The Determination Factors of Firm Value by Return on Assets as Mediating Variable

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ABSTRACT

This research was carried out to examine the effect between inventory turnover, receivables turnover, and sales growth on firm value with return on assets as a mediating variable. This research uses secondary data sourced from annual reports and IDX statistical data. The population of this research included 25 agricultural sectors. The sample selection method used a purposive sampling method with specific qualifications so that 120 data were obtained from 12 firms. The findings of this research are that receivables turnover and sales growth influence return on assets. Inventory turnover and receivables turnover do not affect firm value. However, there is a positive and significant influence of sales growth and return on assets on firm value. In addition, return on assets can mediate receivables turnover on firm value.

Keywords: Inventory turnover, receivables turnover, sales growth, return on assets, firm value

INTRODUCTION

The firm's goals can measure the level of firm success that has been achieved. In achieving these goals, the company will face various uncertain conditions. Each firm has its own goals in establishing a firm, one of which is maximizing its wealth or value for shareholders. The higher the firm value, the more investors will invest their capital in the firm (Jaya, 2020). The firm value can describe the welfare of owners and shareholders, which can be seen in the firm's share price. If the share price is high, the firm value is of high quality. However, if the firm's share price is low, the firm value will be said to be bad (Iswajuni et al., 2018). This research uses Price to Book Value (PBV) to measure the value of a firm. An excellent firm value is if the PBV value is more than one (Claresta, 2022).
The value of agricultural sector firms fluctuates until 2022, the year with the lowest average firm value since 2013. This decline in firm value occurred in the early years of the Covid-19 pandemic, namely in 2020, when several firms reached negative PBV figures. Firms that have never touched negative numbers from 2013 to 2022 are PT BISI Internasional Tbk (BISI) and PT Sawit Sumbermas Sarana Tbk (SSMS). In 2021, nine firms experienced negative PBV, and eight firms experienced it in 2022. That means that the condition of the firms can be said to be unfavorable, and the company's share price will decrease (Pratama & Soekotjo, 2020).

One of the important things for investors before investing in a firm is to look at financial performance. One way of describing financial performance is the profitability ratio. Profitability describes the level of profit obtained in a firm during its operational activities by utilizing assets, capital, and sales. The condition and ability of the firm to earn profits are projected through the firm's profitability. Investors are usually interested in investing in a firm by looking at profitability because they believe they benefit from their investment results (Jaya, 2020). Return on Assets (ROA) is a profitability ratio that describes the utilization of fixed assets owned by a firm. This ratio illustrates the profitability, effectiveness, and efficiency of a firm in making a profit by utilizing its resources. It illustrates the extent to which the return on investment on the investment made. A high ratio value means the firm has managed its fixed assets well. Conversely, if the ratio value is low, the firm needs to improve the management of its fixed (Freddy & Gultom, 2020).

Asset turnover is one of the factors that can influence the level of return on assets in a firm. The value of the activity ratio can determine the efficiency and effectiveness of using firm assets, one of which is inventory turnover. Inventory turnover measures the amount of rotating inventory in one period. A firm's effectiveness in gaining profit or profitability depends on good inventory management. A firm is classified as less than optimal if inventory turnover moves slowly. In addition, firm profits are guided by the effectiveness of the firm's receivables management. An essential element for the continuity of a firm is managing receivables because it can be a source of funds or firm finances in terms of operations (Garcinia et al., 2022). Profit growth is also influenced by high sales every year. Sales growth that continues to expand annually will impact the profits obtained by the firm (Gultom et al., 2020).

Several studies have been conducted previously by Wulandari & Handayani (2023), Fujilestari et al. (2020), and Apriliana et al. (2023) only show the effect on return on assets. Then, previous research by Yanuarti & Heniwati (2022), Elisa & Amanah (2021), and Kurniawan & Munawaroh, (2022) also only showed the effect of inventory turnover, accounts receivable turnover, sales growth, and return on assets on firm value. Therefore, it is necessary to research to support the results of research that has been done before. This study uses return on assets as mediation to distinguish it from previous research. In addition, the object used is also different from previous studies. Return on assets is used as mediation because it has an influence on firm value and is also a reflection of the firm's performance in obtaining operating profit. A higher return on assets will give investors a reasonable view that the firm has better business prospects (Widyakto & Ariefiantoro, 2020).

The difference in results in research that has been done before underlies the need for more research that can add new developments and findings that are different and can be helpful for companies and investors in the future.

Signalling Theory
Spence first expressed signalling theory in 1973 and explained that the owner of the information (the sending party) provides a signal in the form of information, such as illustrating the condition of a firm that can be useful for investors (the receiving party) (Oktavia et al., 2022). Signalling theory was developed again by Ross in 1977, which states that firm executives who have better information will be encouraged to convey this information to investors. This information can be in the form of annual financial reports that provide information on the state of the firm, a record of past conditions, and a reflection of the firm's performance. The information the firm conveys is used as a signal for investors or parties outside the firm to consider their decisions in investing (Rois et al., 2021).

**Firm Value**

Increasing a firm value is an achievement that is a firm's goal. The high firm value will increase welfare for a firm, followed by high share prices, which become a hope for investors for a firm's future. The Price of Book Value (PBV) measures the firm's value relative to the shareholder capital (Elisa & Amanah, 2021).

**Return on Assets**

A firm aims to obtain maximum profits through all its capabilities and resources. One of the ratios used to determine a firm's profitability is Return on Assets (ROA). Return on assets measures a firm's capacity to generate revenue and profits based on the assets owned. A high level of return on assets causes the profits generated to increase (Freddy & Gultom, 2020).

**Inventory Turnover**

Inventory turnover is a financial ratio used to measure how often capital or funds invested in inventory rotate during one period. The large number of turnovers determines the effectiveness of a firm in managing inventory, which affects increasing profit growth. The higher the inventory turnover, the more the effectiveness of operational control grows. Factors that can influence inventory are the volume or quantity required, the continuity of production or uninterrupted distribution, and the nature of the goods. (Freddy & Gultom, 2020).

**Receivables Turnover**

Receivables turnover is a ratio to quantify how quickly trade receivables are successfully accumulated into cash in one period. The higher the receivables turnover ratio value, the better and more effective the firm's receivables management. If the annual receivables turnover rate experiences instability, the firm needs to improve receivables management (Garcinia et al., 2022).

**Sales Growth**

Sales is a firm effort to develop strategic plans to satisfy consumer needs and desires that generate large profits. The sales obtained will measure the sales growth rate each year. The level of sales growth will influence profit growth, which affects the firm’s profitability (Apriliana et al., 2023).

**Hypothesis Formulation**

The Influence of Inventory Turnover on Return on Assets
A high inventory turnover value indicates that the firm can sell goods quickly, thereby increasing revenue. Otherwise, a low inventory turnover value means that sales at the firm still need to be improved, which may affect the firm's sales and profits. Research conducted by Wulandari & Handayani, (2023) and Fujilestari et al. (2020) says there is a positive effect on inventory turnover and return on assets. However, research which is conducted by Garcinia et al. (2022) shows that inventory turnover does not affect return on assets. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H1: Inventory Turnover Has a Positive Influence on Return on Assets

The Influence of Receivables Turnover on Return on Assets

For the activities of a firm, receivables management has a vital role in minimizing uncollectible receivables. Payment of receivables following the policy becomes one of the things that influences a firm's profitability. This is relevant to research conducted by Fujilestari et al. (2020), Yana et al. (2023), and Wulandari & Handayani (2023), which state that receivables turnover influences the return on assets. This differs from research conducted by Garcinia et al. (2022) and Putra et al. (2023), who say that receivables turnover does not affect return on assets. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H2: Receivables Turnover Has a Positive Influence on Return on Assets

The Influence of Sales Growth on Return on Assets

One of the variables that influences the Return on Assets is sales growth. Sales carried out by a firm aim to increase or stabilize sales growth every year because good selling will affect a firm's profits. Research conducted by Apriliana et al. (2023) and Scharissa & Helliana (2023) states that sales growth positively affects return on assets. Meanwhile, research conducted by Gultom et al. (2020) said that sales growth does not affect the return on assets owned by a firm. Based on research which is conducted, researchers formulate a hypothesis that will be proven, namely:

H3: Sales Growth Has a Positive Influence on Return on Assets

The Influence of Inventory Turnover on Firm Value

Yanuarti & Heniwi (2022) found that inventory turnover positively influences on firm value. The firm's good condition is indicated by high inventory turnover. This shows that the firm reduces inventory storage costs and inventory maintenance costs. Firm profits will increase with reduced costs. With growing profits, this will be followed by an increase in firm value. This result is relevant to research conducted by Devina & Purnama (2022), which stated that inventory turnover positively influences firm value. This result is different from Vania (2019), which said that high or low activity in a firm is not a reference for buying shares and has no influence on firm value. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H4: Inventory Turnover Has a Positive Influence on Firm Value

The Influence of Receivables Turnover on Firm Value

Research conducted by Yanuarti & Heniwi (2022) stated that the high receivables turnover does not affect the condition and the firm value. This is in line with research which is conducted by Mesrawati et al. (2022), which states that firm value is not influenced by the level
of receivables turnover. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H5: Receivables Turnover Has a Positive Influence on Firm Value

The Influence of Sales Growth on Firm Value

Research which is conducted by Elisa & Amanah (2021) stated that high sales growth will also increase firm value. A high sales growth rate has a positive impact on firm profits. This high profit can attract investors to invest and increase the value of a firm. This is supported by research by Ellytra & Suparyati (2023) that high sales growth reflects good firm performance and has good prospects in the future. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H6: Sales Growth Has a Positive Influence on Firm Value

The Influence of Return on Assets on Firm Value

Investors are extracted to invest capital in a firm by noticing the level of profitability. A high level of return on assets defines the good conditions of the firm, so demand for shares will increase. This increase will affect firm value (Jaya, 2020). This is supported by research which is conducted by Kurniawan & Munawaroh (2022), which states that the high value of a firm is influenced by the profits and assets kept by a firm. Based on research conducted, researchers formulate a hypothesis that will be proven, namely:

H7: Return on Assets Has a Positive Influence on Firm Value

The Influence of Inventory Turnover, Receivables Turnover, and Sales Growth on Firm Value with Return on Assets as Mediating

Based on research conducted by Yanuarti & Heniwati (2022), high inventory turnover indicates that the firm's occupation is optimal. However, the high value of receivables turnover does not affect the condition and value of the firm. The level of sales growth will positively affect firm value (Elisa & Amanah, 2021). If the profits generated by the firm increase, potential investors will look at the firm to invest, thereby increasing the value of the firm (Jaya, 2020). The company's ability to generate operating profit is significantly determined by the management of the firm's assets and sales growth, which reflects the firm's ability to market products (which reflects the availability of the firm's working capital to carry out its business activities). These aspects are essential for the firm's ability to earn profits. Return on Assets reflects management performance in generating operating profit to dominate in increasing firm value (Widyakto & Ariefiantoro, 2020). Based on the research conducted, researchers formulated several hypotheses that will be proven, namely:

H8: Return on Assets can mediate between Receivables Turnover on Firm Value
H9: Return on Assets can mediate between Inventory Turnover on Firm Value
H10: Return on Assets can mediate between Sales Growth on Firm Value

METHODS

Research conducted by the author is quantitative research with a secondary data type where the data are taken from companies' annual reports, which can be accessed generally via the agricultural sector firm and IDX website. The population of this research includes 22 agricultural sector companies listed on the Indonesia Stock Exchange in 2013-2022. This research uses
purposive sampling with several criteria, resulting in 12 agricultural sector companies as samples over ten years and obtaining 120 data. There are several variables used in this research, including the independent variable consisting of Inventory Turnover (X1), Receivables Turnover (X2), and Sales Growth (X3), the dependent variable is Firm Value (Y), and the mediating variable is Return on Assets (Z). The data analysis method used is descriptive analysis; the classic assumption test consists of normality, multicollinearity, heteroscedasticity, autocorrelation, and multiple linear regression analyses. It also uses hypothesis tests and path analysis with SPSS 25 software. The regression model used is:

\[ Z (ROA) = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + e_1 \]

\[ Y (PBV) = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4Z + e_2 \]

### RESULTS AND DISCUSSION

**Results**

Table 1. Descriptive Statistics Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory Turnover</td>
<td>120</td>
<td>-0.26</td>
<td>2.57</td>
<td>1.7765</td>
<td>0.56234</td>
</tr>
<tr>
<td>Receivables Turnover</td>
<td>120</td>
<td>-0.96</td>
<td>4.78</td>
<td>1.8248</td>
<td>1.0120</td>
</tr>
<tr>
<td>Sales Growth</td>
<td>120</td>
<td>-2.90</td>
<td>12.07</td>
<td>0.1612</td>
<td>1.1571</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>120</td>
<td>-58.25</td>
<td>20.49</td>
<td>3.4802</td>
<td>8.77211</td>
</tr>
<tr>
<td>Company Value</td>
<td>120</td>
<td>-2.30</td>
<td>1.86</td>
<td>0.1658</td>
<td>0.73565</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>120</td>
<td>-58.25</td>
<td>20.49</td>
<td>3.4802</td>
<td>8.77211</td>
</tr>
</tbody>
</table>

Based on table 1, inventory turnover variable (X1), the minimum value produced is -0.26, the maximum value is 2.57, the standard deviation result value is 0.56234, and the average value is 1.7765. For the receivable turnover variable (X2), the minimum value produced is -0.96, the maximum value is 4.78, the standard deviation result value is 1.0120, and the average value is 1.8248. For the sales growth variable (X3), the minimum value produced is -2.90, the maximum value is 12.07, the standard deviation result value is 1.1571, and the average value is 1.612. In the return on assets (Z) variable, the minimum value produced is -58.25, the maximum value is 20.49, the standard deviation result value is 8.77211, and the average value is 3.4802. In the firm value variable (Y), the minimum value produced is -2.30, the maximum value is 1.86, the standard deviation value is 0.73565, and the average value is 0.1658.

Table 2. Classical Assumption Test Results

| Source: data processed by author, 2023 |
Based on table 2, the normality test is accomplished with the Kolmogorov-Smirnov test by reading the significance value or Asymp. Sig (2-tailed) with a test criterion of $\alpha = 0.05$. The significance value obtained is 0.200 or greater than 0.05. So, it can be supposed that the data is normally distributed. The Tolerance and VIF values of each independent variable are used to prove multicollinearity symptoms in the research data. The Tolerance value for the four independent variables is no less than 0.1, and the VIF value for the four independent variables is no more than 10. Thus, symptoms of multicollinearity were not found in this research data. The autocorrelation test uses the Durbin-Watson (DW) test method using the equation $dU < dW < 4 - dU$. In table 5, the $dU$ value with 113 samples and 4 variables is 1.6207 and the $dL$ is 1.7670, forming the equation $1.6207 < 2,050 < 4 - 1.6207$. Thus, symptoms of autocorrelation were not found in this research data.

Graph 1 shows that the data does not show symptoms of heteroscedasticity. The scatter diagram pattern on the Scatterplot graph evidences this. These patterns form random patterns and are scattered below and above the number 0 on the y-axis.

Graph 1. Scatterplot Graph
Source: data processed by author, 2023

Graph 1 shows that the data does not show symptoms of heteroscedasticity. The scatter diagram pattern on the Scatterplot graph evidences this. These patterns form random patterns and are scattered below and above the number 0 on the y-axis.

Table 3. Multiple Linear Regression 1 Results
Source: data processed by author, 2023
From these results the multiple linear equation 1 is as follows:

\[ Z (\text{ROA}) = 7.488 -5.423X_1 + 3.068X_2 + 5.091X_3 + e_1 \]

Table 4. Multiple Linear Regression 2 Results
Source: data processed by author, 2023

From these results the multiple linear equation 2 is as follows:

\[ Y (\text{PBV}) = -0.364 + 0.125X_1 + 0.026X_2 + 0.581X_3 + 0.050Z + e_2 \]

Table 5. Determination Coefficient Test Results
Source: data processed by author, 2023

The coefficient of determination test shown in table 5 produces a first model Adjusted R Square value of 0.332 or 33.2%, which means that the variables inventory turnover, receivables turnover, and sales growth can clarify changes in the dependent variable, namely return on assets of 0.332 or 33.2% and the remaining 0.668 or 68.8% of the influence is caused by factors other than the third independent variable. The Adjusted R Square value of a second model is 0.245 or 24.5%, which means that the independent variables inventory turnover, receivables turnover, sales growth, and return on assets can explain changes in the dependent variable, namely the firm.
value of 0.245 or 24.5% and the remaining 0.755 or 75.5% of the influence is caused by factors other than the four independent variables.

Figure 1. Full Research Model
Source: data processed by author, 2023

Discussion

The Influence of Inventory Turnover on Return on Assets

Based on the test results conducted using SPSS 25, it produces a significance value of 0.000, where this value is less than 0.05. However, the regression coefficient value of inventory turnover is -5.423. Inventory turnover does not affect return on assets, so the first hypothesis (H1) is not accepted. This is supported by research which is conducted by Garcinia et al. (2022) that inventory turnover is not one of the factors increasing return on assets. According to the theory, high inventory turnover means the firm's performance is good. However, if the firm's inventory turnover is low, it indicates a buildup of inventory and a low sales level. So, the firm is declared to be underperforming. Research which is conducted by Wulandari & Handayani (2023) and Fujilestari et al. (2020) does not follow the results of this study because a high inventory turnover value illustrates that the firm can sell goods quickly thereby increasing revenue.

The Influence of Receivables Turnover on Return on Assets

Based on the test results conducted using SPSS 25, it produces a significance value of 0.000, where this value is less than 0.05 and the regression coefficient value of receivables turnover is 3.068. Receivables turnover has a positive and significant effect on return on assets, so concludes that the second hypothesis (H2) is accepted. This is supported by research which is conducted by Fujilestari et al. (2020) and Wulandari & Handayani (2023) which states that high receivables turnover can increase firm profitability. In contrast to research which is conducted by Garcinia et al. (2022) and Putra et al. (2023) which states that the level of receivables turnover does not affect return on assets.

The Influence of Sales Growth on Return on Assets

The test results conducted using SPSS 25 show that the significance value of sales growth is smaller than 0.05, which is 0.026 and the regression coefficient value is 5.091. This means that there is a positive and significant effect of sales growth on return on assets. This study concludes that the third hypothesis (H3) is accepted. The results of this study are in line with research which is conducted by Apriliana et al. (2023) dan Sacharissa & Heliana (2023) which states that one of the things that affects return on assets is sales growth. However, this result is different from
research by Gultom et al. (2020) and Pangestu & Nurasik (2019) which states that there is no effect of sales growth on return on assets.

**The Influence of Inventory Turnover on Firm Value**

The test results that have been carried out using SPSS 25, show that the significance value of inventory turnover is greater than 0.05, which is 0.418 and the regression coefficient value is 0.125. So, it can be concluded that inventory turnover does not affect firm value. This means that the fourth hypothesis cannot be accepted. This is supported by research previously conducted by Vania (2019) that high or low activity in the firm is not a reference in buying shares and has no impact on firm value.

**The Influence of Receivables Turnover on Firm Value**

The fifth hypothesis in this study is that there is a positive effect of receivables turnover on firm value. The significance value of the test that has been carried out is 0.731 where the value is more than 0.05 and the regression coefficient is 0.026. From these results, it can be concluded that receivables turnover does not affect the value of a firm. This means that the fifth hypothesis (H5) in this study cannot be accepted. This research is supported by research which is conducted by Yanuarti & Heniwati (2022) and Mesrawati et al. (2022) which states that receivables turnover is not a factor considered by investors in investing their capital.

**The Influence of Sales Growth on Firm Value**

The significance value of sales growth from the test conducted is smaller than 0.05, which is 0.047 and the regression coefficient value is 0.581. This means that the sixth hypothesis (H6) in this study can be accepted. In other words, high sales growth will affect firm value. This research is supported by the results which are conducted by Elisa & Amanah (2021) and Ellytra & Suparyati (2023) that a high level of sales growth has a positive impact on firm profits. With the amount of profit, it can attract investors to invest and increase the value of a firm.

**The Influence of Return on Assets on Firm Value**

The seventh hypothesis (H7) states that return on assets has a positive influence on firm value. The significance value of return on assets in the test results that have been carried out is smaller than 0.05, which is 0.000 and the regression coefficient value is 0.050. This means that the seventh hypothesis (H7) in this research is accepted. This is supported by research Jaya (2020) and Kurniawan & Munawaroh (2022) which states that firm value is positively influenced by return on assets. With high profitability, demand for shares in a firm will increase because many investors are interested in buying shares in a firm. This has an impact on increasing share prices and firm value.

**The Influence of Inventory Turnover on Firm Value by Return on Assets as Mediating Variable**

Through path analysis that has been carried out with SPSS 25, the indirect test results of inventory turnover on return on assets are -0.382, return on assets on firm value is 0.431, and the direct effect between inventory turnover on firm value is 0.076. Testing is done by comparing the direct test with the indirect test. If the direct test value is smaller than the indirect test, then the return on assets is proven to mediate between the independent variable and the dependent variable. The eighth hypothesis (H8) in this study cannot be accepted. The indirect test value in
this study is smaller than the direct test, which is -0.141. This means that return on assets cannot mediate the effect of inventory turnover on firm value.

The Influence of Receivables Turnover on Firm Value by Return on Assets as Mediating Variable

Through path analysis that has been carried out with SPSS 25 the value of accounts receivable turnover on return on assets of 0.463, return on assets on firm value is 0.431, and the direct effect between receivables turnover on firm value is 0.033. The multiplication operation of these values shows that the indirect test has a greater value than the direct test, which is 0.199. This means that return on assets can mediate the influence between receivables turnover on firm value. This means that the ninth hypothesis (H9) in this study can be accepted.

The Influence of Sales Growth on Firm Value by Return on Assets as Mediating Variable

The results of the path analysis resulted in an effect value of sales growth on return on assets of 0.176, return on assets on firm value of 0.431, and sales growth on firm value of 0.173. The direct test is greater in value than the indirect test. So, the tenth hypothesis (H10) in this study cannot be accepted. Return on assets cannot mediate the influence between sales growth with firm value.

CONCLUSION

From the output of this research, the variables that affect the return on assets in agricultural companies are receivables turnover and sales growth, while inventory turnover variables do not influence the return on assets. Variables that affect firm value are sales growth and return on assets, while inventory turnover and receivables turnover do not affect the value of a firm. Return on assets can mediate the effect of receivables turnover on firm value through path analysis. The implication of the research that the authors conducted was to determine the influence of inventory turnover, receivables turnover, and sales growth on firm value by return on assets as a mediating variable in agricultural sector companies listed on the Indonesia Stock Exchange for 2013-2022. This research is also expected to be a reference and guide for readers, especially investors, in making investments. Suggestions for further research are to choose other dependent, independent, and mediating variables so that the research results get something new. In addition, the firms sampled in this study were very few, so it required considerable effort and accuracy, especially when collecting and processing data. Tests and results in research that the author conducts allow for differences to be shown in different sectors.

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