



Does Profitability, Firm Size, and Intellectual Capital Affect Firm Value?

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Abstract

The purpose of this study is to determine the effect of profitability, company size and intellectual capital on firm value. This type of research is a quantitative research. Researchers use secondary data and data collection using the documentation method. The population of this study are pharmaceutical companies from 2016 to 2021. The sampling technique is purposive sampling and the sample of this research are 10 companies. Different from previous studies using SPSS and eviews, this study uses partial least squares (PLS) to analyze data. Based on the results of this study, it proves that profitability, company size and intellectual capital have an effect on firm value. This means that there is an increase in profitability, company size and intellectual capital can affect a value in the company. Companies can use the results of this research to develop strategies that can increase the value of the company.

Keywords: *Firm Value, Firm Size, Profitability, Intellectual Capital*

INTRODUCTION

In digital era, all sectors experience changes and one of them occurs in the business sector. An example is the company has made a change to a knowledge-based business that relies on technology and knowledge in carrying out every business activity. In addition to these business changes, currently there are technological developments that are increasingly advanced and cause every company to follow the development of existing technology and be able to create new innovations so that competition between companies is becoming increasingly fierce. In the process of creating a new innovation, very large funds are needed and this encourages companies to seek additional funds from outside parties from investors. One way

that companies can do to attract current investors is to increase the value of the company. The firm value can describe the conditions achieved by the company today and prospects in the future so that it can be used as one of the considerations for investors. In addition, the high value of a company illustrates the high level of prosperity of its shareholders so that investors have more confidence in the firm performance and are interested in investing in the company. It can be concluded that one of the important considerations for investors in investing is to look at the firm value.

In the midst of a pandemic several companies experienced a decline in performance and even went bankrupt. But there are companies that are still surviving and even recording growth, one of which is a pharmaceutical company. Pharmaceutical companies are experiencing high growth prospects and strengthening share prices during the pandemic. This is evidenced by data showing that pharmaceutical companies in Indonesia experienced a growth of 10.8% in 2021, this proves an increase from 2020 which grew by 8.65%. When compared to 2019, the growth of pharmaceutical companies was 5.04% and in 2016-2018, growth was only less than 5%. According to data, the majority of share prices of several pharmaceutical sector companies in 2021 have strengthened compared to the previous year. The share price gains were led by PT Kimia Farma (KAFF) by 12.38%, PT Indonesia Farma (INAF) by 6.51%, PT Phapros (PEHA) by 4.27% and PT Darya Varia Laboria (DVLA) which rose by 2.03% (Kardoko, 2020; Yusuf, 2021). Based on the phenomenon above, the growth and strengthening of pharmaceutical company stock prices in Indonesia explains that the value of these companies is high.

Profitability is the first factor that affects firm value. Profitability is considered to affect the value of the company because profitability describes the company ability to generate profits. The higher the profitability, the company ability to generate profits is also high so that investors are interested in investing in the company. This makes the company stock price increase and has an impact on increasing company value. Profitability is also related to the size of the company in influencing the value of the company

The second factor that can affect a firm value is firm size. Company size can be one of the factors affecting the value of the company because it can show the size of the company in terms of total assets. The larger the size of the company which is marked by the size of the total assets owned can describe the company has the ability to generate high profits by managing existing assets. This is a consideration for investors to invest so as to increase the value of the company. In addition to the large size of the company, it needs to be balanced with management of intellectual capital to affect the value of the company.

The third factor that can affect the value of the company is intellectual capital. Intellectual capital is said to be a unique resource in the company that creates a competitive advantage and affects value of the firm. The existence of intellectual capital can distinguish one company from another. Intellectual capital management properly will provide added value to the company that differentiate it from other companies so that the value of the company increases.

Research related to firm value has been carried out by several previous researchers. In research conducted by Sa'diyah (2021), Sucuahi & Cambarihan (2016) also Mubyarto (2020) shows that profitability has an effect on firm value. The results of this study are contrary to research Hirdinis (2019), Huda et al. (2020) and Kusumawati & Harijono (2021) which shows that profitability has no effect on firm value.

Research conducted Ispriyahadi & Abdullah (2021), Djashan (2019) also Reschiwati et al. (2020) shows that firm size has an effect on firm value. But these results contradict the research

conducted Oktaviani (2020), Susanti & Restiana (2018) and Kurnia Saputri & Giovanni (2021) shows that the firm size has no effect on firm value.

In the research conducted Irsyahma & Nikmah (2016), Rabaya et al. (2020) also Fanni & Fuad (2019) shows that intellectual capital affects the firm value. This is contrary to research Wafiyudin et al. (2020), Rangkuti et al. (2019) also Sundari & Setiany (2021) shows that intellectual capital has no effect on firm value.

In several previous studies, it was shown that there were inconsistencies in the results of the research, which made researchers interested in re-examining and finding the factors that influence firm value. Compared to previous research, this study also focuses on the analysis of research results associated with signal theory.

The difference between this study and previous studies is the technical analysis of the data used. In this study, researchers use PLS with the SMARTPLS tool to perform data analysis. Whereas in previous studies using SPSS or eviews to analyze data.

This research is expected to contribute to the development of science and further research related to corporate value and strategy formulation by company leaders in increasing corporate value. The purpose of this study is to determine the effect of profitability, company size and intellectual capital on firm value.

THEORITICAL FRAMEWORK AND HYPOTHESIS

Signalling Theory

This research uses signaling theory. Signal theory explains that company executives have better company information in the form of performance and financial condition as well as company prospects in the future so that they should be able to convey the signal (information) to potential investors. This prevents the occurrence of information asymmetry between the company and users of financial statements that have an impact on the value of the company. Signal theory is the behavior of company management related to management view of the company prospects in providing a clue for investors in the future. The signal conveyed by the company executives to certain parties is in the form of information that can increase the value of the company. The information is stated directly by means of disclosure in the company annual financial statements. This means that information related to profitability, firm size and intellectual capital can be stated directly to investors by disclosure in the company annual financial statements (Setiawanta et al., 2021; Suhadak et al., 2019).

Profitability

Profitability is the ability of a company to generate profit through its business operations during a certain period. Profitability is used to measure the level of operational efficiency and efficiency in the use of company assets to generate profit. There are several ratios used to measure the company profitability, one of which is return on assets (ROA). Return on assets was chosen to measure profitability in this study because it can show the effectiveness of the management in managing existing assets to generate profits. By measuring using return on assets (ROA), investors can determine companies that are able to generate large profit with efficient asset management (Akbar, 2021; Furqoni, 2019).

Firm Size

Firm size is one indicator that can describe the financial capability from a company. The greater the assets owned, the greater the capital invested so that total sales increase and the velocity of money increases. Firm size can show the size of firm with total assets, total sales and the average level of company sales. In this study, total assets are used to see the firm value. The larger the size of a company, the easier it is for the company to find sources of funding both internal and external (investors) so that it can increase the value of the company (Lestari & Khafid, 2021; Linasmi, 2017).

Intellectual Capital

Intellectual capital (IC) is an intangible asset in the form of a combination of human, process and customer factors that can provide a competitive advantage for the company. Companies that can optimally manage their intellectual capital will provide more value for the company. Intellectual capital as a foundation for companies to develop and have advantages compared to other companies. Intellectual capital is essentially an intangible resource but has value for the company so it is considered an important asset in the current era of knowledge development (Budiarti, 2017; Whetyningtyas et al., 2021). Azzahra (2018) states the components of intellectual capital are human capital, structural capital and relational capital. Human capital is a description of the company ability to produce the best solution based on the knowledge of the people owned by the company. Structural capital is the company ability to fulfill the company routine processes and structures that support the efforts of employees in producing an optimal intellectual performance and overall business performance, for example: the company operational system, organizational culture owned by the company and relational capital is a component of intellectual capital originating from outside companies that can increase firm value such as harmonious relationships between customers and companies as evidenced by loyal customers and satisfied with the company services.

Firm Value

Firm value is a description related to the condition of a company. A firm value can also be interpreted as the achievement of a company as a picture of the trust of the community after the company was founded until now. The value of the company is reflected in the share price of the company. High stock prices increase the value of the company and the prosperity of investors is also higher. Vice versa, if the stock price is low, the value of the company is low and has an impact on investors who think the company is not good. Firm value in this study was measured using the PBV indicator. PBV is considered to be able to describe the company ability to manage the capital that has been invested to increase the value of firm (Ardha & Andayani, 2017; Widyakto et al., 2021).

Relationship between profitability and firm value

Profitability is the company ability to generate profit from investments made and in other words, profitability is the company ability to manage company assets in order to generate profit. Profitability growth is a positive signal for investors to invest in the company. High stock demand will trigger stock prices to rise and have an impact on increasing the value of the company. Sabrin et al. (2016) also Sudjiman & Sudjiman (2021) stated that profitability has a positive effect on firm value. This can prove the relationship between profitability and firm value. Then the development of the hypothesis is:

H1: Profitability has an effect to firm value

Relationship between firm size and firm value

Firm size is a picture of the size of a company that can be shown by total assets, total sales, average total sales and average total assets. The size of a large company indicates the company is in a phase of good growth and development that can increase the value of firm. Atiningsih & Izzaty (2021) also Sudiyatno et al. (2020) stated that firm size has a positive effect on firm value. This can prove the relationship between firm size and firm value. Then the development of the hypothesis is:

H2: Firm Size has an effect to firm value

Relationship between intellectual capital and firm value

Intellectual capital is the important factors in increasing the value of firm. Intellectual capital is an intangible capital owned by companies related to human knowledge, experience, innovation and technology. Investors are more likely to pay higher shares of a company if it has higher intellectual resources than other companies. This has an impact on increasing the value of the company due to the high share price. Rahayu (2018) and LumbanGaol et al. (2021) stated that intellectual capital has a positive effect on firm value. This can prove the relationship between intellectual capital and firm value. Then the development of the hypothesis is:

H3: Intellectual Capital has an effect to firm value

RESEARCH METHOD

This type of research is a quantitative research. This research is more focused on measuring variables and testing hypotheses to determine the effect of the independent variable on the dependent variable. In quantitative research, information or data can be calculated systematically and a data analysis procedure is carried out after performing calculations to find out the results and draw conclusions from the research.

The data include quantitative data. The definition of quantitative data is data or information in the form of numbers that are processed using formulas and analyzed using a statistical system. And according to the source, this research data includes secondary data is data taken from other companies or third parties. The data is in the form of financial statements of pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) in 2016-2021.

In this study, the data collection method used was the documentation method. This method is done by collecting some information in the form of documents through electronic media is in the form of financial statements of pharmaceutical companies that have been published by the Indonesia Stock Exchange (IDX) from 2016-2021 on the official website www.idx.co.id.

The population in this study were all pharmaceutical companies listed on the Indonesia Stock Exchange in 2016-2021 as many as 11 companies. The sampling method used purposive sampling method, which means that the sampling method is based on certain criteria so that the number of samples selected is 10 companies. These criteria include: a) companies that publish their financial statements consecutively during 2016-2021 and b) have complete data related to the variables studied.

Table 1. Operational Variables

| No | Variable | Operational Definition | Variable Indicator |
|----|---------------------------|---|--|
| 1 | Profitability (X1) | Profitability is a description of a company ability to generate profit. | $ROA = \frac{\text{Net Profit After Tax}}{\text{Average Total Assets}}$ (Choiriyah et al., 2020; Fauzi & Rukmini, 2018; Hartanti et al., 2019; Sitohang & Siagian, 2021) |
| 2 | Firm Size (X2) | Firm size is the size of the company and can be seen from the total company assets used in the company operational activities. | $\text{Firm Size} = \ln(\text{Total Assets})$ (Meiryani et al., 2020; Sukamto et al., 2019; Tantra, 2018; Widodo et al., 2021) |
| 3 | Intellectual Capital (X3) | Intellectual capital is an intangible asset owned by a company to increase the company competitiveness and have an impact on increasing company profit. | 1) $VA = \text{Out} - \text{In}$ 2) $VACA = \frac{VA}{CE}$ 3) $VAHU = \frac{VA}{HC}$ 4) $STVA = \frac{SC}{VA}$ 5) $VAIC^{TM} = VACA + VAHU + STVA$ (Giovanni & Santosa, 2020; Hermawan et al., 2019; Jetmiko, 2018; Setianto & Sukmana, 2016) |
| 4 | Firm Value (Y) | The firm value is the price that investors are willing to pay if the company is to be sold and the value of the company can also be interpreted as the market value of a company. | $PBV = \frac{\text{Market Price Per Share}}{\text{Book Value Per Share}}$ (Mardhiana, 2020; Ningsih & Sari, 2019; Rose et al., 2021; Sukmawardini & Ardiansari, 2018) |

Data analysis using Partial Least Square (PLS) with Smart PLS software. The analysis carried out on PLS goes through several stages as follows: Outer model measurement analysis as an analysis to ensure the measurement used is feasible as a measurement. There are several tests carried out on the outer model analysis, convergent validity (load factor value) with criteria > 0.7 , discriminant validity (AVE) with criteria ≥ 0.5 and composite reliability with criteria > 0.7 .

Analysis of inner model measurement or structural model is an analysis to determine the relationship between latent variables. This is known after going through the bootstrapping process and the statistical T test parameters and this model is evaluated by looking at the percentage of variance by the R^2 value. The value of the inner model can be displayed from the value of the T-statistic. The criteria used to accept or reject the hypothesis in this study is by examining the T-statistic value greater than the t-table value. The t-table value determined in this study is 1.96 (two tailed).

RESULT AND DISCUSSION

The analysis in PLS there are two stages are outer and inner model. Outer model measurement analysis as an analysis to ensure the measurement used is feasible as a measurement. There are several tests carried out on the outer model analysis, convergent

validity (load factor value), discriminant validity (AVE) and composite reliability. There are several tests carried out on the outer model analysis, convergent validity (load factor value) with criteria > 0.7 , discriminant validity (AVE) with criteria ≥ 0.5 and composite reliability with criteria > 0.7 .

Outer Model

Table 2. Outer Loading

| Indicator /Variable | Outer Loading | Criteria | Result |
|---------------------|---------------|----------|--------|
| X1 | 1.000 | > 0.7 | Valid |
| X2 | 1.000 | > 0.7 | Valid |
| X3 | 1.000 | > 0.7 | Valid |
| Y | 1.000 | > 0.7 | Valid |

Based on the table above, it can be seen that the value of the outer loading of all indicators of the x and y variables is > 0.7 . This shows that all of these indicators have met the criteria of convergent validity or convergent validity test so that it is said to be valid.

Table 3. Discriminant Validity Test (AVE)

| | Variable | AVE | Criteria | Result |
|----|----------------------|-------|------------|--------|
| X1 | Profitability | 1.000 | ≥ 0.5 | Valid |
| X2 | Firm Size | 1.000 | ≥ 0.5 | Valid |
| X3 | Intellectual Capital | 1.000 | ≥ 0.5 | Valid |
| Y | Firm Value | 1.000 | ≥ 0.5 | Valid |

Based on the table above, we can see that the AVE value of all independent and dependent variables has a value of 0.5. This shows that all of these variables have met the absolute requirements of validity testing or it can be said that all variables are valid.

Table 4. Realibility Test

| | Variable | Cronbach's Alpha | Composite Reliability | Criteria | Result |
|----|----------------------|------------------|-----------------------|----------|----------|
| X1 | Profitability | 1.000 | 1.000 | > 0.7 | Reliable |
| X2 | Firm Size | 1.000 | 1.000 | > 0.7 | Reliable |
| X3 | Intellectual Capital | 1.000 | 1.000 | > 0.7 | Reliable |
| Y | Firm Value | 1.000 | 1.000 | > 0.7 | Reliable |

Based on the table, it can be seen that the value from composite reliability and cronbach's alpha for all variables, both independent and dependent variables is > 0.7 . So, it can be concluded that all of these variables can be said to be reliable.

Inner Model

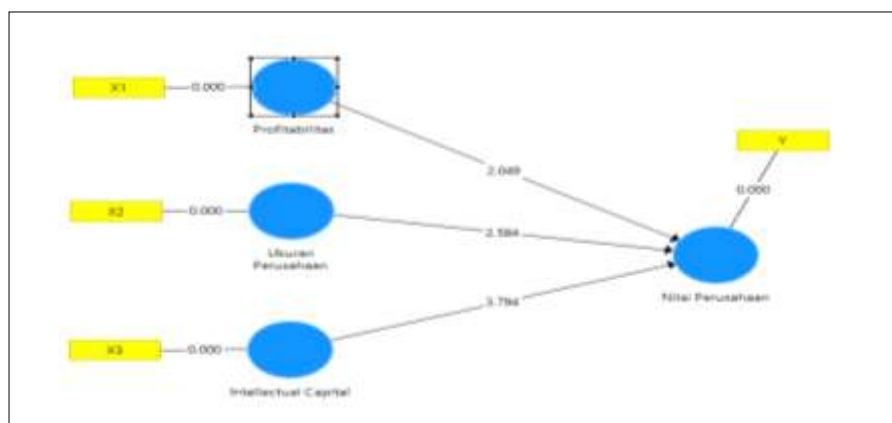


Figure 1. Relationship between variables (Inner Model)

Analysis of inner model measurement or structural model is an analysis to determine the relationship between latent variables. This is known after going through the bootstrapping process and the statistical T test parameters and this model is evaluated by looking at the percentage of variance by R^2 value.

Table 5. Path Coefficients

| | Original Sample | Sample Mean | Standard Deviation | T Statistics | P Values |
|------------------------------------|-----------------|-------------|--------------------|--------------|----------|
| Intellectual Capital -> Firm Value | 0.401 | 0.393 | 0.106 | 3.794 | 0.000 |
| Profitability -> Firm Value | 0.203 | 0.196 | 0.099 | 2.049 | 0.041 |
| Firm Size -> Firm Value | -0.299 | -0.301 | 0.116 | 2.584 | 0.010 |

The table above is a path coefficient test table that can explain the presence or absence of the influence of the independent variable on the dependent by paying attention to the T-statistic also p-value. If the T-statistic value is > 1.96 and $p\text{-value} < 0.05$, it can be said that there is an influence of the independent variable on the dependent variable.

The T-statistic value of profitability to firm value is 2.049 and the p-value is 0.041, so profitability has an effect on firm value. And the T-statistic value of the firm size to the firm value is 2.584 and the p-value is 0.010, so firm size has an effect on firm value. The T-statistic value of intellectual capital on the firm value is 3.794 and the p-value is 0.000, so intellectual capital has an effect on firm value.

Table 6. R Square

| | R Square | R Square Adjusted |
|----------------|----------|-------------------|
| Firm Value (Y) | 0.506 | 0.449 |

It can be seen that the R Square of the firm value is 0.506, it can be concluded that the change in the firm value variable (Y) can be explained by the three variables are profitability, company size and intellectual capital of 50.6% and the remaining 49.4% is influenced by other variables not examined in research.

Discussion

The Effect of Profitability on Firm Value

In testing the hypothesis, it is known that the T-Statistic value is $2,049 > 1.96$ (T-table) also the p-value is $0.041 < 0.05$ so it can be concluded that the first hypothesis (H1) which states that profitability has an effect on firm value is acceptable. The results of this study are in line with research Sa'diyah (2021), Komarudin & Affandi (2019) also Nugroho & Halik (2021) which explains that profitability has an effect on firm value. However, the results of the study contradict the research Astuti et al. (2018), Hirdinis (2019) also Huda et al. (2020) which explains that profitability has no effect on firm value.

Profitability in this study describes the company ability to manage assets in generating profit. High return on assets is an illustration that the company financial performance is good and this is because the company is able to generate profit by managing existing assets efficiently. The higher the level of profitability indicates the company ability to generate profit is also high so that it has an impact on increasing the value of firm.

Based on signaling theory, an increase in profitability in a financial report is an effort made by the company in giving a positive signal to investors regarding the company performance, company growth and good company prospects in the future. This effort makes investors have a positive view of the company so as to encourage investors to invest so that the value of the company increases.

The Effect of Firm Size on Firm Value

In testing the hypothesis, the T-Statistic value is $2.584 > 1.96$ (T-table) and the p-value is $0.010 < 0.05$ so that it can be concluded that the second hypothesis (H2) which states that firm size affects firm value is acceptable. Research results are in line with research Djashan (2019), Gusti nyoman sintya adnyani & Suaryana (2020) also D. S. Nugroho (2021) which explains that firm size has an effect on firm value. However, the results of the study contradict the research Susanti & Restiana (2018), Oktaviani (2020) and Hasangapon et al. (2021) which explains that firm size has no effect on firm value.

The results of this study explain that the larger the size of a company, the easier it is for companies to obtain loans from outside parties so that they can help companies improve their performance and have an impact on increasing the value of firm. One of the characteristics of large companies is that they have a large number of assets so that they are considered to have a tendency to be in a stable condition compared to small companies, which makes investors more interested in investing and encourages an increase in firm value.

In accordance with signaling theory, a large firm size can describe the company has experienced a growth and development. This gives a positive signal that the company is considered to have the potential to grow and develop in the future so that investors are more interested in investing in the company and have an impact on increasing stock prices and increasing the value of firm.

The Effect of Intellectual Capital on Firm Value

In testing the hypothesis, the T-Statistic value is $3.794 > 1.96$ (T-table) and the p-value is $0.000 < 0.05$ so it can be concluded that the third hypothesis (H3) which states that intellectual capital affects firm value is acceptable. Research results are in line with research Rahayu (2018), Pratama et al. (2019) also Yunita & Prastiwi (2021) which explains that intellectual capital has an

effect on firm value. However, the results of the study contradict the research Wafiyudin et al. (2020), Sundari & Setiany (2021) also Rangkuti et al. (2019) which explains intellectual capital has no effect on firm value.

This shows that the company can manage its intellectual capital well. The company is able to manage and optimize employee capabilities and existing operational systems so that employees can work optimally. In addition, by building harmonious relationships with customers, it can also create additional value for the company which will attract investors to invest, thereby increasing the value of firm.

In signaling theory, disclosure of information on intellectual capital management by the company will be a positive signal for investors regarding the advantages and added value of the company when compared to other companies. Companies with high disclosures related to intellectual capital will make investors more interested in investing in the company so that it has an impact on increasing the value of firm.

CONCLUSIONS

Based on the results of the result and discussion above, it can be concluded that the three variables are profitability, firm size and intellectual capital have an influence on firm value. This explains that increasing the level of profitability, company size and intellectual capital can increase the value of the company.

Suggestions for further research are that researchers can expand the object of research, not limited to just one object, researchers can also use different variables and indicators from this study to find other variables that can affect company value and researchers use different theories to find other more appropriate theories.

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