adding to the use of various other sectors or subsectors, such as the automotive subsector and its components, textiles and garments, pharmaceuticals, and others. In addition, research can also be carried out by extending the research period and analyzing changes in the situation caused by the COVID-19 pandemic in the future. Further researchers can also use other financial ratios in order to expand the scope of the variables analyzed. For further research can do regression analysis by using the global covid 19 pandemic as a dummy variable to see its effect on various financial performance variables.

Researchers can also use dummy variables between industries to see the performance of the industrial sectors most affected by the global COVID-19 pandemic

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ANALYSIS OF DIFFERENCE IN STOCK PRICE, MARKET CAPITALIZATION, AND TRADING VOLUME ACTIVITY BEFORE AND DURING COVID-19

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ABSTRACT

The aim for this study is to find whether if there is a difference of stock price, market capitalization, and trading volume before and during COVID-19 pandemic on agriculture and mining sector. The data used for this research is taken from January 1st until April 30th 2020. The sampling technique used on this study was purposive sampling and processed using SPSS 25. The result shows that there are a difference between stock price before and during COVID-19, market capitalization before and during COVID-19, and trading volume before and during COVID-19 on both agriculture and mining sector.

Keywords: Stock Price, Market Capitalization, Trading Volume, COVID-19

1. INTRODUCTION

Stock is the most loved financial instrument on the capital market. Stock is a piece of paper which explains that the owner of the paper is someone who owns a part of a certain company that issued the stock [1-2]. In Indonesia, stock is actively traded in the Indonesian Stock Exchange. A company will issue a share in order to receive funds for its activity. Meanwhile, investors will buy stocks in order to receive stock return.

Stock price is a price that is made from selling and buying activity that occurs in the capital market [3]. A share price might go up and down following its supply and demand. While supply and demand are influenced by some factors, for example macroeconomic, microeconomic, firm performance, social and politics [4]. When there is a high demand for a stock, the price will rise, but when the demand is low, the price will fall. In the Covid-19 pandemic, there can be seen a lot of decremental in the stock price. This might happen because investor loses interest due to decremental in firm income or a rise in firm expenses. When there are a lot of investors that lose interest, this will cause a drop in demand causing the price to go even lower.

Market capitalization is a value of a firm that is listed on a stock exchange. An investor may use market capitalization in order to help themselves find a firm with lower risk to invest their money. A firm with a huge market capitalization indicates that the firm has a lower risk compared to a firm with a lower market capitalization [5]. During the Covid-19 pandemic, there can be seen a lot of decremental in stock price, thus causing the market capitalization of a firm to plunge. This happens because market capitalization is gained by multiplying stock price and outstanding share.

Trading volume activity is defined as a measurement of how big or small a transaction of a stock traded in Stock Exchange. An enormous trading volume indicates a huge buying and selling activities, while small trading volume indicates that there is not much buying and

selling activity happening on the stock exchange. Trading volume itself may be affected by various reasons such as inflation or deflation of currency, interest, regulation, and some events like the Covid-19 pandemic. The presence of the Covid-19 may be a negative sentiment for investors. A bad sentiment may push investors to sell the stock they own or prevent them from buying.

Covid-19 is a disease caused by a virus which identified for the first time in Wuhan on December 2019. The first case of Covid-19 in Indonesia is detected on 2 March 2020 which bring a negative impact on the Indonesian economy which can be seen in many sectors such as the agriculture and the mining sector.

The agriculture sector is a sector that is focused on food and raw materials. The agriculture sector is divided into a few sub-sectors which produce a certain product. Overall, almost all sub-sectors produce goods that are commonly used in the society such as rice, tea, corn, egg, and meat. Even though some of the goods that are produced are considered vital products, the share price, market capitalization, and trading volume from agriculture companies can be seen swaying. This may happen because there might be some disturbance occurring in the company that disturb the production and distribution.

The mining sector is a sector consists of searching, extracting, and processing minerals from earth. Mining sectors do procure some products that are commonly used on society, for example: fuel for vehicle, gas for cooking, silver and gold for jewellery, etc. During Covid-19 pandemic the production, distribution, and demand for such products can be see decreasing. This may happen because firms use less energy, the same goes for citizens where some of them no longer need as much fuel as they used to be since most of them are working from home, they also become more conservative about their spending. For some people, they have to change their priority. These actions might cause a drop in firm income which will reduce investor's interest to buy their stock. Thus, lowering price, market capitalization, and trading volume activity.

Similar research regarding this topic have been done [4-8]

This research is meant to find (1) if there is a difference between stock price before and during Covid-19 in agriculture sector. (2) if there is a difference between stock price before and during Covid-19 in mining sector. (3) if there is a difference between market capitalization before and during Covid-19 in agriculture sector. (4) if there is a difference between market capitalization before and during Covid-19 in mining sector. (5) if there is a difference between trading volume activity before and during Covid-19 in agriculture sector. (6) if there is a difference between trading volume activity before and during Covid-19 in mining sector.

Related Work

Efficient Market Hypothesis

Efficient market hypothesis is a theory invented by Fama [10]. Efficient market hypothesis stated that no one will be able to gain abnormal return in any form of market [10]. There are three types of efficient market. 1) Weak-form efficient (market. A weak-form efficient market is a type of market where it's price is based on historical price. 2) Semi-strong efficient market. A semi-strong efficient market is a type of market which price is made from both

historical price and relevant information that is made public. 3) Strong efficient market. A strong efficient market is a type of market which price is made from historical price, relevant information, and private information that only a selected number of people should have known [11].

Our Contribution

This paper presents some differences on the research object and time frame proposed in Zaky et al. [8]. The objective of this research is to obtain information about the difference in stock price, market capitalization, and trading volume before and pandemic Covid -19 especially agriculture and mining companies from January 1st until April 30th, 2020.

The purpose of the research is to provide information for investors regarding stock prices, market capitalization and trading volume during the covid 19 pandemic. This is done so that investors can make the right investment decisions so that investors do not get big losses.

Paper Structure

The rest of the paper is organized as follows. Section 2 introduces the preliminaries used in this paper, which are the operational variables, hypothesis development, and methodology. Section 3 presents a normality test and a hypothesis test using Wilcoxon Signed Rank Test. Lastly, section 4 concludes the research while suggesting ideas for future research.

2. BACKGROUND

Operational Variables

There are a few variables used in this research, which are stock price, market capitalization, trading volume activity, and Covid-19.

Stock Price. Stock price is a price for a certain stock. In this research, the stock price used is daily closing price which is taken from yahoo finance.

Market Capitalization. Market capitalization is a value from a firm [11]. In this research, market capitalization is gained by multiplying daily closing price and outstanding share. Daily closing price can be gained from yahoo finance and outstanding share can be gained from www.idx.co.id.

Trading Volume Activity. Trading volume activity is a measurement of how much a certain stock is traded in a stock exchange. Trading volume activity can be gained from yahoo finance.

Covid-19. Covid-19 is a virus that infects the respiratory system. In this research, Covid-19 is used to separate two timelines. First, before Covid-19 period which started at 1 January 2020 until before first case of Covid-19 in Indonesia which is 2 March 2020. Secondly, after Covid-19 period which is from 2 March 2020 until 30 April 2020.

Hypothesis Development

Covid-19 pandemic will disturb a country's economy which is shown on a country's stock market. In agriculture sector, Covid-19 cause a disturbance in production and distribution

system. Covid-19 make those who are infected unable to work. For those who are uninfected and able to work, they have to make sure they keep their distance from one to another in order to supress the risk of Covid-19 spreading. These will cause the production rate to decline since there are fewer workers and space available. Those things will cause the firm income to decline, which will cause investors to be less interested and cause lower demand for the stock. A lower demand will lower stock price according to the supply and demand principle.

H_1: There is a significant difference in the stock price of agriculture companies before and during COVID-19 pandemic.

In mining sector, Covid-19 can be seen to disturb production, distribution, and some project. A disturbance in these three points can be considered as a negative information which will cause investors to be less interested and causing lower demand for the stock. A lower demand will lower stock price according to supply and demand principle.

H_2: There is a significant difference in the stock price of mining companies before and during COVID-19 pandemic.

During Covid-19, there can be seen many disturbances in production and distribution which lowers the demand for a stock. A low demand that lowers the price, will also lower market capitalization because market capitalization is gained by multiplying stock price and outstanding share.

H_3: There is a significant difference in the market capitalization of agriculture companies before and during COVID-19 pandemic.

In mining sectors, Covid-19 serves as negative signal. The presence of the Covid-19 has delayed mining projects and caused some mine to be closed temporarily. Such negative information will make investors to be less interested which will cause the demand for the stock to decline. A decline in demand will cause the price to go lower. A lower price will also cause a lower market capitalization because market capitalization is gained by multiplying stock price and outstanding share.

H_4: There is a significant difference in the market capitalization of mining companies before and during COVID-19 pandemic.

In agriculture sector, when Covid-19 becomes a negative influence, investors would start to sell their stocks in order to avoid further loss. But, at the same time, there are less to none people who would like to buy the stock. Hence, there will not be a transaction happening. Since there is no transactions happening, the trading volume will go lower and lower.

H_5: There is a significant difference in the trading volume   activity of agriculture companies before and during COVID-19 pandemic

In mining sectors, Covid-19 have delayed such important project, while also delayed production and lowered firm's income. These conditions will make investors to have less interest in the stock and predict a lower price in the future. Because of the prediction, investors may sell their stock in order to avoid loss. But, no one would buy the stock since they also predict that the price might go lower in the future. Since there are sellers but no buyer, there will be no transaction happening and the trading volume will decline.

H_6: There is a significant difference in the trading volume activity of mining companies before and during COVID-19 pandemic.

Methodology

The data used in this research are taken from yahoo finance and www.idx.co.id. The data are processed using SPSS 25. The population used in this research are firms listed in agriculture sector and mining sector from 1 January 2020 until 30 April 2020, which is divided into two period. 1) period before Covid-19 from 1 January 2020 until 1 March 2020. 2) Period during Covid-19 from 2 March 2020 until 30 April 2020. Kolmogorov Smirnov normality test is used for the classic assumption and Wilcoxon Signed Rank Test is used for hypothesis test.

Table 1, shows the proxy and scale of variables used in this research. The dependent variables used in this research are stock price, trading volume activity, and market capitalization, while the independent variable is Covid-19**.**

Table 1 Agriculture Sector's Normality Test

No	Variables	Proxy	Scale
1	Stock Price	Closing Price	Ratio
2	Trading Volume	Total Volume	Ratio
3	Market Capitalization	Closing Price x Outstanding Shares	Ratio
4	COVID-19	-	-

3. RESULTS

Table 2 Agriculture Sector's Normality Test

	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Stock Price before COVID-19	.339	840	0.000
Stock Price During COVID-19	.309	840	0.000
Market Capitalization Before COVID-19	.213	840	0.000
Market Capitalization During COVID-19	.187	840	0.000
Trading Volume Activity Before COVID-19	.379	840	0.000
Trading Volume Activity During COVID-19	.351	840	0.000

Table 3 Mining Sector's Normality Test

	Kolmogorov-Smirnov		
	Statistics	df	Sig.
Stock Price before COVID-19	0.319	1.680	0.000
Stock Price During COVID-19	0.340	1.680	0.000
Market Capitalization Before COVID-19	0.258	1.680	0.000
Market Capitalization During COVID-19	0.276	1.680	0,000
Trading Volume Activity Before COVID-19	0.365	1.680	0,000
Trading Volume Activity During COVID-19	0.333	1.680	0,000

Normality Test

A Normality test is a test that is used in order to know whether the data used in the research is distributed normally or not [12]. In this research, the normality test used is the Kolmogorov Smirnov normality test, which is a test used for a large number of samples.

From Table 2 and Table 3, there can be seen that the significance of all variables in both sectors are smaller than 5% (0.000 < 0.05) for all variables which indicate that the data is not distributed normally. Therefore, the hypothesis test used will be Wilcoxon Signed Rank Test, because the data is not distributed normally.

Wilcoxon Signed Rank Test

Wilcoxon Signed Rank Test is a test that is used to find if there is a significant difference between two groups that are not distributed normally [12].

Table 4 Agriculture Sector's Wilcoxon Signed Rank Test

		N	Mean Rank	Sum of Ranks
Stock Price before COVID-19 Stock Price During COVID-19	Negative Ranks	639[a]	370.71	236,881.5
	Positive Ranks	77[b]	257.20	19,804.5
	Ties	124[c]		
	Total	840		
Market Capitalization Before COVID-19 Market Capitalization During COVID-19	Negative Ranks	639[d]	370.06	236,466.5
	Positive Ranks	77[e]	262.59	20,219.5
	Ties	124[f]		
	Total	840		
Trading Volume Activity Before COVID-19 Trading Volume Activity During COVID-19	Negative Ranks	414[g]	412.15	170,632
	Positive Ranks	372[h]	372.74	
	Ties	54[i]		
	Total	840		

a. Stock Price During COVID-19 < Stock Price Before COVID-19; b. Stock Price During COVID-19 > Stock Price Before COVID-19; c. Stock Price During COVID-19 = Stock Price Before COVID-19; d. Market Capitalization During COVID-19 < Market Capitalization Before COVID-19; e. Market Capitalization During COVID-19 > Market Capitalization Before COVID-19; f. Market Capitalization During COVID-19 = Market Capitalization Before COVID-19; g. Trading Volume Activity During COVID-19 < Trading Volume Activity Before COVID-19; h. Trading Volume Activity During COVID-19 > Trading Volume Activity Before COVID-19; i. Trading Volume Activity During COVID-19 = Trading Volume Activity Before COVID-19

Table 5 Agriculture Sector's Wilcoxon Test Statistics

	Stock Price before COVID-19 Stock Price During COVID-19	Market Capitalization Before COVID-19 Market Capitalization During COVID-19	Trading Volume Activity Before COVID-19 Trading Volume Activity During COVID-19
Z	-19.604[b]	-19.529[b]	-2.511[b]

	0.000	0.000	0.012
Asymp. Sig (2-tailed)			

Tabel 4 shows the difference happening between stock price, market capitalization, and trading volume activity before and during the Covid-19 pandemic in the agriculture sector. The results show that there are 639 stock prices that are decreasing, 77 stock prices that are increasing, 124 stock prices that do not change with the total data of 840.

On market capitalization variable there are 639 decreasing data, 77 increasing, and 124 remaining the same with the total number of data used is 840 data.

On trading volume activity variable there are 414 increasing data, 372 decreasing data, and 54 data that do not change with the total of 840 data.

Table 5 shows the hypothesis test for the agriculture sector. The result shows that the asymp. Sig for stock price is less than 5% which means there is a significant difference between stock price before and during Covid-19. The same result was also found by Zaky et al. [8], but a different result is gained by He et al [13]. The Covid-19 presence in a country may decrease customers' willingness to spend their money on stock since they need to change their priority due to Covid-19. This will result the demand for a certain stock will decrease, thus making the price of a share go down.

The result shows that the asymp. Sig for market capitalization is less than 5% which means there is a significant difference between market capitalization before and during Covid-19. A similar result was also founded by Kumar and Kumara [5]. Which on their research there was a significant difference in market capitalization before and after Covid-19. This may happen because Covid-19 presence is considered as a negative signal by investors, which led investors to think that the price of a share will go down in the future. This will push investors to hold their money and decide not to buy the share. Such action will lead to the share price of a firm to go down and at the same time market capitalization will also go down because market capitalization is gained by multiplying share price and outstanding share.

The result shows that the asymp. Sig for trading volume activity is less than 5% which means there is a significant difference between trading volume activity before and during Covid-19. This research has a similar research to Zaky et al. [8]. A decremental in trading volume might be caused by a negative sentiment of Covid-19 which led investors to sell their share in order to avoid further loses. At the same time no one or only a few people want to buy the stock. Which result there are not much transaction happening in the stock exchange.

Table 6 Mining Sector's Wilcoxon Signed Rank Test

		N	Mean Rank	Sum of Ranks
Stock Price before COVID-19 Stock Price During COVID-19	Negative Ranks	1,325[a]	751.37	995,559.5
	Positive Ranks	163[b]	688.69	112,256.5
	Ties	192[c]		
	Total	1,680		
Market Capitalization Before	Negative	1,325[d]	754.42	999,607

COVID-19	Ranks			
Market Capitalization During COVID-19	Positive Ranks	163[e]	663.86	108,209
	Ties	192[f]		
	Total	1.680		
Trading Volume Activity Before COVID-19	Negative Ranks	856[g]	780.25	667,894.5
Trading Volume Activity During COVID-19	Positive Ranks	721[h]	799.39	576,358.5
	Ties	103[i]		
	Total	1,680		

a. Stock Price During COVID-19 < Stock Price Before COVID-19; b. Stock Price During COVID-19 > Stock Price Before COVID-19; c. Stock Price During COVID-19 = Stock Price Before COVID-19; d. Market Capitalization During COVID-19 < Market Capitalization Before COVID-19; e. Market Capitalization During COVID-19 > Market Capitalization Before COVID-19; f. Market Capitalization During COVID-19 = Market Capitalization Before COVID-19; g. Trading Volume Activity During COVID-19 < Trading Volume Activity Before COVID-19; h. Trading Volume Activity During COVID-19 > Trading Volume Activity Before COVID-19; i. Trading Volume Activity During COVID-19 = Trading Volume Activity Before COVID-19

Table 7 Mining Sector's Wilcoxon Test Statistics

	Stock Price before COVID-19 Stock Price During COVID-19	Market Capitalization Before COVID-19 Market Capitalization During COVID-19	Trading Volume Activity Before COVID-19 Trading Volume Activity During COVID-19
Z	-26.641[b]	-26.885[b]	-2.53[b]
Asymp. Sig (2-tailed)	0.000	0.000	0.011

Tabel 6 shows the difference happening between stock price, market capitalization, and trading volume activity before and during the Covid-19 pandemic in the mining sector. The results show that there are 1,325 stock prices that are decreasing, 163 stock prices that are increasing, 192 stock prices that do not change with the total data of 1,680.

On market capitalization variable there are 1,325 decreasing data, 163 increasing, and 192 remaining the same with the total number of data used being 1,680 data.

On trading volume activity variable there are 856 increasing data, 721 decreasing data, and 103 data that do not change with the total of 1,680 data.

Table 7 shows the hypothesis test for the mining sector. The result shows that the asymp. Sig. for stock price is less than 5% which means there is a significant difference between stock price before and during Covid-19. The same result was also found by Christianti et al. [4]. The Covid-19 pandemic might cause a firm income to decrease since Covid-19 will make customers spend less money on some products because of a change of priorities. The presence of Covid-19 also makes a firm expense to go up because a firm has to make sure

that their employees are vaccinated, and have their work environment to be sterile. Covid-19 also decreases the production rate and disturbs the distribution of a product. Which all will lead to a decrease in firm net income. A decremental in net income will make investors have less desire to buy the stock which will make the demand for a share go down. When demand goes down, the price will also go down.

The result shows that the asymp. Sig for market capitalization is less than 5% which means there is a significant difference between market capitalization before and during Covid-19. A similar result was also founded by Wisniewska and Kuzma [7]. On their research, there was a significant difference in market capitalization before and after Covid-19. This may happen because Covid-19 presence is considered as a negative signal by investors. In mining sector, the presence of Covid-19 has caused multiple projects to be postponed. Such information led investors to think that the price of a share will go down in the future. This will push investors to hold their money and decide not to buy the share. Such action will lead to the share price of a firm to go down and at the same time market capitalization will also go down because market capitalization is gained by multiplying share price and outstanding share.

The result shows that the asymp. Sig for trading volume activity is less than 5% which means there is a significant difference between trading volume activity before and during Covid-19. This research has similar research to Tarigan et al [6], but a different result is founded by Dewi and Masituloh [14] A decremental in trading volume might be caused by negative impacts of Covid-19 to mining sector like a postpone on projects and decrease in income or rise in expenses which led investors to sell their share because of future share price prediction that does not look very convincing. At the same time, no one or only a few people want to buy the stock. Which result there is not many transactions happening in the stock exchange. Investors during a certain event, tends to take a negative decision [15].

4. CONCLUSION

The aim of this research is to find if there is a difference in stock price, market capitalization, and trading volume activity before and during Covid-19. Based on this research, it can be seen that differences in stock price, market capitalization and trading volume before and during the COVID-19 pandemic in agriculture and mining companies.

Pandemic Covid-19 is a poor sentiment for investors. They worried about future price movements and sold their shares. The company's stock price will decrease due to decreased demand and increased supply. Pandemic COVID-19 disrupts the economy in many countries and profits in many companies. It is a poor signal for investors and potential investors. Profit income will decrease and make investors sell their shares. If the share supply increases and share demand decreases, the share price decrease.

The existence of COVID-19 makes investors prefer to secure their funds which causes price declines. A share price decrease causes a decrease in market capitalization.

COVID-19 caused mining company production to decline. Its projects delay, and revenues declined. Investors want to secure their funds due to the prediction of prices. Investors sell their shares, and share prices decrease. A share price decrease makes market capitalization decreasing

The decrease in stock trading volume makes investors have been worried. They wanted to secure their funds. They are concerned about the decline in stock prices in the future. Investors sell their shares, but no potential investors buy them in the capital market. The trading volume can be a decline.

The limitation of the studies is the observation period. The study uses an eighty-two-day period. The types of industries in this research are agriculture and the mining industry. Further research uses the other industries sectors such as the basic-chemical industry, the property-real estate, the infrastructure, utilities, and transportation. Future research can also use an observation period of three months before and three months during the COVID pandemic.

This study measures stock prices using closing prices. Further research can use other variable measurements such as the average stock price, market capitalization, and average stock trading.

While this research is far beyond perfect, may this research be useful for readers. For company management, since this research found that there are differences in stock price, market capitalization, and trading volume activities before and during Covid-19, management are expected to understand that there are differences in stock price, market capitalization, and trading volume activities before and during Covid-19, therefore management are expected to be able to take an action to prevent stock price, market capitalization and trading volume activity from falling. For investors, may this research help investors to reach a conclusion in their investing activities, investors might want to invest their money in companies that have a high chance to keep their stock price and market capitalization as stable as possible or increasing, investors should also look at the trading volume activity to indicate if there exists a good demand for the stock to avoid losses. Lastly, for further research, may this research help future researchers in terms of providing references.

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THE IMPACT OF COVID-19, MARKET CAPITALIZATION, STOCK TRADING VOLUME, AND LARGE-SCALE SOCIAL RESTRICTIONS ON STOCK RETURNS

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ABSTRACT

The purpose of this research is to determine the effect of Covid-19, market capitalization, stock trading volume and large-scale social restrictions on stock returns. This research uses agriculture companies and property, real estate and building construction companies listed in Indonesian Stock Exchange from March 2, 2020 to December 31, 2020. The Covid-19 measured by growth of positive confirmed cases. The results of research in the agriculture sector show that growth of positive confirmed cases has a negative significant influence on stock return, market capitalization has no significant influence on stock return, stock trading volume and large-scale social restrictions have a positive significant influence on stock return. The results of research in the property, real estate and building construction sector show that growth of positive confirmed cases has no significant influence on stock return, market capitalization has a negative significant influence on stock return, stock trading volume and large-scale social restrictions have a positive significant influence on stock return.

Keywords: Stock Return, Covid-19, Market Capitalization, Stock Trading Volume, Large-Scale Social Restrictions

1. INTRODUCTION

The capital market is a meeting place for companies that need funds and investors who want to invest. The capital market is a place for buying and selling financial instruments consisting of stocks, bonds and other financial instruments. The motivation of investors in investing is the rate of return that will be obtained which is commonly called return. Investors who invest in stocks will get stock returns.

An unexpected event that is currently sweeping the world is the COVID-19 pandemic. The covid-19 virus was first discovered in the city of Wuhan, China at the end of 2019. This covid-19 virus has spread to various countries including Indonesia. The first positive confirmed case in Indonesia was found on March 2, 2020. The spread of the covid-19 virus can affect public health but can also affect the economy [1]. The stock market, which is one of the pillars of the capital market in Indonesia, has also been affected by the COVID-19 pandemic. The decline in the Composite Stock Price Index on the Indonesia Stock Exchange in April is evidence that the COVID-19 pandemic can affect stock prices so that stock returns also decline.

Market capitalization is the total value of shares owned by the company. Market capitalization is one of the factors that investors consider before making an investment. Companies with large market capitalization are usually companies that have long been established and experienced so that the company's condition is stable. This causes stock prices to tend to be stable so that stock returns are stable. Companies with small market capitalization are usually companies that are developing and have the potential to continue to

grow in the future so that the company's condition becomes unstable. This causes stock prices to fluctuate so that the resulting stock returns also fluctuate.
Stock trading volume can affect stock returns. Stock trading volume is the number of shares traded each day. A large stock trading volume indicates that a stock is favored and in demand by investors so that it will affect stock returns.

The Indonesian government's efforts to deal with the spread of the COVID-19 virus are through a policy called large-scale social restrictions. This policy limits community activities and activities in public places such as working from home and studying online.

Research by Hung, Hue and Duong [2] found that the growth of positive confirmation cases had a significant negative effect on stock returns. According to Bahrini and Filfilan [3] the growth of positive confirmation cases has no significant effect on stock returns.

Hung et al. [2] and Al-Awadhi and Alhammadi [9] in their study found that market capitalization had a significant negative effect on stock returns. Research conducted by Nguyen et al. [4] found that market capitalization has a significant positive effect on stock returns.

According to Karwitha et al. [5] found that stock trading volume has a significant positive effect on stock returns. In contrast to research by Hariyanto [10] which found that stock trading volume has a significant negative effect on stock returns.

Hung et al. [2] found that lockdown had a significant positive effect on stock returns. This is different from the research by Eleftheriou and Patsoulis [8] which found that the lockdown had a significant negative effect on stock returns. The differences in the results of previous studies that have been described above, the researchers are interested in conducting research on how the influence of the growth of positive confirmation cases, market capitalization, stock trading volume and large-scale social restrictions on stock returns.

Literature Review

Research conducted by Hung et al. [2] using the dependent variable stock return and independent variables, namely the growth of positive confirmation cases, market capitalization and lockdown. This study uses a sample of 733 companies listed on the Ho Chi Minh Stock Exchange and the Hanoi Stock Exchange in 2020. The results of this study indicate that the growth of positive confirmation cases and market capitalization has a significant negative effect on stock returns, while lockdown has a significant positive effect on stock returns.

Research conducted by Nguyen et al. [4] using the dependent variable stock return and independent variables, namely the growth of positive confirmation cases, market capitalization and lockdown. This study uses 50 samples of banking, finance and insurance companies listed on the Vietnam Stock Exchange during the period 30 January 2020 to 15 May 2020. The results of this study are the growth of positive confirmation cases has a significant negative effect on stock returns, while market capitalization and lockdown have a positive effect. significant to stock returns.

Karwitha et al. [5] conducted a study using stock returns as the dependent variable and stock trading volume as the independent variable. This study uses a sample of 64 companies in

Kenya in 2004-2016. The results of this study indicate that the volume of stock trading has a significant positive effect on stock returns.

Research conducted by Hariyanto [10] using the dependent variable stock return and independent variables, namely the volume of stock trading and market capitalization. The sample used in this study were 62 companies listed on the Indonesia Stock Exchange for the period December 2009 – May 2010 and December 2019 – May 2020. The results of this study are that stock trading volume and market capitalization have a significant negative effect on stock returns.

Our Contribution

This research was conducted with the hope of providing the following benefits: (1) Through this research, it is hoped that it can provide benefits and information to the government in dealing with the COVID-19 pandemic, which can affect the economy, especially the stock market. With this research, the government can choose and make appropriate strategies for handling the COVID-19 pandemic to increase and restore investor confidence to continue investing in stocks. (2) This research is expected to provide benefits and information to investors regarding stock returns. The information provided can help investors to see profitable investment opportunities and minimize the risk of loss during the COVID-19 pandemic. (3) Through this research, it is expected to increase knowledge and insight regarding the importance of the influence of the covid-19 pandemic, market capitalization, stock trading volume and large-scale social restrictions on stock returns.

2. BACKGROUND

Stock Return

Hanafi and Halim [11] define return as "change in value between period t+1 and period t plus other incomes that occur during the t period." It can be explained that the difference in stock price changes between period t+1 and period t can be referred to as stock returns. Returns obtained from investments can be in the form of gains or losses [12]. Jogiyanto [13] states that return is the result obtained from investment". Stock return is the rate of return obtained by investors who invest in stocks. Return is one of the factors that motivate investors to invest [14]. Stock returns can be referred to as gains or losses obtained by investors who invest in stocks.

An Overview of Relations between Positive COVID-19 Confirmation Case Growth, Market Capitalization, Trading Volume, and Large-Scale Social Restrictions on Stock Returns

The growth of positive confirmed cases is the increase in the number of people who have tested positive for COVID-19 from day to day. The lack of awareness and cooperation between the community and the government has led to the uncontrolled spread and transmission of the virus so that the number of people infected is increasing. The COVID-19 pandemic not only affects human health, but also has an impact on the economy, especially in the stock market. The company's sustainability in the future is in question because it requires its employees to work from home as a way to prevent the transmission of the covid-19 virus which will affect the company's performance. Also, financial markets tend to react to a new event such as the COVID-19 pandemic that is currently engulfing various countries [15]. The COVID-19 pandemic has made investors worried about the company's sustainability, so they

responded by selling shares. Through the act of selling shares, the stock price can decrease so that the stock return also decreases. The growth of positive confirmation cases can provide a negative signal for investors regarding the small stock returns obtained.
Ha1: The growth of positive confirmation cases has a negative effect on stock returns.

Market capitalization is obtained from the closing price of the shares multiplied by the number of shares outstanding. Large companies can be characterized by a large market capitalization. According to Ibrahim and Bala [16] companies with large market capitalization have a lower risk. It is said that the risk is lower because the company's growth is stable so that it can reduce fluctuations in stock prices which will affect stock returns. Companies with a small market capitalization still have the potential to grow in the future, so the company's condition is unstable so it has a higher risk. It is said that the risk is higher because the company's growth is unstable which can make stock prices fluctuate and will affect stock returns. Market capitalization can provide a negative signal for investors regarding the small stock returns obtained.
Ha2: Market capitalization has a negative effect on stock returns.

Stock trading volume is the number of shares traded in a certain period of time. Large stock trading volume indicates that certain stocks are actively traded and become the target of investors. An increase in stock trading volume indicates an increase in demand for shares by investors so that stock returns also increase [10]. Stock trading volume can provide a positive signal for investors regarding the amount of stock returns obtained.
Ha3: Stock trading volume has a positive effect on stock returns.

In order to prevent the spread of the COVID-19 virus, the Indonesian government has implemented a large-scale social restriction policy. The Indonesian government has not implemented a lockdown like in other countries considering that the economy is also important to maintain during the COVID-19 pandemic. Through the large-scale social restrictions policy, it is expected to be able to restore the economy in Indonesia. The large-scale social restrictions policy can provide a positive signal for investors because this policy can bring positive changes to the stock market. Positive changes in the stock market will affect stock prices so that stock returns will increase.
Ha4: Large-scale social restrictions have a positive effect on stock returns.
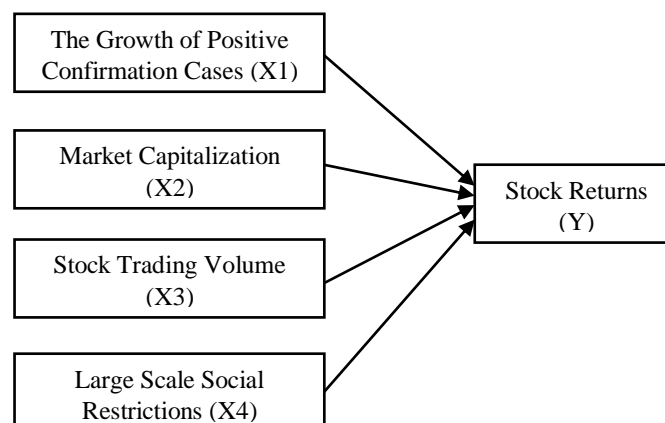
Research Model

Figure 1 Research Framework

3. RESEARCH METHOD

Population and Sample

The population used in this study were companies in the agricultural sector and property, real estate and building construction sectors listed on the Indonesia Stock Exchange for the period 2 March – 31 December 2020. The sample selection technique used purposive sampling. According to Sekaran and Bougie [17] purposive sampling is a sample selection technique through predetermined criteria. The criteria used are: 1) Agricultural companies, and Property, real estate and building construction companies listed on the Indonesia Stock Exchange in the period 2 March – 31 December 2020; 2) Agricultural companies and Property, real estate and building construction companies that present stock prices, market capitalization and stock trading volumes for the period 2 March – 31 December 2020;

The number of company data in the agricultural sector is 21 companies with a research period from March 2 to December 31, 2020 so that the number of samples used in the study is 4,200 samples. In the property, real estate and building construction sectors, 89 companies used data and only 82 companies met the criteria. The total number of samples used is 16,400 samples with a research period from March 2 to December 31, 2020.

Methodology

The dependent variable is a variable that is influenced by the independent variable. The dependent variable in this study is stock returns. The independent variable is a variable that affects the dependent variable. The independent variables in this study are the growth of positive confirmation cases, market capitalization, stock trading volume and large-scale social restrictions.

The formula used in measuring stock returns is as follows:

$$R_t = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$$

The growth of positive confirmed cases can be measured by the following formula:

$$CASE\_G_{i,t} = \frac{CASE_{i,t} - CASE_{i,t-1}}{CASE_{i,t-1}}$$

Market capitalization can be measured by the following formula: *Ln (Market capitalization)*

Stock trading volume can be measured by the following formula: *Ln (Number of Shares Traded)*

Large-scale social restrictions were measured using the following dummy variables: (0=if day t is not the day the large-scale social restrictions is implemented, 1= if day t is the day the large-scale social restrictions is implemented, 2= if day t is the day of implementation of the Transitional large scale social restrictions.

Table 1 Variable Operationalization

Variables	Measurement	Scales
Stock Returns (Y)	$R_t = \dfrac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}$	Ratio
The growth of positive confirmed cases (X1)	$CASE\_G_{i,t} = \dfrac{CASE_{i,t} - CASE_{i,t-1}}{CASE_{i,t-1}}$	Ratio
Market capitalization (X2)	*Ln (Market capitalization)*	Ordinal
Stock trading volume (X3)	*Ln (Number of Shares Traded)*	Ordinal
Large-scale social restrictions (X4)	Dummy variables: 0 = if day t is not the day the large-scale social restrictions is implemented, 1 = if day t is the day the large-scale social restrictions is implemented, 2= if day t is the day of implementation of the Transitional large scale social restrictions.	Nominal

Estimation Method

Panel data regression will generate a different coefficient intercept and slope for each company and in different time periods. Based on Chow test, Hausman test and Lagrange, and Multiplier test that have been run, this research used the random effect model as its estimation model.

Data Analysis Method

This study uses data analysis method as follow:

Multiple Linear Regression Test

Multiple regression model is a model that has more than one independent variable. Through multiple linear regression test, it can be seen that the coefficient value of each variable is either positive or negative. This study uses multiple linear regression to determine the effect of the growth of positive confirmation cases, market capitalization, stock trading volume and large-scale social restrictions on stock returns. The following is the multiple regression model used in the study:

RETURN = α + β_1 COVID-19 + β_2 CAPITALIZATION + β_3 VOLUME + β_4 LARGE-SCALE SOCIAL RESTRICTIONS + ε

4. FINDINGS AND DISCUSSION

Table 2 shows the results of descriptive statistical tests in agriculture.

Table 2 Descriptive Statistics Agriculture Sector

	Return	**Covid-19**	**Capita-lization**	**Volume**	**Large Scale Social Restriction**
Mean	0.001303	0.047437	27.9319	4.966777	1.445
Median	0	0.016982	28.32978	5.637189	2
Max	0.347222	2.166667	30.79741	9.098029	2
Min	-0.169231	0	25.34963	0	0
Std Dev	0.034414	0.163946	1.458908	2.267176	0.732873
Obs	4200	4200	4200	4200	4200

Based on Table 2, it can be seen that stock returns have a mean value of 0.001303. Stock returns have a maximum value of 0.347222 and have a minimum value of -0.169231.

The growth of positive confirmed cases (covid-19) has a mean value of 0.047437. The growth of positive confirmed cases has a maximum value of 2.166667 and has a minimum value of 0.000000.

Market capitalization has a mean value of 27.93190. Market capitalization has a maximum value of 30.79741 and has a minimum value of 25.34963.

Trading volume has a mean value of 4.966777. Trading volume has a maximum value of 9.098029 and has a minimum value of 0.000000.

Large Scale Social Restriction has a mean value of 1.445000. The Large-Scale Social Restriction has a maximum value of 2.000000 and has a minimum value of 0.000000.

Table 3 Descriptive Statistics Property, Real Estate and Building Construction Sector

	Return	**Covid-19**	**Capita-lization**	**Volume**	**Large Scale Social Restriction**
Mean	0.000502	0.047437	27.64194	4.254793	1.445
Median	0	0.016982	27.60147	4.587711	2
Max	0,746575	2.166667	32.21127	9.54016	2
Min	-0.345455	0	24.19315	0	0
Std Dev	0.040088	0.163932	1.628528	2.741816	0.732808
Obs	16400	16400	16400	16400	16400

Based on Table 3, it can be seen that stock returns have a mean value of 0.000502. The stock return has a maximum value of 0.746575 and has a minimum value of -0.345455.

The growth of positive confirmed cases (Covid-19) has a mean value of 0.047437. The growth of positive confirmed cases has a maximum value of 2.166667 and has a minimum value of 0.000000.

Market capitalization has a mean value of 27.64194. Market capitalization has a maximum value of 32.21127 and has a minimum value of 24.19315.
Trading volume has a mean value of 4.254793. Trading volume has a maximum value of 9.540160 and has a minimum value of 0.000000.

Large Scale Social Restriction has a mean value of 1.445000. The large-scale social restriction has a maximum value of 2,000000 and has a minimum value of 0.000000.

Regression Result

Based on Table 4, the regression equation in agriculture is formulated as follow:

RETURN = 0.006571 – 0.007504COVID-19 – 0.000410 CAPITALIZATION + 0.000873VOLUME + 0.001529 LARGE SCALE SOCIAL RESTRICTIONS + ε

Table 4 Agricultural Sector Multiple Linear Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.006571	0.010636	0.617816	0.5367
COVID_19	-0.007504	0.003431	-2.187226	0.0288
Capitalization	-0.000410	0.000393	-1.044784	0.2962
VOLUME	0.000873	0.000255	3.419500	0.0006
Large Scale Social Restrictions	0.001529	0.000775	1.973035	0.0486

The results of the agriculture sector hypothesis test based on Table 4 can be concluded as follows:

The coefficient value of the positive confirmed case growth variable (COVID-19) is -0.007504. The significance level used is 5%. The probability value is 0.0288 (< 0.05), which means that the growth of positive confirmation cases has a significant negative effect on stock returns. So, it can be concluded that Ha1 is accepted.

The market capitalization variable coefficient value is -0.000410. The significance level used is 5%. The probability value is 0.2962 (> 0.05), which means that market capitalization has no significant effect on stock returns. So, it can be concluded that Ha2 is rejected.

The coefficient value of the stock trading volume variable is 0.000873. The significance level used is 5%. The probability value is 0.0006 (< 0.05), which means that the stock trading volume has a significant positive effect on stock returns. So, it can be concluded that Ha3 is accepted.

The coefficient value of the large-scale social restriction variable is 0.001529. The significance level used is 5%. The probability value is 0.0486 (< 0.05), which means that the large-scale social restriction has a significant positive effect on stock returns. So, it can be concluded that Ha4 is accepted.

Table 5 The Result of Hypothesis Testing Agriculture Sector

Hypothesis	Coefficient	Prob	Result
Ha1	-0.007504	0.0288	Ha1 accepted
Ha2	-0.000410	0.2962	Ha2 rejected
Ha3	0.000873	0.0006	Ha3 accepted
Ha4	0.001529	0.0486	Ha4 accepted

Table 6 Property, Real Estate and Building Construction Sector Multiple Linear Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.007363	0.005434	1.355009	0.1754
COVID_19	-1.92E-05	0.002035	-0.009452	0.9925
Capitalization	-0.000410	0.000198	-2.069253	0.0385
VOLUME	0.000550	0.000118	4.666798	0.0000
Large Scale Social Restrictions	0.001480	0.000456	3.245077	0.0012

Based on Table 6, the regression equation is formulated as follow:
RETURN = 0.007363 – 0.0000192 COVID-19 – 0.000410 CAPITALIZATION + 0.000550 VOLUME + 0.001480 LARGE-SCALE SOCIAL RESTRICTIONS + ε

The results of the hypothesis testing of the property, real estate and building construction sectors based on Table 5 can be concluded as follows:

The coefficient value of the positive confirmed case growth variable (COVID-19) is -0.0000192. The significance level used is 5%. The probability value is 0.9925 (> 0.05), which means that the growth of positive confirmation cases has no significant effect on stock returns. So, it can be concluded that Ha1 is rejected.

The market capitalization variable coefficient value is -0.000410. The significance level used is 5%. The probability value is 0.0385 (< 0.05), which means that market capitalization has a significant negative effect on stock returns. So, it can be concluded that Ha2 is accepted.

The coefficient value of the stock trading volume variable is 0.000550. The significance level used is 5%. The probability value is 0.0000 (< 0.05), which means that the stock trading

volume has a significant positive effect on stock returns. So, it can be concluded that Ha3 is accepted.

The coefficient value of the the large-scale social restriction variable is 0.001480. The significance level used is 5%. The probability value is 0.0012 (< 0.05), which means that the large-scale social restriction has a significant positive effect on stock returns. So, it can be concluded that Ha4 is accepted.

Table 7 The Result of Hypothesis Testing Property, Real Estate and Building Construction Sector

Hypothesis	Coefficient	Prob	Result
Ha1	-0.0000192	0.9925	Ha1 rejected
Ha2	-0.000410	0.0385	Ha2 accepted
Ha3	0.000550	0.0000	Ha3 accepted
Ha4	0.001480	0.0012	Ha4 accepted

Determinant Test Result

The value of the coefficient of multiple determination (Adjusted R-squared) in the agricultural sector is 0.005799. These results indicate that the growth variables of positive confirmation cases, market capitalization, stock trading volume and the large-scale social restriction can explain the stock return variable of 0.5799%, while the rest can be explained by other variables.

The value of the coefficient of multiple determination (Adjusted R-squared) in the property, real estate and building construction sectors is 0.001980. These results indicate that the growth variables of positive confirmation cases, market capitalization, stock trading volume and the large-scale social restriction can explain the stock return variable of 0.1980%, while the rest can be explained by other variables.

Discussion

The results of testing the first hypothesis in the agricultural sector show that the growth of positive confirmation cases has a significant negative effect on stock returns. These results are in line with research conducted by Hung et al. [2] and Al-Awadhi and Alhammadi [9] which found that the growth of positive confirmation cases had a significant negative effect on stock returns. Based on signalling theory, the growth of positive confirmation cases can give negative signals to investors regarding the decline in stock returns obtained. This means that the higher the growth of positive confirmation cases, the lower the stock return.

The results of testing the first hypothesis in the property, real estate and building construction sectors show that the growth of positive confirmation cases has no significant effect on stock returns. This result is in line with research by Bahrini and Filfilan [3] which found the growth of positive confirmation cases had no significant effect on stock returns but was not in line

with research by Hung et al. [2] and Al-Awadhi and Alhammadi [9] which found that the growth of positive confirmation cases had a significant negative effect on stock returns. Based on the signal theory, the growth of positive confirmation cases in the property, real estate and building construction sectors cannot provide a signal to investors regarding stock returns. This is because in the digital era like now, people can use social media to find information in the property sector, so the COVID-19 pandemic condition will not hinder people who have needs in the property sector such as houses.

The results of testing the second hypothesis in the property, real estate and building construction sectors show that market capitalization has a significant negative effect on stock returns. These results are in line with research conducted by Hung et al. [2] and Al-Awadhi and Alhammadi [9] which found that market capitalization has a significant negative effect on stock returns. Based on signal theory, market capitalization can provide a negative signal for investors regarding the decline in stock returns. This means that companies with large market capitalization will decrease the resulting stock returns. Companies with large capitalization have lower risk, have experience and stable growth so that stock prices tend to be stable and the resulting stock returns are also stable.

The results of testing the second hypothesis in the agricultural sector show that market capitalization has no significant negative effect on stock returns. This result is in line with research by Taslim and Wijayanto [18] which found that market capitalization does not have a significant negative effect on stock returns but is not in line with research by Hung et al. [2] and Al-Awadhi and Alhammadi [9] which found that market capitalization has a significant negative effect on stock returns. Based on signal theory, market capitalization cannot provide a signal for investors regarding the stock returns obtained.

The results of testing the third hypothesis in the agricultural sector as well as property, real estate and building construction indicate that stock trading volume has a significant positive effect on stock returns. These results are in line with research conducted by Karwitha et al. [5] which found that stock trading volume has a significant positive effect on stock returns. Based on signal theory, stock trading volume can provide a positive signal for investors regarding the increase in stock returns obtained. This means that the greater the volume of stock trading, the greater the stock return.

The results of testing the fourth hypothesis in the agricultural sector as well as property, real estate and building construction indicate that large-scale social restrictions have a significant positive effect on stock returns. These results are in line with the research conducted by Hung et al. [2] and Nguyen et al. [4] which found that the lockdown had a significant positive effect on stock returns. This means that the large-scale social restriction policy that is successfully implemented will increase stock returns. Based on the signal theory, large scale social restriction can provide a positive signal for investors regarding the increase in stock returns obtained. The efforts made by the Indonesian government regarding the implementation of the large-scale social restriction policy have increased investor confidence. Through these tangible results, investors are no longer worried about economic conditions that will affect the stock returns obtained.

5. CONCLUSION

The growth of positive confirmed cases has a significant negative effect on the agricultural sector. Indonesia is an agricultural country where most of the population works as farmers.

People who work as farmers are usually relatively old, so that in conditions of the COVID-19 pandemic, parents are vulnerable to being infected with the Covid-19 virus. If the farmers are infected with COVID-19, then the impact will be on food production. The food production process that is not smooth will affect the company's performance. Declining company performance can make investors worry about declining stock prices resulting in a decrease in stock returns. Meanwhile, in the property, real estate and building construction sectors, it was found that there was no significant effect between the growth of positive confirmation cases and stock returns. This is because the public can seek information related to their needs in the property sector by utilizing social media without having to meet face-to-face with property owners to avoid the transmission of the COVID-19 virus.

Market capitalization has a significant negative effect on stock returns in the property, real estate and building construction sectors. Companies with large market capitalization have a lower risk because the company's condition is stable. Stock prices will not experience significant changes so that stock returns are also stable.

Stock trading volume has a significant positive effect on stock returns. This is because the large stock trading volume indicates that the stock is in demand and targeted by investors. Because the stock is actively traded, it will increase the stock price which will increase the stock return obtained.

Large-scale social restrictions have a significant positive effect on stock returns. This positive influence shows that the large-scale social restriction policy is successful and effective in responding to the COVID-19 pandemic. The successful implementation of the large-scale social restriction policy has increased investor confidence. So, investors will not sell their shares so that stock returns will not decrease.

The limitation of this study is the research sample used only in 2020. The sector used in this study is limited to the agricultural sector as well as property, real estate and building construction. The independent variables used are only limited to the growth of positive confirmation cases, market capitalization, stock trading volume and large-scale social restrictions.

Based on the limitations that exist in the study, the researchers provide suggestions for further research. The first suggestion is to add sectors other than the agriculture sector and the property sector, real estate and building construction, so that the results of the research can assist investors in seeing investment opportunities during the COVID-19 pandemic for all companies in Indonesia such as the manufacturing sector, the consumer goods industry sector and the infrastructure sector, utilities and transportation. The second suggestion is to increase the research period of more than one year, so that companies can make various efforts and implement strategies to maintain trading volume and stock prices during the covid-19 pandemic that affects stock returns and for investors to know the condition of the company in the long term before making decisions. investment. The third suggestion is to add other independent variables that are not used in this study such as stock trading frequency, return on assets, price to book value and debt to equity ratio with the aim of knowing how the influence of other independent variables on stock returns. The variables of stock trading frequency, return on assets, price to book value and debt to equity ratio can be used as consideration for investors before making investment decisions in stocks.

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THE IMPACT OF COVID-19, TRADING VOLUME ACTIVITY AND MARKET CAPITALIZATION ON STOCK RETURN OF LQ-45 COMPANIES

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ABSTRACT

The objective of this research is to analyze the impact of daily growth of Covid-19 positive case, Trading Volume Activity (TVA), and market capitalization on LQ-45 companies' stock return in IDX on the year 2020. This research uses multiple regression models on sample size of 41 companies using non-probability sampling method. This research's analysis approach is as follow: statistical descriptive analysis, t-test, F-test and Coefficient of Determination test. Data processing in this research is done by Microsoft Excel and Eviews 12. This study uses Signalling Theory, Black Swan Theory and Efficient Market Hypothesis Theory as grand theories to explain the relationship between variables used in this study and resulted that the daily growth of Covid-19 positive case and TVA partially have a positive effect on stock return, while market capitalization has a negative effect on stock return. This research is designed to be beneficial for investors as a basis for making investment decisions, as well as assisting company management regarding the management of company performance to increase stock prices.

Keywords: Covid19, trading volume, market capitalization, stock return

1. INTRODUCTION

Capital market is a non-bank financial institution that provides platform for trading of securities such as bonds, mutual funds and stocks [1]. Shares are company ownership rights owned by investors in the expectation of obtaining a return which are dividends and capital gains. If investors sell their shares with higher price compared to the price when it was bought, capital gains are obtained. Investors who want to get high return must sell and buy shares at the right time. Based on these objectives, experts have developed various ways and methods to predict stock price fluctuations in the capital market.

Stock price fluctuations can be influenced by several factors and events. The emergence of a phenomenon, which is the transmission of a deadly virus called *Severe Acute Respiratory Syndrome Coronavirus* 2 (SARS-CoV-2) is one of the factors that has a major impact on the capital market. This virus was first discovered in Wuhan, China in December 2019. This virus attacks almost all countries in the world in the span of several months. The first corona case in Indonesia was reported by the President of the Republic of Indonesia, Joko Widodo, on March 2, 2020. According to Administrator [2], at that time the corona virus had spread to more than 60 countries and had infected 88,382 people and killed 2,996 people.

Finally, on March 9, 2020, the World Health Organization (WHO) proclaimed the COVID-19 outbreak as a pandemic. In April 2020, the Indonesian Ministry of Health released Circular Letter No HK.02.02/I/385/2020 on the usage of masks and the supply of handwashing facilities with soap to prevent the spread of Covid-19, as well as a request for a public awareness campaign to overcome this pandemic.

The Indonesian government has also implemented several policies to break the transmission line of the COVID-19 virus. These policies include the closure of schools and universities, restrictions on the operation of offices, restaurants, shopping centres, places of worship and several public transportation facilities, as well as a prohibition on going out of town. This situation resulted in the collapse of the country's economy as a result of the government's policy to temporarily close several businesses and reduce the needs of the community due to restrictions on these activities. This pandemic caused a sharp increase in risk in the financial sector, which was transmitted to other industries. However, each industry is affected to varying degrees and the response of each industry also varies.

According to behavioural financial theory, an emergency situation like this can affect the psychology and behaviour of investors in their decision-making. Shareholders analyze market conditions and can usually predict future stock price fluctuations which are used as a basis for determining investment strategies. Uncertain global economic conditions like this make some shareholders hesitate to sell their shares, but there are also shareholders who want to sell their shares immediately to avoid the risk of greater losses in the future.

There have been many previous research examining the same variables as used in this study but they have varying results. For example, according to Mujib and Candraningrat's [3] research, the COVID-19 epidemic insignificantly impacts stock returns in negative way. Meanwhile, Herwany, Febrian, Anwar & Gunardi [4] investigated the impact of COVID-19 epidemic on abnormal returns in numerous different industrial sectors. The property, real estate, and construction industries suffered the most damage, while infrastructure, utilities, and transportation were unaffected. Other industries, such as consumer goods and mining, had a positive impact.

The COVID-19 epidemic has a detrimental impact on stock returns, according to research by Liu, Manzoor, Wang, Zhang, and Manzoor [5]. This is supported by the research by Apergis & Apergis [6] which states the same results.

In addition, research conducted by Anh & Gan [7] and Khan, *et al* [8] also stated that the COVID-19 epidemic affected stock return negatively. Meanwhile, in the study by Saputra G, Pulungan & Subiyanto [9] discovered that the company's average abnormal return is not affected by the COVID-19 pandemic.

According to Tapa & Hussin's [10] research, trading volume activity has an insignificant positive impact on stock returns. These findings are comparable to those of studies by Indriastuti and Nafiah [11] and Sujana, *et.al* [12]. Meanwhile, Samman and Al Jafari [13] discovered that in the capital market, stock trading volume had a considerable positive influence on stock return. The findings of Effendi and Hermanto's [14] which came to the same conclusion, are similar. This conclusion is supported by Novirman's [15] research which demonstrated a positive impact on stock returns.

However, study by Taslim and Wijayanto [16] indicated that stock trading volume had an insignificant negative effect on stock return. Ardiansyah and Amanah [17] found a significant negative effect between market capitalization and stock return. Research by Marito and Sjarif [18] show that stock return is unaffected by market capitalization. Contrary to the results of research by Abdullah, Parvez, Karim, and Tooheen [19] that found that the stock return is significantly influenced by market capitalization. The same results were also obtained from the research by Kurniawan [20] and Wibowo, and Hendratno [21]. However, Taslim and

Wijayanto [16] found that market capitalization has an insignificant negative effect on stock return.

This research will also answer: (1) Is there any impact of the daily growth of Covid-19 positive case in Indonesia on the stock return of LQ-45 companies listed on the IDX? (2) Is there any impact of trading volume activity on stock return of LQ-45 companies listed on the IDX? (3) Is there any impact of market capitalization on the stock return of LQ-45 companies listed on the IDX?

Our Contribution

Many previous studies have examined the impact of daily Covid-19 positive case growth, trading volume activity, and market capitalization on stock return, but the results have been inconsistent. This research is conducted to re-examine the impact of these factors. Furthermore, this study integrates various factors that have been utilized in other studies so that the effects of these variables can be compared.

Paper Structure

The following section is laid out as follows. The theoretical overview and hypothesis employed in this study are explained in Section 2. The technique and study data are explained in Section 3. Section 4 will present the findings of experiments that will be used to examine the hypotheses. Finally, Section 5 brings the article to a close and provides suggestions for further research.

2. THEORETICAL REVIEW & HYPOTHESIS

Signalling Theory

This theory was introduced by Michael Spence in 1973 to explain how the communication between signallers (companies) and signal receivers (stakeholders). According to this theory, the company, as a party that has important information about its business, must share this information with stakeholders [22]. The information is presented in the form of the company's annual report, which covers the company's financial and non-financial data. The information provided by the company provides a signal for investors that influence investment decisions. Investors will consider buying or selling their ownership shares based on this available information.

Black Swan Theory

This theory was introduced by Nassim Nicholas Taleb in 2007. This theory is used to describe the phenomena that appear suddenly and have a big impact [23]. The examples of these phenomena include the emergence of the internet, personal computers, the World War, the events of September 11, 2001 which sank the dollar in an instant, the American attack on Iraq which soared oil prices, and many others [24]. In this study, the events of the Covid-19 pandemic that afflicted the entire world were in accordance with the concept of the Black Swan theory.

Efficient Market Hypothesis Theory

This theory was first developed by Eugene Fama and introduced to public in 1965. This theory explains that an efficient market is a market that reflects available information. Fama [25] categorizes market efficiency into three forms. The first form is the weak form of market efficiency, which is a market in which the price of shares or securities fully reflect the past information. The second form is the semi-strong form of market efficiency, which is a market in which the price of shares or securities reflect all published information, including information in the financial statements. The third form is the strong form of market efficiency, which is a market in which the price of shares or securities reflect all available information, including highly confidential information.

Daily Growth of COVID-19 Positive Cases

Coronavirus is a virus that attacks human respiratory system and causes flu-like symptoms which are fever, cough, shortness of breath, and can even cause death in severe cases. This virus was first discovered in Wuhan, China at the end of 2019 and was discovered in Indonesia on March 2nd, 2020. The lockdown policies that were imposed by the government to overcome this outbreak, has a tremendous impact on the state of country's economy. Many people also experience panic due to the rapid spread of this deadly disease. Surprising and unexpected events like this certainly affect investors' decision making on their investments, which also affects stock prices in the capital market [5]. Daily growth of Covid-19 positive cases can be calculated as follow:

$$Covid = Total\ positive\ cases_t - Total\ positive\ cases_{t-1}$$

Trading Volume Activity

Trading volume activity is the total of share trading activities that occur at a certain time. Stocks with high trading volume (active stocks) are stocks that have high speed in their trading activities [26]. The reaction of the capital market to an information can be seen by analyzing trading volume activity. The stocks that have good performance and are favoured by investors will have high stock trading volumes because the company does not have idle funds. All funds are used for capital turnover to do expansion, paying debts to creditors, producing goods or services to be sold to the public that it attracts investors to invest in the hope of getting a high return. The higher demand for shares causes the stock prices increase which will result in an increase in stock return. For this research, trading volume activity can be calculated by:

$$Volume = Ln\ (Trading\ volume\ activity)$$

Market Capitalization

The worth of a public company whose shares have been listed on a stock exchange is known as market capitalization. Stocks with a high market capitalization value show a potential for rapid company growth and relatively low risk exposure that attracts investors to invest. Due to the great demand, the stock price is comparatively high, resulting in a significant return on investment. Taslim and Wijayanto [16] and Novirman [15] explain that market capitalization can be calculated by:

$$MarCap = Ln\ (Closing\ Price\ x\ Outstanding\ share)$$

Stock Return

One of investor's motivation to invest and increase their trust to bear the risk of investing is stock return. Ang, R. [27] also argues that return is the amount of profit earned by investors on an investment. Investors invest only if the investment can provide a rate of return in the form of profits. Stock return can be calculated by:

$$\text{Return} = \frac{CP_t - CP_{t-1}}{CP_{t-1}}$$

The following hypothesis were made based on the previous description:
H_1: The daily growth of Covid-19 positive cases has a negative effect on stock return.
H_2: Trading volume activity has a positive effect on stock return.
H_3: Market capitalization has a positive effect on stock return.

3. METHODOLOGY

Research Design

The data used in this study is secondary data over period March 2nd to December 30th 2020 that was obtained through the https://covid19.go.id/ and https://www.idx.co.id/ site. The data that has been obtained is processed using Microsoft Excel and EViews 12. The subjects in this research are 48 firms who are part of the Indonesia Stock Exchange's (IDX) LQ-45 index. This study's sample was chosen using a non-probability sampling approach based on the following criteria: (1) Companies that are listed in the LQ-45 index respectively for the period of February – July 2020 and August 2020 – January 2021; (2) Companies that do not perform stock split during the observation period. Based on these criteria, 41 companies were obtained from a total of 48 companies listed on the LQ-45 index for the 2020 period.

Multiple Regression Analysis

This study employs a form of panel data regression analysis with a research model that is similar to that employed by Anh and Gan [7] which is:

$$\text{Return}_{i,t} = \alpha + \beta_1 \text{Covid}_{t-1} + \beta_2 \text{Volume}_{i,t} + \beta_3 \text{MarCap}_{i,t-1} + \varepsilon_{i,t}$$

Whereas: $\text{Return}_{i,t}$ is return of stock i on day t, β_{1-3} is coefficient variable, Covid_{t-1} is daily growth in total number of Covid-19 positive cases on day t-1, $\text{Volume}_{i,t}$ is natural logarithm value of the trading volume activity of stock i on day t, $\text{MarCap}_{i,t-1}$ is natural logarithm value of stock market capitalization i on day t-1, and $\varepsilon_{i,t}$ is error.

4. RESULTS AND DISCUSSIONS

Descriptive Statistics Test

Descriptive statistical tests are conducted with the goal of providing readers with a summary of the study items in the form of mean (average), median, maximum, minimum, and standard deviation values. The descriptive statistical analysis of this research variable yielded the following results.

Table 1 Descriptive Statistics Test Result

	RETURN_Y	COVID_X1	VOLUME_X2	MARCAP_X3
Mean	0.001568	2360.470	16.99680	31.20794
Median	0.000000	1788.00	17.04701	30.99307
Maximum	0.250000	8369.00	21.58796	34.37413
Minimum	-0.182143	0.0000	12.40492	28.53715
Std. Dev	0.037979	2016.868	1.342735	1.207845

The stock return variable has an average value of 0.001568 and a median value of 0.000000, according to Table 1. The stock return with the highest value is 0.250000, which is the stock return of Ciputra Development Tbk on April 6th, 2020. The stock return with the lowest value is -0.182143, which is the stock return of Wijaya Karya (Persero) Tbk on March 12th, 2020, while the standard deviation is 0.0387979.

The daily growth of Covid-19 positive cases variable has an average value of 2360.470 and a median value of 1788.00. The highest value of daily growth of Covid-19 positive cases variable is 8369 cases which is the growth of positive cases on December 3rd, 2020. The lowest value of the daily growth of Covid-19 positive cases variable is 0 case, which is the growth of positive cases on March 3rd, 4th, 5th, and 12th 2020. Meanwhile, the standard deviation for the daily growth of Covid-19 positive cases variable is 2016.868.

The trading volume activity variable which is the natural logarithm value of the stock variable has an average value of 16.99680 and a median value of 17.04701. The highest value of trading volume variable is 21.58796 which is the trading volume of Sarana Menara Nusantara Tbk on November 30th, 2020. The lowest value of trading volume variable is 12.40492 which is the trading volume of Tjiwi Kimia Paper Factory Tbk on March 19th, 2020. Meanwhile, the standard deviation for stock trading volume is 1.342735.

The market capitalization variable has an average value of 31.20794 and a median value of 30.99307. The highest value of market capitalization is 34.37413, which is the market capitalization of Bank Central Asia Tbk on December 17th, 2020. The lowest value of market capitalization is 28.53715 which is the market capitalization of Charoen Sri Rejeki Isman Tbk on March 23rd, 2020. Meanwhile, the standard deviation of market capitalization is 1.207845.

Classical Assumption Test

Multicollinearity Test

The goal of the multicollinearity test is to see if the independent variables in the regression model are correlated. A good regression model is one that does not have a correlation between the variables [28]. Test to detect the existence of multicollinearity in a research model can be done by observing the correlation between variables. If the correlation is found > 0.85, it can be concluded that there is multicollinearity in the research model. Otherwise, it can be concluded that there is no multicollinearity problem in the research model.

Multicollinearity test that done in this research resulted that the correlation coefficient between the daily growth of Covid-19 positive cases and trading volume activity is 0.046166, the correlation coefficient between the daily growth of Covid-19 positive cases and market

capitalization is 0.092959, and the correlation coefficient between trading volume activity and market capitalization is 0.066533. Therefore, it can be concluded that the correlation value between all independent variables is lower than 0.85, which means that there is no multicollinearity problem in this regression model.

Heteroscedasticity Test

Heteroscedasticity test is used to see if there is an inequality of variance between the residuals of one observation to another observation. The heteroscedasticity test was carried out by comparing X_2 count with X_2 table. If the value of X_2 count is greater than the value of X_2 table, the equation is a heteroscedasticity equation. When the X_2 count X_2 table, on the other hand, the equation is a homoscedasticity equation.

In this study, the heteroscedasticity test yielded a total squared residual value of 11.56972. The X_2 count is calculated by dividing the sum squared residual amount by two, yielding 5.78486. This study uses α value of 0.05 and the df value of 3, so the X2 table is 7.8147. It can be concluded that this research model does not have a heteroscedasticity problem based on the X2 count X2 table (5.78486 < 7.8147).

Regression Model Test

There are three types of regression models for panel data: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (REM). To interpret the findings of the investigation, one of the most appropriate models will be selected. The Chow Test, Hausman Test, and Lagrange Multiplier Test are three tests that may be used to determine the type of acceptable model. Based on Table 2, the model chosen in this test is the FEM model.

Table 2 Result of Regression Model Test

Test	Probability	Result
Chow Test	0.0000	Prob < 0.05 = FEM
Hausmann Test	0.0000	Prob < 0.05 = FEM

Panel Data Regression Test

From the three regression model tests, it is concluded that the best suitable model for this research is the Fixed Effect Model (FEM). The FEM output is shown below

Table 3 Fixed Effect Model Output

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.843168	0.085213	9.894797	0.0000
COVID	2.31E-06	2.51E-07	9.215731	0.0000
VOLUME	0.014301	0.000576	24.81971	0.0000
MARCAP	-0.034931	0.002728	-12.80599	0.0000

Based on Table 3, the regression equation model in this research can be formulated as:

$Return_{i,t} = 0.843168 + 0.00000231\ COVID_{t-1} + 0.014301\ Volume_{i,t} - 0.034931\ MarCap_{i,t-1} + \varepsilon_{i,t}$

Based on this regression equation, a constant value of 0.843168 is obtained, which means that the stock return variable will increase by 0.843168 if the daily growth of Covid-19 positive cases, trading volume activity and market capitalization is constant or zero.

The daily growth of Covid-19 positive cases has a coefficient of 0.00000231. These results indicate that if the daily growth of Covid-19 positive cases increases by 1 unit, the stock return will increase by 0.00000231 units, assuming that other variables, which are trading volume activity and market capitalization, are constant or zero.

The trading volume activity has a coefficient of 0.014301. These results indicate that if the trading volume activity increases by 1 unit, the stock return variable will increase by 0.014301, assuming that other variables, which are the daily growth of Covid-19 positive cases and market capitalization, are constant or zero.

The market capitalization has a coefficient of -0.034931. These results indicate that if the market capitalization variable increases by 1 unit, the stock return will decrease by 0.034931, assuming that the other variables, which are the daily growth of Covid-19 positive cases and the trading volume activity, are constant or zero.

Simultaneous (F) Test

The simultaneous (F) test is done to test whether the independent variables have an impact on the dependent variable simultaneously. In this study, the F-test was carried out to examine the impact of daily growth of Covid-19 positive cases, trading volume activity and market capitalization simultaneously on stock return. If the probability value obtained is smaller than the significance level (0.05), it can be concluded that the independent variable simultaneously affects the dependent variable. Conversely, if the probability value obtained exceeds the significance level (0.05), it can be stated that the independent variable simultaneously does not affect the dependent variable.

The simultaneous (F) test done in this research resulted the probability value of 0.0000 which doesn't exceed 0.05. This result indicates that the independent variables, which are the daily growth of Covid-19 positive case, trading volume activity and market capitalization have a simultaneous effect on stock return.

Coefficient of Determination Test

The coefficient of determination test is used to determine how effectively a model can explain variance in an independent variable. The coefficient of determination might have a value somewhere between zero and one. A high value of R^2 (Coefficient of Determination) suggests that the independent variables in the model can give nearly all of the information required to predict the dependent variable. Coefficient of Determination test done in this research resulted the adjusted r-squared value of 0.084708. This result indicates that changes in stock return can be explained by the daily growth of Covid-19 positive cases, trading volume activity and market capitalization of 8.47% which means the remaining 91.53% is explained by other variables used in other studies.

Partial (t) Test

The partial test, was intended to examine how much one independent variable alone might explain the dependent variable. The impact of daily growth of Covid-19 positive cases, trading volume activity, and market capitalization on the stock return variable was tested using the t-test in this study. If the probability value obtained is smaller than the significance level (0.05), it can be stated that the independent variable has a significant impact on the dependent variable. The independent variable has no significant impact on the dependent variable if the probability value obtained is greater than the significance level (0.05).

The daily growth of Covid-19 positive cases has a regression coefficient of 0.00000231 with a probability of 0.0000, according to Table 3. A positive coefficient value suggests that Covid-19 positive cases significantly affected stock return on a daily basis. While the probability value of 0.0000 is less than the significance level (0.05), this indicates that the daily growth of Covid-19 positive cases has a significant impact on stock return. This suggests that the increase of Covid-19 positive cases on a daily basis has a significant and positive impact on stock returns. Therefore, it can be concluded that H_1 which is the daily growth of Covid-19 positive cases has a negative effect on stock return, is rejected.

The trading volume activity has a coefficient of 0.014301 with a probability of 0.0000. A positive coefficient value shows that trading volume activity has a positive impact on stock return. While the probability value of 0.0000 is less than the significance level (0.05), this indicates that trading volume activity has a significant impact on stock return. This indicates that high trading volume has a significant positive impact on stock returns. As a conclusion, it can be stated that H_2 which is the trading volume activity has a positive effect on stock return, is accepted.

The market capitalization has a coefficient of -0.034931 with a probability of 0.0000. A negative coefficient indicates a negative effect of market capitalization on stock return. Meanwhile, the probability value of 0.0000, which is lower than the significance level (0.05), indicates that market capitalization has a significant effect on stock return. This means that market capitalization has a significant negative effect on stock return. Therefore, it can be concluded that H_3, which is market capitalization has a positive effect on return share, is rejected.

Discussions

Based on the tests that have been performed, the following results were obtained:

The first finding is that increase in number of Covid-19 positive cases on a daily basis has a significant positive impact on stock returns. This finding is consistent with the findings of Herwany et al [4], who investigated the impact of COVID-19 on stock returns in consumer products and mining industries. However, this finding contradicts the majority of research on the impact of COVID-19 on stock returns, such as research by Mujib and Candraningrat [3], Herwany et al [4], Liu et al [5], Apergis & Apergis [6] and Anh and Gan [7]. This positive influence is due to government policies that limit people's activities during the pandemic resulting in decreased levels of spending or consumption. Reduced public spending causes the availability of more money or savings that can be used to invest. Pandemic Covid-19 cause people to delay spending money on consumptive things such as vacation, so the funds are used to invest. It is also due to the emergence of a digital investment trend

among young people which is marked by the increase in new investors, which are dominated by people aged under 30 years old and between 31-40 years old. The increase of investors' interest during this pandemic can result in increased stock return as well.

The second result is that the trading volume activity has a significant positive effect on stock return. This finding supports Samman and Al-Jafari [13], Effendi and Hermanto [14] and Novirman [15] findings. However, the results of this study contradict the conclusions obtained by Taslim and Wijayanto [16], Tapa and Hussin [10] and Indriastuti and Nafiah [11]. The high volume of stock trading indicates good market conditions because investors believe that the company's good performance can provide maximum return. In accordance with the law of demand and supply, the significant acquisition of shares in the capital market resulted in higher stock prices and a higher stock return.

The third result is that market capitalization has a significant negative effect on stock return. This result is in line with the research by Ardiansyah and Amanah [17], but contradicts with the researches by Kurniawan [20], Abdullah et al [19] and Wibowo, and Hendratno [21]. The negative effect is due to an increase in market capitalization is caused by an increase in stock prices. High stock prices reduce investors' interest in investing that causes stock prices are difficult to increase to higher price. In addition, the increase in stock prices also causes the demand for share purchases to decrease. This can result in a decrease of stock return.

5. CONCLUSION

The following are some of the findings of this study hypothesis testing: The daily growth of COVID-19 positive cases has a significant positive effect on stock return (H_1 is rejected). This is because government regulations restricting people's activities during the epidemic have resulted in individuals having more money or savings, which they invest. Because of the significant interest in investing, there is a lot of demand, which impacts stock prices, resulting in a higher return.

Trading volume activity has a significant positive effect on stock return (H_2 is accepted). This is because the large trading volume activity shows that the stock is in great demand. Investors' motivation is derived from their belief in the performance and prospects of these stocks, which have the potential to give a significant return. High trading volume activity leads to an increase in stock prices, which in turn leads to a higher stock return.

Market capitalization has a significant negative effect on stock return (H_3 is rejected). This is because high market capitalization indicates high stock prices. High stock prices reduce the investment interest so that it causes stock prices to decline. The lower the stock price, the lower the return is.

In order to address the study's limitations, various recommendations for further research have been made. It is recommended for further researchers to expand the research subjects to focus on industrial sectors affected by the Covid-19 pandemic, for example hotel, restaurants, manufacturing, transportation, or food and beverages companies, etc. Further researchers can also increase the research period used, as well as change or add other variables that have higher impact on stock return like Earning per Share (EPS), Debt-to-Equity Ratio (DER), stock trading frequency, etc. As a result, it may be more beneficial since investors may utilize it to help them make investment decisions that optimize their return.

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THE EFFECT OF THE FRAUD TRIANGLE IN DETECTING FRAUDULENT FINANCIAL REPORTING IN INDONESIAN BANKING SECTOR COMPANIES

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ABSTRACT

This research aims at finding out the influence of factors in fraud triangle theory towards fraudulent financial reporting in banking companies in Indonesia. Research sample was chosen by using some criteria that consist of banking sector companies registered and listed in Indonesian Stock Exchange & Bank Based on Business Activity II, III, IV group from 2017 to 2019. These criteria chose 37 banks as sample processed by e-Views 12 and Microsoft Excel application. Fraud triangle theory divides three fraud factors: pressure, opportunity, and rationalization. Pressure factor includes external pressure and financial target. Opportunity factor is reflected by monitoring variable, and rationalization factor consists of auditor change and accrual method variable. Research results show that independent variables gave significant impact to dependent variable, except for monitoring and auditor change variable.

Keywords: *External Pressure, Financial Target, Monitoring, Auditor Change, TATA, Fraudulent Financial Reporting*

1. INTRODUCTION

We know that every company in Indonesia must arrange a financial statement in line with the financial accounting standard set by IAI. PSAK 1 Number 7 aims to prevent the user of financial statements from getting false information, leading to disadvantages. However, each company's management also wants to have their financial condition in good condition, which is reflected in the financial statement. Because of that, some companies do not doubt falsifying the information stated in their financial report, which has become one of the fraudulent actions in Indonesia. ACFE noted that a significant increase in fraud happened in Indonesia each year. Besides that, it also causes immense loss that disadvantages many people.

From that case, the urgency in decreasing fraudulent financial reporting becomes bigger, especially for the banking sector companies that pinpoint the financial sector in Indonesia. *UU No. 10 Tahun 1998* defines *a bank* as a financial institution that collects society's funds in the form of saving and distributes them using credit facilities to increase one's standard of living. It means banks are in charge of managing funds collected from society. If a bank does fraudulent financial reporting, society can not know the bank's financial position in the order. Indirectly, the community will also not know whether banks manage their funds well. The climax is when the bank can not hide its false action anymore, leading to bankruptcy. Many people will not get their money back after that incident happens.

After searching the factor of fraud, Cressey (1953) [1] found three fraud factors: pressure, opportunity, and rationalization. The increase in financial targets can cause a pressure factor. Yet, those increases are not necessarily parallel with increased company operations. It can lead to the action of fraud done by managers to uplift their performance. External pressure like loans

can also be another fraud factor. Lehman Brothers are one example of companies that does fraud because of debt. Lehman Brothers used the window dressing technique to hide their bad financial position by doing fraudulent financial reporting.

Opportunity factors can also cause fraudulent action. An opportunity arises when there is not enough control in a company. A board of commissaries usually does control. However, undetailed and dependent commissaries increase the risk of fraud. The third factor is rationalization, where fraud perpetrator will rationalize his fraudulent action. That kind of perpetrator will cause a big problem because he will not stop to do fraud until their action is found. Because of that, the loss when their fraudulent act is seen has been tremendously significant.

Seeing those problems, the researcher finally decided to analyze the factor of fraud triangle factor towards fraudulent financial reporting in Indonesian banking sector companies.

Literature Study

Agency Theory

Jensen and Meckling put forward this theory in 1976. Jensen and Meckling (1976) [2] said there is a separation between principal and agent. A principal is the company's owner, or we usually know it as a shareholder, whereas an agent is a party that manages a company. The problem in this theory arises because the principal and agent have their own goals where the principal, as an investor, wants to get a significant return from their investment, and the agent's goal is to have some incentives from developing the company to a point. In this theory, an agent has more advantages than a principal because agents' role as part of the management team leads them to have more information about the company's economic and financial condition. While investors only get to know the information when exposed by companies' management. An agent can use this advantage to deceive the principal. The agent tends to forge information regarding companies' conditions to not make investors know companies' problems. Management will try to create data like companies' annual financial statements as if they are in good condition, even better situations to get more salaries and incentives.

Asymmetric Information Theory

Asymmetric information theory is a condition where one party has more information than another. This theory frequently occurs in the business world that companies' management will likely have more information than shareholders. This information inequality regarding companies can affect investors' decision-making quality which will become irrelevant. There are two types of asymmetric information: adverse selection and moral hazard (Scott, 2009) [3]. Adverse selection means that a party or more in a business transaction get to know more information than another party because companies' manager has more knowledge in companies' prospect in the past, present, and future. A moral hazard is a type of information where a party in a business transaction or more can observe the action of fulfilling a transaction, but the others can't. These types of asymmetric information are due to the separation between control and ownership. They also cause investors and external parties not to know much about the company's data. As a result, companies' management can carry out fraudulent financial reporting easily so that they can reach their goals which are different from investors' goals, as stated by Jensen and Meckling.

Signalling Theory

In 1973, Spencer introduced the signaling theory to the public for the first time. Spence (1973) [4] said that the flow of information is similar to the flow of signal sent to be used by its receiver. The implementation in the business world is that managers will strive to give information such as financial statements to investors to consider in making decisions. Then, Ross developed this theory in 1977. Ross (1977) [5] stated that signaling theory is formed due to asymmetric information theory, where companies' management is more knowledgeable than shareholders. Houston et al. (2016) [6] declared that signal is companies' management's action in providing information about how management looks at companies' prospects. Those are carried out by giving financial information that consists of financial notes in the past, present, and future. Investment decision-making will be easier to do by shareholders with financial data. Based on this theory, companies' management is expected to offer companies' information more openly to minimize risk caused by agency and asymmetric information theories.

Fraud Triangle Theory

Three fraud factors in fraud triangle are introduced by Cressey in 1953. Cressey (1953) [1] stated that there are three factors causing fraud: pressure, opportunity, and rationalization.

Pressure

The pressure factor is related to someone's motivation to carry out fraud. Cendrowski and Martini (2007) [7] said that three motivations causing someone to commit fraud are lifestyle needs, illegal activities, and daily life pressure. Cendrowski and Martini emphasize personal reasons for committing fraud. While SAS 99 provides the pressure factor of why an organization commits fraud. According to SAS 99, the pressure factor consists of external and internal pressure. External pressure is done by external parties such as creditors. Creditors tend to ensure that a company will fulfill its liabilities without considering the development of its industry. When a company struggles to pay its debt, creditors' actions will become a burden and pressure on the company. To fulfill its obligations, a company will fake its financial statement to get funds from investors. Later, that fund will be used to finish their liabilities to creditors. However, in banking sector companies, most of their assets include liabilities from customer in which the customer's trust on bank increases as the number of liabilities increases. Even, it will increase their revenue and profit as well.

H1: External pressure has a significant negative impact on fraudulent financial reporting.

While dealing with external pressure, a company will encounter internal pressure, which shareholders cause. As stated before, investors have the return of their shares as their goal. To get a significant return, a company has to be profitable. Because of that, shareholders as companies' owners set some financial standards to be fulfilled by the manager. However, a manager also has his own goal: getting a big salary and incentives. Because of that, a manager must have strived to reach that standard while we can't predict how an industry will develop in the future. If the industry grows, it will be a good chance for the manager to fulfill shareholders' goals.

Nevertheless, it will become pressure if something terrible happens to economic conditions. To ensure they reach the financial target, managers will try every way, even if it means fraud. They can do it by forging financial data or even stating false information, causing

misinterpretation. Because of that, these two pressure factors can be used to detect fraudulent financial reporting.

H2: Financial target has a significant positive impact on fraudulent financial reporting.

Opportunity

The opportunity factor is related to the possibility of someone committing fraud. Besides that, it also corresponds to control being held in a company. If a company has weak control, then fraud action will be easier. Because of that, a company needs to monitor its control of whether it is strong. SAS 99 also states the same thing that the monitoring variable can be one of the factors in detecting fraudulent financial reporting. A board of general and independent commissioners carries out the act of monitoring a company. In this factor, SAS 99 tend to focus on the percentage of independent commissioners because they don't have any conflict of interest with the company they will work with, as stated in the standard.

H3: Monitoring has a significant negative influence on fraudulent financial reporting.

Rationalization

Rationalization is someone's character and action to justify their mistake. In this case, people with this character will feel that what they do is proper and reasonable. They will take the blame on others. For instance, they might say that other people might do the same thing as they do. The other example is they might say that their company gives a meager salary. As long as their act of fraud is not discovered, they will think that their action is all right and should be continued until someone proves their wrong action. Because of that, SAS 99 states that variables that describe the rationalization factor are auditor changes and the accrual method.

An auditor is someone who inspects to find a mistake, fraud, or something that deviates from existing standards and regulations. To do that, an auditor must know the condition and collect information about the company he investigates. Hence, an auditor must first adapt to the workflow of the company. They need some time to adjust themselves to the company's environment. In conclusion, it must be hard for a new auditor to get significant findings unless they are lucky enough. The perpetrator will use this moment to commit fraud. The case shows that auditor change can affect the probability of fraudulent financial reporting.

H4: Change in auditor has a significant positive impact on fraudulent financial reporting

The accrual method proxied by the total accrual to total asset (TATA) ratio can be one thing to determine whether fraudulent financial reporting happens in a company. The law of accrual method said that revenue could be recognized when we have provided service to customers and not when they pay the fee. Because of that, managers can use it to manipulate the company's financial statement by recognizing revenue contrary to the standard.

H5: Accrual method has a significant positive impact on fraudulent financial reporting.

Fraudulent Financial Reporting

ACFE defined fraudulent financial reporting as a scheme where an employee intentionally misstates and eliminates material information from the company's financial statement. When doing financial fraud, the perpetrator must indeed have varied intentions. Like earning management, earnings management's purpose is maximizing the profit so that investors have a good view of the company, minimizing profit to reduce income tax, or carrying out income smoothing to make a stable financial movement. However, the difference between earnings

management and fraudulent financial reporting is that earnings management still refers to the prevailing standards. In contrast, financial statement fraud is done by faking data and violating the standard. Yet, these methods will not still reflect the financial condition of the financial statement user, misleading them in making decisions. Therefore, The Treadway Commission (COSO) recommends four ways to mitigate financial statement fraud: establishing an integrated environment in the company, identifying and understanding factors causing fraudulent financial reporting, assessing financial statement fraud risk in the company, as well as designing and implementing an excellent internal control.
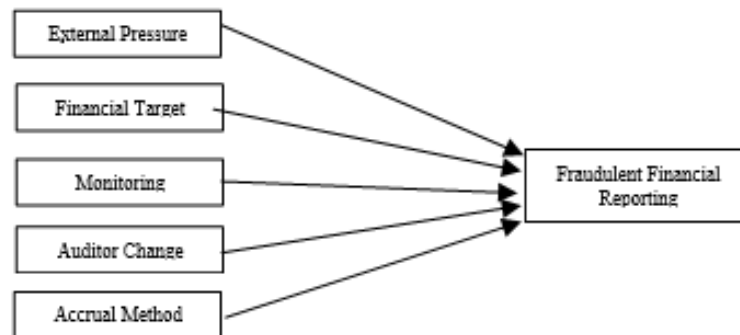

Figure 1. The Research Model

2. RESEARCH METHOD

This research methodology is quantitative descriptive research. A quantitative descriptive study is a descriptive research carried out using data in the form of numbers. In this research, the quantitative data is secondary data collected from companies' financial statements in 2017 – 2019. The data applied in this research is categorized as panel data, combining the time series and cross-section aspects. The time series aspect is from 2017 until 2019, and the cross-section aspect comes from the number of companies.

In this research, the writer uses samples chosen by applying the purposive sampling method. The purposive sampling method is a way to determine research samples by using some criteria. The criteria for the sample of this study are 1) Banking sector companies listed on the Indonesian Stock Exchange; 2) Banking sector companies that are not delisted from the Indonesian Stock Exchange (*Bursa Efek* in 2017 until 2019; 3) Banking sector companies which are listed in Bank Based on Business Activity 2, 3, and 4 categories (have more than 1 trillion rupiahs of core capital).

These are some operational variables that is used in this research:

Table 1. Operational Variables and Measurement

No.	Variable	Measurement	Scale
1	External Pressure	$LEV = \dfrac{Total\ Liabilities}{Total\ Asset}$	Ratio
2	Financial Target	$ROA = \dfrac{Net\ Income}{Total\ Asset}$	Ratio

3	Monitoring	$BDOUT = \dfrac{The\ Number\ of\ Independent\ Commissioners}{Total\ Board\ of\ Commissioners}$	Ratio
4	Auditor Change	AUDCHANGE, dummy variable, Changing Auditor = 1; Not Changing Auditor = 0	Interval
5	Accrual Method	$TATA = \dfrac{Laba\ Bersih - CFO}{Total\ Asset}$	Ratio
6	Fraudulent Financial Reporting	$DAcc_t = \left(\dfrac{TAcc_t}{TA_{t-1}}\right) - NDA_t$	Ratio

3. RESULT AND DISCUSSION

This research has fulfilled three classic assumption tests such as normality test, multicollinearity test, and heteroscedasticity test. Normality test conducted using Jacque Bera has a probability value of 0.755 that is bigger than 0.05 which means the research data has fulfilled normality test.

According to multicollinearity test, the centered VIF value of independent variables is lower than 10 which means that the research data has been free from multicollinearity problem. Heteroscedasticity test is conducted by using White test has the probability value of 0.1365 that is higher than 0.05. It means that the research data has also been free from heteroscedasticity problem.

The research has also taken Chow test and Hausman test. Based on Chow test, the cross section value is 0.0312 which is lower than 0.05. It means that the chosen model in Chow test is fixed effect model (FEM). Then, the panel data test is continued to Hausman test. According to Hausman test, the cross section value is 0.001 that is lower than 0.05 meaning that the chosen model in Hausman test is fixed effect model (FEM). Hence, the model that is chosen for this research is fixed effect model (FEM).

After carrying out panel data test, the descriptive statistic test will be conducted. Here is the result of the descriptive statistic result:

Table 2. Descriptive Statistics

	N	Mean	Max	Min	Std. Deviation
External Pressure	104	0.8099	0.9365	0.0524	0.1205
Financial Target	104	0.0076	0.0313	-0.1123	0.0174
Monitoring	104	0.5817	1.0000	0.4000	0.1125
Auditor Change	104	0.2019	1.0000	0.0000	0.4034
Accrual Method	104	0.0062	0.1633	-0.1422	0.0591
Fraudulent Financial Reporting	104	0.0268	0.2073	-0.1440	0.0655

Table 3. Regression Analysis

Variable	Coefficient	Prob.
C	0.041650	0.0043
LEV	-0.064881	0.0000
ROA	0.414645	0.0000
BDOUT	0.045580	0.2001
AUDCHANGE	0.007317	0.0690
TATA	1.060148	0.0000
R-Squared		0.944058
Adjusted R-Squared		0.941204
F-Statistic		330.7642
Prob (F-Statistics)		0.000000
Durbin-Watson Stat		1.642903

Based on the data from Table 3, the regression equation is as follows:

$$DACCt = 0,041650 - 0.064881 LEV + 0.414645 ROA + 0,045580 BDOUT$$
$$+ 0,007317 AUDCHANGE + 1.060148 TATA$$

(Note: LEV: External Pressure, ROA: Financial Target, BDOUT: Monitoring, AUDCHANGE: Auditor Change, TATA: Accrual Method, DACC: Fraudulent Financial Reporting)

The effect of external pressure on fraudulent financial reporting

The test results show the coefficient value of -0.065 and the t-test significance value of 0.000. The coefficient value with a negative sign states that the independent variable external pressure has a relationship in the opposite direction to the dependent variable fraudulent financial reporting. If the value of the independent variable external pressure increases, then the value of fraudulent financial reporting variable will decrease. Conversely, if the value of the independent variable decreases, then the value of the dependent variable will increase. The significance value of 0.000 is lower than the 0.05 which means that external pressure variable gives significant negative impact on fraudulent financial reporting (H1 is accepted). A greater number of liabilities to external parties in baking sector companies means a significant trust from society. The increase in their liabilities means that they will get revenues from their service, such as administration fees, mutation printing, interbank transfer, and others. It will only improve their goodwill and help to reach their target faster. Therefore, it will remove the risk and probability of baking sector companies to do financial statement fraud. The research result is similar to the research done by Anjilni (2021) [8].

The effect of financial target on fraudulent financial reporting

The test results show the coefficient value of 0.415 and the t-test significance value of 0.000. This means that financial target will give significant positive impact towards fraudulent financial reporting which means that H2 is accepted on this research. Although the external pressure variable will not encourage fraud, we still need to pay attention to the financial target variable because it positively affects the fraudulent financial reporting variable. The financial target is present because of the shareholders' goals of gaining a significant rate of return. At the same time, the rate of return is affected by the amount of the company's profit. So, the manager

has to be financially targeted with the amount of profit to enrich the shareholders. At first, the manager had no problem reaching the financial target.

Nevertheless, the target keeps increasing each year. In contrast, the industries' condition will not indeed be developed as the increasing target. It will necessarily burden the manager because they must increase the company's profit in recessive conditions. Otherwise, they will not get a good incentive, their own goal. Consequently, the manager will try every way to reach those targets, even if it means to do fraud. In banking sector companies, the manager can record financial transactions contrary to the standard. For instance, they will capitalize operating expense as an asset or recognize service revenue before performing the service to their customers. Consequently, we should pay more attention to financial targets in banking sector companies because it can increase the probability of fraudulent financial reporting. This has been similar to the research result done by Cicillia & Serigus (2015) [9].

The effect of monitoring on fraudulent financial reporting

The test results show the coefficient value of 0.046 and the t-test significance value of 0.2001. This means that monitoring variable does not have a significant influence on fraudulent financial reporting, so the hypothesis H3 is rejected. When a company has more portion of independent commissioners, it means that monitoring action will be more effective that it can reduce fraud. However, the research result says it differently. The reason is that the management can still intervene with independent commissioners' work. The management will not cooperate in giving information to the commissioners and will also try to bribe them. Thus, the commissioners' performance will be clouded by those actions and become ineffective, considering that independent commissioners also has personal interest and goals. Prasmaulida (2016) [10] has also stated the same regarding this hypothesis.

The effect of auditor change on fraudulent financial reporting

The test results show the coefficient value of 0.007 and the t-test significance value of 0.069 which means auditor change variable has no significant impact on fraudulent financial reporting. Hence, the H4 hypothesis is rejected. Besides monitoring, routine examinations can be done to avoid fraudulent action. In this case, Indonesian Bank and Financial Service Authority (OJK) can do inspections on banking sector companies. Yet, the examination held by these two organizations is not routine and has a long period range. However, a fraudulent action can be done at every moment. Therefore, employing an external auditor can be one way to avoid fraud. External auditors will work professionally because they do not have any conflict of interest with the company. However, external auditors need time to adjust to the company's environment and situation to collect data and information. So, the auditor tends to find significant findings and fraud in the second year they examine. The management will use this situation to hide their fraudulent action. One of the ways is changing their auditor every year. Every new auditor will surely need time to adapt, which will complicate them in the examination. When they have adapted to the situation and succeeded in collecting information, their examination period has come to an end. Finally, they will make the report based on their findings which are not detailed. The fraudulent action is most likely not to be found.

Nevertheless, auditor change does not significantly influence fraudulent financial reporting. A new auditor can also find fraud easily. It depends on their luck, skill, and experience in the auditing field. New auditors also tend to have a different perspective from past auditors in carrying out an audit. Therefore, there is still a significant chance of finding the fraud. In

addition, we cannot ensure that the company changing auditor is committing fraud because there is also a regulation from the Indonesian financial ministry that a company has to change its auditors every three years. This is stated on Article 3 Paragraph 3 in The Rule of Indonesian Finance Minister Number 17/PMK.01/2008.

The effect of accrual method on fraudulent financial reporting

The last variable, the accrual method, proxied by the total accrual to total asset (TATA) ratio, affects the fraudulent financial reporting variable positively and significantly which means the hypothesis H5 is accepted. This was also stated by Iqbal & Murtanto (2016) [11]. An example of the accrual method implementation is recognizing revenue from customers after providing them services, although the company has not received any payment yet. This is stated in PSAK 72 regarding revenues. However, this term is often misused by the organization's personnel. They will try to use it to increase the company's revenue and profit. An example in banking sector companies is the recognition of electronic data capture (EDC) machine installation revenue that is recorded when the customers do not even use the machine. This contradicts PSAK 72 regulation because the customers have not received any benefit from the company.

Nevertheless, it will increase the total accrual to total asset ratio because the company will not receive any payment until the customer uses the service. This situation will make a more significant difference between net profit and cash from operating activities, increasing the TATA ratio. Therefore, the total accrual to total asset ratio can be one factor in determining the level of fraudulent financial reporting.

Besides the revenue recognition, it can also be caused by issuing credit with a loose condition. Giving credit without following the standard will provide a higher risk to the bank's liquidity because the chance of unpaid debt will be more significant. When banking companies' credit has come to the non-performing loan (NPL) stage, the banking company has to reserve funds for uncollectible receivables. Consequently, it will reduce the company's profit while shareholders want it to increase. Otherwise, it will impact managers' incentives and bonuses. To avoid that, the manager will still use the unpaid receivables as revenue, so they do not have to reserve the loss from uncollectible receivables. However, they will receive any cash from those revenues because they are not collectible. Ultimately, it will only give a greater difference between the revenue and cash from operating activities. Therefore, the total accrual to total revenue ratio will also be higher.

4. CONCLUSION AND SUGGESTION

Conclusion

The external pressure has a significant negative impact on fraudulent financial reporting. This can happen because the bigger liabilities a banking sector company has means that there is a bigger trust from the customer. Indirectly, it will increase the company's revenue from administration fee, provision, and other fees.

The study shows that there is a significant positive influence from financial target towards fraudulent financial statement because managers have their own goals to increase their bonus and incentive which is valued by their ability to reach the financial target. If the financial target increases each year, it will be harder for managers which will lead them to do fraud.

The monitoring variable and the auditor change variable does not significantly impact fraudulent financial reporting because the company's management can intervene independent commissioners' work that makes their performance become ineffective. While, new auditor can have their own judgement so that there will be still probabilities for them to find fraudulent financial reporting.

While accrual method has a significant influence on fraudulent financial reporting. It can be caused by false recognition of revenue in the financial statement to make company's profit become higher. Besides that, it can be done by the relaxation of credit terms. They will be likely to face non performing loan that the company need to reserve receivables' balance. In order not to decrease their profit, they will not disclose it which turns into fraudulent financial reporting.

Suggestion

The suggestion for the next research is to find a different proxies for independent variables that do not influence the dependent variable which is fraudulent financial reporting. For monitoring variable, the next researcher can use IND proxy which is the size of audit committee. While, auditor change can be changed into auditor opinion in financial statement. As well, the dependent variable, fraudulent financial reporting proxy can be alternated using beneish model.

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