

Differences In Intrinsic Value With Stock Market Prices Using The Price Earning Ratio (Per) Approach As An Investment Decision Making Indicator (Case Study Of Manufacturing Companies In Indonesia Period 2016 - 2017)



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Abstract

An investor must be able to consider all kinds of steps that will be taken or that will be carried out, assessing stocks - shares that will provide optimal benefits in making an investment decision. By analyzing the intrinsic value of the price of a company's stock, investors can assess the fairness of the stock price. The method used to analyze intrinsic value is fundamental analysis using the Price Earning Ratio (PER) approach. The samples to be taken in this research are manufacturing companies in Indonesia which are listed on the Indonesia Stock Exchange (IDX) for the period 2016 - 2017 with certain criteria. The results of this research will show that the shares of companies listed are in overvalued, undervalued or correctly valued conditions. So investors can decide to buy, hold or sell their shares.

Keywords: *Intrinsic Value, Investment Decision, Price Earning Ratio*

1. Introduction

Investment is an activity in which an investment agent can be called an investor to invest in a stock purchase issued by a company that aims to obtain future profits by considering the risks involved. Stocks can provide benefits to investors in the form of dividends, namely the distribution of profits to the shareholders based on the percentage of shares they have, in addition stocks can provide benefits to investors in the form of capital gains, namely profits derived from the difference between the price of buying and selling shares. Stocks are securities that have high profit opportunities but also high risks. Looking at the high risk involved in investing in stocks, investors must be able to consider each step in making a stock investment and have to do a thorough assessment to minimize the risk by considering which stocks can provide optimal benefits, one way that can be done investors

are analyzing the company's stock price. Stock prices reflect the company's efficient level of management. Changes in stock prices also generate profits or losses. Fairness of the price of a stock can be assessed by comparing the intrinsic value with the stock price in the stock market, intrinsic value itself is the true value of a stock. By comparing investors, the company will know the condition of the company whether the stock price is too expensive (undervalued), too cheap (undervalued), or the stock price is fair (correctly valued). There are two techniques for analyzing a company's stock price, namely technical analysis and fundamental analysis. Technical analysis is an attempt to estimate stock prices by observing changes in stock prices in the past. While fundamental analysis is an attempt to estimate the price of a stock by observing both internal and external factors of the company. There are two approaches that are generally carried out in looking at the valuation of a stock with fundamental analysis, the current value approach and the approach of Price Earning Ratio (PER). The PER approach is the approach most often used by stock analysts by approaching the scoring value because it is easier to implement. The purpose of this research is to compare the intrinsic value of manufacturing companies listed on the Indonesia Stock Exchange for the period 2016 - 2017 with stock prices in the market, which will be assessed based on fundamental analysis with the PER approach as an indicator in making decisions between buying, selling, or holding shares.

2. Literature Review

2.1 Stock Rating

The indicator that becomes a benchmark for stock investors in investment activities is to look at the movement of stock values on the market. According to Sunariyah (2006) to determine the value of shares, investors must first analyze stocks in the capital market to determine stocks or conduct portfolios that can provide optimal returns.

2.2 Intrinsic value and market value

According to Tandelilin (2010) in stock valuation there are known three types of values, namely: book value, market value, and intrinsic value of shares. Book value is a value calculated based on the bookkeeping of the issuer company. Market value is the value of shares in the market, which is indicated by the price of the stock on the market. Whereas intrinsic value, known as theoretical value, is the actual or supposed value of the stock. Investors need to know these values as important information in relation to making appropriate investment decisions.

2.3 Stock Assessment Technique

The approach that is often used as the basis of research used to assess the price of a stock is an approach with two analyzes, namely technical analysis and fundamental analysis :

1. Technical Analysis

Technical analysis is the analysis used by analyzing stock price movements based on a history of stock price movements over time. According to Tandelilin (2010) technical analysis is a technique to predict the direction of stock price movements and other stock market indicators based on historical market data such as price and volume information.

2. Fundamental Analysis

Fundamental analysis is the analysis used by analyzing fundamental factors that will affect stock prices in the future. According to Sunariyah (2006) states that this analysis is based on an assumption that each share has intrinsic value. There are two fundamental approaches that are generally used in conducting stock valuations, namely the present value approach and the profit or Price Earning Ratio (PER) approach.

a. Current Value Approach

The approach to the present value of the estimated value of a stock is done by capitalizing income, the present value of a stock equals the present value of future cash flows that investors expect in investing.

b. Price Earning Ratio (PER) Approach

This approach is used to estimate the intrinsic value of a stock. According to Tandililin (2010) in the PER approach or also called the multiplier approach, investors will calculate how many times (multiplier) the value of earnings is reflected in the price of a stock.

3. Research Methods

This research uses a survey method with a type of descriptive research in which the data collection is collected from a sample of the population to represent the entire population, this type of research is descriptive research where this research contains the development of concepts and fact collection and does not test any hypothesis. In this research the population is manufacturing companies in Indonesia that have been listed on the Indonesia Stock Exchange for the period of 2016 - 2017. Samples from this population have several criteria set so that companies can be used as research samples. Only companies that meet the criteria will be sampled in this research.

Based on the criteria set out in this research which can be used as samples are companies with the following criteria:

1. Is a manufacturing company listed on the IDX
2. Distributing dividends for 2 periods, 2016 and 2017
3. Deposit financial statements for 2 periods, 2016 and 2017
4. Is a sub sector of :
 - a. Food and Beverages
 - b. Household appliances
 - c. Cement
 - d. Ceramics, porcelain & glass
 - e. Metals & the like
 - f. Chemistry

The following company companies that have met the criteria listed will be displayed in Table 1 as follows :

| No. | Company Name | Company Code |
|-----|--------------------------------------|--------------|
| 1. | Chitose International Tbk. PT | CINT |
| 2. | Indofood Sukses Makmur Tbk. PT | INDF |
| 3. | Multi Bintang Indonesia Tbk. PT | MLBI |
| 4. | Mayora Indah Tbk. PT | MYOR |
| 5. | Sekar Laut Tbk. | SKLT |
| 6. | Nippon Indosari Corpindo Tbk. | ROTI |
| 7. | Semen Gresik Indonesia Tbk. PT | SMGR |
| 8. | Semen Batu Raja Tbk. PT | SMBR |
| 9. | Wijaya Karya Beton Tbk. | WTON |
| 10. | Asahimas Elat Glass Tbk. | AMFG |
| 11. | Arwana Citra Mulia Tbk. | ARNA |
| 12. | Surya Toto Indonesia Tbk. | TOTO |
| 13. | Indal Aluminium Industry Tbk. | INAI |
| 14. | Stel Pipe Industry of Indonesia Tbk. | ISSP |
| 15. | Duta Pertiwi Nusantara Tbk. | DPNS |
| 16. | Ekadharma Internasional Tbk. | EKAD |
| 17. | Chandra Asri Petrochemical Tbk. | TPIA |

Analysis of the data used in this research is quantitative where it will be in the form of numbers and will then be analyzed by doing calculations according to the formula contained in the theory. The aspect studied is the intrinsic value of a stock that will be adjusted to the market value of the stock. Data analysis steps in this research are as follows :

1) Calculate profitability ratios and market ratios with the following variables :

a. Return On Equity (ROE)

$$ROE = \frac{\text{Net profit after tax}}{\text{Stock holders equity}} \times 100 \%$$

b. Earning per Share (EPS)

$$EPS = \frac{\text{Net profit after tax}}{\text{Number of share of common stock outstanding}}$$

- c. Dividen Payout Ratio (DPR)

$$DPR = \frac{\text{Dividend Per Share}}{\text{Earning per share}}$$

- d. PerShare dividend (DPS)

$$DPS = \frac{\text{Dividend Paid}}{\text{Number of share of common stock outstanding}}$$

- e. Price Earning Ratio (PER)

$$PER = \frac{\text{Market Price Per share}}{\text{Earning per share}}$$

- 2) Determining the intrinsic value of a stock using fundamental analysis with the Price Earning Ratio (PER) approach by following several stages, along with the stage in determining intrinsic value :

- a. Calculation of expected dividend growth rates

$$g = ROE \times (1 - DPR)$$

- b. Calculating EPS estimates

$$E_1 = E_0 (1 + g)$$

- c. Calculating the estimated DPS

$$D_1 = D_0 (1 + g)$$

- d. Calculate the expected rate of return

$$k = \frac{D_1}{P_0} + g$$

- e. Calculating estimation PER

$$k = \frac{D_1}{P_0} + g$$

- f. Calculating the intrinsic value of shares

$$\begin{aligned} \text{Intrinsic Value} &= \text{Estimates of} \\ &\text{EPS} \times \text{Estimates of PER} \\ &= E1 \times \text{PER} \end{aligned}$$

- 3) Assess the price of a stock by comparing intrinsic value with stock market prices
- 4) Investment decision making using the following considerations :
 - a. If the intrinsic value is greater than the current market price, then the stock can be said to be *undervalued*, so the investment decision made is to buy or hold shares.
 - b. If the intrinsic value is smaller than the current market price, then the stock can be said to be *overvalued*, so the investment decision made is to sell or not buy shares. If the intrinsic value is the same as the current market price, then the stock is valued at a fair price and is in an equilibrium condition or referred to as *correctly valued*, so that the investment decision made is to hold if the stock has been owned.

4. Finding

Financial Ratio Calculation Results

Table 1. Results of the 2016 Financial Ratio Calculation

| No | Company Code | ROE | EPS | DFR | DPS | PER |
|----|--------------|--------|--------|-------|--------|--------|
| 1 | CINT | 6.32% | 20.61 | 0.24% | 5 | 12.16 |
| 2 | INDF | 9.39% | 373.29 | 0.63% | 235 | 16.06 |
| 3 | MLBI | 96.08% | 436.96 | 0.32% | 140 | 23.11 |
| 4 | MYOR | 14.12% | 41.5 | 0.51% | 21 | 40.48 |
| 5 | SKLT | 5.29% | 23.72 | 0.21% | 5 | 34.79 |
| 6 | ROTI | 6.24% | 19.23 | 0.71% | 13.73 | 60.77 |
| 7 | SMGR | 4.88% | 246.09 | 1.24% | 304.92 | 29.16 |
| 8 | SMBR | 3.24% | 10.86 | 0.61% | 6.58 | 257.18 |
| 9 | WTON | 8.50% | 25.3 | 0.39% | 9.8 | 12.93 |
| 10 | AMFG | 1.77% | 145.85 | 0.55% | 80 | 30.98 |
| 11 | ARNA | 8.52% | 11.43 | 0.44% | 5 | 20.78 |
| 12 | TOTO | 11.21% | 18.26 | 0.27% | 5 | 16.75 |
| 13 | INAI | 10.39% | 88.08 | 0.62% | 55 | 6.44 |
| 14 | ISSP | 0.78% | 2.9 | 1.72% | 5 | 29.79 |
| 15 | DPNS | 1.51% | 14.49 | 0.41% | 6 | 18.11 |
| 16 | EKAD | 10.14% | 92.81 | 0.05% | 5 | 5.62 |
| 17 | TPIA | 19.12% | 242.06 | 0.68% | 164.77 | 24.89 |

Table 2. Results of the 2017 Financial Ratio Calculation

| No | Company Code | ROE | EPS | DFR | DPS | PER |
|----|--------------|---------|---------|-------|--------|-----------|
| 1 | CINT | 6.32% | 19.31 | 0.41% | 8 | 19.89 |
| 2 | INDF | 11.99% | 472.02 | 0.36% | 168 | 16.13 |
| 3 | MLBI | 119.68% | 465.98 | 0.74% | 344 | 21.8 |
| 4 | MYOR | 22.16% | 60.6 | 4.95% | 300 | 36.51 |
| 5 | SKLT | 6.97% | 29.88 | 0.20% | 6 | 10.63 |
| 6 | ROTI | 19.39% | 55.31 | 0.19% | 10.61 | 19.88 |
| 7 | SMGR | 14.83% | 762.3 | 0.40% | 304.91 | 13.94 |
| 8 | SMBR | 8.30% | 26.34 | 0.34% | 9 | 117.81 |
| 9 | WTON | 11.31% | 31.26 | 0.20% | 6.26 | 32.8 |
| 10 | AMFG | 7.24% | 600.1 | 0.13% | 80 | 10.09 |
| 11 | ARNA | 9.64% | 154.06 | 0.03% | 5 | 47.02 |
| 12 | TOTO | 11.06% | 16.33 | 4.29% | 70 | 24.65 |
| 13 | INAI | 13.78% | 112.23 | 0.40% | 45 | 5.8 |
| 14 | ISSP | 3.89% | 14.32 | 0.35% | 5 | 15.61 |
| 15 | DPNS | 3.80% | 34.08 | 0.15% | 5 | 11.5 |
| 16 | EKAD | 15.32% | 125.67 | 0.08% | 10 | 4.2 |
| 17 | TPIA | 29.32% | 1226.36 | 0.04% | 43.05 | 18,077.10 |

Table 3. Results of Calculation of Intrinsic Value

| No | Company | g | E1 | D1 | K | PER | Intrinsic Value |
|----|---------|----------|----------|----------|----------|----------|-----------------|
| 1 | CINT | 0.00629 | 19.97255 | 10.5066 | 0.032086 | 16.39466 | 327.4433436 |
| 2 | INDF | 0.001661 | 659.7592 | 285.9743 | 0.039166 | 11.04517 | 7080.482188 |
| 3 | MLBI | 0.016671 | 695.4793 | 430.9016 | 0.047449 | 12.78071 | 8858.923348 |
| 4 | MYOR | 0.00281 | 81.57863 | 311.3727 | 0.156955 | 24.31519 | 1983.680227 |
| 5 | SKLT | 0.00096 | 40.78095 | 8.908156 | 0.008694 | 23.42166 | 978.9579848 |
| 6 | ROTI | 0.002245 | 65.07075 | 17.51423 | 0.015982 | 16.81943 | 1095.754113 |
| 7 | SMGR | 0.001718 | 886.1661 | 458.1358 | 0.047996 | 18.7616 | 9544.096174 |
| 8 | SMBR | 0.000988 | 31.88139 | 12.30214 | 0.004226 | 91.54714 | 2911.326691 |
| 9 | WTON | 0.001552 | 48.97815 | 11.17702 | 0.023907 | 10.62963 | 467.4712585 |
| 10 | AMFG | 0.000811 | 673.5789 | 128.0973 | 0.020744 | 8.58433 | 5788.898021 |
| 11 | ARNA | 0.001389 | 159.997 | 7.51042 | 0.02395 | 2.888943 | 321.4280652 |
| 12 | TOTO | 0.001619 | 25.58122 | 72.61788 | 0.179603 | 15.85339 | 484.2887622 |
| 13 | INAI | 0.001889 | 156.5651 | 72.63693 | 0.19405 | 2.888943 | 374.0252841 |
| 14 | ISSP | 0.000426 | 15.77672 | 7.508195 | 0.065671 | 7.242516 | 114.247352 |
| 15 | DPNS | 0.000495 | 40.34379 | 8.009637 | 0.023322 | 8.380126 | 343.158662 |
| 16 | EKAD | 0.002038 | 172.4256 | 12.52547 | 0.02306 | 3.619276 | 624.0588977 |
| 17 | TPIA | 0.003884 | 1352.624 | 125.9222 | 0.024871 | 3.739159 | 5057.675839 |

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Table 4. Comparison of Intrinsic Value and Stock Prices in 2018

| No | Company | Intrinsic Value | Stock Price | Company conditions |
|----|---------|-----------------|-------------|--------------------|
| 1 | CINT | 327.44 | 238 | Under Valued |
| 2 | INDF | 7300.48 | 7375 | Over Valued |
| 3 | MLBI | 8858.92 | 15800 | Over Valued |
| 4 | MYOR | 1983.60 | 2590 | Over Valued |
| 5 | SKLT | 978.56 | 1500 | Over Valued |
| 6 | ROTI | 1095.75 | 1200 | Over Valued |
| 7 | SMGR | 9544.1 | 11450 | Over Valued |
| 8 | SMBR | 2911.33 | 1770 | Under Valued |
| 9 | WTON | 467.47 | 378 | Under Valued |
| 10 | AMFG | 5788.9 | 3590 | Under Valued |
| 11 | ARNA | 321.43 | 408 | Over Valued |
| 12 | TOTO | 404.3 | 905 | Over Valued |
| 13 | INAI | 374.02 | 400 | Over Valued |
| 14 | ISSP | 114.25 | 86 | Under Valued |
| 15 | DPNS | 343.16 | 328 | Under Valued |
| 16 | EKAD | 624.06 | 835 | Over Valued |
| 17 | TPIA | 5057.7 | 5750 | Over Valued |

Based on the table in Table 4, it can be seen that :

1. Eleven companies are in an overvalued condition that is intrinsic value smaller than the market price of their shares in 2018. The high stock market price is influenced by investors' expectations of the company's financial performance. If investors estimate the company's performance will be good going forward, then the demand for these shares will increase which causes the stock price to be higher. In addition, high stock prices are also influenced by investors' perceptions of these shares which are influenced by the development of information circulating in the capital market. If the information is positive, it will also lead to a positive perception and cause an increase in the demand for shares as well as vice versa.
2. as many as six companies are in an undervalued condition, namely the intrinsic value is greater than the stock market price in 2018. Low stock market prices are influenced by investors estimating the company's performance going forward, then the demand for these shares will decrease which causes stock prices to be lower. In addition, the low share price is also influenced by investors' perceptions of the stock which is influenced by the development of information circulating in the capital market. If the information is positive, it will also lead to a positive perception and cause an increase in the demand for shares as well as vice versa.

T Test Paired with SPSS

The T Paired or Paired T Test is used as a comparative test or difference if the data scale of the two variables is quantitative (interval or ratio). This test is also called the pairing T Test.

Test results :

| Paired Samples Statistics | | | | | |
|---------------------------|----|--------|----|----------------|-----------------|
| | | Mean | N | Std. Deviation | Std. Error Mean |
| Pair 1 | NI | 2735.0 | 17 | 3265.482 | 791.9959 |
| | P | 276 | | 80 | 1 |
| | | 3211.9 | 17 | 4481.840 | 1087.006 |
| | | 412 | | 60 | 01 |

| Paired Samples Correlations | | | | | |
|-----------------------------|----|---|----|-------------|------|
| | | | N | Correlation | Sig. |
| Pair 1 | NI | & | 17 | .932 | .000 |
| | P | | | | |

Correlation: Value of Correlation between these two variables: Result 0.932 means a strong and positive relationship.

Sig : level of significance of relationship: Outcome 0,000 means significant at the 0.01 level.

| Paired Samples Test | | | | | | | | |
|---------------------|--------|---------|----------------|-----------------|---|--------|-------|-----------------|
| Paired Differences | | | | | | | | |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | t | Sig. (2-tailed) |
| | | | | | Lower | Upper | | |
| Pair 1 | NI - P | -476.91 | 1863.1 | 451.87 | -1434.83 | 481.00 | -1.06 | .307 |

Df: degree of freedom: For analysis T Paired is always N- 1. Where N is the number of samples.

T = value of t count: result -1,055: Must be compared with t table in DF 16. If t count> t table: significant.

Sig. (2-tailed): Probability value / p value T test Paired: Result = 0.307. Meaning: There is no difference between before and after treatment. Because: The value of p value> 0.05 (95% confidence).

Mean: -476.91. Negative Value: This means that there is a significant difference. The average difference between Intrinsic Value and stock price up to - 476.

Investment decision making based on fundamental analysis using the *Price Earning Ratio* (PER) approach is carried out after knowing the results of intrinsic value which is the compared to market prices to determine the condition of the shares, whether undervalued, overvalued, correctly valued which can be seen in the table as follows :

| No | Company | Company conditions | Investation decision |
|----|---------|--------------------|----------------------|
| 1 | CINT | Under Valued | buy shares or hold |
| 2 | INDF | Over Valued | sell shares or hold |
| 3 | MLBI | Over Valued | sell shares or hold |
| 4 | MYOR | Over Valued | sell shares or hold |
| 5 | SKLT | Over Valued | sell shares or hold |
| 6 | ROTI | Over Valued | sell shares or hold |
| 7 | SMGR | Over Valued | sell shares or hold |
| 8 | SMBR | Under Valued | buy shares or hold |
| 9 | WTON | Under Valued | buy shares or hold |
| 10 | AMFG | Under Valued | buy shares or hold |
| 11 | ARNA | Over Valued | sell shares or hold |
| 12 | TOTO | Over Valued | sell shares or hold |
| 13 | INAI | Over Valued | sell shares or hold |
| 14 | ISSP | Under Valued | buy shares or hold |
| 15 | DPNS | Under Valued | buy shares or hold |
| 16 | EKAD | Over Valued | sell shares or hold |
| 17 | TPIA | Over Valued | sell shares or hold |

Based on the results of the analysis, the investment decision that should have been taken by investors aimed at obtaining dividends from eleven companies whose stock prices are in overvalued conditions is to hold shares if they have been owned. However, for investors who have a goal to get capital gains, the right investment decision is to sell the shares.

Based on this analysis, the investment decisions that should be taken by prospective investors who have long-term goals for companies whose stock prices are in undervalued conditions are better not to buy the shares because the development of the Company's fundamental variables during the year of observation has decreased even though the calculation the estimated intrinsic value of its shares is higher than the market price of its shares in 2018.

5. Conclusion

Based on this research investors can more easily anticipate the risks involved in investing, which will make investors get the maximum profit from the investment they invest. for that the importance of analyzing every step that will be taken by investors is very important.

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