Fundamental Analysis of Share Prices in Coal Mining Subsector Companies

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Abstract

This research was conducted with the aim of proving the influence of fundamental factors on the share price of coal mining sub-sector companies listed on the Indonesia Stock Exchange with the accounting period of 2015-2019. The fundamental factors used in this study are the ratios used are Return on Assets (ROA), Debt to Equity Ratio (DER), Earning Per Share (EPS), Price to Earning Ratio (PER), and Price to Book Value (PBV). This type of research is quantitative descriptive which is associatively causal. Antitaif data is obtained from the company's annual report or financial statements that have been published on the Indonesia Stock Exchange. Sampling method is done by purposive sampling method. From the population of 27 coal mining sub-sector companies listed on the Indonesia Stock Exchange, 7 companies were taken as samples with 35 sample data. Hypothesis testing is done by panel data regression analysis method by first doing chow test, hausman test and lagrange multiplier test to choose a more appropriate model to use, and Random Effect Model (REM) is the more appropriate model to use in this study. The results of this study show that simultaneously Return on Assets (ROA), Debt to Equity Ratio (DER), Earning Per Share (EPS), Price to Equity Ratio (PER), and Price to Book Value (PBV) have a positive and significant effect on the share price of coal mining sub-sector companies listed on the Indonesia Stock Exchange. Partially EPS has a positive and significant effect on the share price of coal mining sub-sector companies. Partially ROA, PER, and PBV have no significant effect but give a positive direction to the share price of coal mining sub-sector companies. And partially DER has no significant effect and gives a negative direction to the share price of coal mining sub-sector companies listed on the Indonesia Stock Exchange.

I. Introduction

Every investor or potential investor has certain goals to be achieved through the investment decisions taken. In general, the investment motive is to gain profit, security, and growth of invested funds. For this reason, in investing in shares, investors must analyze the factors that can affect the condition of the company (issuer). The goal is for investors to get a clearer picture of the company's ability to continue to grow and develop in the future. The high or low interest of an investor in investing in shares is influenced by the quality of the value of shares in the capital market.

Fundamental analysis is related to the company's performance on how effective it is in achieving the goals that have been planned by the company. Fundamental analysis is long term, therefore investors will analyze using company financial data to assess stock prospects. In conducting a company analysis, there are many factors that must be considered. Another

factor that can influence investment decisions is behavioral motivation which can be seen from:demographics, such as gender, age and education. Most investors in investment decisions see or consider accounting information factors so that their investment goals are achieved.

Stock analysis is an analysis that aims to determine whether the stock price of the company's stock price is too expensive or still attractive to invest. In stock price analysis there are two stock price ratios that can be used, namely, PER (Price to Earning Ratio) and PBV (Price to Book Value). The following table and graph of stock price movements in coal mining sub-sector companies listed on the Indonesia Stock Exchange.

Table 1. Summary of Research Phenomenon Data on Coal Mining Sub-Sector Companies Listed on the IDX in 2015-2019

Issuer	Year	Stock price (Rp)	ROA (%)	DER (X)	EPS (Rp)	PER (X)	PBV (X)
BSSR	2015	1,110	15,17	0.66	139.05	7.98	2.01
	2016	1,410	14.90	0.44	136.22	17.57	2.45
	2017	2,100	39.41	0.40	169.92	4.90	2.71
	2018	2,340	28.18	63.10	343.60	5.11	2.90
	2019	1,820	12.15	0.47	163.63	11.12	1.34
HRUM	2015	675	31.75	0.48	390.76	-6.87	0.39
	2016	2,100	23.30	0.27	296.84	31.05	1.26
	2017	2.050	36.47	0.31	647.29	9.44	1.07
	2018	1,400	6.80	0.30	176,508	7.93	0.68
	2019	1,320	4.10	0.20	101.70	12.98	0.63
ITMG	2015	5.725	5.36	0.41	770,40	7.43	0.56
	2016	16,875	10,80	0.33	1554.27	15.81	1.67
	2017	20,700	18.60	0.42	3,028.81	6.83	1.80
	2018	20,750	18.00	0.49	2,634.63	7.68	3.92
	2019	11,475	11.00	0.37	1,680	6.83	1.04
TOBA	2015	675	9.11	0.82	77.84	8.67	0.63
	2016	1,245	5.58	0.77	18.67	83.44	1.23
	2017	2.070	11.88	0.99	144.32	14.61	1.91
	2018	1,696	10.00	1.30	66.46	25.32	1.11
	2019	358	10.00	1.40	2.34	152.9	0.77

Source: Indonesia Stock Exchange (Dional data, 2021)

From the table, it can be seen that the share price of coal mining sub-sector companies fluctuated in 2015-2019. The occurrence of fluctuations in stock prices can be caused by several factors. Both are influenced by internal and external factors of the company.

In 2016 the profitability ratio as proxied by ROA at the issuer PT Baramulti Sukses Sarana Tbk (BSSR) decreased by 0.27% from the previous year. Likewise, the ROA ratio at PT Hanum Energy Tbk (HRUM) which decreased in 2016 by 8.45% from the previous year. Not only for BSSR and HRUM issuers. Other issuers experienced similar fluctuations inevery year. The occurrence of ROA fluctuations in each company is due to changes in the amount of net profit generated and changes in total assets in the company.

In 2018 the DER ratio in BSSR companies experienced a very significant increase from the previous year. The increase in the DER ratio is considered unhealthy for the company. Of course, as a stock investor, you want a healthy and strong company. Debt and the company's financial condition is not healthy or the company is unable to pay its debts, then the company is very vulnerable to bankruptcy in the future. Other companies also experienced fluctuations in the DER ratio, the fluctuation was due to the capital structure of each company. Not only BSSR issuers experienced fluctuations in the DER ratio, other issuers also experienced the same thing. The occurrence of fluctuations in the DER ratio is due to changes in the capital structure of each company.

Earning per share (EPS) is very important information for every investor, because through the value of EPS investors will know how much profit from each share. As in PT Indo Tambang Raya Megah (ITMG), in 2016 the EPS value increased from the previous year, which was Rp. 1,554.27, this caused an increase in ITMG's stock price. However, for HRUM issuers, in 2018 the EPS value increased from the previous year, but the stock price decreased from the previous year, resulting in a smaller PER ratio. The occurrence of fluctuations in the EPS of each company is due to changes in the amount of net income and changes in the number of outstanding shares. Likewise, the PER and PBV ratios for each issuer change every year.

II. Review of Literatures

2.1 Stock Price

The share price is the value of a share that reflects the wealth of the company that issued the shares, where changes or fluctuations are largely determined by the forces of supply and demand that occur in the stock market (secondary market). The more investors who want to buy or hold the stock, the higher the price. Conversely, the more investors who want to sell or release a stock, the price will move down.

2.2 Fundamental Analysis

According to Pandansari (2012) Fundamental analysis is one way to predict stock prices by using financial statements as one of the information, especially those related to financial ratios. With the financial ratios, investors can assess the company's performance, how effective and efficient the company is in achieving the desired goals.

Financial ratios or financial ratios are very important in analyzing the company's financial condition. Short- or medium-term investors are generally more interested in short-term financial conditions and the company's ability to pay adequate dividends (Fahmi, 2017). While in the long term financial ratios are also used and used as a reference in analyzing the company's performance for 12 years and then predicted for 10 or 12 years.

2.3 Return on Assets (ROA)

ROA is one of the ratios that measures the level of company profitability (Jiwandono, 2014). ROA is used to determine the amount of net profit that can be obtained from the company's operations with all assets. The high and low ROA depends on the management of company assets by management which describes the efficiency of the company's operations. The higher the ROA the more efficient the company's operations and vice versa, the low ROA can be caused by the number of idle company assets, investment in too much inventory, excess paper money, fixed assets operating below normal and others (Safitri, 2011) occur on the stock exchange. (Sigit, 2011) means that the initial wealth is low.

2.4 Debt to Equity Ratio (DER)

Debt to equity ratio (DER) is a ratio used to measure the level of use of debt to equity owned by the company (Raharjo and Muid, 2013). This ratio shows the percentage of funds provided by shareholders to lenders. The lower this ratio, the better the company's ability to pay long-term obligations. If the company's debt is high, investors will judge the company badly and investors are not interested in buying shares, resulting in the company's share price decreasing (Dwialesi and Darmayanti, 2016).

2.5 Earnings Per Share (EPS)

EPS is one indicator that can show the company's performance, the higher the EPS value means the greater the profit provided by the company for the company's shareholders (Jiwandono, 2014). And EPS is also important in fundamental analysis, namely first, to estimate the intrinsic value of a stock. Second, dividends paid by a company are basically from earnings. Third, the relationship between changes in earnings with changes in stock prices. Earning per share or income per share is a form of giving benefits to shareholders from each share they own (Fahmi, 2017).

2.6 Price to Earning Ratio (PER)

According to Harahap (2020) The market is a place where sellers and buyers meet to conduct buying and selling transactions (trades) either directly or indirectly. In current technological developments new innovations are needed so that all human activities become more efficient, safe, fast and comfortable, especially in the world economy (2020). Marketing strategy is a plan that outlines the company's expectations of the impact of various marketing activities or programs on the demand for products or product lines in certain target markets (Sitepu, 2020). Price earning ratio (price to profit ratio) is the comparison between market price per share (share price per share) and earnings per share (earnings per share) (Fahmi, 2017). This can make stock prices go down (Oktavia, 2010).

2.6 Price to Book Value (PBV)

Price book value (PBV) is defined as the ratio of market recognition to the book value of shares expressed in rupiah (Dwialesi and Darmayanti, 2016). PBV provides a comparison of share price with book value per share. The higher the stock price in the market will get a good assessment from investors. If the PBV ratio is low, the stock price will be lower (Raymond, 2018).

2.7 Hypothesis

The researcher put forward the hypothesis in this study, namely as follows: following:

H1: Return on assets (ROA) has a partial effect on stock prices in coal mining sub-sector companies listed on the BEI

H2: Debt to equity ratio (DER) has a partial effect on stock prices in coal mining sub-sector companies listed on the IDX

H3: Earning per share (EPS) has a partial effect on stock prices in coal mining sub-sector companies listed on the IDX

H4: Price to equity ratio (PER) has a partial effect on stock prices in coal mining sub-sector companies listed on the BEI

H5: Price book value (PBV) has a partial effect on stock prices in coal mining sub-sector companies listed on BE

H6: Return on assets, debt to equity ratio, earnings per share, price to equity ratio, and price book value have a simultaneous effect on stock prices in coal mining sub-sector companies listed on the IDX

III. Research Methods

This type of research is a quantitative descriptive with causal associative nature. The population in this study are coal mining sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the 2015-2019 period. In this study, the researcher used the purposive sampling method, which is the method used to determine the sample with certain criteria (Suliyanto, 2018). The criteria used to determine the sample in this study are:

1. Coal mining sub-sector companies listed on the Indonesia Stock Exchange (IDX).
2. Coal mining sub-sector companies that publish financial reports for the 2015-2019 period.
3. Mining sub-sector companies that have complete data for the variables studied.
4. Coal mining sub-sector companies that did not suffer losses during the 2015-2019 period.

The number of coal mining sub-sector companies listed on the Indonesia Stock Exchange is 27 companies in the 2015-2019 period. However, of the 27 companies, only 7 companies met the criteria used in this study. In this study, hypothesis testing is used which aims to determine how the influence of ROA, DER, EPS, PER, and PBV on stock prices. The data used in this study is panel data, which is a combination of time series and cross section data. The sample data for 7 companies were taken from cross section units and time series data for the 2015-2019 period by using panel data regression analysis with partial tests and simultaneous tests as hypothesis testing.

IV. Discussion

4.1 Chow Test

Chow test is used to determine whether the FEM model is better than the CEM model. The Chow test is used to find out which Pooled Least Square (PLS) or Fixed Effect Model (FEM) model will be selected for data estimation that can be done with the F test. If the calculated F value is greater than F table at certain constants, then the selected model is FEM models. Here are the results of the Chow test in this study

Table 2. Chow Test Results

Redundant Fixed Effects Tests
Equation: FIXED_EFFECT_MODEL
Test cross-section fixed effects

Effects Test	Statistics	df	Prob.
Cross-section F	10.333299	(6.23)	0.0000
Cross-section Chi-square	45.750412	6	0.0000

Source: Test Results (2021)

In the table the distribution value of the chi-square based on the results of calculations using Eviews states that the probability of F in the chow test on the effect of ROA, DER, EPS, PER, and PBV on stock prices is 0.0000.

The probability value is <0.05 or 5%, statistically H0 is rejected and Ha is accepted, so that the correct model to use is the fixed effect model (FEM), therefore it is necessary to retest to find out which model is the most appropriate to use, the fixed effect model. (FEM) or random effect model (REM).

4.2 Hausman Test

The Hausman test is a test used to choose between the FEM model and the REM model. If the Hausman test accepts H1 or p value <0.05 then the method used is FEM, otherwise if the Hausman test accepts H0 or p value >0.05 then the method used is REM. The following are the results of the Hausman test in this study:

Table 3. Hausman Test Results

Test Summary	Chi-Sq. Statistics	Chi-Sq. df	Prob.
Cross-section random	2.158371	5	0.8268

Source: Test Results (2021)

The table shows that the probability in the Hausman test on the effect of ROA, DER, EPS, PER and PBV on stock prices is 0.8268. The results of these tests show a probability value of > 0.05 so that H0 is accepted. Thus, in the Hausman test, the random effect model (REM) is the right model. Therefore, the selection of the model was carried out again using the Lagrange multiplier test to find out which method was more appropriate to use between the random effect model or the common effect model.

4.3 Langrange Multiplier Test

Langrange multiplier is a test used to determine whether REM or CEM is the most appropriate for the significance test, this REM was developed by Breusch Pagan, the Breusch Pagan method for the REM significance test is based on the residual value of the OLS method. The lagrange multiplier test is based on a chi-squares distribution with the degree of freedom as the number of independent variables. If the lagrange multiplier statistic is greater than the critical value of the chi-square statistic, it rejects H0, which means that the correct estimate for the panel data regression model is the REM method rather than the CEM method. On the other hand, if the lagrange multiplier statistic is smaller than the chi-squares value as a critical point, then H1 is accepted, which means that the estimation used in the panel data regression process is the REM method.

Table 4. Langrange Multiplier Test Results

Total panel observations: 35
probability in ()

Null (no rand. effect) Alternative	Cross-section one-sided	Period one-sided	Both
Breusch-Pagan	13.32813 (0.0003)	1.185857 (0.2762)	14,51398 (0.0001)

Source: Test Results (2021)

The table shows that the probability in the Langrange multiplier test on the effect of ROA, DER, EPS, PER, and PBV on stock prices is 0.0003. The test results show a probability value of <0.05 so that H1 is accepted. Thus the regression estimation model for the effect of ROA, DER, EPS, PER and PBV on stock prices is the random effect model (REM). The results of the Chow test, Hausman test and Lagrang multiplier test show that the

best model chosen is the random effect model (REM).

4.4 Hypothesis Testing
a. T test (Partial Test)

The t-test or partial test was conducted to test whether the independent variables (return on assets, debt to equity ratio, earnings per share, price to equity ratio, and price to book value) partially affected the dependent variable (stock price) and tested the extent to which where is the significance of the effect of the independent variable on the dependent variable. The independent variable can be said to be influential and significant, then the hypothesis will be accepted if the probability value of $t < 0.05$.

Table 5. Partial Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	935.6769	2281.311	0.410149	0.6847
ROA	35.86906	56.11199	0.639241	0.5277
DER	-2.823318	40.17491	-0.070276	0.9445
EPS	2.455995	0.811303	3.027224	0.0051
PER	3.943852	3.837724	1.027654	0.3126
PBV	115.1145	178.1098	0.646312	0.5232

Source: Test Results (2021)

1. Hypothesis 1
   To test the truth that return on assets (ROA) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX. From the calculation results of panel data analysis, the return on assets (ROA) variable obtained a coefficient value of 35,86906 with a probability value of 0.5277. Based on the results of these calculations, the probability value > 0.05, then H0 is accepted and Ha is rejected, so it can be concluded that return on assets (ROA) does not significantly affect stock prices in coal mining sub-sector companies listed on the IDX.

2. Hypothesis 2
   To test the truth that the debt to equity ratio (DER) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX. From the calculation results of panel data analysis, the variable debt to equity ratio (DER) obtained a coefficient value of -2.823318 with a probability value of 0.9445. Based on the calculation results, the probability value > 0.05, then H0 is accepted and Ha is rejected, so it can be concluded that the debt to equity ratio (DER) has no significant effect on stock prices in coal mining sub-sector companies listed on the IDX.

3. Hypothesis 3
   To test the truth that earnings per share (EPS) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX. From the calculation results of panel data analysis, the variable earnings per share (EPS) obtained a coefficient value of 2.455995 with a probability value of 0.0051. Based on the results of these calculations, the probability value < 0.05, then Ha is accepted and H0 is rejected, so it can be concluded that earnings per share (EPS) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX.

4. Hypothesis 4
   To test the truth that the price to earnings ratio (PER) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX. From the calculation results of panel data analysis, the variable price to earnings ratio (PER) obtained a coefficient

value of 3.943852 with a probability value of 0.3126. Based on the results of these calculations, the probability value > 0.05, then H0 is accepted and Ha is rejected, so it can be concluded that the price to earnings ratio (PER) does not significantly affect stock prices in coal mining sub-sector companies listed on the IDX.

5. Hypothesis 5
To test the truth that price to book value (PBV) has a significant effect on stock prices in coal mining sub-sector companies listed on the IDX. From the calculation results of panel data analysis, the variable price to book value (PBV) obtained a coefficient value of 115,1145 with a probability value of 0.5232. Based on the results of these calculations, the probability value > 0.05, then H0 is accepted and Ha is rejected, so it can be concluded that price to book value (PBV) does not significantly affect stock prices in coal mining sub-sector companies listed on the IDX.

b. F Test (Simultaneous Test)

Simultaneous test or F-test is a test used to determine whether the independent variables (*return on assets, debt to equity ratio, earnings per share, price to equity ratio,* and price to book value) simultaneously or simultaneously affect the dependent variable (stock price). The following are the results of the F-test in this study:

Table 6. Simultaneous Test Results

F-statistics	3.297862
Prob(F-statistic)	0.017686

Source: data processed by researchers (Eviews10), 2020

Based on the results of tests carried out using Eviews10 software, the F-count value is 3.297862 with an F probability value of 0.017686. In this study the probability value of $F < 0.05$, then Ha is accepted and H0 is rejected. Thus, it can be concluded that the independent variables (return on assets, debt to equity ratio, earnings per share, price to equity ratio, and price to book value) simultaneously have a significant effect on the dependent variable (stock price).

V. Conclusion

Based on the discussion and research results obtained, the following conclusions can be drawn:

1. Based on the results of the study, Return On Assets (ROA) partially has no significant effect on stock prices in coal mining sub-sector companies. The direction of the ROA relationship with stock prices is positive, but does not have much impact on stock prices.
2. Based on the results of the study, the Debt to Equity Ratio (DER) partially has no significant effect on stock prices in coal mining sub-sector companies. The direction of the relationship between DER and stock prices is negative.
3. Based on the results of the study, Earning Per Share (EPS) partially has a significant effect on stock prices in coal mining sub-sector companies. The direction of the relationship between EPS and stock prices is positive.
4. Based on the results of the study, Price to Book Value (PER) partially has no significant effect on stock prices in coal mining sub-sector companies. The direction of

the PER relationship with stock prices is positive, but does not have much impact on stock prices.

5. Based on the results of the study, Price to Book Value (PBV) partially has no significant effect on stock prices in coal mining sub-sector companies. The direction of the ROA relationship with stock prices is positive, but does not have much impact on stock prices.

6. Based on the results of the study, Fundamental Analysis (return on assets, debt to equity ratio, earnings per share, price to equity ratio, and price to book value) simultaneously and significantly affects stock prices in coal mining sub-sector companies. The direction of the relationship of the independent variables simultaneously with the stock price is positive.

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