FUNDAMENTAL ANALYSIS FOR STOCK PRICE VALUATION
BY USING PRICE EARNINGS RATIO METHOD
(Study at Mining Companies Listed on Indonesian Stock Exchange Year 2011-2013)

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ABSTRACT

The research was conducted based on the misprice on the investment of stock. The misprice of investment on stock can be reduced with evaluate the reasonable of stock price by using fundamental analysis. The fundamental analysis that used in this research is Price Earnings Ratio (PER) method. The PER method aim to know the reasonableness of stock price with compare the intrinsic value of stock and the stock market price. The research is descriptive quantitative method. The research takes the sample on mining industry listed on Indonesian Stock Exchange period 2011-2013. Based on the analysis by using PER method, the result of the research shows that the stock of ANTM, PTBA, and TINS in 2011 until 2013 is undervalued, thus the investment decision is purchase the stock. Whereas, estimating the stock position in 2014 is overvalued thus the investment decision is sell the stock. Stock of RUIS in 2011 and in 2014 estimated is overvalued thus the investment decision is sell the stock. Meanwhile, in 2012 until 2013 the stock of RUIS is undervalued and the investment decision is purchase the stock.

Keywords: Fundamental Analysis, Intrinsic Value, Price Earnings Ratio.

1. INTRODUCTION

The development of Indonesia’s economic is effect the development of Indonesia’s people economic. The development of Indonesia’s people economic is indicated by the increasing of standard living of the people. People with the high standard living will find the alternative to manage their fund in order to receive the value added in the future. In the economic modern people tend to make investment as the one of alternative to manage the fund of people. According to Jones (2009:3) “investment can be define as the commitment of fund one or more assets that will be held over some future time period”. It means that the investment activity is held with the aim to receive some additional fund in the future. According to Sharpe (2006:3) “investment is decided into two forms that are investment in the real assets and financial assets”. Investment in the form of financial assets is like a purchasing of stock and bond. Whereas, real assets in the productive assets, new business ownership, and real estate ownership. In the essence, investment is the appointment of the fund with expected to receive the gain in the future and investment as an ownership in the real assets or financial assets.

Investment of stock has a risk because the stock income depends on the price fluctuation (capital gain) and corporate income distribution (dividend). The gain is received by investment of stock is uncertainty, but the gain will be received from stock investment make investor interested to invest the fund in stock because the high risk can give the high return.

The popular security traded on capital market is stocks. According to Mayo (2014:226) “Stock is a security representing ownership in a corporation”. It means that stock is a piece of papers which contain nominal information and declare that the owner of stock has the ownership of stock which company issue. Stock can give the profit to the investor as a dividend of investment in the amount of stock owned by investor and capital gain of stock. Stock has the characteristic high risk high return which stock gives the high profit.
opportunity but has the high risk potential as the stock price fluctuation.

The stock price fluctuates appropriate with the investor perception toward information about income received by the investor. The strategy that can be done by investor is evaluating the normal stock price. The one of strategies to make valuation the stock price is using the fundamental analysis.

Fundamental analysis is based on the assumption that every stock has intrinsic value. This value will be estimated by the investor and analyst. The result of the intrinsic value estimated compare with the price of current market in order to know the reasonableness of stock price. The stock price is overvalued, undervalued, and correctly value. The valuation result of the reasonableness of the stock price is used by the investor to take the investment decision. The investment decision is about decision to buy, sell, and hold the stock.

According to Jones (2009:262) fundamental analyst has two methods which commonly used to determine the stock price. The methods are present value approach and price earnings ratio (PER) method. Using present value approach investor can obtain the information about intrinsic value of stock being analyzed. Intrinsic value can be compare to the market price in the stock market. The comparison is about the intrinsic value more expensive or cheaper than the market price. Meanwhile, price earnings ratio method can be known the current stock price ratio with earnings per share to determine price more expensive or cheaper in the company.

Indonesian Stock Exchange (IDX) provides the companies to make investment activity. The one of them is the industry which running in the mining sector. Mining industry is the one of important sector in the economy of Indonesia, especially as foreign exchange sources. Mining sector has a role to GDP of Indonesia, the total value added created by all economic units in a certain country of the total final goods and services produced by all economic units. The share of mining industry to Indonesia’s GDP can be seen on the figure bellow:

![Figure 1. The Role of Mining and Quarrying to the Total of GDP in the 2013 and 2014](source: www.bps.go.id (2014))

The information on the figure 2 can be basis to make analyzing the stock price in the mining sector. With the condition of mining sector tends to decrease in the production, is the stock price of mining sector in the position overvalued, undervalued or correctly valued. This information will assist the investors in determining investment decisions. That is using the fundamental analysis variables which are expected to affect the stock price which can be calculated by financial ratios derived from the financial statements of the company period 2011-2013 and then make the estimated of the stock price in the 2014. Therefore, researcher try to apply the fundamental analysis by using price earnings ratio method on the mining company listed in Indonesia Stock Exchange. Based on the explanation above, the researcher would like to provide a research entitled “Fundamental Analysis for Stock Price Valuation by Using Price Earnings Ratio Method (Study at Mining Companies Listed at Indonesia Stock Exchange year 2011-2013)”.

2. LITERATURE REVIEWS

Capital Market

Capital market emphasizes the place of the sale and purchase of financial instruments such as stock, bond, mutual funds, and other derivative instruments. According to Jones (2009:29) “capital market is a market that facilitates the issuance and trading of financial securities such as stock and bonds”. The stock market is essentially a network structure that allows the exchange of long-term claims, the addition of financial assets (and liabilities) at the same time, allowing the investor to change and adjust the investment portfolio (through the secondary market).
**Investment**

The term of investment is also called capital formation that is the second component determines the level of aggregate expenditure. Savings of the household sector through a financial institution to buy the capital goods is called investment. According to Jones (2009:3) “investment is commitment of funds to one or more assets that will be held over some future period. The investment activity is expected to achieve the capital gain from the investment activity”.

The investing activity can increase the economics of nation. Because of that, there are many nations make the role as a purpose to increase an investment domestically and foreign investment. This role is implemented to provide economic activities of nation, unemployment absorption, increasing an output produced, economize and increase a foreign exchange.

**Stock**

According to Tandelilin (2010:32) “stock is the proof ownership of the company asset which issued the stock”. Stock can be defined as a certificate that shows evidence of the company and stockholder have the right to claim the income and asset of the company. Based on some this definition, it can be conclude that the stock is certificate or mark of company ownership which listed on the ownership of these stock.

According to Jones (2009:38) there two form stock, preferred stock and common stock. Preferred stock is an equity security with an intermediate claim between the bondholders and the stockholders on a firm’s assets and earnings. Although technically an equity security, preferred stock is known as a hybrid security because it resembles both equity and fixed income instruments. While common stock is equity security representing the ownership interest in a corporation.

**Stock Price Valuation**

As the definition of investment that is a commitment of funds for a period of time to derive a rate of return that would compensate the investor for the time during which the fund are invested. Investor tries to analyst the securities through the valuation technique to get the estimate value of the securities. According to Jones (2009:446) there are two approaches for evaluating the stock price. Those are technical analysis and fundamental analysis.

1. **Technical Analysis**

   Technical analysis can be defined as the use of specific market data for the analyzing of both aggregate stock price (market indexes or industry average) and individual stock price. According to Reilly (2005:584) technical analysis involved the examination of past market data such as price and volume of trading, which lead to an estimate of future price trend and investment decision. Technical analysis is sometimes called market or internal analysis, because it utilizes the record of the market to assess the demand and supply of stock or the entire market.

2. **Fundamental Analysis**

   According to Suressh (2013:44) “fundamental analysis is a method of evaluating a security by attempting to measure its intrinsic value by examining related economic, financial and other qualitative and quantitative factors”. Fundamental analysis attempt to study everything that can affect the security’s value, include of macroeconomic factors (like the overall economy and industry condition) and individual specific factors (like the financial condition and management of companies). According to Jones (2009:262) two basic method to valuing common stock using fundamental analysis are:
   a. Present value method

   The classic method of calculating intrinsic value involves the use of present value analysis, which is often referred to as the capitalization of income method. The other component to determine stock value with present value is cash flow. Cash flow which is used to valuation stock is earnings of company. Earning of company will be separated to investor in form of dividend. Dividend in this method is used to basic analysis. There are some models to determine the value of stock using the component of dividend:
   1) **Dividend Discount Model**

   \[
   V_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \frac{D_3}{(1+k)^3} + \cdots + \frac{D_\infty}{(1+k)^\infty}
   \]

   \[
   V_0 = \sum_{t=1}^\infty \frac{D_t}{(1+k)^t}
   \]

   (Jones, 2009:264)

   2) **Zero-Growth Model**

   \[
   V_0 = \frac{D_0}{k}
   \]

   (Jones, 2009:266)

Jurnal Administrasi Bisnis (JAB) Vol. 28 No. 1 November 2015 administrasibisnis.studentjournal.ub.ac.id
3) Constant Growth Model

\[ V_0 = \frac{D_0 (1 + g)}{1 + k} + \frac{D_0 (1 + g)^2}{(1 + k)^2} + \ldots + \frac{D_0 (1 + g)^n}{(1 + k)^n} \]

(\text{Jones, 2009:267})

\[ V_0 = \frac{D_1}{k - g} \]

(\text{Jones, 2009:271})

4) The Two-Stage growth rate Model

\[ V_0 = \sum_{t=1}^{n} \frac{D_0 (1 + g_s)^t + D_n (1 + g_c)}{(1 + k)^t} \frac{1}{k - g} \]

(\text{Jones, 2009:271})

b. Price earnings ratio method

Price earnings ratio method is method that uses to estimate intrinsic value of stock. This method is called as multiplier method because in this method the investor will account the multiplier of earnings value in stock. According to Penman (2010:49) “price earnings ratio compare current price with earnings”. It means that the price earnings ratio obtains from the comparison between price per share and earnings per share.

The PER ratio can be derived from the dividend discount model, which we have seen, is the foundation of valuation for common stocks. That is the process directly applies only for the case of constant growth. If a multiple period growth model is applicable to the stock being considered, a different formulation from the one presented here will be needed. The formula can be written as follow:

\[ \text{PER} = \frac{D_1/E_1}{k - g} \]

(\text{Jones, 2009:280})

Investment Decision

Investment decision can be made by investors after doing an assessment of the stock price and have to do the right investment decisions and profitable. Investment decisions on stock prices can be done in the form of a decision to sell, buy, and hold stock. Thus, when the intrinsic value of a stock is known, then compare with stock price will be obtained a conclusion that can be used by investors in the process of making a decision whether to buy, sell, or even maintain the stock.

According to Jones (2009:278) the end objective of a discounted cash flow technique is estimate of intrinsic value. Estimated value of stock, derived from estimating and discounting the future cash flow of the stock.

1. If intrinsic value more than current market price, the assessment is undervalued and should be purchased or held if already owned.
2. If intrinsic value less than current market price, the assessment is overvalued and should be avoid, sold if held, or possibly short.
3. If intrinsic value is same as current market price, this implies equilibrium in that the assessment is correctly valued.

3. RESEARCH METHOD

The type of this research is descriptive research with use the quantitative method. The location of this research is located at Indonesia Stock Exchange. This location provides the available data that is needed in this research. Population of this research is mining companies listed on Indonesian Stock Exchange period 2011-2013. The sample technique of this research is use purposive sampling. According to Sugiyono (2006:96) “purposive sampling is a type of not random sampling that the information obtained by using certain considerations (generally adapted to the purpose and research problems)”. Thus the samples of this research are ANTM, PTBA, RUIS, and TINS.

Source of data that use in this research is secondary data which is not received directly but through the published financial report of the company. This data provide the financial report and the stock of the company listed on Indonesia Stock Exchange. After secondary data is collected, the next step is analysis of data as follows:

1. Description the financial ratio of company based on the fundamental variable such as EPS, DPS, ROE, DPR, PER.
2. Calculate the stock price by using PER method with the some step as follows:
   a. Determine retention rate (b)
      \[ b = (1 - DPR) \]
      (Reilly and Brown, 2006:419)
   b. Calculate expected earnings growth (g)
      \[ g = ROE \times b \]
      (Jones, 2009:425)
c. Estimate cash dividend per share (DPS)

\[ D_1 = D_{t-1} (1 + g_1) \]

(Sharpe, 2006: 464)

d. Estimate earnings per share (EPS)

\[ EPS = \frac{\text{Net Income}}{\text{Number of Outstanding Stock}} \]

(Tandelilin, 2010:374)

e. Determine expected return of investment (k)

\[ k = \frac{D_1}{P_0} + g \]

(Sharpe, 2006:467)

f. Calculate PER estimated

\[ PER = \frac{D_1/E_1}{k - g} \]

(Jones, 2009:280)

g. Calculate intrinsic value of stock

\[ \text{Intrinsic Value} = E_1 \times \text{PER} \]

(Tandelilin, 2010:377)

3. Valuate the reasonable of stock price and make the investment decision.

a. Determine the intrinsic value of stock and compare with the closing price.

b. Determine the stock price position in undervalued, overvalued or correctly valued and make the investment decision to buy, sell or hold the stock.

4. RESULT AND DISCUSSION

Valuation of Stock Price

The valuation of stock price by using PER method is calculation the intrinsic value of each company. The intrinsic value of each company was obtained by multiplication between estimated EPS and estimated PER from the calculation of financial data of the company. Furthermore, the intrinsic value is compared with current market of each company to determine the position of the stock. The comparison between estimated intrinsic value and current market price can be shown on the table below:

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Intrinsic Value</th>
<th>Closing Price</th>
<th>Stock position</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTM</td>
<td>2011</td>
<td>Rp. 2,175,00</td>
<td>Rp. 1,620,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Rp. 1,880,00</td>
<td>Rp. 1,280,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Rp. 1,360,00</td>
<td>Rp. 1,090,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Rp. 1,030,00</td>
<td>Rp. 1,065,00</td>
<td>Overvalued</td>
</tr>
<tr>
<td>PTBA</td>
<td>2011</td>
<td>Rp. 19,750,00</td>
<td>Rp. 17,350,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Rp. 20,150,00</td>
<td>Rp. 15,100,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Rp. 15,500,00</td>
<td>Rp. 10,200,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Rp. 9,250,00</td>
<td>Rp. 12,500,00</td>
<td>Overvalued</td>
</tr>
<tr>
<td>RUIS</td>
<td>2011</td>
<td>Rp. 195,00</td>
<td>Rp. 220,00</td>
<td>Overvalued</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Rp. 240,00</td>
<td>Rp. 195,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Rp. 200,00</td>
<td>Rp. 192,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Rp. 197,00</td>
<td>Rp. 217,00</td>
<td>Overvalued</td>
</tr>
<tr>
<td>TINS</td>
<td>2011</td>
<td>Rp. 2,750,00</td>
<td>Rp. 1,670,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Rp. 1,880,00</td>
<td>Rp. 1,540,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Rp. 1,650,00</td>
<td>Rp. 1,600,00</td>
<td>Undervalued</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Rp. 1,164,72</td>
<td>Rp. 1,327,00</td>
<td>Overvalued</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Source: Data Processed 2015</td>
<td></td>
</tr>
</tbody>
</table>

Based on the table 1 above, it can be known that the stock of ANTM in the period of 2011 until 2013 is undervalued. The comparison between estimated intrinsic value and close price in 2011 is the intrinsic value Rp. 2,175,00 more than the close price Rp1,620,00. In 2012 the intrinsic value Rp. 1,880,00 is more than Rp. 1,280,00. And in 2013 the intrinsic value Rp. 1,360,00 is more than the close price Rp. 1,090,00. Whereas, in the estimated of 2014 stock position is overvalued. The comparison between intrinsic value and close price is Rp. 1,030,00 less than the close price Rp. 1,065,00.

For stock of PTBA in the period 2011 until 2013 is undervalued. The comparison between estimated intrinsic value and close price in the 2011 is the intrinsic value Rp. 19,750,00 more than the close price Rp 17,350,00. In 2012 the intrinsic value Rp. 20,150,00 is more than Rp. 15,100,00. And in 2013 the intrinsic value Rp. 15,500,00 is more than the close price Rp. 10,200,00. Then, in 2014 estimated stock position is overvalued. The comparison between intrinsic value and close price is Rp. 9,250,00 less than the close price Rp. 12,500,00.

Stock of RUIS is overvalued in the period of 2011 until 2013 is undervalued. The comparison between estimated intrinsic value and close price in 2011 is the intrinsic value Rp. 195,00 less than Rp. 220,00. In 2012 and 2013 the stock position is undervalued with the comparison Rp. 240,00 more than Rp. 195,00 and Rp. 200,00 more than Rp. 192,00. And, in 2014 the estimated stock position is overvalued, the comparison show that estimated intrinsic value Rp. 197,00 is less than the close price Rp. 217,00.

The next is stock of TINS that in the period of 2011 until 2013 is undervalued. The comparison between estimated intrinsic value and close price in 2011 is the intrinsic value Rp. 2,750,00 more than the close price Rp. 1,670,00. In 2012 the intrinsic
value Rp. 1,880,00 is more than Rp. 1,540,00. And in 2013 the intrinsic value Rp. 1,650,00 is more than the close price Rp. 1,600,00. Meanwhile, in 2014 the estimated stock position is overvalued. The comparison between intrinsic value and close price is Rp. 1,164,72 less than the close price Rp. 1,327,00.

**Investment Decision**

Based on the valuation of intrinsic value of stock by using PER Method, the position of stock price can be known as undervalued, correctly valued, or overvalued. That is the comparison between intrinsic value of stock and close price of stock. Then, the investment decision can be determined for sell, buy or hold the stock.

**Table 2. The Investment Decision using PER Method**

<table>
<thead>
<tr>
<th>Company</th>
<th>Year</th>
<th>Position of Stock Price</th>
<th>Investment Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTM</td>
<td>2011</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Overvalued</td>
<td>Sell the stock</td>
</tr>
<tr>
<td>PTBA</td>
<td>2011</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Overvalued</td>
<td>Sell the stock</td>
</tr>
<tr>
<td>RUIS</td>
<td>2011</td>
<td>Overvalued</td>
<td>Sell the stock</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Overvalued</td>
<td>Sell the stock</td>
</tr>
<tr>
<td>TINS</td>
<td>2011</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>Undervalued</td>
<td>Purchase the stock</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>Overvalued</td>
<td>Sell the stock</td>
</tr>
</tbody>
</table>

Source: Data Processed 2015

Based on the table 2 above, the stock position of ANTM in 2011 until 2013 is undervalued, the investment decision is purchase the stock if the stock not owned yet and restrain the stock if the stock already owned. Then, the estimated stock position in 2014 is overvalued, thus the investment decision of ANTM in 2014 is sell the stock if the stock already owned.

The stock position of PTBA in 2011 is undervalued, and then the investment decision is purchase the stock if the stock not owned yet. In 2012 until 2013 is undervalued, then the investment decision is purchase the stock. Furthermore, comparison between estimated intrinsic value and close price in 2014 shows that the stock position is overvalued then the investment decision for stock PTBA is sell the stock.

The investment decision of RUIS in 2011 is sell the stock, because the stock position is in the overvalued. Then in 2012 and 2013 based on the stock position undervalued, the investment decision is purchase the stock if the stock not owned yet and restrains the stock if the stock already owned. Then, the estimated stock position of RUIS in 2014 is overvalued, thus the investment decision is purchase the stock if the stock already owned.

The investment decision for TINS in 2011 is undervalued, and then the investment decision is purchase the stock if the stock not owned yet. In 2012 until 2013 is undervalued, then the investment decision is purchase the stock. Furthermore, comparison between estimated intrinsic value and close price in 2014 shows that the stock position is overvalued and the investment decision is sell the stock of TINS.

**5. CONCLUSION AND SUGGESTION**

**Conclusion**

1. The result of the valuation of stock price by using PER method shows that the stock position of the mining companies as long as the period of 2011 until 2013 and the estimated in the 2014 is in the period of 2011 the company which in the undervalued position are ANTM, PTBA, and TINS. Whereas the company which in the overvalued position is RUIS. In the period of 2012 and 2013 the position of the all company sample is undervalued. And then in the estimated stock position in period 2014, all of sample of the research is in the stock position overvalued that are ANTM, PTBA, RUIS and TINS.

2. The investment decision based on the analysis of stock price of mining companies in 2011 ANTM, PTBA, and TINS are purchase the stock due to the stock position is undervalued. Whereas, the investment decision of RUIS is sell the stock if the stock already owned. The investment decision in 2012 of ANTM, PTBA, RUIS and TINS are purchase the stock if the stock not owned yet. And then in 2013 the investment decision of all companies is purchase the stock, because the stock is...
cheaper than intrinsic value or in the undervalued position. And then the estimated investment decision in period 2014 of ANTM, PTBA, RUIS and TINS are sell the stock if the stock already owned, due to the stock position of all companies sample in the overvalued position.

**Suggestion**

1. Fundamental analysis by using PER Method is the one of analysis to valuate stock price in stock trading. Thus, investor needs to complete this method with the other method of fundamental analysis to receive the accuracy valuation of stock price.

2. Fundamental analysis is the one of ways to analysis the stock price in the long time period. It will be better if the investor also using the technical analysis for valuate the stock price to support the analysis of stock price.

3. Fundamental analysis try to forecast the stock price in the future through estimated the value of fundamental analysis factor that influence the stock price in the future and implement the relation of variables to get the estimation. Thus, the stock price received sometime different each other because the analysis using the data estimated. Because of that, investors need to use the other analysis to compare the result to receive the accuracy data.

**6. BIBLIOGRAPHY**


