


**MODELING FIRM VALUE ON INFRASTRUCTURE, UTILITY, AND
TRANSPORTATION COMPANIES**

Sukirno^A, Anintyas Prihandini^B



ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 01 September 2023</p> <p>Accepted 13 December 2023</p>	<p>Purpose: This study aims to model the effect of liquidity, leverage, profitability, and firm size on firm value in infrastructure, utilities, and transportation companies listed on the Indonesia Stock Exchange in 2018-2021.</p> <p>Theoretical Framework: Based on signal theory (Spence, 1973), companies usually try to give signals through positive information in their financial reports to potential investors. This positive signal is expected to provide positive feedback from the company. According to Rizqia & Sumiati (2013), a positive signal from the company is expected to provide positive benefits for the company so that it can provide high value for the company.</p> <p>Design/Methodology/Approach: This research was a quantitative approach involving 43 infrastructure, utility, and transportation companies listed on the Indonesia Stock Exchange from 2018 to 2021. The data were analysed with a data panel regression.</p> <p>Findings: The results of this study indicate: (1) Liquidity has no effect on firm value. (2) Leverage has no effect on firm value. (3) Profitability affects firm value. (4) Firm size has no effect on firm value. (5) Liquidity, leverage, profitability, and firm size simultaneously affect firm value.</p> <p>Research, Practical & Social Implications: The research findings imply that in modeling firms' value, investors as researchers are recommended to use a careful consideration and fit factors.</p> <p>Originality/Value: The results confirm the previous research that liquidity, leverage, and size have no effect on firm's value but profitability. Nevertheless, it is recommended to the future research to employ a bigger sample size and consider any controlling or mediating variables affecting firms's value.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i12.3997</p>
<p>Keywords:</p> <p>Liquidity; Leverage; Profitability; Firm Size; Firm Value.</p> <div data-bbox="172 987 475 1227" style="text-align: center;">  </div>	

**MODELAGEM DO VALOR DA EMPRESA EM EMPRESAS DE INFRAESTRUTURA, SERVIÇOS
PÚBLICOS E TRANSPORTE**

RESUMO

Objetivo: Este estudo tem como objetivo modelar o efeito da liquidez, alavancagem, lucratividade e tamanho da empresa no valor firme em empresas de infraestrutura, serviços públicos e transporte listadas na Bolsa de Valores da Indonésia em 2018-2021.

Estrutura Teórica: Com base na teoria dos sinais (Spence, 1973), as empresas geralmente tentam dar sinais através de informações positivas em seus relatórios financeiros para potenciais investidores. Espera-se que este sinal positivo forneça um feedback positivo da empresa. De acordo com Rizqia & Sumiati (2013), espera-se que um sinal positivo da empresa proporcione benefícios positivos para a empresa, para que possa proporcionar um alto valor para a empresa.

^A Ph.D. in Business Administration, Master in Accounting. Accounting Study Program, Universitas Negeri Yogyakarta. Indonesia. E-mail: sukirno@uny.ac.id Orcid: <https://orcid.org/0000-0002-1914-937X>

^B Practitioner in Accounting. Accounting Study Program, Universitas Negeri Yogyakarta. Indonesia. E-mail: anintyasprihandini@gmail.com



Design/Metodologia/Abordagem: Esta pesquisa foi uma abordagem quantitativa envolvendo 43 empresas de infraestrutura, serviços públicos e transporte listadas na Bolsa de Valores da Indonésia de 2018 a 2021. Os dados foram analisados com regressão em painel de dados.

Conclusões: Os resultados deste estudo indicam: (1) A liquidez não tem efeito sobre o valor firme. (2) O efeito de alavanca não tem qualquer efeito sobre o valor firme. (3) A rentabilidade afeta o valor firme. (4) A dimensão da empresa não tem qualquer efeito sobre o valor firme. (5) A liquidez, o efeito de alavanca, a rentabilidade e a dimensão da empresa afetam simultaneamente o valor firme.

Pesquisa, Implicações Práticas e Sociais: as conclusões da pesquisa implicam que, ao modelar o valor das empresas, os investidores como pesquisadores são recomendados a usar uma consideração cuidadosa e fatores de adequação.

Originalidade/Valor: os resultados confirmam a pesquisa anterior de que a liquidez, a alavancagem e o tamanho não têm efeito no valor da empresa, mas na lucratividade. No entanto, recomenda-se que os estudos futuros utilizem uma amostra de maior dimensão e considerem quaisquer variáveis de controle ou mediação que afetem o valor das empresas.

Palavras-chave: Liquidez, Aproveitamento, Lucratividade, Tamanho da Empresa, Valor da Empresa.

MODELACIÓN DEL VALOR FIRME DE EMPRESAS DE INFRAESTRUCTURA, SERVICIOS PÚBLICOS Y TRANSPORTE

RESUMEN

Objetivo: Este estudio tiene como objetivo modelar el efecto de la liquidez, el apalancamiento, la rentabilidad y el tamaño de la empresa sobre el valor de la empresa en las empresas de infraestructura, servicios públicos y transporte que cotizan en la Bolsa de Valores de Indonesia en 2018-2021.

Marco Teórico: Basado en la teoría de señales (Spence, 1973), las empresas suelen tratar de dar señales a través de información positiva en sus informes financieros a los inversores potenciales. Se espera que esta señal positiva proporcione una respuesta positiva de la empresa. Según Rizqia & Sumiati (2013), se espera que una señal positiva de la empresa proporcione beneficios positivos para la empresa de modo que pueda proporcionar un alto valor para la empresa.

Diseño/Metodología/Enfoque: Esta investigación fue un enfoque cuantitativo que involucró a 43 empresas de infraestructura, servicios públicos y transporte que cotizaron en la Bolsa de Valores de Indonesia de 2018 a 2021. Los datos se analizaron con un panel de regresión.

Hallazgos: Los resultados de este estudio indican: (1) La liquidez no tiene ningún efecto sobre el valor en firme. (2) El apalancamiento no afecta al valor en firme. (3) La rentabilidad afecta al valor en firme. (4) El tamaño de la empresa no afecta al valor de la empresa. (5) La liquidez, el apalancamiento, la rentabilidad y el tamaño de la empresa afectan simultáneamente al valor de la empresa.

Investigación, Implicaciones Prácticas y Sociales: Los hallazgos de la investigación implican que en el valor de las empresas de modelado, se recomienda a los inversores como investigadores utilizar una consideración cuidadosa y factores de ajuste.

Originalidad/Valor: Los resultados confirman la investigación previa de que la liquidez, el apalancamiento y el tamaño no tienen efecto sobre el valor de la empresa, sino sobre su rentabilidad. Sin embargo, se recomienda a la futura investigación emplear una muestra de mayor tamaño y considerar cualquier variable de control o mediadora que afecte el valor de las empresas.

Palabras clave: Liquidez, Apalancamiento, Rentabilidad, Tamaño de la Empresa, Valor de la Empresa.

INTRODUCTION

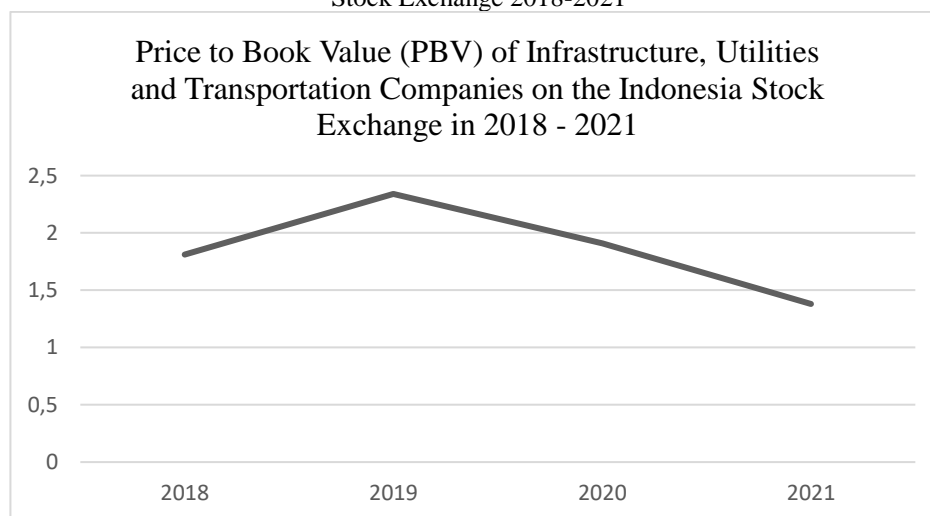
Today, the development of the business world is happening very rapidly, and this requires companies to survive the changes. The growing competition in the business world also forces the company to consistently provide good performance for all its stakeholders, both internal and external stakeholders. In establishing a company, each company usually has its own goals. The goals usually consist of short, medium, and long-term goals. In the short term,

the company may have a goal to develop its market, and increase its profit as much as possible. Then for the company's long-term goals, one of which is to become a company that has a good and maximum assessment. Then, on the other hand, according to Novari & Putu (2016), Each company has short-term goals and short-term goals, the short-term goal is that the company can get the maximum possible profit by utilizing the resources owned by the company while the long-term goal is to maximize the value of the company.

A good firm value, especially a company that has go public, is the hope of its shareholders because, with a high value of a company, it is followed by a high level of prosperity for its shareholders. In addition, it was also explained that the wealth of shareholders and also the wealth of the company is represented through the market price of its shares, where the market price of the shares can indicate investment decisions, funding, and asset management of the company (Pertiwi & Pratama, 2012). From these things, it means that the high price of the company's shares can be said that the prosperity of the shareholders in it. Firm value is the value or price potential buyers are willing to pay if the company is to be sold, so the higher the firm value, the higher the selling value of the company.

In Indonesia itself, there are quite a several companies that already go public; based on the statistics report on the Indonesia Stock Exchange for 2021, there are around 729 companies that have registered to go public. Companies listed on the IDX consist of various sectors, including the financial sector, energy, medical devices, technology, et cetera. One sector of these sectors is the infrastructure, utilities, and transportation sectors.

Figure 1 – Price to Book Value Chart of Infrastructure, Utilities, and Transportation Companies on the Indonesia Stock Exchange 2018-2021



Source: Statistic IDX (2021); Andriyani, et al. (2020).

If we look at the current growth in Indonesia, there have been a lot of improvements in the infrastructure sector in Indonesia, such as the construction of the Trans-Sumatra road and the Trans-Papua road, and there are also plans to build a new capital city in Kalimantan. This, cannot be separated from the role of infrastructure companies and investors. However, is the growth in the infrastructure, utilities, and transportation sectors in Indonesia in line with the growth in the value of the company? The chart above shows that the value of infrastructure, utilities and transportation companies has experienced positive growth. In 2018, the firm value touched 1.81, then in 2019, it increased to 2.34. However, after experiencing a pretty good increase, it turns out that with the arrival of a pandemic in 2020 and 2021, the value of infrastructure, utilities, and transportation companies has decreased again to reach 1.38 at the end of 2021, where this figure is even lower than in 2018.

Prospective investors, in determining the company they want to fund, really need information related to the company to make judgments, whether the company has a good value, and whether the stock price is normal and by the performance presented. To perform this analysis, one of the things needed is the company's financial statements. Financial reports allow investors to assess the company's performance over a certain period (usually one year). As for assessing the company, it is suspected that it is influenced by several factors, namely liquidity (Reeza, 2015), leverage (Fajaria & Isnalita, 2018), profitability (Rizqia et al., 2013), and firm size (Husna & Satria, 2019).

Based on the background described above, the researcher intends to conduct research on firm value with the title “The Effect of Liquidity, Leverage, Profitability, and Firm Size on Firm Value (Study in Infrastructure, Utility, and Transportation Companies in 2018-2021).”

LITERATURE REVIEW

Signaling Theory

Based on signal theory (Spence, 1973), companies usually try to give signals through positive information in their financial reports to potential investors. This positive signal is expected to provide positive feedback from the company. According to Rizqia & Sumiati (2013), a positive signal from the company is expected to provide positive benefits for the company so that it can provide high value for the company.

Liquidity

According to Fahmi's research (2012), it is explained that liquidity is the ratio used to measure a company's ability to meet its short-term obligations. In line with Putri and Aminah's research (2022), "The liquidity ratio is a ratio that can be used to measure a company's ability to meet short-term obligations that are due." The liquidity ratio is very important for a company because a high liquidity ratio indicates that the company has a good ability to meet its short-term obligations, and this is expected to attract potential investors to invest in the company.

So the liquidity ratio is a financial ratio that is useful for measuring and knowing a company's ability to meet their short-term debt later. The liquidity ratio is quite important because the existence of a liquidity ratio is expected to be one of the measuring tools to determine the company's financial condition, especially the condition of its short-term liabilities.

H1: Liquidity has a positive effect on the firm value of infrastructure, utilities, and transportation companies listed on the Indonesia Stock Exchange for the 2018-2021 period.

Leverage

Companies in running their business, especially companies that are already quite large, must be kept from what is called debt, both short-term debt and long-term debt. Because with this debt, it can help the company to get funding so that the company can develop. However, the company must have more debt for the company. However, companies cannot be reckless in having debts for their companies. According to Fahmi's research (2011), leverage is the ratio used to measure how much the company is financed by debt. This understanding is in line with Kasmir's research (2010) which explains that leverage, also known as the solvency ratio, is a useful ratio for measuring the extent to which a company's assets are financed by debt.

From the existing explanations, it can be seen that leverage is a solvency ratio, which is used to measure and determine how much of a company's assets are financed by debt. Companies must take good care of their leverage, so the ratio of debt to the company's assets and capital can remain ideal.

H2: Leverage has a negative effect on the firm value of infrastructure, utilities and transportation companies listed on the Indonesia Stock Exchange for the 2018-2021 period.

Profitability

As discussed in the background, every company, when it is established, must have its own goals. One of the general goals of a company is to get the maximum possible profit. With

much profit, the company can develop its business to become even bigger. Besides that, investors or external parties who want to work with the company are more confident about establishing cooperation. One of the considerations they use to choose the company is to calculate the profitability ratio of the company.

According to Naccur and Goaied (1999), profitability is one factor that creates future value to attract new investors. The definition of profitability ratios, according to Kasmir (2010) is the ratio used to see a company's ability to seek profit from its operations. Another definition is according to Munawir (1996), profitability is the company's ability to earn profits in a certain period. The two opinions are quite similar. They both explain that profitability is a ratio to determine a company's ability to earn profits.

From the understanding that has been explained in the previous paragraph, it can be concluded that the profitability ratio is the ratio used to determine company's ability to generate profits within a certain period of the operations they carry out.

H3: Profitability has a positive effect on the firm value of infrastructure, utilities and transportation companies listed on the Indonesia Stock Exchange for the 2018-2021 period.

Firm Size

Companies have different sizes in their development. There are small companies, medium companies, and also large companies. According to Husna & Satria (2019), firm size is a scale where companies are classified in various ways, including by looking at their total assets, log size, stock market value, and others. In line with the opinion of Kimsen et al. (2019), firm size has a scale, meaning that it is classified based on firm size according to various things, including total company assets, stock market value, market capitalization, and others.

From the understanding above, it can be seen that firm size is a classification of the size of a company based on several things, such as company assets, company stock value, market capitalization, and others.

H4: Firm size has a positive effect on the firm value of infrastructure, utilities and transportation companies listed on the Indonesia Stock Exchange for the 2018-2021 period.

Firm Value

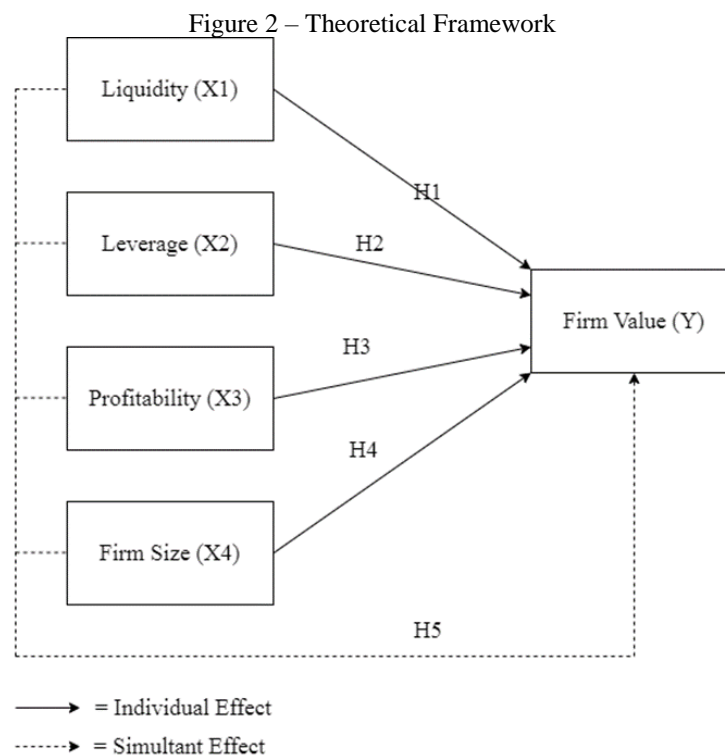
Firm value is very important for the company because, with good value, the company can have a good name for external parties, thereby increasing trust in the company. A high corporate value also reflects the prosperous state of the shareholders in it.

Based on Sartono's research (2010), firm value is the price that investors are willing to pay if the company is to be sold later. Meanwhile, according to Sujoko & Soebiantoro (2007), firm value is the perception of investors on the company's level of success, which is often associated with stock prices. Because of this, a high company stock price tends to make the firm value also high.

From the understanding previously explained, it can be concluded that firm value is an investor's perception of the price of a company which investors are later willing to pay for.

H5: Liquidity, leverage, profitability, and firm size simultaneously have a positive effect on the firm value of infrastructure, utilities and transportation companies listed on the Indonesia Stock Exchange for the 2018-2021 period.

After exploring and reviewing theories and relevants empirical studies, the relationship among variables can be depicted in the following research framework.



Source: Prepared by the Authors' based on the literature review

METHODOLOGY

The type of research conducted in this study is causal associative research. The population is the overall subject that used in research. The population of this study is 58 infrastructure, utilities, and transportation companies listed on the Indonesia Stock Exchange from 2018 to 2021.

The sample in this study was selected by purposive sampling method. Researchers determine specific criteria for the sample used in research. These criteria are:

- a. The company is listed in the infrastructure, utilities, and transportation sectors on the Indonesia Stock Exchange in 2018-2021.
- b. The company always publishes financial reports for the 2018-2021 period in total.

Based on predetermined sample criteria, 43 infrastructure, utilities, and transportation companies were used in the study.

Table 1 – The operational definitions of all variables can be tabulated as follows

No.	Variable	Measurement
1.	Firm Value (Y) (Sartono, 2010)	$Q = \frac{\frac{MVE}{Debt}}{Total Assets}$
1.	Liquidity (X1) (Fahmi, 2012)	$Curent Ratio = \frac{Current Assets}{Current Liabilities}$
2.	Leverage (X2) (Fahmi, 2012)	$DER = \frac{Total Liabilities}{Total Equity}$
3.	Profitability (X3) (Kasmir, 2008)	$ROA = \frac{Net Profit}{Total Assets}$
4.	Firm Size (X4) (Prasetyorini, 2013)	$Size = Ln (Total Assets)$

Source: By the authors.

Data Analysis Technique

Descriptive statistic

According to Ghozali (2016), descriptive statistics are a description of data in information to make it easier and clearer to understand. Descriptive statistics are carried out by describing data presented in the form of the results of data processing that has been carried out, such as the average, median value, maximum value, minimum value, and also standard deviation.

Panel data regression estimation model

Amaliah et al. (2020) states that in analyzing data panel, researchers need to conduct regression estimation model. Three models below are generally be used to estimate the best regression model.

Common Effect Model (CEM)

This model is the simplest panel data model because it only combines time series and cross section data. The Common Effect Model does not pay attention to time or individuals, so it is assumed that company data has the same behavior in every period of time.

Fixed Effect Model (FEM)

Fixed Effect Model is a technique for estimating panel data using a dummy variable to capture differences in intercepts. This estimation model is often also called the Least Squares Dummy Variable (LSDV) technique.

Random Effect Model (REM)

The Random Effect Model will estimate panel data where the disturbance variables may be related to each other over time and between individuals. In REM, intercept differences are accommodated by the error terms of each company.

Panel data regression estimation model selection

From the three panel data regression estimation models that have been described, it will be chosen which model is most suitable for the research data that has been collected. The selection of this model is not chosen randomly, but by testing, namely as follows:

Chow Test

Chow test was conducted to choose which model is better between Common Effect Model (CEM) and Fixed Effect Model (FEM).

Hausman Test

The Hausman test was conducted to choose which model is better between the Random Effect Model (REM) and the Fixed Effect Model (FEM).

Lagrange Multiplier Test

The Lagrange Multiplier test is only carried out if the Common Effect Model (CEM) is selected in the Chow test and the Random Effect Model (REM) is selected in the Hausman test, this test is carried out to choose between CEM or REM.

Classic assumption test

This test is carried out because the data collected is required to meet the classical assumption test. In this study, no normality test was carried out because Ajija (2011) explained that a normality test is required when the number of observations is less than 30. If the number of observations exceeds 30, it is not necessary to carry out a normality test because the

distribution of the sampling error term is close to normal. The following is the classic assumption test used in this study:

Multicollinearity Test

This test was conducted to determine whether there is a strong relationship between the independent variables in the study. According to Ghozali (2013), there is no linear relationship in the independent variables because this is done to avoid bias.

Heteroscedasticity Test

Tests were carried out to determine whether there were symptoms of heteroscedasticity in the study. If it turns out that there are symptoms of heteroscedasticity, this indicates that the data is not uniform, causing an error.

Autocorrelation Test

This test is conducted to determine whether there is a correlation between a period t and the previous period. In this study, the autocorrelation test carried out by Durbin-Watson test with the following criteria (Santoso, 2014):

- i. If the value < -2 , then there is a positive autocorrelation.
- ii. If the value is between -2 to $+2$, then there is no autocorrelation.
- iii. If the value is $> +2$, then there is a negative autocorrelation.

Hypotheses testing

Hypotheses testing is done to find out whether the hypotheses that have been prepared previously can be accepted or rejected. In testing these hypotheses, there are two types of testing, namely:

T Test / Partial Hypotheses Test

The T-test was conducted to determine the effect of the independent variables on the dependent variable, partially or individually. In this test, the formulation of the hypotheses is as follows:

- i. If the empirical significance value is $> 0,05$, then H_0 is accepted while H_a is rejected.
- ii. If the empirical significance value is $\leq 0,05$, then H_0 is rejected while H_a is accepted.

F Test / Simultaneous Hypotheses Test

The F test is conducted to determine the effect of the independent variables on the dependent variable simultaneously or together. Related to the criteria for testing this partial hypotheses are as follows:

- i. If the empirical significance value is > 0.05 then H_0 is accepted while H_a is rejected.
- ii. If the empirical significance value is ≤ 0.05 then H_0 is rejected while H_a is accepted.

Coefficient of Determination (R-squared)

The coefficient of determination is to find out how much the independent variable contributes to the dependent variable. This coefficient of determination shows the ability of the regression line to explain the variation of the dependent variable which can be explained by the independent variables. R-squared values range from 0 to 1. Values close to 1 mean that the independent variables provide almost all the information needed to predict the variation of the dependent variables. The closer to 1 means the better.

RESULTS AND DISCUSSION

Descriptive Statistics Test Result

In this test, the research data described based on the average value (mean), minimum value, maximum value, and standard deviation. The results of descriptive statistical tests of the variables in this study are presented in the following table.

Table 2 – Descriptive Statistics of the Variables

Description	Min	Max	Mean	Std. Dev.
Liquidity	0.000	1026.010	11.723	85.575
Leverage	-2.860	149.870	2.549	11.717
Profitability	-1396.9	0.460	-8.127	106.509
Firm Size	18.170	36.110	29.123	2.292
Firm Value	-7.350	5737.050	36.753	437.911

Source: Indonesian Stock Exchange Data in 2018-2021.

Regression Estimation Model

The results of processing using the Common Effect Model, Fixed Effect Model and Random Effect Model are as follows.

Table 3 – Regression Estimation Model Results

Variable / Model	CEM		FEM		REM	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
C	46.555	0.094	38.461	0.734	46.555	0.098
X1	-0.007	0.737	0.004	0.908	-0.007	0.740
X2	-0.019	0.907	-0.006	0.973	-0.019	0.908
X3	-4.092	0.000	-4.099	0.000	-4.092	0.000
X4	-1.473	0.120	-1.203	0.756	-1.473	0.125
R-squared	0.997		0.997		0.997	
F-Stat. / Sig. F	12719.42	0.000	1.078.833	0.000	12719.42	0.000

Source: Indonesian Stock Exchange Data in 2018-2021.

Panel Data Regression Estimation Model Selection

Chow test result

Based on the Chow test shown in the table below, the Significance value of the Cross-section Chi-square is 0.331 and the Cross-section F is 0.645 (> 0.05), so based on the Chow Test selected is the Common Effect Model.

Table 6 – Chow Test Result

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.899248	(42,125)	0.6458
Cross-section Chi-square	45.410544	42	0.3318

Source: Indonesian Stock Exchange Data in 2018-2021.

Hausman test result

Based on the Hausman test shown in the table below, a Significance value of 0.974 (> 0.05) is obtained, so based on the Hausman Test the Random Effect Model is selected.

Table 7 – Hausman Test Result

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.497763	4	0.9737

Source: Indonesian Stock Exchange Data in 2018-2021.

Lagrange multiplier test result

Based on the Lagrange Multiplier test shown in the table above, a Significance value of 0.974 (> 0.05) is obtained, so based on the Lagrange Multiplier Test the model chosen is the Common Effect Model.

Table 8 – Lagrange Multiplier Test Result

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.166215 (0.6835)	0.042937 (0.8358)	0.209152 (0.6474)

Source: Indonesian Stock Exchange Data in 2018-2021.

Classical Assumption Test Result

Multicollinearity test result

It can be seen from the test results above, the relationship between different variables as a whole is less than 0.9. This shows that there are no symptoms of multicollinearity in the data of this study.

Tabel 9 – Multicollinearity Test Result

	X1	X2	X3	X4
X1	1.000000	-0.028086	0.010520	-0.240723
X2	-0.028086	1.000000	0.023017	0.088930
X3	0.010520	0.023017	1.000000	0.366982
X4	-0.240723	0.088930	0.366982	1.000000

Source: Indonesian Stock Exchange Data in 2018-2021.

Heteroscedasticity test result

From the test that has been carried out, the results show a significant value for the liquidity variable (X1) of 0.547, then for the leverage variable (X2) of 0.871, the profitability variable (X3) is 0,315, and the firm size variable (X4) is 0,320. Overall, the significance value for all variables is greater than 0,05. So it can be concluded that the existing data passed the heteroscedasticity test.

Tabel 10 – Heteroscedasticity Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	62.61468	26.78982	2.337256	0.0206
X1	-0.013703	0.022705	-0.603533	0.5470
X2	-0.026116	0.160617	-0.162596	0.8710
X3	0.019175	0.019035	1.007388	0.3152
X4	-1.970013	0.914197	-2.154911	0.0326

Source: Indonesian Stock Exchange Data in 2018-2021.

Autocorrelation test result

Based on the results of the Durbin-Watson autocorrelation test, the resulting Durbin-Watson value is 1,358. This value is in a position between the numbers -2 to +2. It can be concluded, in this autocorrelation test, that the regression model does not have autocorrelation.

Tabel 11 – Autocorrelation Test Result

Weighted Statistics			
Root MSE	24.97489	R-squared	0.996728
Mean dependent var	36.75320	Adjusted R-squared	0.996650
S.D. dependent var	437.9119	S.E. of regression	25.34601
Sum squared resid	107284.1	F-statistic	12719.42
Durbin-Watson stat	1.358623	Prob(F-statistic)	0.000000
Unweighted Statistics			
R-squared	0.996728	Mean dependent var	36.75320
Sum squared resid	107284.1	Durbin-Watson stat	1.358623

Source: Indonesian Stock Exchange Data in 2018-2021

Hypotheses Test Result

Based on the model estimation with CEM, FEM and REM, it is concluded that CEM is the best estimation model can be used to test the research hypotheses. Below is the result of regression model with CEM.

Tabel 12 – Panel Least Squares Result Based on CEM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46.55578	27.70100	1.680653	0.0947
X1	-0.007888	0.023477	-0.335984	0.7373
X2	-0.019398	0.166080	-0.116801	0.9072
X3	-4.092889	0.019682	-207.9491	0.0000
X4	-1.473916	0.945291	-1.559220	0.1208
Root MSE	24.97489	R-squared	0.996728	
Mean dependent var	36.75320	Adjusted R-squared	0.996650	
S.D. dependent var	437.9119	S.E. of regression	25.34601	
Akaike info criterion	9.331758	Sum squared resid	107284.1	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Schwarz criterion	9.423255	Log likelihood		-797.5312
Hannan-Quinn criter.	9.368881	F-statistic		12719.42
Durbin-Watson stat	1.358623	Prob(F-statistic)		0.000000

Source: Indonesian Stock Exchange Data in 2018-2021.

Liquidity to Firm Value

Based on the table above, it is known that liquidity has a significance value of 0.737, which is greater than 0,05. Based on predetermined criteria, it can be seen that the H1 hypothesis, which contains "There is a positive effect of liquidity on firm value," is rejected.

From the tests that have been carried out, it is known that liquidity does not affect firm value. Sari & Ida (2020), it is explained that high or low liquidity does not affect firm value. A low Current Ratio (CR) value will not affect the firm value because it only indicates a problem with the company's capability to pay the short-term debt, and it does not necessarily mean that the firm value will decrease. However, with a Current Ratio (CR) value that is too high, this is not good because it shows a lot of funds or assets that are not used properly to generate profits for the company. These results are in line with research conducted by Dewiningrat & Baskara (2020), Sari & Ida (2020), and Adiputra & Hermawan (2020), where research also found that liquidity has no significant effect on firm value.

Leverage to Firm Value

Based on the table above, it is known that leverage has a significance value of 0.908, which is greater than 0,05. Based on predetermined criteria, it can be seen that the H2 hypothesis, which contains "There is a negative effect of leverage on firm value," is rejected.

In the tests that have been carried out, the results show that leverage has no effect on firm value. This is also supported by several studies that have been conducted by Husna & Satria (2019), Rachmawati & Binem (2015), and Adiputra & Hermawan (2020) in which the research also found that leverage has no effect on firm value. Based on research conducted by Rachmawati & Binem (2015), a high level of leverage which is expected to reduce company profits has no effect on investor interest in investing in the company. In practice, even though a company is funded by debt to run the company's operations, investors will look at the maturity date of the debt. If the debt maturity is long enough, investors will still decide to invest in the company.

Profitability to Firm Value

Based on the table above, it is known that liquidity has a significance value of 0.000, which is smaller than 0,05. Based on predetermined criteria, it can be seen that the H3 hypothesis, which contains "There is a positive effect on the profitability on firm value," is accepted.

In the tests carried out, it is known that profitability have positive effect firm value. The profitability variable that does not affect firm value also occurs in Husna & Satria (2019), Dewiningrat & Baskara (2020) and Sari & Ida (2018) research. This means that the profitability of the company can increase the value of the company because it is partially proven to have a positive and significant influence on firm value. These results indicate that the regression coefficient for probability is positive according to the hypothesis, which means that the higher the profitability, the higher the firm value, and vice versa.

Firm Size to Firm Value

It is known that liquidity has a significance value of 0.121 which is greater than 0,05. Based on predetermined criteria, it can be seen that the Ha4 hypothesis, which contains "There is a positive effect of firm size on firm value," is rejected.

Based on the tests that have been carried out, the results show that firm size does not affect the firm value variable. This is in line with research conducted by Dewiningrat & Baskara (2020) and Sari & Ida (2020) but not in line with research conducted by Rachmawati & Binem (2015). The size of the company, which does not affect its value, is explained in the research of Sari & Ida (2020), where the larger the size of the company, the more debt it will require for the company's operational funds. The use of debt that is too large is considered inefficient for a company because the greater the debt owned, the greater the interest expense that will be borne later. In addition, the greater the company's debt, the greater the return on assets because the assets guaranteed by the company for the debt are greater than the return on assets that will be received by the company, so this will later affect the company's solvency.

F significance value shows 0,000 meaning that there is positive effect of liquidity, leverage, profitability, and firm size on firm value. Thus, it can be seen that H5, which contains "There is a positive influence of liquidity, leverage, profitability, and firm size on firm value" in this study, was accepted. Adjusted R-Square (R²) is 0.997. This represents the percentage of the independent variable's influence on the dependent variable is 99.7%. Or it can be interpreted that the independent variables used in the model are able to explain 99.7% of the dependent variable. The remaining 0.3% is influenced by other factors outside the regression model.

CONCLUSIONS AND SUGGESTIONS

Conclusions

- a. Liquidity does not have a positive effect on firm value in infrastructure, utility, and transportation sector companies listed on the Indonesia Stock Exchange. This is evidenced by a significance value of 0,740, greater than 0,05.
- b. Leverage does not have effect on firm value in infrastructure, utility, and transportation sector companies listed on the Indonesia Stock Exchange. This is evidenced by a significance value of 0,908, which is greater than 0,05.
- c. Profitability have a positive effect on firm value in infrastructure, utility, and transportation sector companies listed on the Indonesia Stock Exchange. This is evidenced by a significance value of 0,000, where the value is smaller than 0,05.
- d. Firm size does not have a positive effect on firm value in infrastructure, utility, and transportation sector companies listed on the Indonesia Stock Exchange. This is evidenced by a significance value of 0,126, greater than 0,05.
- e. Liquidity, leverage, profitability and firm size simultaneously have positive effect on firm value in infrastructure, utility, and transportation sector companies listed on the Indonesia Stock Exchange. This is evidenced by a significance value of 0,000, smaller than 0,05.
- f. The value of the effective contribution shows the result that liquidity, leverage, profitability, and firm size, in total, make an effective contribution of 99,7% of the firm value. From this, as many as 0,3% of the factors that influence firm value are influenced by other variables not discussed in this study.

Suggestion

Based on the results of the research, discussion, and the limitations that the researcher experienced in carrying out this research, the researchers provide the following suggestions:

- a. For investors, it would be better to pay more attention to factors other than liquidity, leverage, profitability, and firm size before investing in a company because there are still many other factors outside of these four variables that affect firm value.
- b. In view of the limitations of the research that has been conducted, it is advisable for further related research to consider the following points:
 - 1) Using a sample with a more extended period range

- 2) Make additions or changes to variables that have no effect to determine what factors affect the firm value. Maybe the variables used are not only limited to factors related to financial reports but can also pay attention to broader issues such as inflation, economic growth, country and world economic conditions, and others, especially in the 2020 Covid pandemic -19 entered the country of Indonesia and affected Indonesia's economic conditions.

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