

The Effect of Innovation on Price to Book Value: The Role of Managerial Ownership in Indonesian Companies

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Abstract

This study examines and analyzes the effect of innovation on the price to book value mediated by managerial ownership in Indonesian companies. In order to achieve the goals and objectives, the company increases its value by increasing shareholders. Improving the welfare of shareholders can be done through investment and financial policies, and is reflected in share prices in the capital market. The higher the share price, the better the owner's welfare, and the company's value will also increase. The population of this study is the manufacturing companies – as many as 162 – listed on the Indonesia Stock Exchange in 2012-2017. By using a purposive sampling method, 25 companies met the criteria for the sample. The data comes from the companies' annual report taken from the Indonesia Stock Exchange website. The data is further analyzed using partial least square (PLS). The results of the study showed that innovation has a significant effect on price to book value. The companies with high marketing innovation produce high company performance as well. The companies get a commensurate reward from marketing innovation activities to carry out continuous marketing innovations. In addition, managerial ownership does not mediate the relationship between innovation and price to book value.

Keywords : Book Value, Innovation, Managerial Ownership, Indonesian Companies, Emerging Markets

JEL Classification Code: A11, G32, O32, Q55

1. Introduction

The company is a form of business entity as well as a gathering place for labor, capital, entrepreneurship and natural resources aimed at maximizing profits. In order to achieve this goal, the company increases its value by increasing shareholders. Improving the welfare of shareholders can be done through investment and financial policies, and is reflected in share prices in the capital market. The higher the share price, the better the owner's welfare, and the company's value will also increase.

Company value is proxied by price to book value (PBV). PBV is a comparison between the company's stock price and the book value of the company. The higher the PBV, the more the market will trust the company's prospects going forward. The PBV ratio shows how a company is able to create firm value relative to the amount of capital invested. The relationship between the stock market price and the book value per share can also be used as an alternative approach to determine the value of a stock, where the market value of a company must reflect the book value (Tandelilin, 2010).

An increased share value will also increase the value of the company. To realize this goal, shareholders submit their management to the company manager. When surrender occurs, conflicts of interest begin. Conflicts of interest between managers and shareholders are often called agency conflicts. The ownership structure is essential in agency theory because most agency conflicts started from the separation of ownership and management (Mazumder, 2017; Vu, Phan, & Dang, 2020). Shareholders and managers alike want maximum profits. On the other hand, managers and shareholders alike try to avoid risk. Managers are at risk of not being appointed again as a manager if they fail to carry

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out their functions, while shareholders are prone to losing their capital if they choose the wrong manager.

Occurring agency conflicts may decrease the value of the company. Impairment of company value will affect the wealth of shareholders, so shareholders will take several supervisory actions on management behavior, one of which is an appropriate control mechanism to reduce the conflict with managerial ownership. Managerial ownership is a situation where the manager owns the company’s shares, or in other words, the manager is also a shareholder of the company. Agency conflict can be reduced in this way because the policies of managers who own company shares will undoubtedly be different from managers who act purely as managers. This type of manager will try to increase the value of the company and, thus, the value of his wealth as a shareholder will increase as well; it will also try to prevent the company from potential bankruptcy that harms managers because of losing incentives and shareholders who will lose returns and the funds they invested.

Company value is also greatly influenced by innovation. Innovation has a significant positive effect on firm value (Anjelina, 2019). According to her research, which links innovation with tax avoidance, the innovating company does not shift its profits through tax avoidance to innovate further because the higher the innovation, the higher the value of the company. These results support the signal theory, which states that innovation is a positive signal for a company because it reflects the company’s competitiveness so that it will increase the value of the company.

Mason, Bishop, and Robinson (2009) found that more innovative companies grew faster (as measured by the percentage of sales of new products). The more innovative companies experienced approximately 10 percent growth compared to less innovative companies. Innovation by a company is the key to being able to compete and survive in the competitive business competition in the present. Creativity and innovation drive the competition of companies and demand widespread innovations from employees in

several global companies. The strategic role of innovation on company performance and value needs to be optimized. Thus, it is necessary to study the interrelationship of innovation and company characteristics such as company size and age, market orientation, barriers to innovation funding, the level of competition, and the country’s economic situation (Zemplerová & Hromádková, 2012). Table 1 summarizes the results of previous research.

The purpose of this study is to analyze the effect of innovation on PBV, analyze the effect of innovation on managerial ownership, analyze the effect of managerial ownership on PBV, and analyze the effect of managerial ownership mediating the effect of innovation on PBV.

The benefits of this research are:

1. As a consideration for parties in the Islamic and conventional capital markets in making investment decisions, related to investment selection decisions and analysis of company conditions and their effects on investment products of their choice.
2. As the material for study and consideration in making policy for the government, especially the Ministry of Finance and Bapepam-LK as capital market supervisors, and enriches the bibliography on the effects of innovation, managerial ownership and PBV.
3. As a reference and further research information related to PBV, innovation, and managerial ownership.

2. Literature Review

PBV is a ratio to assess the fair price of a stock by calculating the latest stock price value on the book value of the newest company financial statements (Latief, 2018). P/B ratio is a ratio used to compare a stock’s market value to its book value. PBV is a calculation or comparison between market value and the book value of a stock. With this PBV ratio, investors can find out directly how many times the market value of a stock is valued from its book value. This ratio can give an idea of the potential price movements of

Table 1: Research Gap of Previous Research Results

Variables	Authors	Findings
Innovation	Rafinda & Noveria (2014) Anjelina (2019) Kusumawati (2010)	Significant
	Nohong (2016)	Not significant
Managerial ownership	Darmayanti & Sanusi (2018) Ussu, Saerang, & Ogi (2017) Jusriani & Rahardjo (2013) Agnova & Muid (2015) Sukirni (2012) Kusumaningrum & Rahardjo (2013)	Not significant

stock so that from this picture, indirectly, this PBV ratio also has an influence on stock prices (Utami, 2010). PBV or the ratio of stock prices to book value is often used to assess the price of a stock, whether cheap or expensive, which is usually called stock valuation. Companies with PBVs below one are typically considered cheap shares, while PBV ratios above one can be considered expensive shares. PBV ratio shows how many shareholders finance the company's net assets. PBV can be calculated by dividing the price per share of the company concerned with the book value per share.

Innovation is an idea, practices or objects that are realized and accepted as something new by a person or group to be adopted (Rogers, 2010). Innovation is the successful application of a company's creative ideas. Therefore, the company is expected to form new thoughts in dealing with existing competitors, customers and markets. Innovation is a broader concept that addresses the application of new ideas, products or processes (Amabile, 1996). Law no. 18 of 2002 defines innovation as research, development, and/or engineering activities aimed at developing the practical application of new scientific values within contexts or new ways to apply existing science and technology to product or production processes. There are five characteristics of innovation, including relative superiority, compatibility, complexity, ability to be tested, and the ability to be observed (Tarumingkeng dan Suwondo, 2017). Product innovation can fail due to errors in implementing strategies, non-innovative product designs, incorrect estimation of competition, where design or production costs are far higher than expected. In product innovation, there are three things that must be considered: product excellence, product uniqueness, and product costs (Gatignon & Xuereb, 1997).

R&D companies that have leverage suffer more than other companies when faced with financial difficulties. Innovative activities that are incremental have a positive relationship between leverage and the R&D program (Hoang & Ngoc, 2019; Lee & Ye, 2019; Chiu & Lin, 2019). In the context of companies in Indonesia, where innovation is more focused on incremental innovation, innovation is usually funded by debt, and the expectation is that the higher the amount of debt used by companies to form capital structures, the higher the innovation will be carried out by companies (Idrus & Sudarma, 2011).

Management ownership of shares is deemed able to harmonize potential differences between outside shareholders and management, and agency problems are assumed to be lost if a manager is also a company owner. Managerial ownership is the separation of ownership between outsider and insider. If a company has many shareholders, a large group of individuals is unable to participate in the day-to-day management of the company actively. Therefore, they elect the board of commissioners who choose and oversee the company's management. This structure means that the owner is different from the company manager. It gives

stability to companies that are not owned by companies with owners and concurrently managers (Bodie & Alan, 2006). Managerial ownership is one way to reduce agency problems, and this is because managerial ownership is an internal monitoring tool for manager performance (Melinda & Sutejo, 2008). Managerial ownership is closely related to agency problems. The higher the share ownership of directors/commissioners, more concerned they will be to improve company performance. They will try to reduce financial risk by maintaining debt levels and increasing the company's net profit. Managerial ownership, as the name implies, is a comparison of managerial share ownership compared to the number of shares outstanding on the stock market. In other words, managerial ownership is the magnitude of the proportion of ordinary shares owned by management (directors and commissioners).

Hypotheses are based on an analysis of existing theories and previous research, organized as follows:

H1: Innovation affects PBV.

H2: Innovation affects managerial ownership.

H3: Managerial ownership affects PBV.

H4: Managerial ownership mediates the effect of innovation on PBV.

3. Research Methods

This research is associative research with a causal relationship that aims to find out the relationship between two or more variables. Causal relationships are causal relations, and the independent variable (X) affects the dependent variable (Y). Interactive or reciprocal relationships are relationships that affect each other. The type of research approach is quantitative that produces structured data, so it can carry out the process of quantifying data, namely, by changing the original data into tangible data (Sinambela, 2014).

The operational definitions of some of the variables that have been described are as follows:

- a. PBV in this study is calculated based on the distribution of market value or closing price with the book value of a stock in a manufacturing company listed on the Indonesia Stock Exchange in the period 2012-2017 expressed in rupiah.
- b. Innovation is defined as the successful application of a company's creative ideas or the company's ability to create new ideas, products, or processes. Therefore the company is expected to form new thoughts in dealing with existing competitors, customers and markets.
- c. Managerial ownership is the company's shares owned by the company's management. Managerial ownership is measured using an indicator of the percentage of share ownership owned by management from the total amount of share capital in circulation.

The object in this study is manufacturing companies listed on the Indonesia Stock Exchange in 2012-2017. The subject of the research is the annual report of manufacturing companies whose data are taken directly from the Indonesia Stock Exchange website, www.idx.co.id. The sample selection in this study was determined by the purposive sampling method with several provisions, namely (1) registered on the Indonesia Stock Exchange during 2012-2017, (2) issuing audited annual financial statements during the 2012-2017 period, (3) using the rupiah currency (Rp) in the financial statements and annual reports and has complete data on the variables to be examined during the years 2012-2017. The sampling of this study is illustrated in Table 2:

Table 2: Sample Selection Process

Sample Criteria	Result
Manufacturing company listed on the Indonesia Stock Exchange (IDX) in 2012-2017	162
Manufacturing companies that publish audited annual financial statements for the period of 2012-2017	102
Manufacturing companies that do not use the rupiah (Rp) in their financial reports or annual reports	0
Manufacturing companies that do not have complete data on the variables to be examined during the years 2012-2017	35
Number of companies analyzed	25

Based on the sample selection results in Table 2, it can be seen that, from all manufacturing companies listed on the Indonesia Stock Exchange during 2012-2017, there were only 25 companies that could be used as research samples.

4. Results

4.1. Descriptive Statistics

In this study, descriptive analysis is used to provide an overview of the value of each research variable seen from the maximum, minimum, mean, and standard deviation values. In this descriptive analysis, the standard deviation values can be used to provide an overview of the data distribution of each research variable. The standard deviation value which is still lower than the mean value indicates good data distribution and normal distribution, so that it will give good analysis results, while the standard deviation value that exceeds the mean suggests the data distribution is not good because many data fluctuations are leading to unfavorable analysis results. Based on the results of the descriptive analysis in Table 3, the analysis shows that the PBV value has the lowest value of -2.695 and the highest of 84.444 with a mean of 5.418 and a standard deviation of 11.220.

Table 3: Results of Descriptive Analysis

Variables	Mean	Min	Max	Standard Deviation
PBV	5.4180	-2.6950	82.4440	11.2200
Managerial ownership	0.0330	0.0000	0.3800	0.0790
Innovation	0.0070	0.0000	0.1080	0.0180

Based on the results of the descriptive analysis, the PBV deviation standard value exceeds the mean PBV value. It shows that PBV has a data distribution that is not very good and contains data with possible fluctuations that cause unfavorable analysis results. Graph PBV value during the period 2012-2017 in 25 sample companies can be seen in Figure 1:

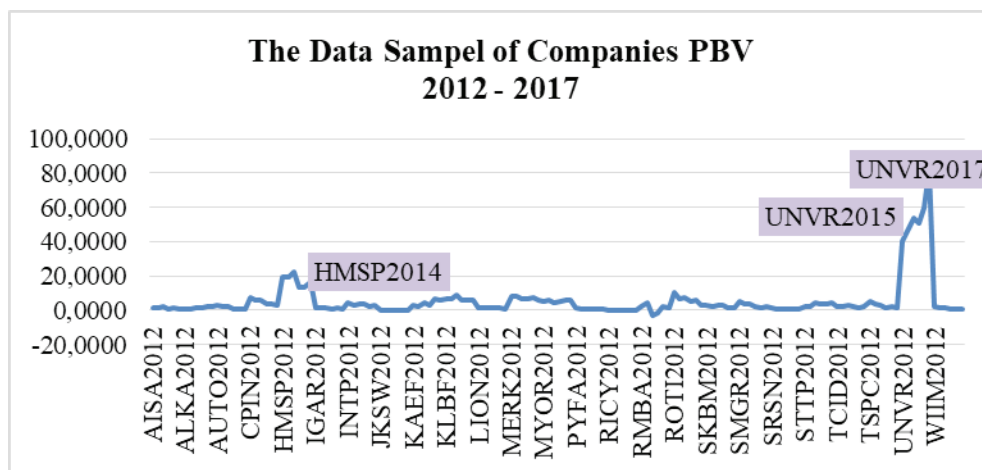


Figure 1: PBV Value of Sample Companies in 2012-2017

Based on the PBV value chart of 25 sample companies during the 2012-2017 period above, it can be seen that the UNVR company is the company that most often has a very high PBV value when compared to other manufacturing companies. In managerial ownership, the results of the descriptive analysis in Table 4 show that the value of managerial ownership has the lowest value of 0.000 and the highest of 0.380 with a mean of 0.033 and a standard deviation of 0.079. Based on the results of the descriptive analysis, the value of the standard deviation of managerial ownership exceeds the mean value of managerial ownership. It shows that managerial ownership does not have proper data distribution and contains data with possible fluctuations that provide unfavorable analysis results. The graph of managerial ownership values during the period 2012-2017 in 25 sample companies can be seen in Figure 2:

Based on the graph of managerial ownership values of 25 sample companies during the 2012-2017 period above, it can be seen that WIIM, SRSN, and MYOR companies are the companies that most often have very high managerial ownership values when compared to other manufacturing companies. In innovation, the results of the descriptive analysis in Table 4 show that the innovation value has the lowest value of 0.000 and the highest of 0.108 with an average of 0.007 and a standard deviation of 0.018. Based on the results of the descriptive analysis, the standard deviation of innovation exceeds the mean value of innovation. It shows that innovation has a not-so-good distribution of data and contains data with possible fluctuations that can provide unfavorable analysis results. The graph of innovation values during the period 2012-2017 in 25 sample companies can be seen in Figure 3:

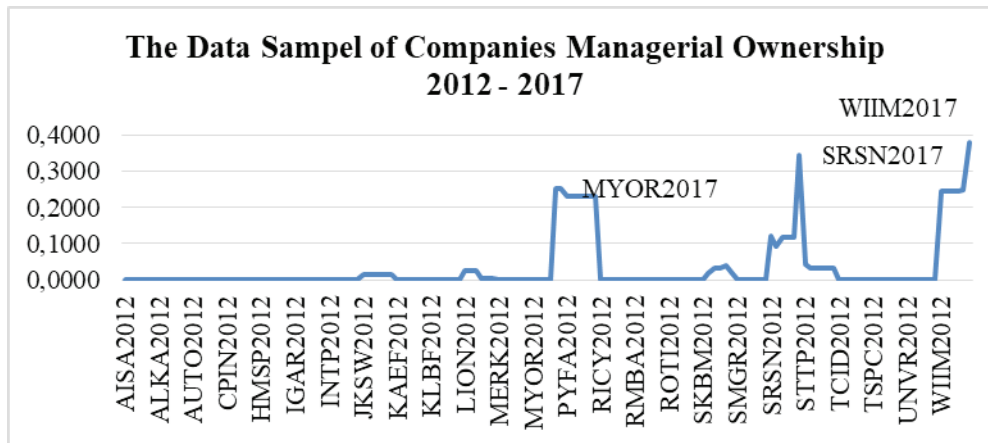


Figure 2: Managerial Ownership of Sample Companies in 2012-2017

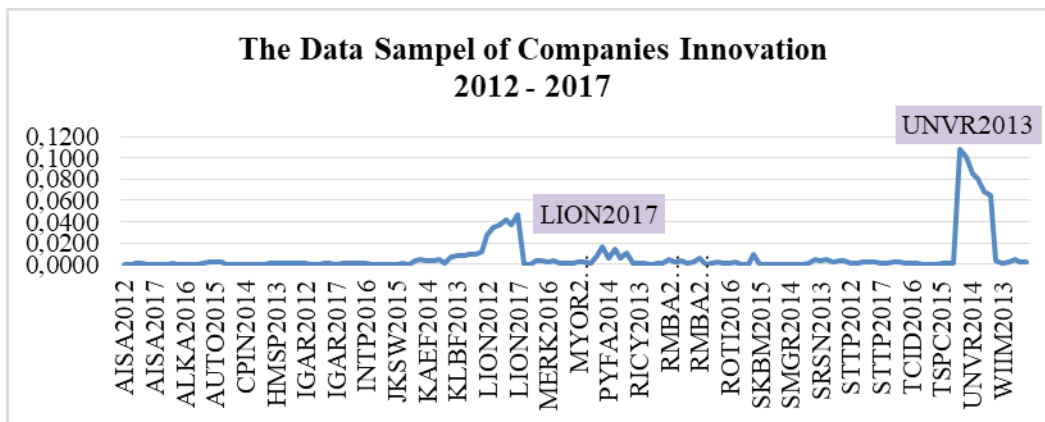


Figure 3: Value of Sample Company Innovations in 2012-2017

Based on the graphs of the innovations of 25 sample companies during the 2012-2017 period above, it can be seen that LION and UNVR companies are the companies that most often have very high innovation values when compared to other manufacturing companies. In this study, an analysis of the effect of innovation on PBV mediated by managerial ownership will be analyzed using the Partial Least Square (PLS) analysis technique. Based on the hypothesis developed in this study, the PLS model specifications that will be estimated in this study are as follows (see Figure 4):

Based on the PLS model specifications in the picture above, all constructs are first-order constructs with one measuring indicator, so that the stages in this PLS analysis only consist of the goodness of fit testing and inner model testing.

After fulfilling the construct validity and reliability at the outer model testing stage, the testing continues on the Goodness of fit model testing. Fit the PLS model can be seen from the SRMR value of the model. The PLS model is stated to have met the criteria of goodness of fit model if the SRMR value <0.10, and the model declared a perfect fit if the SRMR value <0.08. The results of the PLS model goodness of fit test shows that the SRMR value

of the saturated model is 0.000, and the estimated model is 0.000. Because the SRMR value of the model is good on the saturated model and the estimated model is below 0.10, the model is declared a perfect fit and is suitable for testing the research hypothesis.

4.2. Inner Model Testing

Testing the inner model includes the test of the significance of direct influence, examining the indirect effect and measurement of the impact of each exogenous variable on endogenous variables. All of these tests will be used to test the research hypothesis (see Figure 5).

4.2.1. Testing Direct Effects

Based on the estimated results of the PLS model with the bootstrapping technique above, all paths are significant (p-value for all paths <0.05). Based on the results of testing the hypothesis, the following test results are obtained:

The p-value of the effect of innovation on firm value (INOV → PBV) is 0.000 with a statistical T of 8.503 and

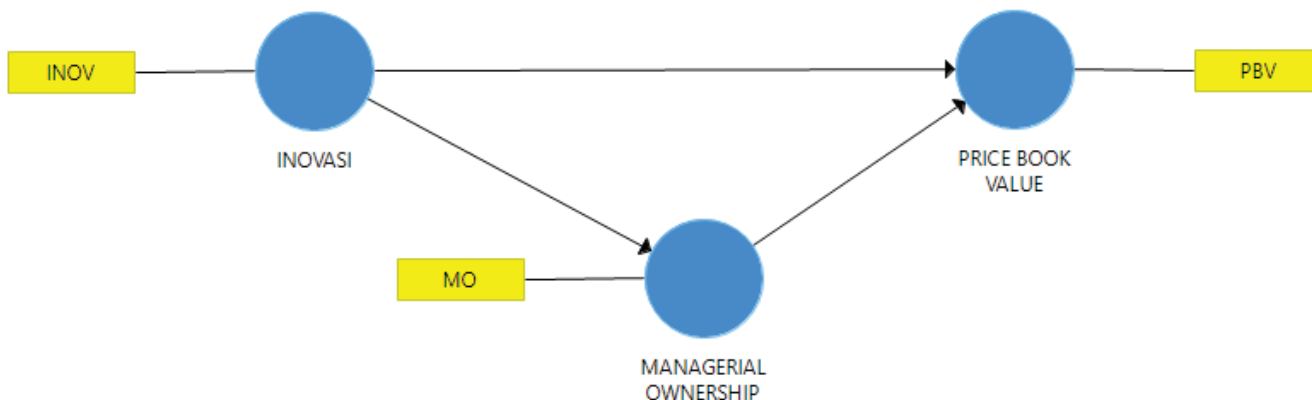


Figure 4: PLS Model Specification

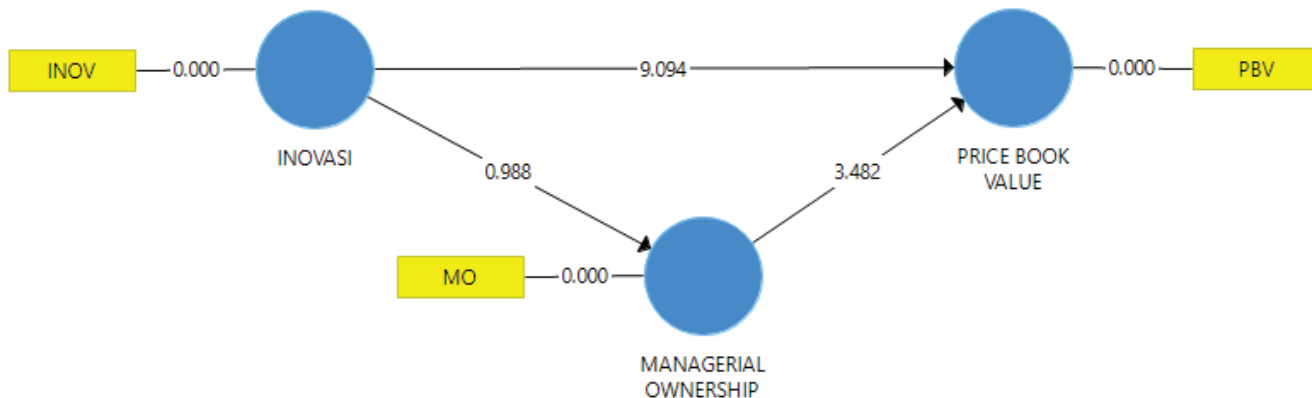


Figure 5: PLS Model with Bootstrapping Technique

the path coefficient is positive 0.506. Because the p-value <0.05 , T statistic > 1.65 and positive path coefficient, it can be concluded that the innovations created by companies have a positive and significant effect on firm value, manufacturing companies that can create many innovations tend to have high values compared with manufacturing companies that are not good at creating innovation.

The p-value of the effect of innovation on managerial ownership (INOV \rightarrow MO) is 0.102 with a statistical T of 1.274. Because the p value > 0.05 with a T statistic <1.65 , it can be concluded that the innovation created by the company does not significantly influence the managerial ownership of a company.

The p-value of the effect of managerial ownership on firm value (MO \rightarrow PBV) is 0.018 with a statistical T of 2.107 and the path coefficient is -0.045. Because the p-value <0.05 , T statistic > 1.65 and the negative path coefficient, it can be concluded that the managerial ownership of the company has a negative and significant effect on the value of the company, manufacturing companies with high managerial ownership tend to have lower company values compared with manufacturing companies that have low managerial ownership.

4.2.2. Testing Indirect Effects

In this study, managerial ownership variables act as variables that mediate the indirect impact of innovation on firm value. Based on the test results of the indirect effect, the following results are obtained: p-value of the indirect effect of innovation on firm value mediated by managerial ownership (INOV \rightarrow MO \rightarrow PBV) is 0.230 with a statistical T of 0.741 and a path coefficient marked negative of 0.003. Therefore p-value > 0.05 , T statistic <1.65 , it can be concluded that innovation cannot indirectly influence on PBV mediated by managerial ownership.

4.2.3. R Square

In PLS analysis, R Square shows the contribution of exogenous variables to endogenous variables. In this study, endogenous variables of managerial ownership are influenced by innovation. Thus, the R square value of managerial ownership shows the significant contribution of innovation to managerial ownership. Furthermore, the PBV variable is influenced by managerial ownership and innovation. Thus the R square value of the PBV variable shows the contribution of managerial ownership and innovation to firm value.

Based on the results of the PLS analysis, the results of the analysis show that the R square value of managerial ownership is 0.027, this indicates that the effect of innovation on managerial ownership is 2.7%, while the remaining 97.3% of managerial ownership variance is influenced other

factors beyond innovation. Furthermore, in PBV, R Square value of 0.762 is obtained, this shows that the contribution of managerial ownership and innovation to PBV is 76.2%, while the remaining 23.8% PBV variance is influenced by other factors outside managerial ownership and innovation.

4.3. Hypothesis Testing

Based on the results of the PLS analysis, the p-value of the effect of innovation on firm value (INOV \rightarrow PBV) is 0,000 with a statistical T of 8.503 and a positive path coefficient of 0.506. Because the p-value <0.05 , T statistic > 1.65 and positive path coefficient, it can be concluded that the innovations created by the company have a positive and significant effect on firm value, manufacturing companies that can create many innovations tend to have higher values than with manufacturing companies that are not good at creating innovation. It supports hypothesis 1 in this study, so that hypothesis 1 is accepted.

Based on the results of the PLS analysis, the p-value of the effect of innovation on managerial ownership (INOV \rightarrow MO) is 0.102 with a statistical T of 1.274. Therefore the p value > 0.05 with a T statistic <1.65 , it can be concluded that the innovation created by the company does not significantly influence the managerial ownership of a company. It does not support hypothesis 2 in this study, so hypothesis 2 is not accepted.

Based on the results of the PLS analysis, the p-value of the effect of managerial ownership on firm value (MO \rightarrow PBV) is 0.018 with a statistical T of 2.107 and the path coefficient is negative at -0.045. Because the p-value <0.05 , T statistic > 1.65 and the negative path coefficient, it can be concluded that the managerial ownership of the company has a negative and significant effect on the value of the company, manufacturing companies with high managerial ownership tend to have lower company values compared with manufacturing companies that have low managerial ownership. It supports hypothesis 3 in this study, so that hypothesis 3 is accepted.

Based on the results of PLS analysis, the p-value of the indirect effect of innovation on firm value mediated by managerial ownership (INOV \rightarrow MO \rightarrow PBV) is 0.230 with a statistical T of 0.741 and the path coefficient is negative with 0.003. Because the p value > 0.05 , T statistic <1.65 , it can be concluded that innovation cannot influence indirectly on PBV mediated by managerial ownership. It negates hypothesis 4 in this study, so hypothesis 4 is not accepted.

5. Discussion

5.1. The Effect of Innovation on PBV

Based on the results of the PLS analysis, it was concluded that innovations created by companies have a positive and

significant effect on firm value, manufacturing companies that can create many innovations tend to have higher values compared to manufacturing companies that are less good at creating innovation.

The results of this PLS analysis are supported by findings obtained from the results of the descriptive analysis, which indicate a tendency for high firm value in companies with high innovation, from the results of the descriptive analysis that indicate a direct relationship between innovation and PBV. It can be seen in the phenomenon that occurs in one manufacturing company, UNVR. Based on the results of descriptive analysis, UNVR companies become companies that have high innovation when compared to other manufacturing companies and this company is also a company with great company value when compared to other manufacturing companies.

The results of this study are in line with the results of Wintoro (2008), which shows that companies with high marketing innovation produce high company performance as well. The company gets a commensurate reward from marketing innovation activities so that there is an incentive for the company to carry out continuous marketing innovations. Idrus and Sudarma (2011) also gave the same research results. In their research, it was stated that innovation is one of the internal factors that play a vital role in the high or low value of the company. The results of this study also support the results of previous studies conducted by Kusumawati (2010), the results of the study indicate that the characteristics of the leadership, as well as new product innovations, have a positive effect on company performance, new product innovations and company performance have a positive impact on sustainable competitive advantage. Rafinda and Noveria (2014) in their research also used R&D costs as a proxy for innovation, the results of their research also showed that innovation can increase company value, the results of his research showed that R&D in the previous eight quarters or two years had a significant relationship with stock values and the value of the company with a positive coefficient, which shows an increase in R&D led to an increase in the value of shares and company value in the next 8 quarters or the next 2 years.

The results of this study are also in line with the results of Nohong (2016) which shows that innovations of pharmacy companies can increase company size, company growth, and company value. The results of this study also support the findings of Anjelina (2019) where the results of his study actually show that innovation has a significant negative effect on tax avoidance, tax avoidance has a significant positive effect on firm value, innovation has a significant positive effect on firm value, and tax avoidance is not a mediating relationship between innovation and the value of the company.

5.2. The Effect of Innovation on Managerial Ownership

Based on the results of the PLS analysis, it can be concluded that the innovations created by the company do not significantly influence the managerial ownership of a company. It might be due to the fact that most of the sample companies in this study had low managerial ownership, so they did not have much influence in providing support for R&D. In general, more concentrated ownership represents potential support in supporting or opposing management. The proportion of public ownership in the company's ownership structure will facilitate monitoring, intervention, or some other disciplinary influence on managers. Therefore, the concentration of public ownership can influence the company's strategic decisions, namely research and development investment expenditure.

5.3. The Effect of Managerial Ownership on PBV

Based on the results of the PLS analysis, it is concluded that the managerial ownership of the company has a negative and significant effect on the value of the company, manufacturing companies with high managerial ownership are likely to have lower company values compared to manufacturing companies that have low managerial ownership. The results of this study are in line with the results of Sukirni (2012), which shows that the variables associated with managerial ownership significantly negatively affect company value.

The results of this study are also in line with the research results of Kusumaningrum and Rahardjo (2013), which shows that investment decisions and dividend policies have a positive effect on company value, while funding decisions, managerial ownership, and institutional ownership negatively affect company value. Agnova and Muid (2015) in their research also stated that managerial ownership had a negative effect on firm value, the results of the study as a whole showed that managerial ownership had a negative and significant effect on firm value, profitability and debt policy had a positive and significant effect on firm value, and investment opportunity does not significantly influence the value of the company. However, the results of this study are not in line with the results of Jusriani and Rahardjo (2013) that managerial ownership (INSDR) does not have a significant influence on company value (PBV), overall, the research shows that profitability (ROE) and dividend policy (DPR) has a significant positive effect on firm value (PBV), while debt policy (DER) and managerial ownership (INSDR) do not have a substantial effect on firm value (PBV). Darmayanti and Sanusi (2018) also showed inconsistent results that showed no influence on company ownership on firm value.

6. Conclusion

The results of the research conducted have been calculated using SEM (structural equation modeling) with the SmartPLS program, and the following conclusions can be drawn: innovation has a significant positive effect on firm value (PBV), innovation has no significant impact on managerial ownership, whereas managerial ownership significant adverse effect on firm value (PBV). While innovation cannot have an indirect effect through managerial ownership on firm value (PBV). Based on the hypothesis testing resulting from processing innovation, managerial ownership and corporate value (PBV), it can be suggested as follows: the need for the role of managerial ownership in increasing innovation in manufacturing companies as indicated by the addition of research and development (R&D) costs and increased R&D costs through Managerial ownership in manufacturing companies will increase company value (PBV).

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