

Comparative Analysis Return On Assets (ROA) And Economic Value Added (EVA) In Metal And Mineral Sub- Sector Companies In Indonesia Stock Exchange 2016-2020 Period

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Abstract

Comparative Analysis Return On Assets (ROA) And Economic Value Added (EVA) In Metal And Mineral Sub-Sector Companies In Indonesia Stock Exchange 2016-2020 Period Indonesia is a country with abundant natural resources. can be explored and produce energy resources that can be enjoyed at home and abroad, by being able to become export goods to neighboring countries. Many mining companies have explored metals and minerals in the earth and these companies are issuers in the Indonesian capital market. This study aims to analyze the difference between ROA and EVA generated by the financial performance of companies belonging to the metal and mineral sector mining companies. With the analysis of differences in the company's financial performance indicators in providing insight for investors to take investment actions for these companies. In this research, the writer chose descriptive quantitative method and different test. The data used in this study are the financial statements of metal and mineral sector companies on the Indonesia Stock Exchange in the period 2016 to 2021. The results of this study are that there is a significant difference between ROA and EVA, with a higher EVA level than ROA. So that EVA can be used to measure the company's financial performance better than ROA.

Keywords

ROA, EVA, Financial, Performance

1. Introduction

The Indonesia Stock Exchange has nine sectors consisting of agriculture, mining, industrial and chemical, various industries, industrial goods and consumption, property, real estate and building construction, infrastructure, utilities and buildings, finance, trade, services and investment. Mining is an activity of extracting valuable and economically valuable mineral deposits from the earth's crust, both above and below sea level. The results of this activity include oil and natural gas, coal, iron sand, tin ore, nickel ore, bauxite ore, copper ore, gold ore, silver and manganese ore (Central Bureau of Statistics, 2021). The mining sector has several sub-sectors including coal, gas and oil, metals and other minerals, rocks and others.

According to (Alamsyah, 2019) the development of the business world and increasingly rapid economic development encourage business competitors to be able to improve their company's performance. Likewise with companies operating in the metal and mineral mining sub-sector. Business in the metal and mineral mining sector is a very interesting business to discuss with very high dynamics, and it can be seen from the side of the price of production products such as gold which has a very high value and has a fairly high volatility.

Indonesia is a country that has a very large and diverse wealth of natural resources, one of which is minerals. From the mining sector, Indonesia produces various kinds of agricultural products that can be used for various needs from energy to construction materials. The metals and minerals mining sub-sector produces nickel, gold, silver, bauxite and others, and these products are of the most valuable value in the world.

The company is a business entity that has a function to increase the value of the company by producing goods or services that have value and generate profits for the company. According to (Arisanti, 2016) in creating value for shareholders by increasing the rate of return on invested capital. The company's stakeholders consist of internal and external parties of the company. The company's internal parties such as the board of directors, board of commissioners, trade unions. While external parties are the government as regulator, shareholders, investors etc. Stakeholders in the company must always observe the company's financial performance to be able to assess the company's activities. These activities will get a good value if the company's financial performance report always increases every period, and preferably, a company's activities will be considered bad if the company's financial performance report always shows a declining trend each period.

The company's financial statements are a factor that determines the level of satisfaction of the company's stakeholders. Analysis of a company's financial statements will be carried out to see the company's fundamentals. In the analysis of financial statements is done by using the method of financial ratios. (Riberu, 2017) states that saying that using the company's own resources such as assets, capital or sales, the ROA measures the company's ability to generate profits. From the explanation above, it can be concluded that the measurement of this ratio only takes into account profits which causes this ratio to have weaknesses. The most frequently used financial ratio to assess a company's fundamentals is the Return On Asser (ROA), where this ROA means that a company is in a healthy financial position if it has an ROA value between 0.5-0.8 (Sukamulja, 2019). In addition to ROA, currently, to assess the company's fundamental condition, Economic Value Added (EVA) analysis can be used. (Riberu, 2017) states that EVA is used to measure the company's financial performance by looking at economic added value to create company value. The comparison between ROA and EVA is still being discussed. Some researchers look for differences in the results of performance measures produced by ROA and EVA, which one better or more describes the company's financial performance.

Companies that have been registered as members of the Indonesia Stock Exchange and whose shares are owned by the public from the metal and mineral subsector mining providers can be seen from table 1 below:

Table 1. List of Metal and Mineral Sub-Sector Companies that are IDX Members

No	Code Stock	Initial Public Offering (IPO)	Company
1.	ANTM	27 November 1997	Aneka Tambang Persero Tbk.
2.	ARCHI	20 June 2021	Archi Indonesia Tbk.
3.	CITA	March 20, 2002	Cita Mineral Investindo Tbk.
4.	DKFT	November 21, 1997	Central Omega Resources Tbk.
5.	IFSH	05 December 2019	Ifishdeco Tbk.
6.	INCO	May 16, 1990	Vale Indonesia Tbk.
7.	MDKA	June 19, 2015	Merdeka Copper Gold Tbk.
8.	NICL	09 June 2021	PAM Mineral Tbk.
9.	PSAB	April 22, 2003	J Resources Asia Pasifik Tbk.
10.	SMRU	October 10, 2011	SMR Utama Tbk.
11.	TINS	October 19, 1995	Timah Tbk.
12.	ZINC	October 16, 2017	Kapuas Prima Coal Tbk.

When viewed from the table above, there are 12 companies belonging to the metal and mineral sub-sector mining sector with the longest IPO period being PT Timah Tbk. And most recently is the company PT. Archi Indonesia Tbk. and PT. PAM Mineral Tbk. All of these companies are engaged in the production of minerals and metals which are mined from mining sites in Indonesia.

In the 2016-2020 period, data on the average value of ROA and EVA were obtained from all metal and mineral sub-sector companies, we can see in table 2 below:

Table 2. Average ROA and EVA of Metals and Minerals Sub-Sector Companies

Year	ROA	EVA (in Billion Rp)
2016	-0,0228	-10.912,97
2017	0,0234	444,2
2018	0,0391	844,32
2019	0,0200	875,31

2020	-0,0090	980,15
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From table 2. above, it can be concluded that the financial performance of metal and mineral companies has a fluctuating ROA value, while the EVA value is seen in a positive trend increasing every year. The difference in the results of the financial ratios of ROA and EVA in terms of trends in financial performance becomes a background for researchers regarding the comparison between ROA and EVA in measuring the performance of companies in the metal and mineral sub-sector mining sector.

Based on the above background, the authors set the research problem in the form of financial performance as measured by financial ratios ROA, the financial performance of metal and minerals sub-sector companies with EVA measuring instruments and the last is a comparison between the financial performance of metals and minerals sub-sector companies listed in The Indonesia Stock Exchange which looks at the financial performance measurement tools with ROA and EVA.

2. Literature Review

Financial performance is a method used to determine whether financial implementation standards have been followed successfully or not by using financial implementation rules (Fahmi, 2017:435). Financial performance is a condition that shows the financial health of a company and is measured using predetermined sizes, standards, and criteria (Adiguna, 2017: 435). The financial performance is reflected in the financial statements which are the achievement of the company's financial performance (Fahmi, 2015). To understand the financial health of the company, it is necessary to examine the financial statements so that the financial position in a period can be known. The following is the definition of financial statement analysis according to experts, namely: According to Hanafi (2016), the activity of reviewing the company's financial statements with the aim of determining ROA, company health or risk level. According to Hery (2016:139) said that financial analysis includes the use of ratios. Ratio analysis is a type of financial statement analysis that uses financial ratios to relate several financial statements. According to (Hery, 2015) financial ratios are comparing one report item with other report items that have a meaningful and significant relationship. According to Kasmir (2016, p. 94) financial ratios are actions that compare quantities in financial statements, for example by dividing one number by another. Comparisons can be made in a financial report or between components of financial statements. Based on several definitions of financial ratios above, it is concluded that financial ratios are activities to compare financial statement items with one another which are prepared by combining the figures in the financial statements. By comparing the company's financial ratios each year, it is possible to study the composition of the changes that occur and determine the increase or decrease in financial conditions and company performance in a period (Hery, 2015).

According to (Hery, 2015) said that the return on assets (Return On Assets) is a ratio that shows the results (return) on the use of company assets in creating net income. In other words, this ratio is the net profit generated from each total asset. The following is the calculation of Return On Assets, namely: $\text{Return On Assets} = (\text{Net Profit})/(\text{Total Assets})$.

Understanding EVA is a measure of financial performance by measuring the difference between the company's return on capital and the cost of capital (Young and O'Byrne, 2001:4). Stern and Shiely (2001:15) say "EVA is the profit that remains after deducting the cost of the capital invested to generate that profit". EVA is the profit that remains after deducting the cost of capital invested to generate that profit. Meanwhile, Brigham and Houston (2010:111) say that EVA is an estimate of the actual economic profit of a business for a certain year, and is very much different from accounting net income where accounting profit is not reduced by the cost of equity while calculating EVA these costs will be incurred. Furthermore, Kamaludin (2011: 60) said that EVA is nothing but operating profit after tax minus the cost of capital after tax. According to Young and O'Byrne (2001:40) the formula for Economic Value Added (EVA) is: $\text{EVA} = \text{NOPAT} - \text{Capital Charges}$

As a company performance appraisal tool, EVA has advantages over other performance measures. Some of the advantages of EVA include (Rudianto, 2006:352), namely: EVA can align management goals and shareholder interests where EVA is used as an operational measure of management that reflects the company's success in creating added value for shareholders or investors. EVA provides guidelines for management to increase operating profit without additional and or capital, exposing lending (receivables and investing funds that provide high returns). EVA is a financial management system that can solve all business problems from strategy and movement to day-to-day operational decisions.

In this study, the authors used independent or independent variables and did not use the dependent or dependent variables. Where the independent variables are Return On Assets and the Economic Value Added method. Comparative analysis is carried out by comparing one theory with another, and the results of one study with other studies (Supriadi, 2020). In this study, a different test of the independent variables will be carried out to determine the comparison of the two methods. The following is an explanation of the measurement of financial performance using these two methods. In this study, the author uses the independent or independent variables and does not use the dependent or dependent variables n. Where the independent variable uses the ROA ratio method consisting of Net Profit Margin, Gross Profit Margin, Return On Assets, Return On Equity and Economic Value Added method. Comparative analysis is carried out by comparing one theory with another, and the results of one study with other studies (Supriadi, 2020). In this study, a different test of the independent variables will be carried out to determine the comparison of the two methods.

3. Research Methodology

The research method is a scientific technique used to find the truth of something that is being explored. The research method is basically a scientific approach technique to obtain data intended for certain purposes and uses (Sugiyono, 2018). In conducting research, of course, using methods based on scientific character, namely rational, empirical and systematic.

Rational means research is carried out in a way that is easy for someone to understand. Empirical means that the methods used can be observed by the human senses, so that other people can observe and know what methods are used in research. Systematic means referring to a process that follows a predetermined set of steps.

Based on the background, problem formulation and theory that have been explained, this research has characteristics. Based on the method, this research uses quantitative methods. The research method is a positivism-based approach to evaluating a particular population or sample by collecting data using research tools, analyzing quantitative or statistical data and testing established hypotheses (Sugiyono, 2018). Based on the objectives, this research uses descriptive method. Descriptive method is research that seeks to describe phenomena that occur in a real, realistic, actual, real and current way, because this research is to make descriptions, pictures or paintings in a systematic, factual and actual way regarding the facts, nature and relationships between phenomena investigated.

According to Unaradjan (2019), the population is an object or subject that is found in a certain location and meets certain criteria related to the challenge of the study. The population used in this study is all the financial statements of metal and mineral sub-sector companies listed on the Indonesia Stock Exchange. According to Unaradjan (2019), the sample is part of the population to be studied. Because a representative sample will not be used to handle all data and information, and not all people or items will be studied. The sampling technique used in this research is non-probability sampling. According to Unaradjan (2019), non-probability sampling is a sampling method that does not allow every member of the population to be included in one sample. This sampling technique consists of systematic, quota, accidental, purposive, saturated, and snowball sampling.

In conducting this research, the technique used is descriptive analysis, normality test and difference test. To perform a different test technique, use the Independent sample t-test if the data is normally distributed, but if the data is not normally distributed then use the Mann-Whitney U Test. According to (Asnidar, 2019) says that a descriptive statistic is a way to get a picture (description). from data studied without the aim of drawing broad conclusions or generalizations. The data used is usually presented in the form of tables, diagrams, graphs and others. Quantitative data can be analyzed using descriptive analysis. The frequencies used in descriptive statistics are measures of central tendency (mean, median, mode) and dispersion (range, variance, standard deviation). In this study, descriptive statistics of the average, maximum, minimum and standard deviation values were used to describe the research variables. The program used to perform calculations is Microsoft Excel.

4. Result and Discussion

4.1 Research Result

Return On Assets is a metric used that shows how well a company's assets are being used to generate net income. The following is a table of the results of the calculation of Return On Assets for metal and mineral sub-sector companies from 2016 to 2020. It can be seen from table 3. The results of the ROA calculation are below:

Table 3. ROA Calculation Results

(in billion)						
Company	Code	2016	2017	2018	2019	2020
PT. Aneka Tambang Persero Tbk	ANTM	0,0022	0,0045	0,0263	0,0064	0,0362
PT. Cita Mineral Investindo Tbk	CITA	-0,0973	0,0177	0,2023	0,1703	0,1572
PT. Central Omega Resources Tbk	DKFT	- 0,0465	-0,0197	-0,0352	-0,0380	-0,1076
PT. Vale Indonesia Tbk	INCO	0,0086	-0,0070	0,0275	0,0258	0,0358
PT. Merdeka Copper Gold Tbk	MDKA	- 0,0091	0,1163	0,0725	0,0728	0,0311
PT. J Resources Asia Pasifik Tbk	PSAB	0,0261	0,0173	0,0209	0,0042	0,0020
PT. SMR Utama Tbk	SMRU	- 0,0931	0,0161	-0,0364	-0,1118	-0,2500
PT. Timah Tbk	TINS	0,0264	0,0423	0,0351	0,0300	0,0235
Average		- 0,0228	0,0234	0,0391	0,0200	-0,0090
Min		- 0,0973	-0,0197	-0,0364	-0,1118	-0,2500
Max		0,0264	0,1163	0,2023	0,1703	0,1572
Std		0,0502	0,0418	0,0753	0,0817	0,1208

Based on the results of the calculation of Return On Assets above, it shows that the lowest value is at PT SMR Utama Tbk of -2,500 which means that every IDR 1 of total assets results in a loss of 25%. This happened because PT SMR Utama Tbk in 2020 had a drastic loss of 322,104,973,315 compared to the previous year having a loss of 184,289,498,478. Based on the limitation of the Return On Assets ratio having a reference of 0.5-0.8, it can be said that the Return On Assets value of the metal and mineral sub-sector companies from 2016 to 2020 is in an unhealthy financial condition because the value is below the reference limit.

From the calculation results above, there is a Return On Assets which has a negative value caused by the less than optimal management of operating performance carried out by the company so that it suffers a loss. There are five companies that have a negative Return On Assets, namely PT Cita Mineral Investindo Tbk in 2016, PT Central Omega Resources Tbk in 2016 to 2020, PT Vale Indonesia Tbk in 2017, PT Merdeka Copper Gold Tbk in 2016, PT SMR Utama Tbk in 2016,2018,2019,2020 which means that the company is less than optimal in providing management of company assets, causing a loss in net income which is used in the calculation of Return On Assets.

The average value of Return On Assets from 2016 to 2020 has a smaller value than the standard deviation. This shows that the metal and mineral sub-sector companies from 2016 to 2020 have a data pattern that is scattered so that it becomes a high variation in the value of Return On Assets.

Economic Value Added is used to determine the results of the added value obtained by the company which is measured by using the calculation of net operating profit after tax which is then reduced by the capital charge. The following is a table of the results of the calculation of the Economic Value Added of metal and mineral sub-sector companies from 2016 to 2020. The results of the EVA calculation can be seen in Table 4. EVA calculation is below:

Table 4. EVA Calculation Results

(in Billion Rp))						
Company	Code	2016	2017	2018	2019	2020
PT. Aneka Tambang Persero Tbk	ANTM	14,28	1.021,10	706,99	1.642,57	2.641,42
PT. Cita Mineral Investindo Tbk	CITA	-20,11	57,72	254,44	763,39	918,84
PT. Central Omega Resources Tbk	DKFT	-71,54	-37,26	-30,94	66,59	115,83

PT. Vale Indonesia Tbk	INCO	311,79	-275,28	1.557,30	1.645,86	1.745,91
PT. Merdeka Copper Gold Tbk	MDKA	-88.757,70	1.328,49	2.378,55	2.533,29	1.945,68
PT. J Resources Asia Pasifik Tbk	PSAB	802,68	512,44	706,18	297,77	782,45
PT. SMR Utama Tbk	SMRU	-188,36	60,98	-12,4	-108,77	-545,12
PT. Timah Tbk	TINS	605,24	885,43	1.194,46	161,78	236,16
Average		-10.912,97	444,20	844,32	875,31	980,15
Min		-88.757,70	-275,28	-30,94	-108,77	-545,12
Max		802,68	1.328,49	2.378,55	2.533,29	2.641,42
Std		31.455,95	580,62	834,16	956,85	1.065,59

Based on the calculation results above, it shows that there are three companies that have a positive Economic Value Added from 2016 to 2020 including PT Aneka Tambang Persero, PT J Resources Asia Pasifik Tbk, PT Timah Tbk. The three companies have Economic Value Added values that fluctuate or fluctuate during the period, but the value is still positive, so this shows that the company provides added value for the company and stakeholders. The Economic Value Added which has the highest value is PT Aneka Tambang Persero Tbk at 2,641.42 during 2016 to 2020.

PT Cita Mineral Investindo Tbk has a negative Economic Value Added value in 2016 of -20.11 billion, but in 2016 to 2020 the value generated is always increasing. This shows that in 2016 PT Cita Mineral Investindo Tbk did not provide added value for the company and stakeholders such as shareholders, which caused the results obtained were not in line with their expectations because the rate of return of funds was lower than expected.

PT Central Omega Resources Tbk has a negative Economic Value Added in 2016 to 2018. From the data calculated above, it can be seen that the Economic Value Added value generated by PT Central Omega Resources Tbk from 2016 to 2020 does not provide added value for the company and shareholders. because the resulting value is negative or lower than expected. However, in 2019 to 2020 the company provides added value and always increases to the following year.

PT Merdeka Copper Gold Tbk had a negative Economic Value Added in 2016 of -88,757.70 billion, which is the lowest Economic Value Added value in a metal and mineral sub-sector company during 2016 to 2020. However, in 2017 to 2020 the Economic Value Added was the lowest. generated by the company is positive. Although in 2020 it decreased by 587.61 billion from 2,533.29 in 2019 to 1,945.68, the Economic Value Added value in that year was still positive. This shows that in 2017 to 2020 the company provided added value for the company and shareholders, but in 2016 the company was unable to provide added value.

PT SMR Utama Tbk has a positive Economic Value Added in 2017 of 60.98 billion which means that in that year the company provided added value for the company and shareholders as expected. However, in 2016, 2018, 2019, 2020 PT SMR Utama Tbk had a negative Economic Value Added which means that it does not provide added value for the company and does not meet the expectations of shareholders.

4.2 Classic Assumption Test

The normality test is used to measure the data that has been obtained and then tested to see whether the data is normally distributed or not so that the statistical selection can be done correctly. Decision-making guidelines are: if ROA value > 0.05 then the data is normally distributed and if ROA value is < 0.05 then the data is not normally distributed. The following is a table of normality test results using the One-Sample Kolmogorov-Smirnov and Shapiro-Wilk methods with the help of SPSS software vers.26.00.

Table 5. Table of normality test results

Tests of Normality							
	Method	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Result	ROA	.126	40	.000	.838	40	.000
	EVA	.663	40	.000	.122	40	.000

a. Lilliefors Significance Correction

Based on the table of normality test results above, it shows that the value of the ROA obtained is 0.00 and the Economic Value Added value is 0.00. Based on the reference for decision making, the value obtained by ROA and Economic Value Added is below the reference level, which is below 0.5 or 5%. From these data, Economic Value Added and ROA are not normally distributed, so the next step used to perform a different test is to use the Mann-Whitney U test method.

Different tests are used in research to find out whether there are differences by comparing one group to another. There are two types of different tests in a study, namely related or not related (independent). In this study, the different tests used were unrelated so that the independent sample t-test was used for.

Table 6. Table of mann-whitney u test statistics

Ranks				
	Metode	N	Mean Rank	Sum of Ranks
Hasil	ROA	40	86.50	14480.00
	EVA	40	125.50	5620.00
	Total	80		

Based on the statistical test table above, it can be seen that the mean value of the ROA ranking is smaller, namely 90.50 compared to the Economic Value Added of 140.50. So based on the test results, it can be said that H1 is accepted which means that the ROA value is lower than the Economic Value Added and H2 is accepted which means that the Economic Value Added value is higher than the ROA value in measuring the company's financial performance.

Table 7. Mann-whitney u . Test results

Test Statistics^a	
	Result
Mann-Whitney U	1500.000
Wilcoxon W	14840.000
Z	-3.787
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Metode	

Based on the table of test results above, it shows that the resulting value of Asymp.Sig.(2-tailed) is 0.00 which means that the different test results obtained are below the reference level of 0.05 or 5%. Thus, if the result is < from the reference level, it means that there is a significant difference. So H3 is accepted because there is a significant difference between ROA and Economic Value Added in measuring financial performance.

4.3 Discussion of Research Results

Based on the graph of the average ROA ratio and Economic Value Added, it shows that PT Aneka Tambang Persero has stable ROA values and is able to provide the highest added value for metal and mineral sub-sector companies. PT Merdeka Copper Gold Tbk has a stable value of ROA but the added value provided is low for metal and mineral sub-sector companies. PT Cita Mineral Investindo Tbk has the highest ROA and ROE values but the added value provided is stable for metal and mineral sub-sector companies.

In measuring financial performance in a company requires a financial measurement method. ROA and EVA are needed in measuring financial performance to see the rate of return that will be given to shareholders. However, the two methods have differences according to the test results which state that the two methods have significant differences. ROA measure financial performance only taking into account the profits generated not without looking at the cost of capital issued by the company. While the Economic Value Added method in measuring financial performance takes into account the risks and costs of capital used by the company. Therefore, the Economic Value-

Added method is better used in measuring financial performance because of the accuracy given in the calculation process.

5. Conclusion

Measuring financial performance using ROA consisting of gross profit margin, net profit margin, return on assets, return on equity shows a value that fluctuates every year. However, based on the different test, the ROA value obtained is lower than the EVA.

Measuring financial performance using Economic Value Added shows an increasing value every year. Based on the different test results, the Economic Value Added value is higher than ROA value.

Based on the two measurement methods, namely the ROA and EVA based on the test results, there are significant differences. From the two methods, Economic Value Added is said to be better than the ROA in measuring financial performance because the Economic Value Added method takes into account the risks and costs of capital used by the company.

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