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Business diversification of coal mining companies as a strategy facing coal price volatility: The effect on company performance and share prices

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ABSTRACT

This study aims to determine the effect of business diversification on stock prices by mediating company performance, represented by the variable ROE and EPS in a fluctuating coal price situation. The data used are 16 companies engaged in coal mining in Indonesia and listed on the Indonesia Stock Exchange (IDX) from 2012 to 2019. Using two analysis methods: path analysis to examine direct and indirect relationships between variables and different tests to see differences in the performance of companies that diversify and do not diversify. The results showed that coal commodity prices had a significant positive effect on stock prices and indirectly, through ROE and EPS, had a significant positive impact on stock prices. Business diversification directly has a significant negative impact on stock prices and indirectly through EPS positively affects stock prices. Business diversification provides a substantial difference to EPS and does not provide a significant difference to ROE.

Introduction

The use of energy derived from coal is mostly carried out by various sectors, both industrial and non-industrial, because coal is one of the largest sources of energy that can be extracted from the earth. Coal is a non-renewable energy. This coal mining product is in great demand in the world because its energy can be used directly as a fuel that will produce heat.

The above makes companies interested in taking economic benefits from the coal mining business, including in Indonesia. Based on the 2020 BP Statistical Review, Indonesia is one of the five major coal producing countries in the world. Indonesia's coal production in 2019 was 9% of the world's total coal production and is the second largest producer in the world after China, which managed to produce 47.6% of the world's total coal production. The distribution of world coal production outside China tends to be even.

The highest coal consumption in the last ten years was dominated by three countries, namely China at 51.7%, India at 11.8% and the United States at 7.2% of the total world coal consumption. Based on ESDM data, in the last ten years the price of coal has fluctuated very much and with a very wide price range. The highest price of coal was USD 127.05/ton in February 2011 and the lowest price was USD 49.42/ton in September 2020. Coal price fluctuations will affect companies running in coal mining business. From this data, the world coal price is strongly influenced by the plans of the two countries in energy procurement in their countries. This will directly affect the income of coal mining companies.

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Many ways are done to maintain the performance of the company. One of the efforts made by mining companies is to add business units in other industrial sectors besides coal mining within the company or what is often called diversification. It is expected that this diversification can reduce the impact of the fluctuation in coal prices so that the company's financial performance can be maintained. In theory, it is stated that diversification can be influenced by the company's liquidity. Liquidity helps discipline managers by increasing market monitoring (Holmstrom and Tirole 1993) through increasing share price informativeness, or by facilitating block holder control and threats of non-controlling block holders to exit (Edmans, Fang, and Zur 2013). Considering the two reasons for diversification mentioned above, it is reasonable to suspect that an increase in stock liquidity is negatively related to diversification.

There is a gap in the existing literature on the economic benefits of diversifying a firm's products (Aivazian, Rahaman, and Zhou 2019). On the one hand, the "dark side" view of diversification argues that conglomeration leads to inefficient allocation of resources in diversified firms, leading to a significant discount in the valuation of such firms compared to similar stand-alone firms. On the other hand, the "bright side" view postulates that diversification leads to lower cash flow volatility and a more efficient allocation of resources through internal capital markets and that, as a result, such firms should trade at a premium price than non-firms that do. diversified.

In business diversification, the thing that needs attention is the need to ensure that business diversification is a good step that needs to be taken by the company to help the performance of the coal mining company. The company's performance needs to be seen from two sides, namely internal performance and from the investor's point of view.

From the investor side, having a company listed on the IDX makes it easier for investors to access information, namely information about the company's condition, both financial performance and company value during the period. In general, the value of companies on the IDX is indicated by the Indonesia Composite Index (ICI). This indicator shows how much the joint stock price has developed in Indonesia.

In coal price, coal mining companies are companies with world-class commodities so that their characteristics are strongly influenced by movements in global commodity prices that have been predetermined, known as Harga Batubara Acuan (HBA). This HBA will be the benchmark in determining the price of coal per each product in each company which is called the Harga Patokan Batubara (HPB). In a coal mining company, considering the positive trend in 2018, HBA which is also in line with ICI's positive trend in the same year, the coal price factor becomes important to be studied further. The effect of HBA has been studied by Sundari (2015) where it was found that HBA has a positive and significant effect on ROA and ROE. Furthermore, Ja'far (2018) research found that ROA moderated by HBA can weaken the positive effect of ROA on stock prices, and CR moderated by HBA can strengthen the negative effect of CR on stock prices (market value).

Some of the research mentioned above, many scientists have done research on some of the variable relationships that will be sought, but there are still many contradictions that occur from existing research. In researching the relationship between stock prices and company performance, Sundari (2015) research states that there is a positive relationship between HBA and ROE, but the results of research by Tauke & Tulung (2017) and Marsha & Murtaqi (2017) state that there is no significant relationship between HBA and company performance. .

Regarding the relationship between business diversification and company performance, scientists in their research are divided into three opinions; (i) Berger et al., (2010) and Chang et al., (2017) state that diversification has a negative effect on firm performance, (ii) Kang & Lee, (2014) and Yang et al., (2017) state that diversification has a positive effect on firm performance, (iii) Liu et al., (2012) state that it will not affect the company's performance in this case represented by ROE and EPS. The difference in the results of these studies may occur due to differences in the taking of variables in each study.

For the relationship between company performance and stock prices, the average researcher agrees that in signaling theory what is conveyed in a company's financial statements reflects the company's condition which is the basis for investors to decide on the purchase of shares (Talamati and Pangemanan 2015; Tandelilin 2010). However, this determination is very individual in nature so that it is possible for investors not to pay attention to this or in other words not to make the company's performance the main factor in buying shares that will affect stock prices (Puspitaningtyas 2015, 2017). Both stocks and commodities are bought and sold on physical trading floors and through electronic trading networks without ever being exchanged for physical goods. On the other hand, the basic difference between stock market and commodity market is the products they deal with, and how they work. The stock market relates to the ownership of a company's shares. Commodity prices are increasingly playing an important role in explaining equity markets, Buyuksahin et al., (2010) reveal that commodity financialization has a complex relationship between different commodities or the interaction between commodities and financial assets. Furthermore, Buyuksahin et al., (2010) found that commodity and stock markets can move like "market one" in times of fluctuation. However, in research there are different results in each country studied.

In this study, it is aimed to examine the effect of business diversification on stock prices by mediating company performance, represented by the variable ROE and EPS in a fluctuating coal price situation. This study employed path analysis method to examine direct and indirect relationships between variables and different tests to see differences in the performance of companies that diversify and vice-a-versa. In our analysis, we selected 16 companies engaged in coal mining in Indonesia and listed on the Indonesia Stock Exchange (IDX) with a time span from 2012 to 2019.

Organization of the text as follows: Following the introduction part, theoretical and empirical review highlighted the key discussions and the connection of research topic with related theories. Data and sampling, research model have been demonstrated in Research and Methodology part. Finally, this paper concludes with analysis, findings and conclusions.

Literature Review

Theoretical and Conceptual Background

Modern Portfolio Theory (MPT)

At first portfolio theory was initiated by Harry M. Markowits in 1927 and he is an economist, according to him, it is very important for an investor to invest his wealth in a business, because portfolio calculations generally measure the ability of a business to return by considering the level of risk that must be considered. In practice, investors in securities often diversify their investments by combining several securities, or it can be said that they are trying to form a portfolio (HM 1959).

Markowitz's theory is now better known as Modern Portfolio Theory, (MPT). Modern Portfolio Theory, an improvement on traditional investment models, is an important advance in financial mathematical modeling. This theory encourages asset diversification to hedge against market risks as well as risks that are unique to a particular company. The theory (MPT) is a sophisticated investment decision approach that helps investors to classify, estimate, and control the type and amount of risk and expected return; also called Portfolio Management Theory. Portfolio theory departs from traditional security analysis in shifting the emphasis from analyzing the characteristics of individual investments to determining statistical relationships between the individual securities that make up the entire portfolio (JE and JG 1997).

Signaling Theory

Signaling theory provides an explanation that companies have the urge to publicly submit their financial reports to external parties (Wolk et al 2001). Reliable financial reports will give outsiders the confidence and ability to see the company's performance in the previous period so as to reduce distrust or uncertainty about the company's prospects in the future. A signal is considered good if it can be captured by the market and perceived as good and not easily replicated by companies with poor quality. The company's signaling effect is positive when the company makes share repurchases and dividends (Koller, Dobbs, and Huyett 2011). Signaling effect by dividend distribution is stronger than share repurchase signal, because dividend distribution can be perceived as future and recurring payment commitments by the company to investors. Accurate information is very important because it affects the decision-making processes used by individuals, businesses, and governments (Connelly et al. 2011).

Picking Order Theory

Initially this theory was introduced by Donaldson in 1961, then the name pecking order theory was given by Myers in 1984. In this theory it is stated that companies will tend to internal funding (paid-in capital and retained earnings) as a source of funding (Myers and Majluf 1984). External funding may be required when internal funding sources are not sufficient for the company's needs. The order of external funding is usually:

i. Issuing debt securities
ii. Convertible securities
iii. Equity

Pecking order theory explains that a good company is a company that has a low loan ratio because it is considered that internal funds are able to meet the funding needs of running their business so that outside funding is not needed. And vice versa, companies that are less profitable need funds from outside parties and tend to have high debt ratios and result in companies having high capital costs that must be borne and will potentially reduce profit. The next impact is the decline in the credibility of the debtor and the emergence of the company's financial risk if it cannot pay off. Jong et al., (2011)conducted his research on 6000 US companies in the period 1985 to 2005 and found evidence that supports the pecking order theory.

Stock Price

The definition of stock price is the amount of cash flow that can be received where the cash is valued at this time (net present value) (Sartono 2010). Stock prices fluctuate and are influenced by many factors, both factors related to the performance of the company concerned, as well as macro factors such as social, economic and political conditions of a country. The stock price is the price determined by capital market participants and the size is determined by the demand and supply of shares in the capital market (Jogiyanto 2014). Stock price is the expected value of cash flow, rate of return and also earnings that will be received by investors, where these factors are influenced by macroeconomic conditions and global economic conditions (Tandelilin 2010).

Coal Commodity Price

In coal mining companies, the determination of the price of coal has been regulated in the Regulation of the Director General of Mineral and Coal of the Republic of Indonesia Number 515.K / 32 / DJB / 2011 concerning the formula for determining the benchmark price of coal. Harga Batubara Acuan (HBA) is strongly influenced by macroeconomic conditions, as it is an international

trade commodity. The HBA is obtained from the average of 4 commonly used coal price indexes, namely the Indonesia Coal Index, Platts Index, New Castle Export Index, and New Castle Global Coal Index. Furthermore, from the HBA, the Harga Patokan Barubara (HPB) is calculated which is influenced by quality, namely calorific value, moisture content, sulfur content, and ash content according to the coal trademark called HPB Maker. Furthermore, this HPB maker will be used as a calculation in determining the price of coal per each product from a coal mining company in Indonesia.

Business Diversification

Diversification is literally translated as activities or actions to make something more diverse or not depending on only one type of activity. Diversification has long been considered an important tool for companies to increase profit margins and market share (Ayal and Zif 2015).

Satoto & Heru (2009) stated that diversification is one of the strategies that companies can do to expand their business, either with new business units or new subsidiaries, either in one line of business or in a different business from the company's main business. The choice of diversification is part of the company's strategy that is quite interesting to do in the face of very tight business competition and in the face of very fast growth and market changes.

Company Financial Performance

The performance of a profit-oriented company can be measured by looking at the company's financial performance. The good or bad performance of a company can be seen from the condition of the company's financial performance in question. Measurement of financial performance can use several variables or financial ratios contained in company reports.

Research Wang et al., (2013) stated that the ratios that are often used to measure stock prices are Earning Per Share (EPS) and Return On Equity (ROE). Likewise, research by Pasaribu & Fernando (2008) states that the most frequently used financial ratio to predict stock prices is Earning Per Share (EPS).

One of the financial ratio analyzes that can be used to measure the performance of a company is the calculation of Return On Equity (ROE), where in general ROE is a picture of a company being able to manage capital and profits derived from existing capital, both from the owners of their own capital or investment from shareholders. According to Sugiono (2009) return on equity is the rate of return of all capital owned by the company. The higher the value of the ROE ratio, the better the financial performance and the better the value of a company's success. Ratio analysis can provide an overview of the success of a company in managing its business. An indicator of the success of a company based on Return On Equity (ROE) if it has an average value of 40%, then the company is said to be good (Kasmir. 2018).

Riana & Dewi (2015) research shows that ROE will have a positive effect on EPS, Earning Per Share (EPS) is able to become a full mediator (Full Mediation) the influence of ROE on stock prices. This means that EPS has a very large role in mediating the effect of ROE on stock prices which directly has a negative effect, but with the presence of EPS as a mediator, the effect becomes positive.

Ayal & Zif (2015) examines the role played by commodity prices in influencing stock market indexes. They conclude that the price of palm oil has a significant positive effect on the stock market index in Malaysia. (Patel 2012) investigates the effect of macroeconomic determinants on Indian Stock Market performance for variables such as money supply, interest rates, inflation, gold prices, silver prices, oil prices, industrial production index, etc. The study determined that there is a long-term relationship between macroeconomic variables and stock market indexes. (Alqattan and Alhayky 2016) used the ARDL model to examine the long-term relationship between oil prices and stock returns in the six GCC countries. Monthly data are used for the period 2006 to 2015. The results show a strong positive relationship between oil prices and stock prices only in the short term.

The stock price must reflect the company's financial performance. The higher the stock price reflects the company's financial performance, the better. Or it can be said, the higher the financial performance of a company, the higher the rate of return on shares in the stock market (Talamati and Pangemanan 2015).

In theory, it is stated that the company's performance can be reflected in the company's stock price. If the company's performance shows a good projection, the company's shares will be in demand by investors, so that it can encourage share prices to rise. This shows that there is a positive relationship between the company's performance and the company's stock price. Good financial performance will get appreciation from the market in the form of an increase in stock prices. Conversely, poor financial performance will be followed by a decline in stock prices. (Puspitaningtyas 2015) suggests that the value of shares reflects the value of the company. Therefore, the company's management will strive to improve its financial performance to encourage share price increases.

Profitability shows the company's ability to benefit from the amount of funds invested in overall assets (Jami and Bahar 2016; Puspitaningtyas 2017). This study measures profitability by using the return on equity indicator. This measurement shows the company's ability to manage its own resources to get a return on equity. Return on equity (ROE) is a measure of the income available to shareholders from the funds they invest in the company (Alfian, Aryani, and Zulkifli 2016). A higher return on equity (ROE) reflects the company is in a favorable condition. Favorable company conditions will encourage share prices to increase following an increase in market demand for company shares.

This study measures market valuation using earnings per share indicator. Some financial literature states that earnings per share (EPS) is included as an indicator of profitability, but some mention that earnings per share is an indicator of market valuation. This study uses earnings per share as an indicator of market valuation. The higher the level of earnings per share (EPS) indicates the greater the ability of a company to generate the proportion of net income for each share. This reflects that the company has achieved success in its business activities and succeeded in the welfare of its shareholders (Fahmi 2012). Therefore, high earnings per share (EPS) will encourage higher stock prices.

Coal Price and Company Performance

Based on previous research from Tauke & Tulung (2017) whose research concluded that solvency with the debt to equity ratio (DER) variable and profitability with the return on asset (ROA) variable had a positive effect on firm value as measured by price book value (PBV). However, the liquidity variable with the current ratio (CR) does not affect the PBV. This means that the higher the solvency and profitability of the company, the higher the value of the company. Likewise, research conducted by Marsha & Murtaqi (2017) that profitability (ROA) and liquidity (CR) have a positive and significant effect on the value of the company.

In a coal mining company, considering the positive trend in 2018, HBA which is also in line with the positive trend of ICI in the same year, the coal price factor is important to be studied further. The effect of HBA has been tested by Sundari (2015), where it was found that HBA has a positive and significant effect on ROA and ROE. Furthermore, Ja'far (2018) found that the ROA moderated by HBA can weaken the positive effect of ROA on stock prices, and CR moderated by HBA can strengthen the negative effect of CR on stock prices (market value). The results of research from Sundari (2015) show that coal prices have a positive influence on the ROE of a company.

Based on the literature study above, the hypothesis in this study can be described as follows:

i. The price of coal has a direct effect on the stock price
ii. The price of coal through the company's financial performance has an indirect effect on stock prices
iii. Business diversification has a direct effect on stock prices
iv. Business diversification through the company's financial performance has an indirect effect on stock prices
v. There are differences in company performance between companies that diversify and do not diversify.

Research and Methodology

This study will analyze the direct and indirect effects between coal commodity prices and company diversification on the stock prices of coal companies in Indonesia.

Coal Commodity Price (X1)

Harga Acuan Batubara (HBA) is the price set by the government which becomes the benchmark for the sales price that will be used by companies in selling their coal based on the needs of the consumer industry. HBA is obtained from the calculation of the average of 4 coal price indexes commonly used, namely the Indonesia Coal Index, Platts Index, New Castle Export Index, and New Castle Global Coal Index.

Business Diversification (X2)

Business diversification is a company management decision to expand its business to increase profits, expand market share, and maintain the company. The entropy index was developed by Jacquemin & Berry (1979) to measure diversification. It has a clear advantage over the Herfindahl index and SIC codes as it can reflect the degree of correlation between different industries and the distribution of sales income of different industries (Cainelli and Iacobucci 2016).

$$DT = \sum_{i=1}^{n} p_i \ln\left(\frac{1}{p_i}\right)$$

DT is the overall level of diversification; n is the number of sectors operated by a company, represented by the three-digit SIC code; and Pi represents the proportion of business revenue from the main business in the total business revenue.

ROE or Return on Equity (Y_1).

Return On Equity (ROE) can be calculated from the comparison between net income and equity, the calculation can be written as follows:

$$\text{ROE} = \frac{\text{Net profit}}{\text{Total Equity}}$$

EPS or Earning per Share (Y_2).

Earnings Per Share is the amount of net profit of a company that is ready to be distributed to shareholders. The calculation of EPS can be written as follows:

$$\text{EPS} = \frac{\text{Net Profit}}{\text{Number of Shares}}$$

Stock Price (Z)

The share price is a sign of the participation or ownership of a person or a business entity in a company, or it can be said as a reflection of an investment decision, equity participation, or asset management. Data is taken during Q1 of the year after the annual financial statements are issued.

Population and Sample

Observations on the research on the effect of business diversification on the company's performance and the company's stock price will be carried out on coal mining companies in Indonesia that have been listed on the IDX.

The data used in this is secondary data from mining companies in Indonesia from 2012 to 2019 obtained from the ESDM web site regarding Reference coal prices, https://www.minerba.esdm.go.id/harga_acuan. And from the Annual Financial Statements and Annual Reports of each company which are publicly released on the IDX.

This research will use path analysis method. Path analysis method is used to analyze the direct and indirect effect of business diversification on the company's performance and the company's stock price. This study also uses a different test to analyze the fifth hypothesis. This research will use EViews and SPSS analysis tools,

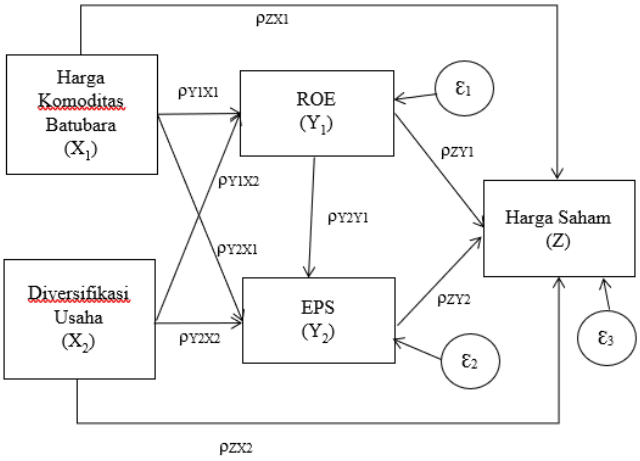

Figure 1: Path Analysis Diagram

The regression model of path analysis can be formulated as follows:

Model 1 : $Z = \rho_{ZX1}X1 + \rho_{ZX2}X2 + \rho_{ZY1}Y1 + \rho_{ZY2}Y2 + \varepsilon_3$

Model 2 : $Y1 = \rho_{Y1X1}X1. + \rho_{Y1X2}X2 + \varepsilon_1$

Model 3 : $Y_2 = \rho_{Y2X1}X_1 + \rho_{Y2X2}X_2 + \rho_{Y2Y1}Y_1 + \varepsilon_3$

Where:

Z : Share Price (Rupiah)
X1 : Coal Commodity Price (Dollar/Ton)
X2 : Business Diversification
Y1 : Return on Equity (ROE)
Y2 : Earning Per Share (EPS) (Rupiah/Share)
ρ : Variable coefficient
ε : Residual

Analysis and Findings

Based on the path analysis, the regression results are obtained as follows

Table 1: Results of Model 1 Regression Analysis

Dependent Variable: Stock Price

Variable	Coefficient	Probability	Description
Coal Commodity Price	0,069	0,018	Significant
Business Diversification	-0,138	0,096	Significant
ROE	-0,060	0,123	Not significant
EPS	0,475	0,000	Significant

Source: Processed data

$Z = 0{,}069\ X_1{}^* - 0{,}138\ X_2 - 0{,}060\ Y_1 + 0{,}475\ Y_2{}^*$

Table 2: Results of Model 2 Regression Analysis

Dependent Variable: ROE

Variable	Coefficient	Probability	Description
Coal Commodity Price	0,290	0,000	Significant
Business Diversification	-0,108	0,356	Not significant

Source: Processed data

$Y_1 = 0{,}290\ X_1{}^* - 0{,}108\ X_2$

Table 3: Results of Model 3 Regression Analysis

Dependent Variable: EPS

Variable	Coefficient	Probability	Description
Coal Commodity Price	0,026	0,562	Not significant
Business Diversification	0,263	0,007	Significant
ROE	0,379	0,000	Significant

Source: Processed data

$Y_2 = 0{,}026\ X_1 + 0{,}263\ X_2{}^* + 0{,}379\ Y_1{}^*$

From the path analysis obtained, it can be seen that there are some relationships between variables that are not significant, so steps are needed to remove them from the path analysis and not be included in the next analysis, this process is called trimming. The purpose of trimming is to see the influence of significant variables, so that the magnitude of the direct and indirect effects between variables can be calculated. In accordance with table 1, it can be seen that there are several relationships between variables that are not significant in the equation model above, namely:

i. Commodity price of coal on EPS
ii. Diversification of business on ROE
iii. ROE on stock prices

Table 4: Path Coefficient Results After Trimming

Relationship Between Variables	Regression Analysis Results		
	Regression Coefficient	Prob.	Description
$Z = f(Y_2)$	0,475	0,0000	Significant
$Z = f(X_1)$	0,069	0,0182	Significant
$Z = f(X_2)$	-0,138	0,0955	Significant
$Y_1 = f(X_1)$	0,290	0,0003	Significant
$Y_2 = f(Y_1)$	0,379	0,0000	Significant
$Y_2 = f(X_2)$	0,263	0,0066	Significant

Source: Processed data

The structure of the new path after trimming can be seen in Figure 1 below.

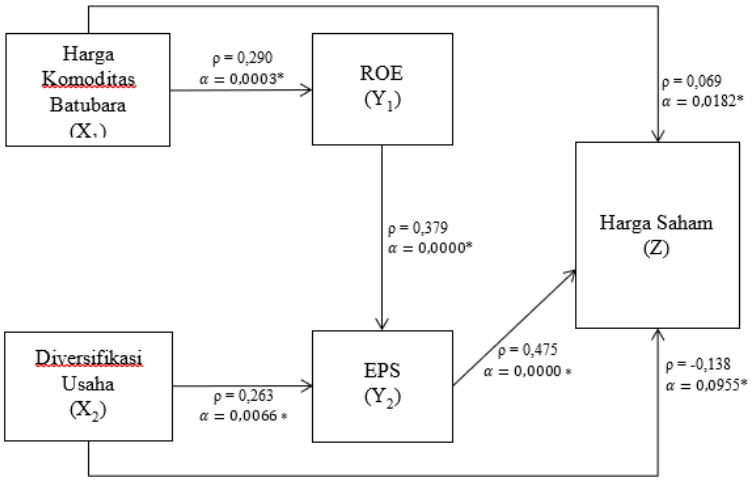

Figure 2: Path Analysis After Trimming

Based on the structure of the new path analysis, it can be seen that:

i. Coal commodity prices, business diversification and EPS have a direct effect on stock prices.
ii. Coal commodity prices through ROE and EPS have an indirect effect on stock prices.
iii. Business diversification through EPS has an indirect effect on stock prices.

Direct and Indirect Effects of Coal Commodity Price Variables, Business Diversification, ROE and EPS on Stock Prices

The purpose of the path analysis method is to see the direct and indirect effects of exogenous variables on endogenous variables. In this study aims to look at the direct and indirect effects of variables diversification to the stock price and financial performance of the company, in this case measured using ROE and EPS.

The direct effect of EPS (Y_2) on stock prices (Z) is equal to :

$\rho ZY_2 = 0,475$

The direct effect of commodity price of coal (X_1) on stock prices (Z) is equal to :

$\rho ZX_1 = 0,069$

The direct effect of diversification (X_2) on stock prices (Z) is equal to :

$\rho ZX_2 = -1,377$

The indirect effect ROE (Y_1) via EPS (Y_2) on stock prices (Z) is equal to:

$\rho Y_2Y_1 . \rho ZY_2 = 0,379 \times 0,475$

= 0,180

1. The indirect effect of coal commodity prices (X_1) through ROE (Y_1) and EPS (Y_2) on stock prices (Z) is equal to:

$\rho Y_1X_1 . \rho Y_2Y_1 . \rho ZY_2$ = 0,290 x 0,379 x 0,475

= 0,052

2. The indirect effect of business diversification (X_2) via EPS (Y_2) on stock prices (Z) is equal to:

$\rho Y_2X_2 . \rho ZY_2$ = 0,263 x 0,475

= 0,125

3. The direct effect of coal commodity prices (X_1) on ROE (Y_1) is equal to:

ρY_1X_1 = 0,290

4. The direct effect ROE (Y_1) to EPS (Y_2) amounted to:

ρY_2Y_1 = 0,379

5. The direct effect of diversification (X_2) to EPS (Y_2) amounted to:

ρY_2X_2 = 0,263

6. Indirect effect of commodity price of coal (X_1) via ROE (Y_1) to EPS (Y_2) amounted to:

$\rho Y_1X_1 . \rho Y_2Y_1$ = 0,290 x 0,379

= 0,110

7. Total influence ROE (Y_1) on stock prices (Z) is equal to:

$\rho Y_2Y_1 . \rho ZY_2$ = 0,379 x 0,475

= 0,180

8. The total effect of EPS (Y_2) on stock prices (Z) is equal to:

ρZY_2 = 0,475

9. The total effect of the commodity price of coal (X_1) stock price (Z) is equal to:

$\rho ZX_1 + (\rho Y_1X_1 . \rho Y_2Y_1 . \rho ZY_2)$ = 0,069 + (0,290 x 0,379 x 0,475)

= 0,121

10. The total effect of business diversification (X_2) on stock prices (Z) is equal to:

$\rho ZX_1 + (\rho Y_2X_2 . \rho ZY_2)$ = -1,377 + (0,263 x 0,475)

= -1,252

Discussion

The price of coal commodity (X_1) has a direct effect on the stock price (Z) of 0.069. This is in accordance with the first hypothesis which states that coal commodity prices have a direct effect on stock prices. The stock price of a company is volatile and is influenced by many factors. Factors that influence changes in stock prices include macro and micro factors. Macro factors come from outside the company such as interest rates, inflation, exchange rates and global economic conditions, while micro factors come from within the company, in the form of net income, share value and other financial ratios (Hamidah, Maryadi, and Ahmad 2018). Based on the results of the path analysis, it is found that the price of coal commodities directly has a significant positive effect on the share price of coal mining companies in Indonesia, meaning that an increase in coal prices will increase the share price of coal mining companies.

Coal commodity prices (X_1) through ROE (Y_1) and EPS (Y_2) have an indirect effect on stock prices (Z) of 0.052. This is in accordance with the second hypothesis which states that coal commodity prices through financial performance have an indirect effect directly on the stock price. The increase in commodity prices can increase revenue for mining companies, so that mining companies will get greater profits. The coal price variable has a significant positive effect on the share price of coal companies in Indonesia, this happens if the coal price increases it will increase revenue for coal companies, so that it can have implications for increasing investor profits which will ultimately increase the coal company's share price (Luthfiyah 2020).

Business diversification (X_2) has a direct effect on stock prices (Z) of -1.377. This is in accordance with the third hypothesis which states that business diversification has a direct effect on stock prices. Business diversification is an activity that makes a business

more diversified. Business diversification is one of the important strategies of a business in an effort to increase profits and market share (Ayal and Zif 2015). The results of the path analysis show that the business diversification index directly has a significant negative effect on the stock price of coal mining companies in Indonesia. This means that an increase in the diversification index will reduce stock prices. This is in accordance with the third hypothesis which states that business diversification has a direct effect on stock prices. Business diversification directly has a significant negative effect on stock prices, this happens because companies that diversify have a higher risk, besides that companies that diversify tend to have slow growth even though they have a stable income level (Lee and Jang 2007).

Business diversification (X_2) through EPS (Y_2) has an indirect effect on stock prices (Z) of 0.125. This is in accordance with the fourth hypothesis which states that business diversification through financial performance has an indirect effect on stock prices. Business diversification carried out by the company is always in line with the risks taken by the company. This is also seen by investors in determining investment. Business diversification that still has a high risk will make investors think twice about investing in the company. It can be seen in this study that business diversification has a direct negative effect on coal prices.

However, investors will also certainly see the company's performance in making investment decisions. Coal mining companies to survive in conditions of declining commodity prices, one of which is by diversifying their business, therefore this business diversification is expected to increase the company's performance. And the increase in the company's performance is what investors will see in determining investment, the increase in company performance will encourage investors to invest in the company and will encourage an increase in stock prices. In this study, it can be seen that with EPS as an indicator of a rising company performance, it will encourage investors to invest in the company and will eventually push up stock prices.

Differences in company performance between companies that diversify and do not diversify their business

This study determines the difference in the financial performance of coal mining companies in Indonesia between companies that diversify and companies that do not diversify in the period of declining coal prices. This division is based on the cycle of declining coal prices in the market. This division is divided into 2 periods, namely the price period of 2012 – 2015 and the price of 2016 – 2019, where from historical data it is obtained that in these two periods the price of coal has decreased. Furthermore, for the period 2012 – 2015 identification is given as period I and for the period 2016 – 2019 given identification as period II. The analysis was carried out in these two periods.

Table 5: Output Independent Samples Test Period 1

Variable	Levene's Test Sig.	t-Test Sig. (2-tailed)	Result
ROE	0.624	0.266	No Significant
EPS	0.000	0.041	Significant

Source: Processed data

Based on the table in "Equal Variance Assumed" the sig value is known. (2-tailed) of 0.266 where this value is greater than 0.05, so as a basis for decision making in the Independent Sample Test, it can be concluded that H0 is accepted and Ha is rejected. So it can be concluded that there is no significant difference in ROE between group 1 companies and companies in group 2.

Based on the table in "Equal Variances not Assumed", it is known that the sig. (2-tailed) of 0.041 where this value is less than 0.05. So, in decision making in the Independent Sample Test, it can be concluded that H0 is rejected and Ha is accepted. So, it can be concluded that there is a significant difference in EPS between group 1 companies and companies in group 2.

Table 6: Output Independent Samples Test Period 2

Variable	Levene's Test Sig.	t-Test Sig. (2-tailed)	Result
ROE	0.047	0.532	No Significant
EPS	0.000	0.002	Significant

Source: Processed data

Based on the table in "Equal Variance not Assumed", it is known that the value of sig. (2-tailed) of 0.532 where this value is greater than 0.05, so on the basis of decision making in the Independent Sample Test it can be concluded that H0 is accepted and Ha is rejected. Thus, it can be concluded that there is no significant difference in ROE between companies in group 1 and companies in group 2.

Based on the table in "Equal Variances not Assumed", it is known that the sig. (2-tailed) of 0.002 where this value is less than 0.05, so as the basis for decision making in the Independent Sample Test, it can be concluded that H0 is rejected and Ha is accepted. Thus it can be concluded that there is a significant difference in EPS between group 1 companies and companies in group 2.

From the Independent Samples Test conducted above with 2 periods, it can be seen in the period 1 year 2012 – 2015 and period 2 years 2016 – 2019 there are consistent results, where the business diversification carried out by coal mining companies in Indonesia does not provide a significant difference in ROE. However, the business diversification carried out by coal mining companies in Indonesia provides a significant difference in its EPS value.

The results of the different tests here are in line with the research of Li et al. (2019) which states that according to the results of the regression analysis the relationship between diversification and company performance represented by ROE varies between coal companies in China. On the one hand, when a company expands its scale, it acquires more resources, which can result in economies of scale and economies of scope. On the other hand, the company's management costs have also increased. This means that in diversification, ROE will vary greatly depending on the diversification carried out. Chen & Budidarma (2020) reveals that business diversification carried out by banking companies through non-interest income income has a significant positive effect on company performance represented by ROA and EPS. This shows that business diversification from basic income will affect EPS. Although in the framework of evaluating company performance, ROE and EPS have differences in their relationship to diversification. This is because ROE depends on debt and capital variables which can be said to be needed to diversify, or in other words, the value of ROE is very dependent on diversification strategies such as what the company is doing and how much capital is used to diversify (Soeroto and Wisudanto 2014).

Conclusion

Our study concludes that coal commodity prices had a significant positive effect on stock prices and indirectly through ROE and EPS had a significant positive effect on stock prices. Business diversification provides a significant difference to EPS and does not provide a significant difference to ROE. Our research highlights also that (i) commodity prices indirectly through ROE and EPS have a significant positive effect on stock prices, meaning that if there is an increase in coal commodity prices, it will increase ROE and EPS which in the end will indirectly increase stock prices, (ii) business diversification directly has a significant negative effect on stock prices, meaning that if there is an increase in the diversification index, it will directly reduce stock prices, (iii) business diversification indirectly through EPS has a significant positive effect on stock prices, meaning that if there is an increase in the business diversification index which shows that more diversification is carried out, it will increase EPS and indirectly affect the increase in stock prices, (iv) business diversification carried out by coal mining companies in Indonesia provides a significant difference in EPS from companies, but does not provide a significant difference to the ROE value of these companies. This means that the business diversification carried out by coal mining companies in Indonesia will provide a different value in profitability which in this study is reflected in the difference in the EPS value.

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