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# Analysis of The Effect of Profitability, Leverage and Firm Size on Firm Value

Heri Ispriyahadi[1] & Budiman Abdulah[2]*
*STIE Muhammadiyah Jakarta*
*budiman_ide@yahoo.com

Keywords : Profitability, Leverage, Firm size, Firm Value.

Abstract : *This study examines profitability, leverage, and firm size on company value in the financial services sector. This study uses a sample of 67 companies in the financial industry (banks and non-bank financial institutions) listed on the Indonesia Stock Exchange. The sampling process was selected using purposive sampling by applying specific criteria. This study involves three regression estimations (pooled OLS, fixed effects, and random effects). Performing the Chow test, the Hausman test, and the Lagrange test shows that the Fixed Effect Model is the best in panel data regression. The results showed that ROA and company size have a significant relationship to firm value. Meanwhile, leverage shows a negative relationship but not substantial to firm value. These results illustrate that the higher the profit and the bigger the company gives a positive signal to investors, thus encouraging investors to buy company shares. Increasing investor demand encourages the increase in company value. The effect of the three independent variables (profitability, leverage, and company size) concurrently on the corporate value variable was recorded at 67.14%, and the remaining 22.86 influenced by another factor.*

## 1 INTRODUCTION

Every Increasing company value is a goal that the company wants to achieve. This will be a good indicator for the internal company that shows the company's management performance results are getting better. Investors who are parties outside the company also have an interest in company value. They believe that high company value is their hope of a profit from the investment they make (Wahyudi, 2013). For this reason, the company will always try to maintain and increase the value of the company at a high level. The more profitable one firm has, the higher its value (Dang N.H et al. 2018). In this case, what the company needs to do is focus on the dominant factors affecting firm value. Firm value describing the performance of the company and able to influence investor's decision (Mahendra, 2012). Based on the results of previous studies, firm value can be determined by some factors, such as company's ability to generate profits, leverage policy, short liabilities capability and policy, financing policy, the size of the company, stock price in the market, profitability and several factors that have been concluded through other empirical research. Among these factors, three variables that contribute to firm value are profitability, leverage, and company size (Rizqia et al., 2013). Firm value will be one of shareholders biggest attention. Therefore, one of the company's missions is to maximize the prosperity of the shareholder by maximize price of the stock. Increasing the firm value is a goal from all management decisions in financial and it can be achieved by maximize income or profit from the shareholders (Harmono, 2011). One of parameter that can showed firm value is the stock price. Stock price reflected of the firm value, which all investor and shareholders expected a maximum benefit from it.

Profitability is the net result of various company policies and decisions. Borio et al (2017) defines profitability as a business capability, interpreting profit over a certain periode. According to Handriani and Robiyanto (2018), profitability is one of the most important goals of financial management besides maximizing the owner's wealth. Profitability is a very important performance determinant. Profitability plays a vital role in all aspects of the business because it shows its efficiency and reflects its performance. Profitability also indicates that the company will share more significant returns with investors. Dang N.C et al. (2018) found that profitability has a positive and significant effect on companies' value listed on securities bursa in Vietnam. High profitability indicates that the company has a good and healthy performance to

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*September Edition 2021*

realize the company's goals. Leverage refers to the extent to which firms make use of their money borrowings (debts financing) to increase profitability (Alkhatib, 2012). Gatzo et al. (2013) stated that debt would be useful if it can generate the company's income efficiently. For that, the company must generate income that exceeds the cost of debt to increase its return on equity (Abdul and Adelabu, 2015). In managing debt, it must be arranged both in terms of amount and use. So, debt must be maintained by the company's needs. Debt must not be excessive or too small because both will have an adverse impact on the company. The company's profit will potentially decrease. Likewise, to be effective, debt must also be channeled into productive activities.

The results of research on leverage and firm value show different results. Optimal leverage will positively and significantly impact firm value (Cheng and Tzeng 2011). Meanwhile, on the other hand, Siahaan (2014) stated that debt has no significant effect on firm value. Another researcher, Sylvia (2021) pronounced that debt has a negative effect on firm value. Companies also need to focus on the firm size factor. This is important because to optimize the company's value, that is, when applying the company's funding release, it is very dependent on the size of the company. Pramana and Mustanda (2016) state that large companies have the convenience of obtaining funding sources because creditors trust them more. Firm size has a positive and significant effect on firm value, as indicated by the results of research from Martini et al. (2014), Moeljadi (2014), Angga and Wiksuana (2016), Hidayah (2014), and Rasyid et al. (2015). However, other studies are different, namely research from Rai and Merta (2016), which shows that company size has a negative and significant effect on company value. Considering the above explanation, the researcher chooses three variables: profitability, leverage, and company size, as independent variables that will affect firm value in the financial services company sector. Consideration of selecting a financial sector service company because of their significant role in providing financing for Indonesia's development. Until now, the government is still very dependent on the banking sector and other financial institutions for the financing sector because the capital market's role cannot replace it. Thus, it is interesting to examine what factors significantly influence the value of the financial services sector firms. This study fills a gap that previous researchers have not done, namely by combining banks and other financial institutions as research objects.

## 2 LITERATURE REVIEW

### Signalling Theory

According to Brigham and Houston (2010), this theory is from an investor's perspective. Investors can find out the company's prospects by paying attention to the signs of corporate action the company is taking. This signal will reflect the company's current, present, and future conditions linked to what happened to the company. Information related to the company is essential because it will impact parties' decision-making outside the company with an interest in the company**.** Hossain & Hossain (2015) explain that the signaling theory is based on asymmetric information; managers use leverage policies to give signals to the market because investors respond to financing through debt as a sign or indication of high future performance and high corporate cash flow in the future will come.

### Pecking Order Theory

This theory was first introduced by Donalson in 1961, while Myers and Majluf carried out Pecking Order Theory's naming in 1984. Determining the source of funds, the company will use the source of funds based on this theory's priority order. The initial sequence is funds that come from retained earnings because these funds come from company operations results so that no cost of funds is spent. If the amount of funds is insufficient, the company can look for sources of funds from outside. If there are insufficient funds, the company will look for other funds from outside the company, namely, debt. The last source of funds is funds from equity. Debt has a higher priority than equity because it has a lower cost than issuing shares. The pecking order theory explains that the higher the level of corporate debt, the company's ability to earn profits will decrease. Generally, companies will prefer to use internal rather than external funding (Oktapiani and Wiksuana, 2018). Funding with a minor risk level is internal funding followed by external funding through bank loans, and the last one is equity funding with a high-risk group because it gives a negative signal to the market.

### The Trade-off Model

Trade-off theory assumes that the company has an optimal ratio between debt and equity, which is considered based on the benefits and costs of debt. The costs associated with debt are tax costs, bankruptcy costs and financial hardship, and agency fees. An optimal capital structure is a combination of funding sources that consist of debt and stock that will yield the firm's highest value. One indication of the high value of the company is the high stock prices. Thus, the optimal capital structure is a capital structure that generates the highest stock price.

### Firm Value

*Journal of Business, Management, and Accounting* *Volume 3*
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*September Edition 2021*

The company always strives to continue to increase company value. The higher the value of the company, the increase in shareholder wealth. Lisa (2017) states that a higher company value will provide maximum prosperity for shareholders. Fama (1978) expressed the opinion that company value will be reflected in its share price. Firm value is very important because of the high value of the firm will be followed by high shareholder wealth (Brigham & Houston, 2010). The firm value is crucial to know because it reflects the firm's performance and can affect the perception of investors on the firm (Hapsoro and Falih 2020).

**Profitability**

Brigham and Houstan (2010) state that profitability results from some decisions and policies made by the company. In general, *profitability* is a business's ability to produce a return on an investment based on its resources in comparison with an alternative investment. Therefore, companies that can achieve high profits are companies that have good prospects. Investors will be interested in investing their funds in companies that have high profits. With increased profits, investors get returns in the form of yields and capital gains. Various financial ratios that are often employed to measure profitability are Net Proft Margin (NPM), Return on Equity (ROE), Return on Assets (ROA). Kabo (2012), in his blog on financial management, discusses ROA, this ratio describes the company's ability to generate profits from every rupiah of assets used. By knowing this ratio, it can be assessed whether the firm is efficient in utilizing its assets in its operational activities. ROA also provides a better measure of the company's profitability because it shows the management's effectiveness in using assets to generate revenue. Mayogi and Fidiana (2016) also states that a positive ROA shows that the total assets used for firm operations can provide profits for the company. Conversely, if the ROA is negative, it shows that the total assets used do not provide a gain/loss.

$$= \frac{\text{Profit Before Tax and Interest}}{\text{Total Aset}} \text{ x } 100\%$$

ROA assists managers and investors to see how well a company can convert its investment in assets into benefits. ROA is generally considered as a return on investment for a firm due to capital assets are often made up of the most substantial portion in investment funds. The higher the level of ROA obtained by a firm, the higher the performance of a firm, and so does the chance of getting dividends; vice versa (Trang et al., 2015).

**Leverage**

Leverage is the company's policy to finance the company by using funds that come from debt. Modigliani and Miller (1963) stated that funding could increase firm value. This increase occurred due to the effect of tax-deductable, which can be used to finance company investment. The higher ratio of debt to assets will follow the higher company value indicated by the value of company stock. But the continuous increase in debt will not increase firm value because it increases the company's risk. The high debt will allow the risk of default. If this happens, then it will lower the value of the company. Increased leverage will increase companies' value until a certain level, and increased levels of leverage after the limit will reduce the value of the company because of the increased risk of corporate debt. According to Nuraina (2012) stating the greater leverage means the greater the company's assets or funding obtained from debt. The greater the leverage, the greater the likelihood of the company's failure to not be able to pay its debt, so that it has the risk of bankruptcy. Using DER, it will be known whether the company's Equity is sufficient to finance existing deficits. A high DER means that the firm uses high debt.

$$\text{DER} = \frac{\text{Total Liabilities}}{\text{Total Equity}} \text{ x } 10$$

**Firm Size**

Firm Size is one of the variables that are considered to affect firm value. Usually, the firm size is reflected in the total assets owned by the company. Large-scale companies are companies that are growing, so that they affect the company's profitability. Profits that tend to increase will be a pull factor that encourages increased interest and demand for investors in company shares, which will increase the company's value. Thus it can be said that company size directly affects firm value. large companies tend to find it easier to get creditor trust to obtain funding sources to increase company value (Pramana and Mustanda (2016). In line with Rais & Santoso (2017), firm size is defined as the measurement to classify the size of the company according to various calculations. They are based on total assets, total sales, average total sales of assets, log size market value shares, number of employees, and others. The size of a company could be an indicator that illustrates the level of risk for investors to invest in the company. Large firms are deemed to have an excellent financial capacity, more capable of fulfilling all of their obligations, and can accommodate an adequate return rate for investors. The computation that commonly used to gauge the firm size is as follows:

*Journal of Business, Management, and Accounting*
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Firm Size = Log Natural Total Assets

Optimizing company value is the primary goal of the company. Therefore, companies must prioritize the factors that have a significant influence on firm value. This study will investigate the impact of profitability, leverage, and company size on financial sector companies with the following framework:

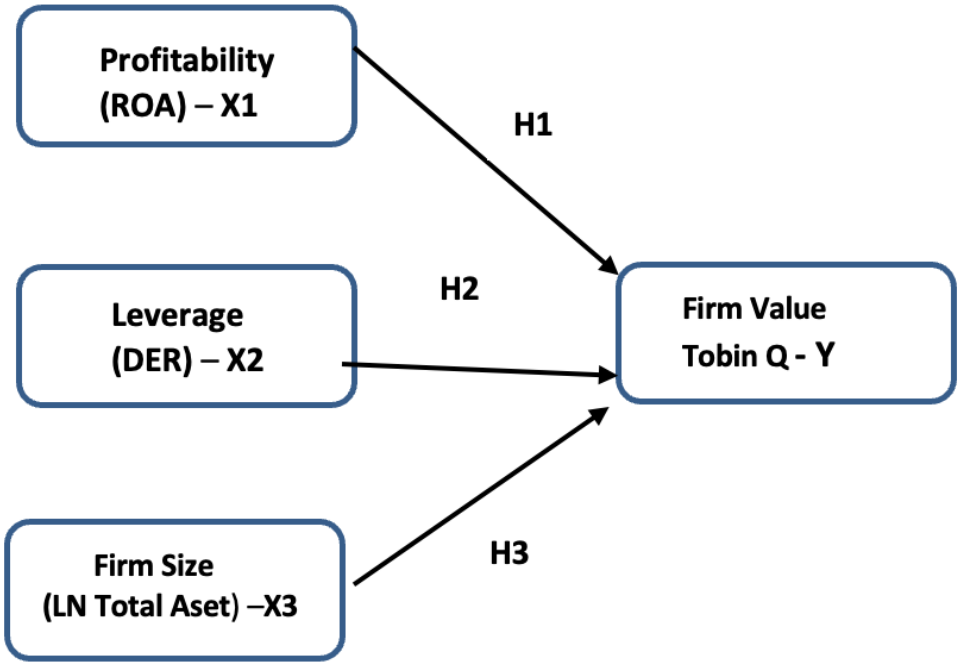


**Figure 1. Research Model**

*Source: Data processed by Author, 2020*

**Hypothesis**

Based on the explanation in the literature review and previous empirical studies, the following hypotheses can be formulated:

**Hypothesis 1: There is an effect of profitability on firm value in Indonesia's financial services sector companies**

High profitability indicates that the company has a good and healthy performance to realize the company's goals. Profitability is the company's ability to generate profits and measure operational efficiency and efficiency in using its assets (Chen, 2011). Profit is generally calculated through the profitability ratio used is Return on Assets (ROA), which is the ratio of profit before tax to total assets. If the company's profitability increases, namely by increasing ROA, it will encourage an increase in firm value. Companies with high profits will find it easier to get additional capital or loans because this high profit can guarantee if the company can repay the loan. Thus it can be said that profitability affects firm value. Research conducted by Husna and Satria (2019) found that profitability positively affects firm value.

**Hypothesis 2: There is an effect of leverage on firm value in companies in Indonesia's financial sector companies**

Companies can use debt (leverage) to raise capital for higher profits. Leverage is the company's ability to pay off its financial obligations, both short and long term. In managing debt, it must be arranged both in terms of amount and use. So, debt must be maintained by the company's needs. Debt must not be excessive because it will hurt the company. Excessive use of debt will increase the company's burden so that it can reduce profits, which can decrease company value.

*Journal of Business, Management, and Accounting* *Volume 3*
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*September Edition 2021*

This means that the higher the leverage value, the riskier the investment is being made. This is evidenced from previous studies, which found that leverage has a significant but negative effect on firm value (Ogolmagai 2013, Hartono et al. 2013, Kodongo et al. 2014, and Mahendra et al. 2012).

**Hypothesis 3: There is an effect of company size on firm value in Indonesia's financial sector companies**

Total capital, sales volume, and total assets are variables that are often used to measure company size. The company will reach the maturity stage when it has large assets. Long-term benefits for companies with large assets are the support for positive cash flow. Company size can be seen from its total assets and capital (Rai and Merta 2016). Generally, large companies tend to find it easier to get creditor trust to get funding sources to increase company value (Pramana and Mustanda, 2016). Previous studies that supported the existence of a significant positive and significant relationship between firm size and firm value were research conducted by Martini et al. (2014), Moeljadi (2014), Angga and Wiksuana (2016), Hidayah (2014), and Rasyid et al. (2015) revealed that company size has a significant positive effect on firm value,

# 3 RESEARCH METHOD

**Population and Sample Research**

This study included all companies in the financial sector companies, banks, and other financial institutions registered on the Indonesia Stock Exchange from 2014 to 2018 (5 years). In this study, sampling using purposive sampling technique concerning the following criteria:

1. Financial services sector companies listed on the Indonesia Stock Exchange during the study period, from 2014 to 2018.
2. The company has completed financial data required during the study period.

The population in this study was 79 financial sector companies registered on the Indonesia Stock Exchange. The samples selected using the above criteria are:

**Table 1. Population Characteristics and Number of Research Samples**

| Information | Total |
|---|---|
| Financial sector companies registered on the Indonesia Stock Exchange (BEI) 2014-2018 | 79 |
| Financial Sector companies that do not match the qualifications: | |
| 1. Financial Sector Companies not registered on the Indonesian Stock Exchange during the research period, starting from 2014 to 2018. | 7 |
| 2. Companies do not have complete data required for research during the research period. | 5 |
| Sub total company that ineligible | 12 |
| Total companies sampled (eligible) | **67** |
| Total data used (5 years of observation) | **335 Data** |

*Source: www.idx.co.id, www.sahamok.com dan www.yahoofinance.com, 2020*

**Panel Data Regression Model**

To estimate model parameters with panel data regression. There are three types of models, namely Pooled Least Square (PLS), Fixed Effect Model (FEM), and Random Effect Model (REM).

**Pooled Least Square (PLS)**

PLS is a panel data regression model calculation approach using the OLS method. Pooled data is data obtained by randomly sampling from a population at different periods. The disadvantage of this technique is that the intercept and slope between individuals and time do not change so that the differences are not too obvious. The regression equation can be written as follows:

$$\gamma it = \alpha + \beta Xit + \varepsilon it$$

For i = 1, 2,…, N and t = 1, 2,… T, where N is the number of units / individual cross-sections, and T is the number of periods. N + T equations can be generated from this common effects model, namely as many as T cross-section equations and N time series equations.

**Fixed Effect Model (FEM)**

This approach uses dummy variables as independent variables in the calculation of regression so that OLS can estimate it and an unbiased and consistent estimator can be obtained. The drawback of this approach is that the degree of freedom is too large. However, the shortcomings of the PLS have been resolved (the intercept is subject to change). The regression equation can be written as follows:

$$\gamma it = \alpha i + \beta Xit + \varepsilon it + Dit$$

For i = 1,2,…, N and t = 1,2,…, T, where N is the number of units / individual cross-sections, and T is the number of time periods.

**Random Effect Model (REM)**

REM is an alternative to the fixed-effect method. In REM, differences in individual characteristics and time are accommodated in the error of the model. The intercept is not considered constant in the random effect approach but is considered a random variable with an average value. The regression equation can be written as follows:

$$\gamma it = \alpha + \beta Xit + UI + \varepsilon it$$

**Model Selection with Panel Data**

There are testing stages to choose which model to use for research, namely:

**Chow Test**

The chow test is a test to determine the most appropriate model to use in estimating the panel model data between the Pooled Least Square (OLS) and the Fixed Effect Model (FEM). Chow test is done by looking at the restricted F-test, which helps see whether the constant value of each individual or time varies. The following is a hypothesis from the Chow Test:

$H_0$: estimation model can be used estimation with Pooled Least Square (PLS).

$H_1$: estimation model can be used analysis with Fixed Effect Model (FEM).

Decision making by looking at the probability of the F-count and comparing it with α 0.05

- If the probability of F-count <0.05, then $H_0$ is rejected
- If the probability of F-count> 0.05, then $H_0$ is accepted

**Hausman Test**

The next step is to perform a specification test using the Hausman test. This test aims to find the right and more efficient model between the Fixed Effect Model (FEM) or the Random Effect Model (REM).

*Journal of Business, Management, and Accounting* *Volume 3*
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*September Edition 2021*

The purpose of the Hausman test is to determine whether there is a relationship between the residual random effect and the independent variables. To ensure consistency and efficiency of random effect correlation, it is necessary to ensure no residual relationship with the independent variable. The following is the hypothesis from the Hausman Test:

$H_0$: Random Effect Model (REM) is an appropriate and more efficient model

$H_1$: Fixed Effect Model (FEM) is the right and more efficient model.

Decision making by looking at the probability of Chi-Square Statistics and comparing with α 0.05:

- If the probability of the Chi-Square statistic is <0.05, then $H_0$ is rejected
- If the Probability of Chi-Square Statistics> 0.05, then $H_0$ is accepted.

**Lagrange Multiplier Test**

The Lagrange Multiplier (LM) test is a test to determine whether the Random Effect model is better than the Common Effect (REM) method. The following is the hypothesis of the Lagrange Multiplier Test:

$H_0$: Pooled Least Square (PLS) is the right and more efficient model

$H_1$: Random Effect Model (REM) is the right and more efficient model

Decision making by looking at the probability of the Breusch Pagan Statistics and comparing with α 0.05:

- If the probability of the Chi-Square statistic is <0.05, then $H_0$ is rejected
- If the Probability of Chi-Square Statistics> 0.05, then $H_0$ is accepted.

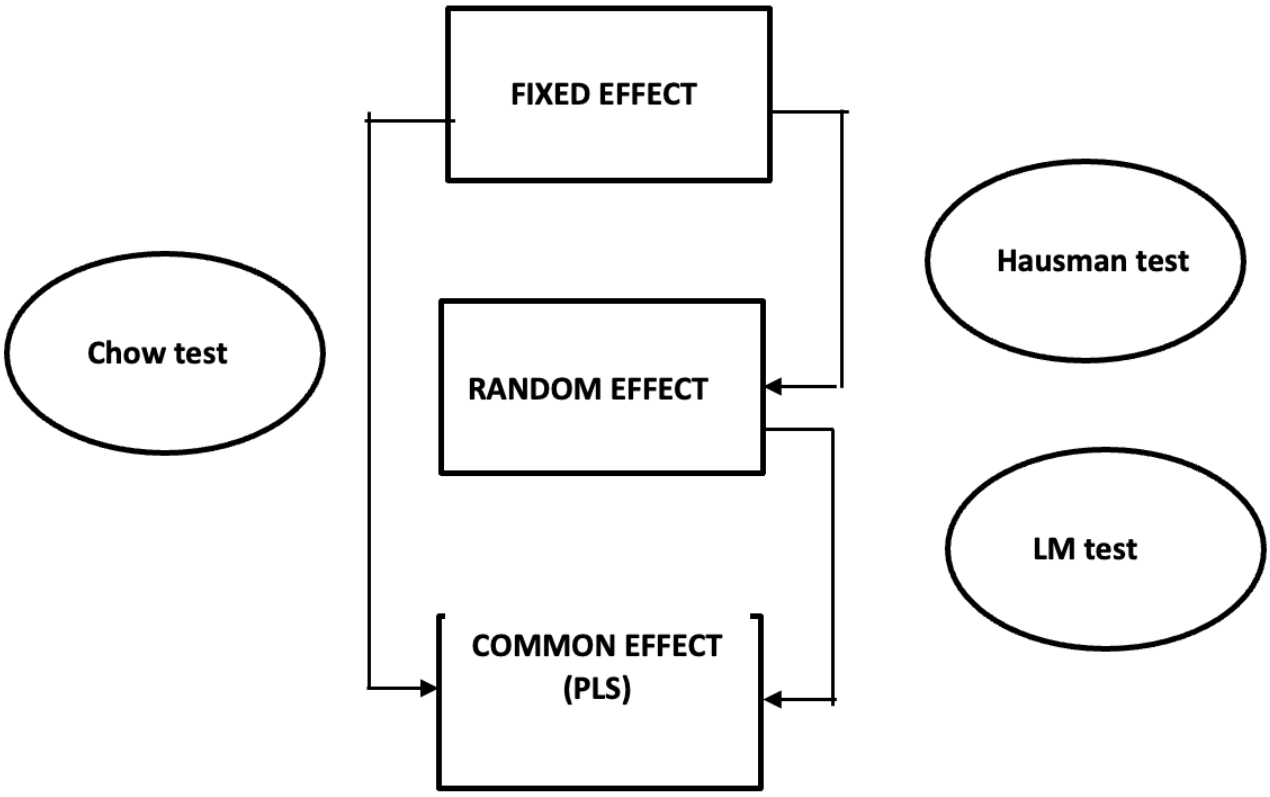


**Figure 2. Panel Model Selection Test**

*Source: Sriyana (2014 : 181)*

**Classic Assumption Test**

For this research to obtain the results of data analysis that meet the test requirements, in this study, classical assumption testing is carried out for statistical testing. To get an estimate that meets the BLUE (Best Linear Unbiased Estimator) qualification, which has a linear nature which means a linear function of a variable bound (Y) in a regression

*Journal of Business, Management, and Accounting* *Volume 3*
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*September Edition 2021*

model, not biased, which means that the estimation results are by the actual value, and the minimum variance. Therefore, classical assumption tests must be carried out so that the regression analysis results meet the criteria.

**Multicollinearity Test**

A multicollinearity test was conducted to measure the intercorrelations between independent variables (Cahyono & Prabawa, 2011). According to Ghozali (2012), the multicollinearity test aims to test whether the regression model found a correlation between independent (independent) variables. A good regression model should not correlate with the independent variables. If the independent variables are correlated, this variable is not orthogonal. Orthogonal variables are independent variables in which the correlation value between independent variables is equal to zero. It can be done by analyzing the correlation matrix of the independent variables to detect the presence or absence of multicollinearity in the regression model. If there is a high enough correlation between the independent variables (generally above 0.90), this is an indication of multicollinearity.

**Heteroscedasticity Test**

This heteroscedasticity test aims to test whether there is an inequality of variance from the residuals of one observation to another in the regression model. There are several techniques for detecting heteroscedasticity according to Nachrowi dan Usman (2006), namely by graphic methods and formal tests, namely the Breusch-Pagan-Godfrey and the white test. If the probability value of F count and Chi-Square count is more than α (0.05), it can be said that the research model does not have a heteroscedasticity problem.

To ensure the absence of heteroscedasticity data, this study conducted a white test. The hypothesis used is:

$H_0$: There is no heteroscedasticity problem in the regression model

$H_1$: There is a heteroscedasticity problem in the regression model

Where if the probability value of the F count and the calculated Chi-Square is greater than the alpha level of 0.05 (5%), it can be concluded that there is no heteroscedasticity in the equation model.

**Hypothesis Testing**

**Partial Significance Test (t-test)**

This test is carried out to see the effect of each independent variable individually on the dependent variable (Ghozali 2012).

Hypothesis criteria are as follows:

**Hypothesis 1**

$H_1 = 0$; Profitability has no effect on firm value at the company the financial services sector in Indonesia.

$H_1 \neq 0$; Profitability has an effect on firm value in sector companies Financial services in Indonesia.

**Hypothesis 2**

$H_2 = 0$; leverage does not affect firm value in Indonesia's company's financial services sector.

$H_2 \neq 0$; leverage affects the value of the financial services sector firm in Indonesia.

**Hypothesis 3**

$H_3 = 0$; Firm size does not affect the value of the sector firm financial services in Indonesia.

$H_3 \neq 0$; Firm size affects the value of the service sector firm finance in Indonesia.

The test is carried out with a significant level of 95% confidence with a degree of freedom to determine the area of acceptance and rejection of $H_0$ with the formula:

*Journal of Business, Management, and Accounting* *Volume 3*
*E-ISSN 2714-870X* *Issue 2*
*September Edition 2021*

$$dk = n-k$$

Where:
dk = Degree of freedom
n = Number of sample members
k = Number of independent variables

The decision rules are as follows:

$H_0$ is accepted if the p-value is> 0.05
This means that partially exogenous variables do not have a significant effect on endogenous variables.

$H_0$ is rejected if the p-value is <0.05
This means that the exogenous variables partially influence the significant effect of endogenous variables.

**Simultaneous Significance Test (F-test)**

According to Firdaus (2004), simultaneous testing of the regression coefficient hypothesis is carried out using analysis of variance. With this analysis of variance, it will be able to understand how the influence of a group of independent variables together on the dependent variable. The test statistic used in this case is the F test statistic. The test is carried out with a significant level or 95% confidence or α = 0.05, with the F test formula (Sugiyono, 2009: 235):

$$F = \frac{R^2/(k-1\_}{(1-R^2)/(n-k)}$$
$$=$$

Information:
$R^2$ = multiple correlation coefficient
n = Number of sample members
k = number of independent variables

The decision rules are as follows:
$H_0$ is accepted if the p-value is> 0.05
This means that profitability, investment decisions, and dividend policy together do not significantly affect firm value.

Reject $H_0$ if the p-value <0.05
This means that profitability, investment decisions, and dividend policy together significantly affect firm value.

**Coefficient of Determination ($R^2$)**

The coefficient of determination (R2) reflects how much variation in the dependent variable Y can be explained by the independent variable X (Nachrowi, 2006). In other words, to express the size of the contribution of the independent variable (X) to the dependent variable (Y), it can be determined by the formula of the coefficient of the reflection. The amount of R2 (coefficient of determination) will indicate that the correlation between the dependent variable (Y) and the independent variable (X) is strong or not. It can also be seen how much the dependent variable can be explained by the independent variable (X), while other factors determine the rest.

# 4 RESULT AND DISCUSSION

**Panel Data Regression Model**

Testing using the Chow test, the Hausman test and LaGrange Multiplier test is performed as a prerequisite for obtaining the best model in panel data regression. By performing these tests in pairs, we can obtain the most accurate

*Journal of Business, Management, and Accounting* *Volume 3*
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*September Edition 2021*

estimation model from the common effect model (CEM), fixed effect model (FEM), or random effect model (REM) model. Chow-test is a statistical test to choose the most suitable model between the common effect model (CEM) and the fixed-effect model (FEM). table 2 below describes the results of the chow test as follows:

**Table 2. Results of the Chow Test Analysis**

| Effect Test | Statistic | d.f | Prob |
|---|---|---|---|
| Cross-Section F | 7.801083 | (66,265) | 0,0000 |
| Cross-Section Chi-Square | 361.598755 | 66 | 0,0000 |

*Source : Data Processed With Software E-views 10, 2020*

using the E-views program with a confidence level of 95% (α = 5%). According to the figure above, the chi-square critical value is 0.0000; which is less than α (0.05). Thus, the ideal estimation method to be used is the fixed effect model (FEM). After conducting the chow test, a Hausman test was then exercised to determine the best regression model between the fixed-effect model (FEM) or the random effect model (REM). The following are the results of the Hausman test:

**Table 3. Hausman Test Result**

**Test cross-section Random effects**

| Test Summary | Chi-Sq Statistic | Chi-Sq d.f. | Prob. |
|---|---|---|---|
| Cross-Section Random | 53.828257 | 3 | 0,0430 |

*Source: Data Processed With Software E-views 10,2020*

Based on the results table , the Hausman test was performed using the E-views program with a confidence level of 95% (α = 5%). The random cross-section value is 0.0430, where the value is less than α (0.05). Accordingly, the best estimation method to be utilized is the fixed effect model (FEM). Based on the panel data test results, namely the Chow test and the Hausman test, it can be concluded as follows.

**Table 4. Panel Data Regression Test Results**

| Types of Testing | Results | Conclusion |
|---|---|---|
| Chow Test<br>H0 = CEM<br>H1 = FEM | Prob , alpha (5%)<br>0,0000 then H0 is rejected<br>and H 1 is accepeted | Fixed Effext Model is the most appropriate model |
| Hausman Test<br>H0 = CEM<br>H1 = FEM | Prob , alpha (5%)<br>0,0430 then H0 is rejected<br>and H 1 is accepted | Fixed Effext Model is the most appropriate model |

*Source: Data Processed with Software E-views 10,2020*

After performing several statistical tests with the help of E-views 11 software, the ***fixed-effect model (FEM)*** is the best regression model to be used in this study. Results that were successfully gathered from the relevant regression test directly answer all the hypotheses in this study.

**Testing classic assumptions**

This classic assumption test aims to find out whether the data that have been collected are feasible for further investigation. Thus, the classic assumption tests exercised in this study are as follows: Multicollinearity testing aims to test whether there is a correlation between the independent variables in a model. A good model should not find any correlation between the independent variables. The multicollinearity problem can be detected by analyzing the correlation value between tested variables. Multicollinearity issues occur when a correlation between independent variables is found to be greater than 0.8. Based on the results of statistical tests related to the multicollinearity test, it can be seen in the following table:

**Table 5. Multicollinearity Test Results**

| Correlation | | | |
|---|---|---|---|
| | ROA | DER | FIRM SIZE |
| ROA | 1.000.000 | -0.442311 | -0.151863 |
| DER | -0.442311 | 1.000.000 | -0.570343 |
| FIRM SIZE | -0.151883 | 0.570343 | 1.000.000 |

*Source: Data Processed with Software E-views 10, 2020*

Based on the results of the multicollinearity test above, it shows that there is no correlation between the independent variables. It is, therefore, the dataset that is free from multicollinearity problems. To identify the residual variance found in all observations in the linear regression model, it is necessary to test the heteroscedastic. A good regression model should present homoscedastic variance in its random variables. To test for heteroscedasticity using the Glesjer test with the following results.

**Table 6. Heteroscedasticity Test Results**

| Variable | Coefficient | Std Error | t Statistic | Prob |
|---|---|---|---|---|
| C | -1.609115 | 1.104310 | -1457123 | 0.1463 |
| ROA | -0.000451 | 0.008279 | -0.054532 | 0.9566 |
| DER | -0.001836 | 0.016814 | -0.108217 | 0.9131 |
| FIRM SIZE | 0.121893 | 0.069093 | 1.764185 | 0.0789 |

*Source: Data Processed With Software E-views 10, 2020*

From the table above, it shows that each residual has a probability value of more than 0.05, so the data is free from heteroscedasticity problems.

**Descriptive Analysis**.

The following are further discussions of the results of the tests.

**Table 7. Descriptive Statistics**

| | N | Maximum | Minimum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| ROA | 335 | 20.11000 | -14.84000 | 1.990798 | 3.816296 |
| DER | 335 | 18.21000 | 0,010000 | 4.383211 | 3.355393 |

*Journal of Business, Management, and Accounting* *Volume 3*
*E-ISSN 2714-870X* *Issue 2*
*September Edition 2021*

| | | | | | |
|---|---|---|---|---|---|
| COMPANY SIZE | 335 | 20.98324 | 10.84443 | 15.94625 | 2.209044 |
| TOBIN'S Q | 335 | 16.89140 | 0.065034 | 1.118404 | 1.251055 |

*Source: Data Processed with Software E-views 10, 2020*

Based on table 6 above, the return on assets (ROA) varies between -14,8400 to 20,1100; the mean value was 1.9907 with a standard deviation of 3.8162. The lowest return on assets (ROA) with a value of -14,8400 is owned by Reliance Securities Tbk (2017), and the highest return on assets (ROA) with a value of 20,100 is owned by Panca Global Securities Tbk (2014). The leverage formulated with DER varies from 0.0100 to 18.2100; the mean value was 4.3832, and the standard deviation was 3.3553. Yulie Sekurindo Tbk (2017) and Danasupra Erapacific Tbk (2014, 2017, and 2018) have the lowest DER with a value of 0.0100. The Banten Regional Development Bank Tbk owns the highest DER with a value of 18,2100. (2015). The company's size, which is formulated by Company size, varies between 10.8444 to 20.9832; the mean value is 15.9462 with a standard deviation of 2.2090. The smallest company size with a value of 10.8444 is owned by Danasupra Erapacific Tbk (2014), and the largest company sizewith a weight of 20.9832 is owned by Bank Rakyat Indonesia (Persero) Tbk (2018). Meanwhile, the company value formulated with Tobin's q varies between 0.0650 to 16.9814; the mean value is 1.1184 with a standard deviation of 1.2510. The lowest Tobin's q with a value of 0.0650 is owned by Panca Global Securities Tbk (2014), and the highest Toxins q with a value of 16.9814 is owned by Panin Sekuritas Tbk (2014).

**Hypothesis test**

**Partial Significance Test (t-test)**

The t-test was conducted to see the magnitude of the variable's influence on the variable's impact statistically. The test results show that only two independent variables (ROA and Firm Size) have a significant effect on the dependent variable. Meanwhile, one other variable, namely DER, is having no significant impact.

**Table 8. Partial Significance Test Results (t-test)**

| Variable | Coefficient | std error | t-statistic | Prob |
|---|---|---|---|---|
| C | 21.37882 | 2.486424 | 8.598219 | 0.0000 *** |
| ROA | 0.040341 | 0.018640 | 2.164252 | 0.0403 ** |
| DER | 0.021902 | 0.037859 | 0.578515 | 0.5634 |
| FIRM SIZE | -1.281601 | 0.155568 | -8.238210 | 0.0000 *** |

*Source : Data Processed With Software E-views 10, 2020*
* , ** , ***: indicate significant level at 10%, 5% and 1%

Table 7 presents the outcomes of panel data regression so that the following equation can be made:

**Y = 21,38 +0,040 ROA + 0,021 DER – 1,282 Company size+ e**

The following discussion is to explain the results of the partial registration test:

**Effect of ROA on firm value (Tobin's Q)**

From table 7 above, the regression results show that ROA has a positive and significant effect on firm value in the financial sector companies. This is indicated by the regression coefficient of 0.0403 with a probability of 0.0313. This shows that the p-value is 0.0313 <α 0.05 so that $H_1$ is accepted. From this result, it can be explained that investors tend to choose their investment by buying shares of companies that have high profits. This is understandable because companies with high yields signal that the companies have good prospects in the future. Increasing the demand for company shares will increase company value. This result is reinforced by previous research conducted by Mardiyati et al. (2012) with the results that ROE has a positive and significant effect on firm value.

*Journal of Business, Management, and Accounting* *Volume 3*
*E-ISSN 2714-870X* *Issue 2*
*September Edition 2021*

**The effect of DER on Firm Value (Tobin's Q)**

The regression results show that the DER variable coefficient is 0.0219 with a probability value of 0.5634. With the p-value being 0.5634> α 0.05, $H_2$ is rejected, meaning that DER has no significant effect on Tobin's Q. Companies' characteristics in the financial sector rely more on sources of funds from debt to finance their operations. This positive influence shows that companies in the financial industry can adequately manage their debts into productive assets to provide more significant profits than the cost of debt they must bear. The use of this debt is by the Pecking Order Theory (POT), which means that debt is preferred over funding by issuing shares due to tax savings. However, although the study results show that debt has a positive effect on firm value, the impact is not significant for the financial sector industry. Research conducted by Prastiko (2012) also found that leverage has no significant impact on firm value.

**Impact of Company size on Firm Value (Tobin's Q)**

The regression results show that company size significantly affects firm value in the financial industry sector. This is reflected in the regression coefficient which is recorded at -1.2816 with a probability value of 0.0000. With the p-value being 0.0000 <α 0.05, H3 is accepted, and company size has a significant effect on firm value (Tobin's Q). owever, the research results show a negative relationship between the firm size and firm value. This means that the greater the company's size will be decreasing firm value on companies in the financial sector. This result can be explained that investors want to invest their funds in companies with good prospects and do not depend on the company's size. Suppose there is a negative issue regarding the company (for example, the company is on the verge of bankruptcy). In that case, it will automatically encourage investors not to invest their funds in the company. If a company has a large size, investors will avoid buying shares because the potential loss is also more significant. 2 studies support this research with the results of firm size having a negative and significant effect on firm value (Adnyana and Badjra 2014 and Imron and Alliyah 2013).

**Simultaneous Significance Test (F-test)**

This test is intended to obtain how much influence simultaneously independent variables (ROA, DER, and Firm Size) on firm value proxied by Tobin's Q. Decision making:

- If Sig. <alpha 0.05 then reject H0
- If Sig. > alpha 0.05, then H0 does not reject.

**Table 9. Simultaneous Significance Test Results (F-test)**

| | | | |
|---|---|---|---|
| R-Squared | 0.671382 | Mean dependen var | 1.118404 |
| Adjusted R-squared | 0.585818 | SD. Dependen var | 1.251058 |
| SE. Of regression | 0.805142 | Akaike info criterion | 2.587913 |
| Sum squared resid | 171.7870 | Schwarz criterion | 3.384895 |
| Log Likehood | -363.4754 | Hannan – Quinn crit. | 2.905646 |
| F-statistic | 7.846492 | | |
| Prob (F-statisitc) | 0.000000 | | |

*Source: Data Processed with Software E-views 10, 2020*

Based on calculations using the E-views program, the results showed that the F test value was 7.8464 and significant with a probability value of 0.0000 <α = 0.05. From the test results, the dependent variable, firm value (Tobin's Q), is simultaneously influenced by the three independent variables ROA, DER and Firm size.

**Determination Coefficient Test ($R^2$)**

The coefficient of determination or analysis $R^2$ (R Squared) is often defined as all independent variables' ability to explain the variance of the dependent variable. In this research equation model $R^2$ (R Squared), which shows the

*Journal of Business, Management, and Accounting* *Volume 3*
*E-ISSN 2714-870X* *Issue 2*
*September Edition 2021*

proportion of the independent variables, namely ROA, DER, and company size, to the dependent variable, namely Toxin's Q, is seen in the following table.

**Table 10. Coefficient of Determination Test Results (R2)**

| | | | |
|---|---|---|---|
| R-Squared | 0.671382 | Mean dependendent var | 1.118404 |
| Adjusted R-squared | 0.585818 | S.D dependent var | 1.251055 |
| SE. of regression | 0.805142 | Akaike info criterion | 2.587913 |
| Sum squared resid | 171.7870 | Scwarz criterion | 3.384895 |
| Log likehood | -363.4754 | Hannan-Quinn criter. | 2.905646 |
| F-Stattistic | 7.846492 | Durbin-Watson stat | 0.791800 |
| Prob (F-statistic) | 0.000000 | | |

*Source: Data Processed with Software E-views 10, 2020*

Based on the regression results, it shows that ROA, DER, and company size can simultaneously affect the firm value (Tobin Q) by 67.13%, which can be seen from the coefficient of determination (R2), which is recorded at 0.6713 (67.13%). The other variables influence the remaining 32.87%.

## 5 CONCLUSIONS

The research investigates whether ROA, DER, and company size influence the company value of the financial sector company. The results showed that two independent variables, namely ROA and the firm's size, significantly affect the financial sector's firm value. Meanwhile, one independent variable, namely DER, has no significant effect. Companies that can earn large profits will attract investors to buy shares in the company. This condition is a positive signal to increase corporate value in the financial sector companies. The exciting thing from the research results is that it turns out that the company's size is not a motivating factor for investors to buy their shares. The research results show that company size has a significant relationship to firm value, but the direction is negative. Investors in deciding to invest their funds focus more on companies with good prospects than looking at the company's size. If there are negative issues about the company, investors will avoid investing in large companies because the potential for losses is also more significant. The results of this study are beneficial for investors and companies. For investors, they are advised to invest their funds in the companies that can generate maximum profits. Factors like ROA and company size should also be considered; corporates management is suggested to make the best effort to achieve excellent financial performance to attract investors to invest their wealth in the companies' stocks.

This research was hindered by several limitations. The first limitation of this research is related to the data coverage. The results cannot be applied in all industrial sectors because the data used in this study is limited to the Indonesia Stock Exchange's financial service companies. A second limitation is that the study only uses three independent research variables: ROA, DER, and company size. Finally, there is also a limitation period examined in this study only from 2014-2018. For future research, we recommend including other lists of industries excluded in this study as the research object and add more variables to influence the firm value.

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