

Strategy Of Financial Efficiency Of Coal Companies In Indonesia In The Era Of Disruption

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Abstract: This study aims to determine the level of financial efficiency of coal companies listed on the Indonesia Stock Exchange and the strategies that must be done to achieve a good level of financial efficiency. The sampling technique uses purposive sampling method and produces 11 (eleven) companies as research samples. Data analysis techniques used are Data Envelopment Analysis (DEA) to measure the level of financial efficiency of coal companies for 2015-2016, and SWOT analysis to determine the strategies that must be carried out by the company. Based on the results of data analysis, it was found that 10 (ten) coal companies were efficient in 2015, then 9 (nine) efficient companies in 2016. The strategy that must be applied by coal companies to obtain good financial efficiency based on SWOT analysis matrix must use aggressive strategies (quadrant 1). The strategy that must be done is to maintain good efficiency and calculate the exact costs associated with US\$ currency. In addition, the company must also increase EPS to increase investor confidence. Another strategy is to increase production volumes for coal exports to importing countries and increase exports so that revenue and total assets increase with the strengthening of US\$ and hedging to anticipate price fluctuations and the exchange rate of Rupiah to US\$ by making a payment agreement contract.

Index Terms: Efficiency, DEA, Coal Company, SWOT Analysis

1 INTRODUCTION

Indonesia is a country with abundant natural resources. These natural resources are divided into two types according to the nature of the renewal, namely those that can be updated and those that cannot be updated. One of the natural products produced by Indonesia is sourced from mining which is a natural resource that cannot be recognized. Types of mining products in Indonesia include coal, petroleum, namely coal. Coal trading uses standard prices based on US\$ exchange rates. The existence of a trade war between the United States and Tiongkok causes turmoil against trade in the world. The turmoil automatically impacts countries like Indonesia. The picture of the Indonesian economy based on economic statistical data published by Bank Indonesia shows that economic growth up to February 2018 was 5.27%, inflation rate was 3.20%, BI 7 Day RR Rate was 5.50% while the Rupiah exchange rate against US\$ was weakened. The weakening of the Rupiah exchange rate against US\$ can affect the trading of shares on the Indonesia Stock Exchange. Based on data released by IDX in mid 2018, in 20 companies with the highest net income, there were 4 (four) coal companies, namely Toba Bara Sejahtera, Tbk; Bayan Resources, Tbk; Adaro Energy, Tbk and Bukit Asam, Tbk show that coal companies are one of the profitable sectors.

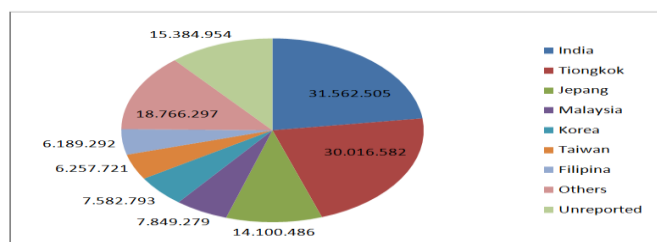


Chart 1. The Purpose of Indonesian Coal Exports in 2017

Coal is an attractive sector to be studied in Indonesia, because it is a source of energy that can be mass-produced and cheaply priced. Indonesia is the largest producer and exporter of coal in the world with the largest export demand coming from Tiongkok and India. Various disturbances that occur in the coal mining industry both from outside factors

with various factors from abroad as well as internal factors with various regulations related to mineral and coal makes the coal mining industry in Indonesia experience ups and downs but still a primadona. Based on data from the ESDM Ministry's Directorate General of Minerals and Energy in 2017 the amount of production was relatively stable, while the number of exports tended to decline.

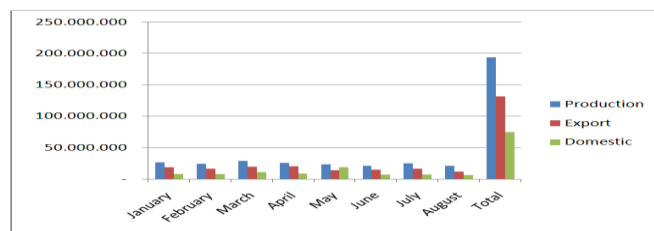


Chart 2. Realization of Coal Production in 2017

Based on various conditions based on the data that has been described, coal companies must optimize production, where to optimize production, efficiency becomes important because companies are required to produce output with a certain number of inputs. If the level of efficiency is low, the company will be faced with the problem of financial distress, so that an appropriate strategy is needed to maintain the viability of coal companies. The success of businesses to survive and evolve in a more advanced direction by knowing their strengths, weaknesses, opportunities and threats that can be taken by the company, or better known as SWOT (Strength, Weakness, Opportunity, Threat) so that strategies can be taken that influence success and growth of a company [1].

RESEARCH PURPOSES

1. To find out and analyze the level of financial efficiency of coal companies in Indonesia
2. To analyze the right strategy so that coal companies in Indonesia achieve a good level of financial efficiency

2 LITERATURE REVIEW

BASIC CONCEPT OF EFFICIENCY

Efficiency is one of the performance parameters that theoretically underlies the entire performance of an organization [2]. The ability to produce maximum output with existing input is an expected measure of performance. When the efficiency measurement is carried out, an entity is faced with the condition of obtaining an optimal level of output with the existing input level, or finding a minimum input level with a certain level of output achievement. By identifying the allocation of inputs and outputs, it can be further analyzed to see the causes of inefficiency. The dominance of large companies in most manufacturing and service industries is a consequence of economies of scale. Economies of scale exist where proportional increases in the number of inputs used in the production process produce lower unit costs. Economies of scale emerge from three main sources, input-output relations, unavailability and specialization [2]. The company's performance is very important because it provides shareholders with a financial outlook. One approach to checking performance is to look at the level of efficiency of the company in utilizing their input to produce output [3].

DATA ENVELOPMENT ANALYSIS (DEA)

The DEA concept was introduced by Charnes, Cooper and Rhodes in his journal entitled measuring the efficiency of decision making units [4]. Data Envelopment Analysis (DEA) method is made as a tool for evaluating the performance of an activity in a unit of entity / organization / decision making unit (DMU = Decision Making Unit). This DMU can be in the form of a manufacturing work unit, department or branch in an organization, hospital, bank, government office, prison, port, or even a company in various types of industries [5]. Basically the working principle of the DEA model is benchmarking input and output data from a DMU with input data and other similar DMU outputs. This comparison is done to obtain a relative efficiency value between DMU-DMU which is the object of analysis. There are two basic classifications of DEA approach models based on their orientation, namely DEA with input orientation (input oriented) and DEA with output orientation (output oriented). The choice of orientation is based on the majority of variables that are mostly in management control, or in other words depending on the limited control by management / users of the DEA model, both on the input or output owned by the entity / unit that is the object of analysis [6]. In addition to classifying based on its orientation model, in the DEA approach there are also two models of approaches based on the relationship between input variables and their output, namely the CRS (Constant Returns To Scale) [4] model and the Variable Returns to Scale (VRS) model developed by Banker, Charnes and Cooper from its predecessor model [7]. The model with CRS conditions indicates that the addition to the production factor (input), will not have an impact on additional production (output). Models with VRS conditions will show that the addition of a number of factors of production (input) will provide an increase or decrease in production capacity (output). The CRS assumption is only appropriate if all DMUs operate at an optimal scale. In real conditions, there are many factors that cause all DMUs to

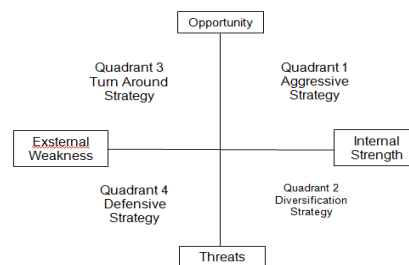
be unable to operate on an optimal scale, namely imperfect competition, financial constraints, and so on. If the CRS assumption is still imposed on conditions where the DMU does not operate on an optimal scale, then the output will result in Scale Efficiencies.

DATA ENVELOPMENT ANALYSIS (DEA) MODEL

The CCR model was first proposed by Charnes, Cooper and Rhodes, this model is input oriented based on the constant return to scale assumption, so it is often called the CRS model. In this model, each DMU will be compared with all DMUs in the sample assuming that the internal and external conditions of each DMU are the same. The concept of the approach in this model states that the addition of one input must add one output. In other words, if the input is added x times, then the output will increase x times too. According to Charnes, Cooper and Rhodes, this model can show overall technical efficiency or the value of profit efficiency for each company or DMU. This approach is relatively more appropriate to be used to analyze efficiency performance in manufacturing companies [4]. The BCC model, this model was first introduced by Banker, Charnes and Cooper. This model is a development of the CCR model, with the assumption that the variable return to scale (VRS), which means that each additional input x times will not result in an increase in output of x times too, but can be larger or smaller than x times. This shows that this approach is relatively more appropriate if it is used to analyze performance efficiency in service companies [7]. Performance measurement can help companies to evaluate the allocation of resources they have with the aim of being able to determine and manage and allocate these resources to activities that can add value [8]. Hemmasi, Talaeipour, Khademi, Farzipoor, Pourmousa in their research resulted in the evaluation of the performance of several companies for several years can also be done through the calculation and analysis of DEA [9].

SWOT ANALYSIS

SWOT analysis is to identify various factors systematically (Strengths or strengths, Weaknesses or weaknesses, Opportunities or opportunities and Threats or threats) to formulate a company strategy. The combination of internal factors and external factors is a factor considered in the SWOT analysis. In the SWOT analysis is compared between internal factors (Strengths with Weaknesses) and also compares external factors (Opportunities and threats) so that a strategy is appropriate for the company's progress [10].



Picture 1. SWOT Analysis

SWOT analysis includes an analysis based on the situation in an industry which includes its strengths, weaknesses, opportunities and threats. The strengths and weaknesses of an industry are based on their internal conditions. While opportunities and threats are based on the company's external situation [11].

3 METHOD

RESEARCH OBJECT

The object of research in this study is coal mining companies in Indonesia listed on the Indonesia Stock Exchange during the 2015-2016 period as many as 24 companies.

SAMPLE MAKING METHOD

The sampling method used is purposive sampling method that is sampling using criteria [12]. The criteria used :

1. Coal mining companies that have been listed on the Indonesia Stock Exchange in the period 2015-2016.
2. Coal mining companies whose financial statements are complete and can be observed on the Indonesia Stock Exchange in the period 2015-2016.
3. Do not have a main business activity as a mining contractor.

Based on these criteria, 11 companies were obtained as research samples.

The company is :

1. PT. Tambang Batubara Bukit Asam, Tbk (PTBA)
2. PT. Resource Alam Indonesia, Tbk (KKG)
3. PT. Indo Tambangraya Megah, Tbk (ITMG)
4. PT. Harum Energy, Tbk (HRUM)
5. PT. Garda Tujuh Buana, Tbk (GTBO)
6. PT. Golden Energy Mines, Tbk (GEMS)
7. PT. Bayan Resources, Tbk (BYAN)
8. PT. Bumi Resources, Tbk (BUMI)
9. PT. Bara Jaya Internasional, Tbk (ATPK)
10. PT. Atlas Resources, Tbk (ARII)
11. PT. Adaro Energy, Tbk (ADRO)

4 ANALYSIS METHOD

EFFICIENCY ANALYSIS

This study uses DEA to measure the level of efficiency of a sample company. If we want to use DEA, then we must determine the input and output variables that will be used to measure the level of efficiency. The variables chosen by the authors are expected to measure the efficiency of coal mining companies. This research adopts the production function approach, so that the three main production factors will be used as input variables. We can use operational costs, total assets and employee costs as a proxy of these input variables, and use operating income, production volume and earnings per share as output variables [14].

SWOT ANALYSIS

Determination of the strategy in the SWOT analysis is based on the calculation of the external strategy factor matrix (EFAS) and the calculation of the internal strategy factor matrix (IFAS). The first stage of calculation of the EFAS and IFAS matrix first stage determines the weight of each factor with a range of 0 (not important) to 1 (very

important) with the total number of weights equal to 1. The second stage gives the scale of each factor with a value of 1 (very low), 2 (low), 3 (good), 4 (very good). The third stage multiplies multiplying the weight of the factor by the factor scale. The fourth stage sums up all multiplications in the third stage. The fifth stage of the amount that has been calculated in the fourth stage between strengths or strengths with weaknesses or weaknesses, then also the amount calculated in the fourth stage between opportunities or opportunities with threats or threats. The last stage connects the results of the calculation of the difference in the SWOT analysis image so that a strategy that must be done by the company will be obtained [10].

5 RESULTS AND DISCUSSION

EFFICIENCY ANALYSIS

The results of efficiency calculations based on input and output data using the Data Envelopment Analysis (DEA) method which is assisted by Win4Deap2 software produces efficiency values from each coal company listed on the Indonesia Stock Exchange which includes the research sample can be seen in the table of the efficiency value.

Table 1. Efficiency Value Result

No	Company Name	Efficiency Value (%)		
		2015	2016	Average
1	PT. Tambang Batubara Bukit Asam, Tbk (PTBA)	100	85.6	92.8
2	PT. Resource Alam Indonesia, Tbk (KKG)	100	100	100
3	PT. Indo Tambangraya Megah, Tbk (ITMG)	100	100	100
4	PT. Harum Energy, Tbk (HRUM)	100	100	100
5	PT. Garda Tujuh Buana, Tbk (GTBO)	100	100	100
6	PT. Golden Energy Mines, Tbk (GEMS)	100	100	100
7	PT. Bayan Resources, Tbk (BYAN)	100	100	100
8	PT. Bumi Resources, Tbk (BUMI)	100	100	100
9	PT. Bara Jaya Internasional, Tbk (ATPK)	100	100	100
10	PT. Atlas Resources, Tbk (ARII)	61.4	48.2	54.8
11	PT. Adaro Energy, Tbk (ADRO)	100	100	100

In 2015 based on the results of the calculation of Data Envelopment Analysis (DEA) on 11 (eleven) companies that became the sample of the study with operational costs, total assets and employee costs as a proxy of input variables as well as operating income, production volume and earnings per share as output variables obtained results 10 (ten) companies have a financial efficiency level of 100%, meaning that the 10 (ten) companies are financially well-managed and efficient. There is only 1 (one) company, namely PT. Atlas Resources, Tbk which is inefficient because the value of the calculation of Data Envelopment Analysis (DEA) is 61.4%. In 2016 based on the results of the calculation of Data Envelopment Analysis (DEA) in 11 (eleven) companies that became the sample of the study

there were 9 (nine) efficient companies with the value of the calculation of Data Envelopment Analysis (DEA) of 100%. Whereas 2 (two) companies namely PT. Bukit Asam Coal Mine, Tbk the level of efficiency is 85.6% and PT. Atlas Resources, Tbk the efficiency level is 48.2% so that 2 (two) companies are not efficient yet. The results of this study are supported by research conducted by Wang, Tran and Nguyen on 23 mining companies in India showing that the level of efficiency will affect the performance of companies in the sector [14].

SWOT ANALYSIS

Based on the results of the identification of data obtained from various sources, internal factors were obtained, namely efficiency scores from the calculation of Data Envelopment Analysis (DEA), employee costs, production costs, earnings per share and return on assets were strengths. This is based on the results of efficiency calculations using Data Envelopment Analysis (DEA) obtained 80% of the total companies included in the efficient category, 50% of the companies observed succeeded in reducing employee costs in 2016 compared to 2015, 60% of the company's production costs below the total average the entire company for 2015-2016, the company's 100% earnings per share from 2015 to 2016 increased and return on assets 60% increased in 2016 compared to 2015. While the total assets, operating income and production volume were internal factors including weakness category. Based on data from the analysis, the total assets of 80% of companies decreased in 2016 compared to 2015, the operating income of 60% of companies also decreased in 2016, besides that the production volume of 60% of the companies observed also decreased compared to 2015. The results of data analysis on external factors for opportunity are the exchange rate of Rp. US \$, trade war between the USA and Tiongkok, the economic growth of coal importers, the development of science and technology. While external factors for threats are coal prices, share ownership structure and possible economic crisis. These factors are classified as opportunities and threats because based on the results of the analysis obtained the following data, the weakening of the exchange rate of Rupiah to US\$ is a factor because the price of coal is based on US\$, the trade war between the USA and Tiongkok is due to the progress of Tiongkok, the country's economic growth importers, namely the 5 biggest destination countries are Tiongkok, India, Japan, Malaysia and Korea, their economic growth is good, the last as an opportunity is the development of science and technology in all countries. Which includes threats, namely coal prices, although the exchange rate of Rupiah. US\$ is weakened so that coal prices will rise but the prices are very volatile so that when the company does not hedge possible losses due to fluctuations in prices, the ownership structure of 50% of coal companies is controlled by foreign so that most decision-making is still controlled by foreigners, the possibility of an economic crisis is a threat that might occur if there is a war either trade war or inter-state war due to the trade war. The SWOT matrix results results in a total score for the strength factor of 3.53 while the weakness factor is 2.8 so that the difference is 0.73. For SWOT matrix calculation the total factor of the total score is 3 while the total threat factor score is 2.33 so the difference is 0.67. If it

is described, it will enter in quadrant 1, that is, the coal company industry must carry out an aggressive strategy.



Picture 2. SWOT Analysis of Coal Company Industry

The aggressive strategy that must be carried out by the coal industry in the strength-opportunity strategy includes maintaining good efficiency and calculating the exact costs associated with the US\$ currency. The strength-threat strategy that must be done is to increase EPS to increase investor confidence. The strategy that must be done on the weaknesses of opportunities is to increase the volume of production for coal exports to the importing country and increase exports so that income and total assets increase with the strengthening of US\$. While the weakness-threat strategy that must be carried out by the company is to hedge to anticipate price fluctuations and the exchange rate of Rupiah to US\$ by making a payment agreement contract.

5 CONCLUSION

Based on the results of data analysis, the following conclusions can be drawn :

1. The level of efficiency of coal companies including the sample of 11 (eleven) companies on average for 2015-2016 is good, based on calculations using Data Envelopment Analysis (DEA) in 2015 there were 10 (ten) efficient companies, whereas in 2016 there were 9 (nine) efficient companies.
2. The results of the SWOT analysis to determine the strategy that must be carried out by the company results in that the company must implement an aggressive strategy by maintaining good efficiency and calculating the exact costs associated with US\$ currency, in addition the company must increase EPS to increase investor confidence . Another strategy is to increase production volumes for coal exports to importing countries and increase exports so that revenue and total assets increase with the strengthening of US\$ and hedging to anticipate price fluctuations and the exchange rate of Rupiah to US\$ by making a payment agreement contract.

RECOGNITION

The author would like to thank Isti Fadah from the University of Jember Faculty of Economics and Business.

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