Company Value Before and During COVID-19: Evidence from the Property and Real Estate Industry in Indonesia

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Abstract. The objective of this research is to gauge the impact of financial performance and maturing long-term debt on firm's value during the COVID-19 pandemic. The study comprises the collection of data on nine big property-sector companies and analysis via quantitative methods, namely panel-data-regression models. Its results demonstrate that only commercial property revenue and COVID-19 had a substantial negative impact on firms' value. Meanwhile, F-Test findings indicate that the independent variable had an influence on the firms' value, at a p-value of (0.0037). This means that commercial property income may be used to describe the worth of major firms in the property sector, which investors should consider when selecting investments. Furthermore, property- and real- estate-sector companies should provide policies and regulations to safeguard commercial income toward maintaining their assets and surviving in the COVID-19 era. This study fills a research gap by exploring effects on the property and real estate industry during the COVID-19 crisis, as a benchmark for comparison.

Keywords: COVID-19, firm value, financial performance, maturing long-term debt

Abstrak. Tujuan dari penelitian ini adalah untuk mengukur dampak kinerja keuangan dan jatuh tempo utang jangka panjang pada nilai perusahaan selama pandemi COVID-19. Studi ini meliputi sembilan perusahaan besar sektor properti dan analisis melalui metode kuantitatif, yaitu model regresi data panel. Hasilnya menunjukkan bahwa hanya pendapatan properti komersial dan COVID-19 yang memiliki dampak negatif substansial pada nilai perusahaan. Sementara itu, hasil uji F menunjukkan bahwa variabel independen berpengaruh terhadap nilai perusahaan, pada p-value (0,0037). Ini berarti bahwa pendapatan properti komersial dapat digunakan untuk menggambarkan nilai perusahaan besar di sektor properti, yang harus dipertimbangkan investor saat memilih investasi. Selain itu, perusahaan sektor properti dan real estate harus memberikan kebijakan dan peraturan guna menjaga pendapatan komersial untuk mempertahankan aset mereka dan bertahan di era COVID-19. Studi ini mengisi celah penelitian dengan mengeksplorasi efek pada industri properti dan real estat selama krisis COVID-19, sebagai tolok ukur perbandingan.

Kata kunci: COVID-19, nilai perusahaan, kinerja keuangan, utang jangka panjang yang akan jatuh tempo

Introduction

Not only has the ongoing coronavirus pandemic harmed health, but also multiple industrial sectors, including the real estate industry. Property sector performance had genuinely started to show an upward trend, though punctuated by periods of stagnation, until it dwindled as a result of the COVID-19 crisis (Wareza, 2019). This is demonstrated by equitable distribution or sales reduction in the housing, real estate, mall, and office sectors due to strict social restriction (PSBB) policies (Mashabi, 2021). The property, property investment, and building construction sector stock indices have fallen the most since the beginning of 2020, falling 19.69% in the year to date (IDX, 2019).

Financial analysis can be used to assess company value. A corporation's economic analysis relies heavily on information the company provides in the form of financial reports, containing industry knowledge, economic conditions, company market share, management efficiency, and other factors determining a firm's results. Every business has a financial statement, which provides critical information to its stakeholders and helps them make vital decisions to safeguard the company's future. Such statements show how financial results have contributed to the corporation.

As an examination of a statement of financial position, financial analysis is commonly used to calculate the various pertinent ratios. Gitman (2009) characterizes *profitability ratio* as a ratio used to measure management effectiveness based on the returns from investment sales and the company's ability to generate profits, which will serve as the foundation for dividends paid. The success of management in achieving full profits for the company would indicate good results. The *loans ratio* indicates how much of a company's total assets are purchased with borrowed funds, as measured by balance-sheet debt. It is a metric for determining the financial leverage of a company. It also gives finance analysts critical information about such a company's financial health or pressures.

According to Hariadi (2005), business diversification aims to maximize benefit by merging many investment portfolios, whether via different products, the formation of new business divisions or subsidiaries, or the acquisition of an established entity. Commercial property revenue can provide regular and periodic income, which can reduce the risk of business residents.

The Corporate Finance Institute defines *maturing long-term debt* as debt with a maturity of more than one year. The *current portion* of long-term debt is the amount of principal and interest on long-term debt scheduled to be paid within a year. Data findings can be gathered to determine the amount of debt that must be paid. When these long-term loans mature, investors will be notified of upcoming expenses and given information about obligations that must be met.

Previous research has revealed significant differences in the impact of variable profitability ratios and stock performance on company shares in various industrial sectors. However, it has devoted little attention to the issue of firm value in the property and real estate industry.

Each company faces unique business-related risks which can affect its value. With this in mind, the present study aims to evaluate to what extent profitability, leverage, commercial property revenue, maturing long-term debt, and COVID-19 could affect firm value.

Theoretical Model

Company Value
A company's primary goal is to maximize profit or wealth, particularly for its shareholders, through attempts to enhance or maximize the market value of its share price. This is a broad aim, impacted by financial industry practices (Tika, 2012). *Company value*, according to Harmono (2009), is the firm's performance as represented by the stock price, which is in turn produced by the capital

market's demand and supply and represents the public's evaluation of the firm's success. Gultom et al. (2013) identify company value as a metric which may be used to determine how much "importance" a firm has from the perspective of various stakeholders, such as investors, who link a company's value to its share price.

Tobin's q, made famous by Prof. James Tobin, is one of the methods for determining a company's value. It is a ratio-measuring tool which treats company value as a form of value encompassing all tangible and intangible assets. Tobin's q can also be used to gauge a company's effectiveness and efficiency in using all its assets (Dzahabiyya, Jhoansyah, Danial, 2020). Hence, Tobin's q can be defined as the ratio of a company's worth to the value of its assets (Naqsyabandi, 2015). If the figure yielded is higher than it was previously, the corporation is more likely to be managing its assets effectively and increasing earnings.

Properly calculating the q ratio can prove challenging, due to the difficulty in determining the replacement cost of a company's assets (Margaretha, 2014). Nevertheless, Tobin's q has several advantages, according to Smithers and Wright (2008):

- It represents the total value of the company's assets.
- It is a measure of market sentiment, e.g., analysis or speculation about a company's prospects.
- It reflects the company's intellectual capital.

Profitability
The examination of a company's financial statements, including its income statements and balance sheets, is closely linked to assessing its financial performance. An income statement shows the company's operating performance, whereas a balance sheet shows its net worth (Adam, 2014). Financial ratios can be used to calculate a firm's financial results amid reviewing financial statements.

The two categories of profitability ratios this study uses are return on assets and return on equity. Return on assets (ROA), as defined by Harahap (2013), is a ratio indicating how much net income is derived from asset valuation, in dividing net income by the firm's average total assets. According to Fahmi (2013), this ratio is important in determining the size of the firm. The higher this ratio is, the better a company's financial condition is likely to be, as it speaks to company efficiency in using assets to achieve net profit after taxes.
H1: The return-on-assets ratio positively affects company value.

Leverage
Leverage is the amount of liabilities with which a firm finances its assets. The debt-to-asset ratio can be employed to calculate leverage, quantifying how much debt a company uses to fund its assets. A high debt-to-asset ratio tends to result in lower stock returns, since investors are likely to believe that the company is using more debt to conduct its operations and is therefore heavily reliant on third-party funds (posing a greater risk to investors). The theory is supported by Salim (2015), who demonstrated

Likewise, Hery (2016) identifies the "debt-to-total-asset ratio" (DAR) as a measurement of how much a company's assets are funded by debt or how much debt it has on asset funding. Kasmir (2017) also discusses the debt-to-asset ratio, used to interpret or compare a company's total debt to its total assets, or to see how much of the company's assets are funded by debt.
H2: The debt-to-asset ratio negatively affects company value.

Commercial Property Revenue
Goel and Chaudary (2013) maintain that since a well-diversified portfolio is less risky, portfolio diversification should be a critical consideration for investors. One factor which can influence portfolio diversification is demographic character; Goetzman and Kumar (2005) relate the degree of portfolio diversification to an investor's income and age.

According to Lusardi and Mitchell (2008), financial literacy variables also have an effect on portfolio diversification, as they can influence investor behavior.

Portfolio diversification, according to Fabozzi (1999), is the creation of portfolios in such a way that portfolio instability is reduced without losing returns. Investors who specialize in a particular asset, such as bonds, believe it is often important to diversify their investments. This means that all available funds should not be invested in a single company share, but rather in a portfolio that includes securities from a variety of firms.

Diversified industries are growing, which could enable them to increase or maximize profits and hence companies' value. According to Tantra (2017), diversified firms can enhance their industries via operational performance: Cooperative operations in manufacturing, distribution, and human resources, as well as the transfer of expertise and knowledge among similar business units, all can increase efficiency and, consequently, a firm's value.

Aquaris and Darmawan (2019) support this hypothesis by showing that diversification, also known as "premium diversification," could increase company value.

H3: Commercial property revenue positively affects company value.

Maturing Long-Term Debt

The maturity of debt obligation pertains to the day the borrower repays the amount specified by the issuer (Booth, Cleary, Drake, 2014). The issuer of a note or bond is usually required to pay a predetermined amount in the future. As a financial obligation is issued, the maturity is usually determined. Debt obligation may mature in five, 10, 50, or 100 years. Debt with a maturity of more than one year is referred to as "long-term debt." The amount of principal and interest of total debt required to be repaid within one year is referred to as the "current part of long-term debt" (corporatefinance.com).

When considering debt as a source of finance, companies must also consider debt maturity, since the debt maturity chosen will likely have an impact on the company's worth. Hence, if the firm decides to use debt as its primary source of funding, it must simultaneously make decisions on debt maturity (Barclay, Smith, 1995). The goal of maturing long-term debt is to give investors debt information to assess the company's costs.

H4: Maturing long-term debt (MTLD) negatively affects company value.

The COVID-19 Pandemic

The COVID-19 pandemic, which still has no end in sight, has had a significant influence on the global economy and social sectors, including in Indonesia. As a result, the investment sector has deteriorated, resulting in companies' closure (beritasatu.com). Devi, Warasniasih, Masdiantini, and Musmini (2020) echo this hypothesis by demonstrating the negative effects of the COVID-19 crisis on profitability and leverage.

H5: The COVID-19 crisis negatively affects company value.

Research Framework
Based on the literature review described above, the hypotheses are organized thus:
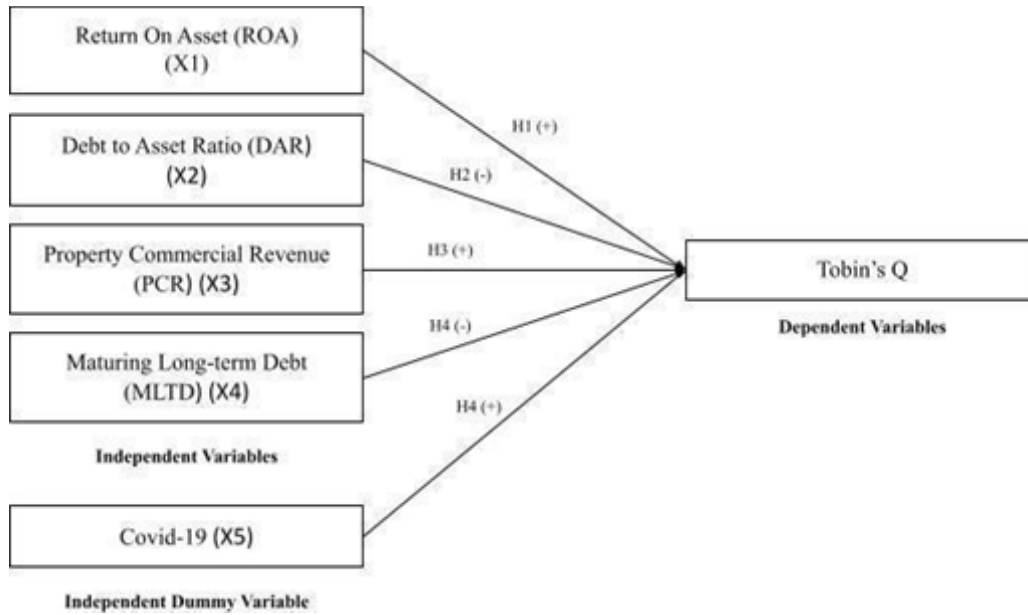
Figure 1.
Research Hypothesis Framework

Research Methodology

Research Design
A quantitative research approach is used for the present research design. Quantitative research is a technique and set of measurements yielding a specific value (Kothari, 2007). According to Rovai et al., (2014), quantitative researchers consider the universe to be outside of themselves, which implies that an empirical truth exists independently of any observations.

The primary goal of this study is to examine the financial impact of property and real estate companies on stock output. This is to be accomplished via an assessment of how financial results may affect the stock performance of property and real estate companies, specifically profitability, leverage, and commercial property revenue.

Data Collection Method
This study employs purposive sampling, under the following eligibility requirements:

- The real estate and property companies for the sample were listed on the Indonesia Stock Exchange (IDX) during the 2015–2020 period.
- These companies published financial reports for the fiscal years 2015–2020.
- They had been actively trading over the previous 200 days.
- They were among the 25 largest companies in the real estate and property industry.
- They had the highest level of market capitalization in real estate.

The Indonesia Stock Exchange determines the classification of property and real estate companies. Nine companies met the criteria above, as listed in Table 1.

Tobin's q ratio was used as a measure of firm value in this study (dependent variable). As mentioned earlier, Tobin's q is a method for determining a company's value, derived from the value of intangible and tangible assets. The independent variables were return on assets (ROA), the debt-to-asset ratio (DAR), commercial property revenue, maturing long-term debt, and COVID-19. Table 2 illustrates these descriptions.

Table 1.
List of Data

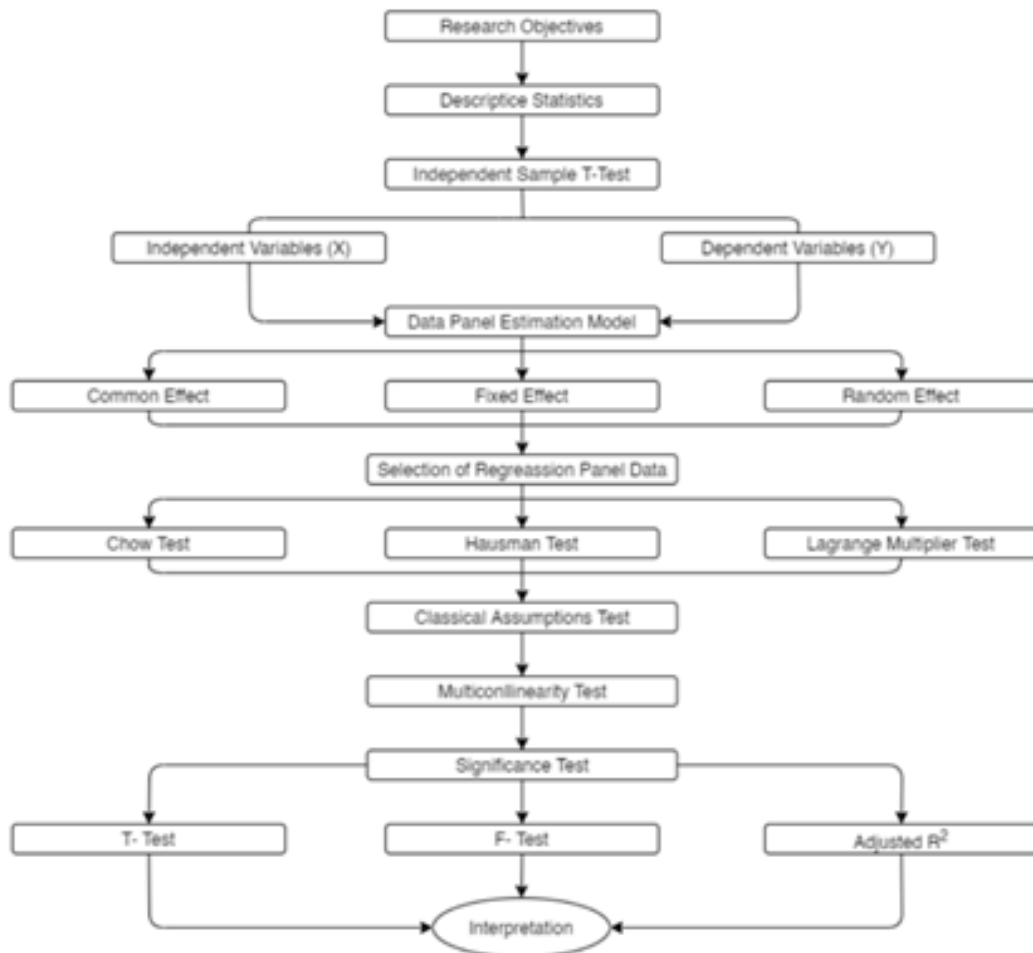| No.	Stock Code	Company Name
1	BSDE	Bumi Serpong Damai Tbk
2	PWON	Pakuwon Jati Tbk
3	CTRA	Ciputra Development Tbk
4	WIKA	Wijaya Karya Tbk
5	LPKR	Lippo Karawaci Tbk
6	DUTI	Duta Pertiwi Tbk
7	ADHI	Adhi Karya Tbk
8	ASRI	Alam Sutera Realty Tbk.
9	APLN	Agung Podomoro Land Tbk.

Figure 2.
Data Analysis Flow

The first stage of the research method, as depicted in Figure 2, is to obtain descriptive statistics such as mean, standard deviation, and correlation coefficient. The second is to identify the independent and dependent variables. The third is to develop a data panel to determine the best model for performing regression among common-effect, fixed-effect, and random-effect models. The fourth comprises the Chow test, Hausman test, and Lagrange multiplier test.

In the fifth phase of the research process, the classical assumption test, also known as the multicollinearity test, is used for multiple linear regression equations. The sixth step is to apply a significance test to the multiple linear regression equations, which includes a test on individual regression coefficients (t-test) and a Simultaneous Significance Test with Adjusted R2 and F-Test. The seventh and final stage of the research process is the evaluation of test results.

Table 2.
List of Variables

Variable	Description	Source	Expected Sign
Firm Value (Y)	Frequently used as a metric for a firm's intangible assets or intellectual capital. Because intellectual capital exists, the market frequently adds value to the firm	Haryono et al. (2015)	$\text{Tobin's } Q = \dfrac{Market\ Value\ Equity + Total\ Debt}{(Total\ Equity + Total\ Debt)}$
Return on Asset (X1)	indicates how much net income is derived when calculated from asset valuation by dividing net income by the average total assets of the firm	Harahap (2013)	$ROA_{i.t} = \dfrac{Net\ Income_{i,t}}{Total\ Assets_{i,t}}$
Debt to Asset Ratio (X2)	can be used to assess a company's liquidity	Kasmir (2014)	$DAR_{i.t} = \dfrac{Total\ Debt_{i,t}}{Total\ Assets_{i,t}}$
Property Commercial Revenue (X3)	indicates the entire revenue from solely the sale of the property.	Aquaris and Darmawan (2019)	$PCR\ Ratio = \dfrac{Property\ Commercial\ Revenue}{Total\ Revenue}$

Table 2. (Continued)
List of Variables

Variable	Description	Source	Expected Sign
Maturing Long-Term Debt (X4)	the day that the borrower repays the amount time specified by the issuer	Booth, Cleary, Drake, 2014	$= \dfrac{Maturing\ Long-Term\ Debt}{\dfrac{Long-term\ liabilities\ that\ will\ mature\ within\ 1\ year}{Total\ Asset}}$
Covid-19 (X5)	A health crisis that has a significant influence on the global economy	Devi, Warasnias ih, Masdianti ni, and Musmini (2020)	0 for years before to Covid-19 and 1 for years after Coid-19

Data Analysis Technique

The data analysis was based on the concept of simplifying data into a format easy to read and understand. The programs Microsoft Excel, EViews, and SPSS were used to interpret the data. EViews, created by Quantitative Micro Software (QMS), includes statistical and econometric methods for analyzing cross-sectional data, time series, and panel results.

SPSS (Statistical Package for the Social Sciences) performs comparative and correlational statistical tests in the context of univariate, bivariate, and multivariate analysis for both parametric and non-parametric statistical

$$TobinQ_{it} = \alpha + \beta_1\,ROA_{it} + \beta_2\,DAR_{it} + \beta_3\,PCR_{it} + \beta_4\,MLTD_{it} + \beta_5\,COVID19_{it} + s_{it}$$

Where;
$TobinQ_{it}$ = The firm value of company i on t period of time
α = regression model intercept
β_x = Regression coefficient
ROA_{it} = Return on Assets of company i on period t
DAR_{it} = Debt to Assets Ratio of company i on period t
PCR_{it} = Property Commercial Revenue of company i on period t
$COVID19it$ = 0 is before Covid-19, 1 is for Covid-19
ε_{it} = Component error of time period and cross-sectional data observation

Result And Discussion

Result
Descriptive Analysis

Table 3.
 Descriptive analysis

	ROA	DAR	PCR	MLTD
Mean	1.432	22.167	21.129	2.075
Median	0.547	22.941	18.725	0.194
Maximum	11.243	85.260	57.808	22.520
Minimum	-3.028	0.000	0.999	0.000
Std. Dev	2.123	11.302	15.507	4.211

Table 3 shows nine major companies in the property industry from 2015 to 2020, with a total of 216 observations for each variable. Based on descriptive statistics, it can be stated that the mean of return on assets data is 1.43%, which implies that from 2015 to 2020, the average of the companies' capabilities to produce net income by using their assets was 1.43%. The median is 0.54% and the maximum is 11.24%.

Conversely, the debt-to-asset ratio has a mean of 22.16 %, implying that from 2015 to 2020, the average percentage of a company's assets supported by debt would have been 22.16%. The median percentage is 22.94%. The highest debt-to-asset ratio came from PT Duta Pertiwi in the second quarter of 2017, at 85.26%.

The mean of commercial property revenue data is 21.12%, indicating that from 2015 to 2020, the average property income (such as from leasing buildings or recreation spaces) was deducted from the average property income. The median percentage is 18.72%. In the second quarter of 2020, the maximum is 57.80%, coming from PT Pakuwon Jati.

Finally, the median of maturing long-term debt data is 0.19%, while the mean of maturing long-term debt data is 2.07%. In the second quarter of 2017, PT Duta Pertiwi received the highest associated percentage, at 22.52%. This implies that the firm had a considerable amount of long-term debt liabilities which would reach maturity in a year.

Chow Test
The Chow test is employed to determine whether to use a common effect or fixed effect model. According to the hypothesis on panel data regression model selection, the fixed effect model is to be chosen if the cross-section chi-square value is 0.05 (significant value). If it is greater than 0.05, the common effect model is to be chosen (significant value).

As seen in Table 4.3, the Chow test revealed that the probability value of the cross-section chi-square was 0.000 0.05 (significant value), meaning that a fixed effect model should be selected. This was followed by the Hausman test, as the next subsection describes.

Table 4.
Chow Test Result

Chow Test	
Effect Test	Prob.
Cross -section Chi -square	0.0000

Hausman Test

The Hausman test evaluates whether the fixed effect or the random effect model is superior. This is revealed by the probability value in the random cross-section. If this value is greater than 0.05, the random effect model is selected; if it is less than 0.05, the fixed effect model is selected.

The random effect model was chosen for this study based on the Hausman test's results.

Table 5.
Hausman Test Result

Hausman test	
Test summary	Prob.
Random cross -section	1.000

Classical Assumption and Multicollinearity Test

The multicollinearity test gauges whether there is a relationship between the independent variables in the regression model. To ascertain multicollinearity, the variance inflation factor (VIF) was used. Multicollinearity is acceptable if VIF is less than 10, and unacceptable if VIF is greater than 10.

Table 6.
Multicollinearity Test

Variables	Variance Inflation Factor (VIF)
ROA	1.448
DAR	1.299
PCR	1.256
MLTD	1.119
NOTE:	
Dependent variable: Tobin's Q	

Coefficient of Determination (Adjusted R^2)
The value should be between 0 and 1 based on the adjusted R2 value (Table 7). The adjusted R^2 result is 0.0573. These variables can explain 0.57% of Tobin's q, with the majority explained by other variables.

Significance Test
The random effect model is the result of panel data regression selection that is appropriate for the panel data model. The random effect model was used for the significance test. This study uses the partial test (t-test), simultaneous test (F-test), as well as coefficient of determination (adjusted R^2). The three data sets produced the following results:

Table 7.
Significance Test Result

ROA	Coefficient	-0.015
	t-Statistic	-1.033
	p-value	0.3028
DAR	Coefficient	-0.0037
	t-Statistic	-1.028
	p-value	0.3048
PCR	Coefficient	-0.00641
	t-Statistic	-2.399
	p-value	0.0173**
MLTD	Coefficient	-0.0105
	t-Statistic	-1.0874
	p-value	0.2781
COVID19	Coefficient	-0.13201
	t-Statistic	-2.3078
	p-value	0.022**
Adjusted R-Squared		0.0573
F-Statistics		3.6144
Prob (F-Statistics)		0.0037

Notes:
**: significantly effect to dependent variable (p-value < 0.05)

Discussion

According to the t-test results, the COVID-19 crisis had a negative effect on the value of those considered the major firms in the property sector between 2015 and 2020. This shows a reduction in firm value due to the pandemic, and supports the hypothesis that COVID-19 would have had a negative effect on firm value. It is also supported by previous studies on the predicted impact of COVID-19 on large property-sector companies.

While commercial property revenue negatively affected the firms' value, this does not support the associated hypothesis. One of the causes the commercial property revenue negatively effect is Covid-19. This result contradicts the previous hypothesis. However, it can be inferred that Covid-19 had a negative influence on firm value since the year Covid-19 was included in the observation of the company's value of property big companies from 2015 to 2020. One example of the impact is the vulnerability of the hospitality industry due to the stay-at-home policy, *PSBB* (Large-Scale Social Restrictions) and *PPKM* (Enforcement of Restrictions on Office Activities) (Kompas.com.

The level of demand for hotels and flats decreased, which had an influence on commercial property revenue, since commercial property earnings are limited to sources such as apartment rentals, hotels, and property management. The property sector was in decline prior to COVID-19. Suahasil Nazara, the chairman of the BKF Ministry of Finance (Kemenkeu), stated that the property sector has consistently grown at a slower rate than the economy since 2015. Even the contribution of the property industry to the GDP is always less than 3%. In addition, the property sector's growth in 2018 was just 3.58 percent, much below the national economic growth of 5.02 percent (cnbcindonesia.com). So, from the year prior to Covid-19, it may be deduced that the property sector's growth has been below that of the national economy, and that growth following Covid-19 may be lower than the previous year.

In addition, there are a number of variables that have no effect on the value of major property companies throughout the 2015-2020 period. Return on Assets, Debt to Asset Ratio, and Maturing Long-Term Debt are the three factors that have no affect. This indicates that the three variables have been unable to justify the firm's value of major companies' property to investors. In order to add additional information, the firm's value, it is intended to add variables in future study. The goal is to be able to explain the firm's value of property major companies to investors.

Conclusion

There is a research gap between this study and prior studies on firm value in this study. COVID-19 was considered in examining impacts on company value in the property sector.

This study used panel data from a sample of nine big property-sector companies. Various objectives were conceptualized based on the research problem, including determining whether there were variations in firm value by analyzing profitability ratios, leverage ratios, commercial property revenue, and maturing long-term debt. The research drew from companies' quarterly data for six years (2015 to 2020), for a total of 216 data sets. The random effect model was found suitable to address the research problem, in accordance with regression panel data selection.

Based on the results and analysis, and aligned with the research question and formulation of the problems described in the discussion section, the conclusions are as follows:
1. Profitability ratio effect on the value of big companies in the property sector from 2015 to 2020:
   -The return-on-assets ratio did not significantly affect company value.
2. Leverage ratio effect on the value of big companies in the property sector from 2015 to 2020:

- The debt-to-asset ratio did not significantly affect company value.
2. Commercial property revenue had a significant negative effect on the value of big companies in the property sector from 2015 to 2020.
3. Maturing long-term debt did not significantly affect the value of big companies in the property sector from 2015 to 2020
4. COVID-19 had a significant negative effect on the value of big companies in the property sector from 2015 to 2020.

This study focused only on the property and real estate firms listed on the Indonesia Stock Exchange, with an observation period from 2015 to 2020 (on a quarterly basis). Based on the p-value of $(0.0037) < 0.05$ of the t-test, the profitability ratio, leverage ratio, commercial property revenue, and maturing long-term debt simultaneously influenced the value of big property-sector companies listed on the IDX from 2015 to 2020.

These findings suggest that only commercial property revenue had a negative impact on the firms' value; hence, the two indicators for the movement of the firm's value in the major companies' property sector may be inferred. Efficient market theory is supported by this outcome. This study is offered in a semi-strong form, meaning the pricing represents all relevant public data. The prices generated are a reflection of previous stock prices as well as the facts accessible in the market, such as financial statements and commercial revenue from property. Commercial property revenue is a type of data that includes stock prices.

Recommendations
This research was limited to five variables, namely return on assets (ROA), debt-to-asset ratio (DAR), Price Commercial Revenue (PCR), and maturing long-term debt (MLTD). Future research should consider investigating additional variables such as current ratio (CR), quick ratio (QR), and debt-to-equity ratio (DER).

Researchers should consider going more deeply into the COVID-19 scenario and applying their findings to growth companies or company valuations, This study focused only on the property and real estate firms listed on the Indonesia Stock Exchange, with an observation period from 2015 to 2020 (on a quarterly basis). Based on the p-value of $(0.0037) < 0.05$ of the t-test, the profitability ratio, leverage ratio, commercial property revenue, and maturing long-term debt simultaneously influenced the value of big property-sector companies listed on the IDX from 2015 to 2020.

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from the start of the pandemic to its present status. They should also consider furthering research into and comparisons with other sectors, besides adding to the knowledge base on the property and real estate industry, since this study was limited to large Indonesian companies in the field.

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