

FINANCIAL PERFORMANCE, INSTITUTIONAL OWNERSHIP, SIZE, AND FIRM VALUE: A STRUCTURAL EQUATION MODELING APPROACH

N. Rusnaeni¹, Hari Gursinda², Hendro Sasongko³, Dani Rahman Hakim⁴

Universitas Pamulang^{1,4}

Universitas Pakuan^{2,3}

Email: nanirusnaeni1809@gmail.com¹ hg.gursida@unpak.ac.id² hendrosgk@gmail.com³
danirahmanhak@gmail.com⁴

Abstract: This study analyzed the effect of financial performance, institutional ownership, and firm size on firm value. This study used the partial least square structural equation modeling (PLS-SEM) analysis to examine which indicators best measure financial performance. This study employed panel data from Indonesia's 13 property and real estate sector companies. This study found that the return on assets ratio is the only indicator measuring financial performance. This study also found that financial performance positively affects firm value. On the other hand, institutional ownership affected the firm value negatively. In contrast, this study failed to prove any positive effect of firm size on firm value. This study indicated that investors tend to pay close attention to profitability as the primary consideration when investing in property and real estate companies' shares. Another implication of this research is that the significant institutional ownership in a company tends to make investors uninterested.

Keywords: *Firm Value, Financial Performance, Institutional Ownership*

1. Introduction [Times New Roman 12 bold]

The property and real estate sector business in Indonesia is still stagnating. Over the past decade, the firm value of these sector companies has not increased significantly. On the contrary, the need for property, especially public housing, tends to be relatively high. Therefore, it is crucial to examine the determinants of firm value for property and real estate sector companies. However, research on the firm value in Indonesian property and real estate sector companies has been rare. Besides, many researchers are still paying much attention to the firm value topics.

Signaling theory from Lintner (1956) indicated that financial performance influences firm value. By using this theory, many studies such as from Martha et al. (2018), Husna & Satria (2019), Mira (2020), Susanti & Restiana (2018), Atidhira & Yustina (2017), Cahyaningrum & Antikasari (2017), Haryono & Paminto (2015), Sucuahi & Cambarian (2016), and Mudjijah et al. (2019) mentioned that financial performance has a positive effect on firm value. Financial performance is a signal for investors to invest in a company. Based on this, if the financial performance is high, the firm's value will also.

However, the effect of financial performance on firm value tends to be inconsistent. Evidently, Mahendra et al. (2012) stated that the dimensions of leverage and liquidity are not

affected firm value. Rivandi (2018) also found that leverage does not affect the firm value as a dimension of financial performance. Research by Mai (2013) and Hirdinis (2019) also failed to prove the positive effect of profitability on firm value. The difference in the proxies used in measuring financial performance is one of the causes of the inconsistency of the research results. Therefore, this study seeks to re-examine the effect of financial performance on firm value by first ensuring the most appropriate financial performance measurement model through structural equation modeling partial least squares (PLS-SEM) analysis. This research uses property and real estate sector companies as research objects. As far as we know, studies that used the PLS-SEM in the property and real estate context have not been founded.

In addition to financial performance, many studies have also examined the effect of firm size and institutional ownership on firm value. Similar to financial performance, firm size and institutional ownership on firm value also differ between research results. On the one hand, the research of Kakani et al. (2011) and Wahyuni et al. (2013) stated that the firm's size has a positive and significant effect on the firm's value. Nevertheless, on the other hand, Gharaibeh & Qader (2017), Dewi & Sudiarta (2017), Astuti et al. (2019), and Mudjijah et al. (2019) stated that firm size is not proven to affect firm value. Besides, Tauke et al. (2017) found that firm size harmed firm value.

Likewise, some studies, such as from Naini & Wahidahwati (2014), Clay (2002), Chen et al. (2008), and Dian & Lidyah (2016) mentioned that institutional ownership has a positive effect on firm value. However, many studies suggest otherwise. Israel et al. (2018), Wijaya & Purnawati (2014), Tambalean et al. (2018), Dewi & Sanica (2017), Astuti et al. (2019), and Awulle et al. (2018), for example, stated that institutional ownership does not affect firm value. Therefore, it is essential to re-examine the effect of firm size and institutional ownership on firm value in the context of property and real estate sector companies.

Hypotheses Development

The signaling theory from Lintner (1956) indicated that financial performance is the primary signal used by investors to make decisions. Companies with high financial performance can provide a positive signal for investors to invest in shares in the company. The investor's interest tends to impact the value of the company. It is because the firm's value can be measured based on its shares. One of the most widely used measures of stock-based firm value by researchers is Tobin's Q. By using Tobin's Q, many researchers proved that the financial performance affected the firm value.

Several studies used different dimensions and indicators in measuring financial performance. The dimension of profitability with return on assets (ROA) indicator is one of the most widely used measures of financial performance by researchers. Many researchers also used the dimensions of liquidity, solvency, and leverage to measure financial performance to test their effect on firm value. Several studies that have succeeded in proving the positive influence of financial performance on firm value are Martha et al. (2018), Husna & Satria (2019), Mira (2020), Susanti & Restiana (2018), Atidhira & Yustina (2017), Cahyaningrum & Antikasari (2017), Haryono & Paminto (2015), Sucuahi & Cambarian (2016), and Mudjijah et al. (2019). Explicitly, Pratiwi et al. (2020) found that ROA positively affects firm value.

However, several other studies could not find any significant effect of financial performance on firm value. Research by Mai (2013), Mahendra et al. (2012), Hirdinis (2019), and Rivandi (2018) did not find any effect of financial performance on firm value. One of the reasons behind the differences between the results of this study is the use of different proxies in measuring financial performance. In addition, differences in sample types, company characteristics, industry characteristics, and different macroeconomic conditions between countries also create inconsistencies in the research results.

Although the influence of financial performance on firm value still varies between studies, the researchers did not discover the specific and robust theories to encounter the signaling. Therefore, signaling theory is relevant in predicting the positive influence of financial performance on firm value. This study has a similar point of view on signaling theory, so the first hypothesis in this study is:

H₁: Financial Performance affects firm value positively

Many researchers also used firm size as a determinant of firm value. Investors prefer to invest their money in higher size companies. Based on signaling theory, firm size is also an important signal for investors. Siahaan (2013), Rizqia et al. (2013), Zuhroh (2019), Kakani et al. (2011), and Wahyuni et al. (2013) proved that firm size has a positive effect on firm value. These studies confirm that investors tend to still pay attention to the firm's size in investing. However, research from Israel et al. (2018) and Husna & Satria (2019) revealed that firm size could not affect firm value. More explicitly, using a sample of companies in the real estate sector, Setiadharmas & Machali (2017) did not find the effect of firm size on firm value. Furthermore, Hirdinis (2019) found that firm size had a significant adverse effect on firm value. The existence of contradictions between research makes it necessary to re-test. In this context, concerning signaling theory and several previous studies, the researcher suspects that:

H₂: Firm's Size affects firm value positively

Based on the agency theory of Jensen & Meckling (1976), a larger company will increase its agency costs. Agency costs in this context arise from the need to increase control over the company. Without good supervision with the concept of corporate governance, the larger the firm's size is considered to trigger various irregularities. Such deviations stem from information asymmetry in which the board of commissioners does not have detailed and adequate information compared to the board of directors. As a result, the board of directors can be triggered to commit various irregularities.

One form of corporate governance implementation that is considered to increase company performance is the involvement of institutional investors in the board of commissioners. It can be achieved in line with the increase in institutional ownership. Therefore, the size of the company's capital structure with institutional ownership is considered to increase the firm's value. Chen et al. (2008) found that institutional ownership can increase firm value as measured by Tobin's Q. These results indicate that institutional investors can positively contribute to the company by effectively monitoring the costs incurred by the company. Lin & Fu (2017) found robust results that institutional ownership positively affects firm value.

Meanwhile, Nashier & Gupta (2016) research revealed that institutional ownership positively affects firm value because it can increase oversight of managerial actions and decisions. In line with that, Lin (2010) found a threshold effect between institutional ownership and firm value of 81.2%. If the institutional ownership is less than 81.2%, it cannot affect the firm value. However, if institutional ownership is more than 81.2%, there is an increase in firm value of 1.25% from every 1% increase in institutional ownership (Lin, 2010).

However, other studies include those from Wijaya & Purnawati (2014), Tambalean et al. (2018), Dewi & Sanica (2017), Astuti et al. (2019), and Awulle et al. (2018), did not find a positive effect of institutional ownership on firm value. Setiany et al. (2020) separate the effect of foreign and domestic institutional ownership on firm value based on the source. Setiany et al. (2020) stated that foreign and domestic institutional ownership has a positive but not significant influence on firm value. Navissi & Naiker (2006) mentioned that one of the reasons that institutional ownership cannot affect firm value is the absence of board representation. In other words, institutional ownership needs to be accompanied by representation in the board of commissioners. Based on this, assuming that institutional ownership gets board representation, this study assumes that:

H₃: Institutional Ownership affects firm value positively.

2. Research Method

This study employed panel data from property and real estate sector companies listed on the Indonesia Stock Exchange. By using the purposive sampling method, as many as 13 companies were selected as samples in this study. Because the observation period is ten years, from 2011 to 2020, the total observation data in this study is 130. This study uses the structural equation modeling partial least square (PLS-SEM) method to examine the relationship between the variables that are the model in the study. The primary purpose of using PLS-SEM in this study is to determine which ratio is the most precise in measuring financial performance. In addition, PLS-SEM is also considered entirely accurate in analyzing panel data. Several other studies have used PLS-SEM to examine panel data on research in economics and accounting. Researches conducted by Haryono & Paminto (2015), Ramli et al. (2019), and Laguir et al. (2015) are a small part of research in the field of accounting that uses PLS-SEM.

This research uses PLS-SEM analysis to determine the most appropriate indicator of financial performance. Financial performance is positioned as a latent variable that a reflective measurement model measures in this context. This study tested three indicators for suitability in measuring financial performance, namely ROA, ROE, and DPR. Meanwhile, this study's firm value, size, and institutional ownership were only measured using a single indicator. On that basis, the measurement model in this study only applies to financial performance variables. The equations that can be built to express the financial performance measurement model in this study are as follows:

$$FP = l_1 * ROA + l_2 * ROE + l_3 * DPR + e \dots\dots\dots (1)$$

Where FP = Financial Performance, *l* = loading factor, *e* = error measurement

Furthermore, the equation to express the structural model in this study is as follow :

$$TOBIN = \rho_1 FP_{it} + \rho_2 SIZE_{it} + \rho_3 INST_{it} \dots\dots\dots (2)$$

Where, ρ = koefisien yang menunjukkan pengaruh antar variabel. TOBIN=Firm Value, FP=Financial Performance which reflected by ROA, ROE, and DPR. INST = Institutional Ownership.

3. Results and Discussion

3.1. Results

The results of descriptive statistical analysis to describe the central tendency of the data variables in this study are as follows:

Table 1. Descriptive Statistic

	TOBIN	SIZE	ROEQ	ROA	INST	DPR
Mean	0.599	0.221	0.189	0.060	0.663	0.188
Median	0.550	0.220	0.120	0.055	0.650	0.140
Maximum	2.180	0.250	1.690	0.260	0.990	1.740
Minimum	-0.360	0.170	-0.010	-0.010	0.310	0.000
Std. Dev.	0.445	0.017	0.270	0.045	0.189	0.226
Skewness	0.788	-1.113	3.317	1.066	0.104	3.705
Kurtosis	4.527	3.994	14.85	5.582	1.814	23.00
Jarque-Bera	21.70	26.75	830.1	50.50	6.524	2048.
Probability	0.000	0.000	0.000	0.000	0.038	0.000
Sum	64.74	23.89	20.43	6.540	71.67	20.41
Sum Sq. Dev.	21.26	0.031	7.804	0.218	3.844	5.503

Table 1 shows that the average firm value is at the level of 0.599 or 59.9%. It indicates that the market does not consider the firm's value positively. The value of Tobin's Q is good if it is greater than 1. In other words, the market generally gives a lower assessment of 0.391 or 39.1% of the company's book value. Conditions like this show that not many investors are interested in investing in property and real estate sector shares. Evidently, the average ROA of property and real estate sector companies also tends to be minimal, only 0.060 or 6%. In other words, the profitability of property and real estate sector companies is relatively low.

Measurement Model

This study uses a reflective measurement model, which measures latent variables by reflecting them through several indicators that theoretically measure them. Only financial performance is measured using more than one indicator in this context. The variables firm size, institutional ownership, and firm value are only measured by one indicator or commonly referred to as a single indicator. The measurement model in this study can be described as follows:

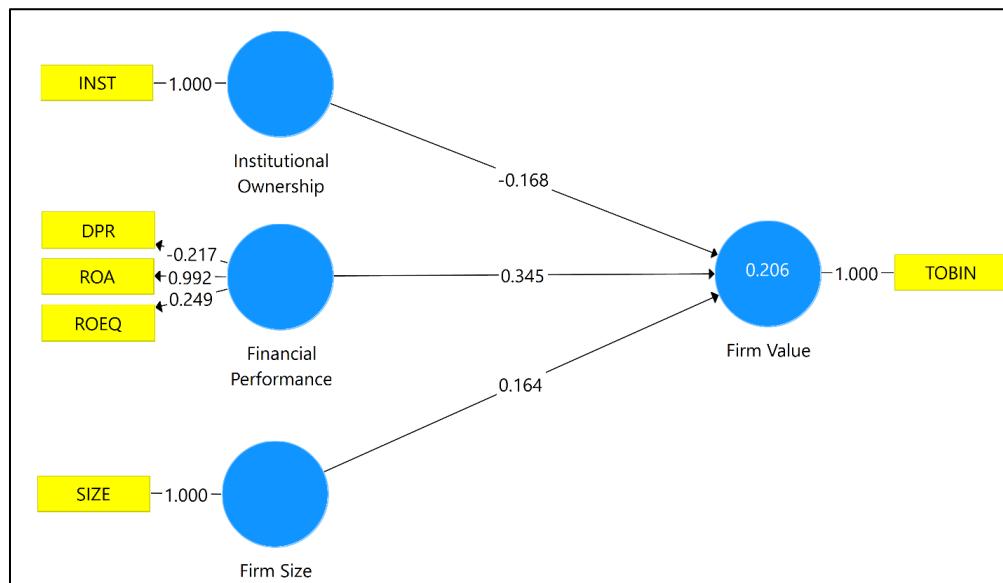


Figure 1. Measurement Model

The validity and reliability of the indicators used as measurement models in this study can be seen from the table as follows:

Table 2. Measurement Model Test Results

Variable	Label Indicator	Description	Loading	CA	AVE	CR	VIF
Institutional Ownership (IO)	IO	Percentage of total institutional shares	1.000	1.000	1.000	1.000	1.000
Financial Performance (FP)	DPR	Dividend Payout Ratio	-0.217	0.081	0.364	0.355	1.019
	ROA	Return on Asset	0.992				1.109
	ROEQ	Return on Equity	0.249				1,109
Firm's size (SIZE)	SIZE	Market Capitalization	1.000	1.000	1.000	1.000	1.000
Firm Value (FV)	Tobin's Q	Market value of company assets	1.000	1.000	1.000	1.000	1.000

Notes: CA = Cronbach Alpha, AVE=Average Variance Extracted, CR=Composite Reliability, VIF=Value Inflation Factor. Indicators that get a value less than 0.4 will be reduced immediately. Meanwhile, the loading factor value less than 0.7 but greater than 0.4 will be selected according to the limit of AVE and CR values. Based on that, this study only took one indicator for the FP variable, namely ROA. Thus, all variables are only measured by one indicator each

Table 2 shows that the DPR and ROEQ indicators are not valid and reliable in measuring financial performance. In other words, the only indicator that can be used to reflect financial performance in this study is ROA. Therefore, the DPR and ROEQ indicators will not be included in the subsequent analysis. After removing the two indicators, the measurement model can be ascertained to meet the quality requirements. It is because CA, AVE, and CR will be worth 1.

Structural Model Assessing Procedure

After determining the measurement model, the mechanism used in the PLS-SEM analysis is the structural assessment of the model. In this study, the structural assessment of the model can be seen from the following table:

Table 3. Evaluation of the Structural Model

	Structural Model (Firm Value)	Description
R Square	0.204	Weak
Adj R Square	0.186	Weak
RMS Theta	0.137	Lack of fit
Predictive Relevance Q^2	0.116	Has Predictive Ability
q^2 effect size	0.175	Medium

Notes: RMS theta smaller than 0.12 indicates a well-fitting model, but the model tends to be less fit if it is above that. The predictive relevance value of Q^2 , which is more than 0, indicates predictive ability, while the q^2 effect size shows how big the predictive ability is.

Table 3 shows that the R Square value for the structural model of this research is 0.204. The variance in the firm value variable is determined by a 20.4% change in the variance in the exogenous variable. In the discipline of economics, this value tends to be quite large, but in the field of management or marketing, an R Square value below 0.25 is considered to be in the weak category because most of the data use the same scale in management or marketing studies. It is different from economic research, which uses observed data. Therefore, although the R Square in this study tends to be weak, it does not mean that the structural model is not of high quality.

Furthermore, the contribution of each exogenous variable from the R Square value of the endogenous variables are as follows:

Table 4. The f^2 Effect Size Values

Exogenous Variable	Firm Value	Description
Financial Performance	0.130	Small
Firm Size	0.033	Small
Institutional Ownership	0.037	Small

Notes: According to Hair et al. (2017), results of 0.02, 0.15, and 0.35 are interpreted as a small, medium, and large f^2 effect sizes

Table 4 shows that the financial performance variable contributes to the other exogenous variables. More explicitly, the values in table 4 can be interpreted that financial performance can explain the variance in the firm value of 13%. Meanwhile, the contribution of company size is only 3.3%, and institutional ownership is 3.7%. This striking difference in the contribution of financial performance to firm size and institutional ownership is the main reason why the structural model of this study is not fit, as shown by the RMS Theta value.

Furthermore, the path coefficient or the influence between exogenous variables on endogenous variables and hypothesis testing in this study can be seen from the table as follows:

Table 5. The Path Coefficient and Hypothesis Testing

	Original	Sample	Standard	T Statistics	P
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	Sample (O)	Mean (M)	Deviation (STDEV)	(O/STDEV)	Value s
Financial Performance -> Firm Value	0.341	0.345	0.115	2.977	0.003 **
Firm Size -> Firm Value	0.171	0.176	0.110	1.555	0.121
Institutional Ownership -> Firm Value	-0.172	-0.168	0.077	2.244	0.025 **

Notes: *significant at 0.01, **significant at 0.05

The original sample value in table 5 shows the path coefficient value obtained from the original sample. While the sample mean value is the path coefficient of the exogenous variable to the endogenous variable obtained from bootstrapping (resampling). When viewed from the value of bootstrapping results, the effect of financial performance on firm value has a positive and significant notation of 34.5%. Therefore, the first hypothesis in this study is accepted, which means that financial performance has a positive and significant effect on firm value. The higher the company's financial performance, the higher the firm's value.

Furthermore, the path coefficient value of the effect of firm size on firm value has a positive but not significant notation of 17.6%. Although the effect looks quite significant because the p-values are higher than 0.05, the second hypothesis of this study is rejected. It means that firm size does not positively affect firm value. In other words, the larger the firm's size does not make the firm's value increase.

Table 5 also shows that the effect of institutional ownership on firm value has a negative and significant notation of -16.8%. Based on these results, the greater the institutional ownership of the property and real estate sector companies, the lower the firm's value. Although the resulting p-values are smaller than 0.05 because this study suspects that institutional ownership positively affects firm value, this study still rejects the third hypothesis. The structural model generated from this research is as follows:

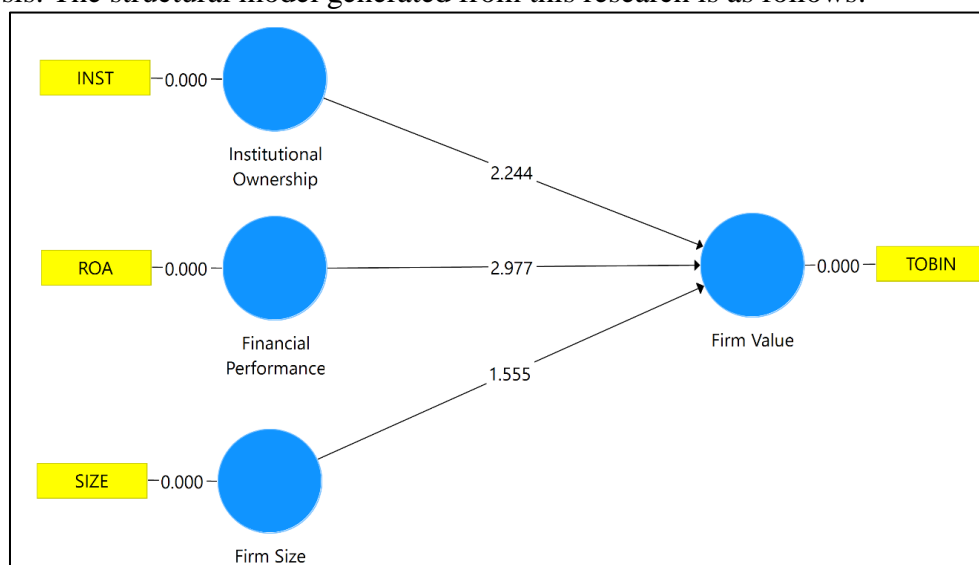


Figure 2. Structural Model

3.2. Discussion

The effect of financial performance on a firm's value

This study proves that financial performance has a positive effect on firm value. The only indicator that can reflect financial performance in this study is ROA, a dimension of profitability. Conditions like this indicate that investors tend to pay more attention to the profitability aspects of property and real estate sector companies by considering liquidity, leverage, and solvency. The positive influence of financial performance on firm value in this study also shows that companies' financial performance is still the primary signal attracting investors' attention. This result is relatively in line with the signaling theory of Lintner (1956) that financial performance and dividend payout increased stock prices, which has an impact on firm value.

The result of this study tends to be in line with the research conducted by Martha et al. (2018), Husna & Satria (2019), Mira (2020), Susanti & Restiana (2018), Atidhira & Yustina (2017), Cahyaningrum & Antikasari (2017), Haryono & Paminto (2015), Sucuahi & Cambarihan (2016), Mudjijah et al. (2019), and Pratiwi et al. (2020). The positive influence on financial performance, which is reflected by using ROA, shows that investors still prioritize a company's profitability in investing. Moreover, investors are relatively more cautious in investing in the current pandemic and economic uncertainty. Investors tend to look deeper into the financial condition of the company, especially its profitability.

The descriptive statistical analysis results show that property and real estate sector companies have Tobin's Q value below 1. It is also the case with the acceptance of the first hypothesis of this study. The positive effect of financial performance on firm value is that investors who invest in property and real estate sector companies tend to seek dividends more than capital gains. Investors consider the value of property and real estate sector companies as unfavorable. Moreover, the condition of Indonesia's property and real estate sector has not developed consistently. One thing that has been forgotten is that the property and real estate sectors depend on people's purchasing power. In contrast to the manufacturing sector, even though people's purchasing power declines, they can still produce a better average financial performance.

The effect of the firm's size on the firm's value

This study failed to prove a positive effect of firm size on firm value. When referring to signaling theory, the firm's size should also signal that investors can catch in making investment decisions. Nevertheless, in the context of property and real estate sector companies, company size was not considered as an aspect that makes the market give a better assessment of the company. In other words, the firm's size is considered no longer relevant when it is associated with the firm's value. Moreover, in the current digital economy era, companies with lower asset values can have a higher valuation due to high brand value and significant intangible assets.

Many studies no longer use firm size as an exogenous variable but as a control variable based on this condition. However, the results of this study are still relatively in line with research conducted by Israel et al. (2018), Husna & Satria (2019), Setiadharmas & Machali (2017), and Hirdinis (2019), which also state that firm size does not have a positive effect on firm value. On the other hand, this research contradicts the research conducted by Siahaan (2013), Rizqia et al. (2013), Zuhroh (2019), Kakani et al. (2011), and Wahyuni et al. (2013). Based on this, the effect of firm size on firm value is still inconsistent and determined by some other factors.

The effect of institutional ownership on the firm's value

This research finds that institutional ownership has a negative and significant effect on firm value. Higher institutional ownership, the lower the value of the company. The results of this study indicate that investors are looking for companies with lower institutional ownership. This result is inconsistent with agency theory, which indicates that institutional ownership can be an instrument of good governance to improve financial performance and company value. In addition, this study also tends to be inconsistent with the research of Chen et al. (2008), Lin & Fu (2017), and Nashier & Gupta (2016).

On the other hand, this study relatively strengthens the research results from Lin (2010) regarding the threshold effect of institutional ownership on firm value of 81.2%. In the context of this study, the average institutional ownership of the company is 66.3%, so because it is less than 81.2%, it cannot affect the firm value. This study also indicates that the majority of institutional ownership status is passive. If the institutional ownership status is passive, it can increase CEO power. As a result, supervision becomes less practical to harm firm value (Schmidt & Fahlenbrach, 2017). The magnitude of CEO power in this condition indicates the weak supervision carried out by institutional investors over the company (Duggal & Millar, 1999). Therefore, institutional ownership needs to be balanced with representation on the board of commissioners (Navissi & Naiker, 2006).

Robustness Checks

The fit model shown from the results of the PLS-SEM analysis in this study tends to be inadequate. Therefore, it is necessary to test the robustness of the research results. In this context, this study checks the immunity of the model by estimating the research data based on panel data regression analysis. The results are as follows:

Table 6. Panel Data Regression Analysis Results

	CEM	FEM	REM
Constant	-0.398	-0.744	-0.485
Size	5.013 (0.043)**	5.964 (0.174)	5.216 (0.094)***
ROA	3.521 (0.000)*	4.467 (0.000)*	3.854 (0.000)*
INST	-0.435 (0.033)**	-0.306 (0.271)	-0.399 (0.083)***
R ²	0.204	0.343	0.180
Adj. R ²	0.185	0.256	0.161
SE	0.446	0.426	0.423
F (Prob)	10.786 (0.000)	3.973 (0.000)	9.266 (0.000)
Jarque-Bera	80.38 (0.000)	249 (0.000)	78.87 (0.000)
Chow Test	24.963 (0.015)	24.963 (0.015)	-
Hausman Test	-	0.776 (0.855)	0.776 (0.855)
Breusch Pagan LM	9.123 (0.002)	-	9.123 (0.002)
Notes: *significant at 0.01 level, **significant at 0.05 level, ***significant at 0.10 level			

Table 6 shows that the best panel data regression model is the random effect model (REM). This result is obtained from the results of the Chow test that FEM is better than CEM. Referring to the Hausman test results, it appears that REM is better than FEM. Meanwhile, based on the results of Breusch Pagan, REM is better than CEM. In this context,

the results shown from the REM regression model are slightly different from the results shown by PLS-SEM. The difference is in the effect of institutional ownership on firm value. The results of the REM regression model show that institutional ownership is not proven to have a significant effect on firm value. The results of the PLS-SEM prove statistically that institutional ownership has a negative and significant effect on firm value. From this robustness check, the effect of financial performance on firm value is robust based on the PLS-SEM analysis and the REM regression model.

4. Conclusion

This study found that ROA is the only indicator of financial performance. In the context of this research, financial performance is proven to have a positive effect on firm value. On the other hand, this study cannot prove the effect of firm size on firm value. In addition, this study found that institutional ownership has a negative effect on firm value. The results of this study indicate that investors tend to be less responsive to the firm's size in investing shares in Indonesian property and real estate sector companies. When institutional ownership increases, investors tend to be less interested, resulting in a decrease in the firm's value. This condition also indicated that institutional ownership had not encouraged better governance.

This study has several limitations, including only three indicators to reflect financial performance. In addition, this study is suspected of having an omitted variable bias problem because it ignores macroeconomic aspects, which are theoretically considered sufficient to determine whether or not property and real estate sector companies develop. It is because this study tends to have a low fit model. Another limitation is that this study did not control the effects of the COVID-19 pandemic, which began to spread in Indonesia in early 2020. Therefore, future research is expected to fill these weaknesses.

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