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## Article

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# The Effect of Ownership and Financial Performance on Firm Value of Oil and Gas Mining Companies in Indonesia

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## ABSTRACT

This study aims to analyze the effect of institutional ownership, operating leverage, liquidity on firm value with company performance as an intervening in oil and gas mining companies listed in Indonesia stock exchange (IDX) between 2014 and 2018. A total of 10 companies classified in on the Indonesia Stock Exchange in the oil and natural gas mining sub-sector were used as sample, making the number of assessments to be 50 observations within a span of 5 years of 2014-2018. Data analysis using partial least squares/PLS analysis with structural equation modeling/SEM analysis model. The results of the study revealed that institutional ownership, operating leverage and liquidity have a positive influence on firm value. The mediating test by using the Sobel test showed that the firm's performance is able to mediate the effect of institutional ownership, operating leverage, liquidity on the value of oil and gas companies in Indonesia.

**Keywords:** Energy Companies, Institutional Ownership, Operating Leverage, Liquidity, Firm Value, Firm Performance

**JEL Classifications:** L25, Q43

## 1. INTRODUCTION

Increased demand for crude oil combined with concerns about its availability caused oil prices to reach record highs in history in the 2000s (Hamilton, 2009). Although this upward trend was temporarily interrupted by the 2008-2009 global financial crisis (Tayebi and Yazdani, 2014), world oil demand increased significantly after 2009 (and hence prices rose accordingly), largely due to the increased level of crude oil consumption in developing countries which showed rapid growth of gross domestic product (GDP) in some economic giants like China and India (Li and Lin, 2011). Since the 1990s, Indonesia's crude oil production has experienced a continuing downward trend due to lack of exploration and investment in this sector (Pallone, 2009). In recent years, the country's oil and gas sector has actually hampered GDP growth. Oil production targets, set by the government at the beginning of each year, were not achieved for a number of years in a row because most oil production came from aging oil fields. At present, Indonesia has an oil refining capacity which is roughly the same

as a decade ago, indicating that there are limited developments in oil production, which causes the current need to import oil to meet domestic demand (Table 1). The lack of exploration and other investments in the oil sector has caused a decline in Indonesia's oil production due to weak management from the government, excessive bureaucracy, unclear regulatory framework and unclear legal terms regarding contracts (SKK Migas, 2019). This creates an investment climate that is not attractive to investors, especially if it involves expensive long-term investment.

Private energy companies in oil and gas mining in the world are one of the biggest contributors to world oil production, in addition to the state oil company. In various contexts, oil and gas company performance has a crucial effect on oil production and consumption. In addition, energy companies are one of the most profitable and most traded stock on the stock exchange. In this context, the assessment of financial fundamentals and company performance has an influence on the company's value (Hung et al., 2018; Thu and Khuong, 2018; Khamis et al., 2018).

Previous literature has investigated firm performance and financial performance of energy company finances by highlighting several variables that affect the firm's value (Akhtar et al., 2012; Pătări et al., 2014). According to, Greco (2012) the issue of ownership is one of the important issues in the governance and earning management of oil companies in Europe. Institutional ownership is a portion of share ownership by institutions such as other companies or the government. Other variables that are thought to affect the value of the company include operating leverage and liquidity (Saleem and Naseem, 2013; Jurkowski and Daly, 2015). Here, this study seeks to analyze the effect of institutional ownership, operating leverage, liquidity on firm value with company performance as an intervening in oil and gas mining companies in Indonesia.

## 2. LITERATURE REVIEW AND HYPOTHESIS

### 2.1. Institutional Ownership, Company Value, and Financial Performance

Financial performance analysis is conducted to see the extent to which a company has carried out using the rules of financial implementation properly and correctly. Financial performance is a periodic determination of the operational effectiveness of an organization and its employees based on predetermined financial targets, standards, and criteria. The company's financial performance can be interpreted as a prospect or future, growth and potential for good development for the company. Information on financial performance is needed to assess potential changes in economic resources that might be controlled in the future and to predict the production capacity of existing resources (Barlian, 2003).

Thanatawee (2014) examines the impact of institutional ownership on firm value in Thailand. The relationship between institutional share ownership and firm value in a sample of 1,451 observations from 323 non-financial companies listed on the Thailand stock exchange (SET) for the period 2007-2011 shows that equity ownership by domestic institutional investors has a positive impact on firm value while higher institutional ownership of foreign entities is associated with lower company value. The findings indicate that domestic institutional investors provide an effective monitoring role to improve corporate governance and corporate value, while institutional foreign investors are not active in monitoring managers and can even take over corporate resources at the expense of minority shareholders. Other studies also show the relationship between institutional ownership and company value (Wimelda and Siregar, 2017; Kansil and Singh, 2018; Nashier and Gupta, 2016).

Moreover, regarding the effect of institutional ownership on financial performance, Candradewi and Sedana (2016) analyzing the effects of managerial ownership, institutional ownership and independent board of commissioners on return on assets (ROA) shows that managerial ownership and institutional ownership have a significant effect on ROA. The greater the proportion of managerial ownership, the smaller the chance of conflict between

managers and shareholders so as to increase ROA. Previous studies also highlighted the relationship between institutional ownership and financial performance (Hwihanus and Ramadhani, 2019; Sofiana et al., 2019; Elyasiani and Jia, 2010; Cornett et al., 2007; Chaganti and Damanpour, 1991).

H<sub>1</sub>: There is a positive and significant effect of of institutional ownership on the value of oil and gas mining companies.

H<sub>2</sub>: Institutional ownership has a positive effect on financial performance of oil and gas mining companies.

### 2.2. Operating Leverage, Company Value and Financial Performance

Laghari (2017) examines the impact of operating leverage and financial leverage on firm value based on company data listed on the Karachi stock exchange (KSE), Pakistan using panel data from 2005 to 2009 using regression techniques. Regression results reveal that there is a significant impact of the degree of operating leverage (DOL) and degree of financial leverage (DFL) on firm value. Operating leverage and financial leverage level which are a measure of business risk and financial risk can significantly affect the value of the company. Several studies have analyzed the relationship between operating leverage and firm value 9 Rayan, 2010; Siahaan, 2014; Cheng and Tzeng, 2011).

Regarding the the effects of operating leverage on company profitability, Lestari and Nuzula (2017) investigate whether the company has been effective in using financial leverage (DFL) and operating leverage (DOL) in order to increase the company's profitability (ROE). The results of multiple linear regression analysis by using SPSS shows that DFL and DOL simultaneously have a significant effect on ROE. However, DFL partially has no effect on ROE and DOL partially has a significant negative effect on ROE. Enekwe et al. (2014) also found there are no significant effect of operating leverage on financial performance, although other analyzes show a positive relationship between financial leverage and financial performance (Rehman, 2013; Ashraf et al., 2017).

H<sub>3</sub>: There is a positive and significant effect of operating leverage on the value of oil and gas companies.

H<sub>4</sub>: Operating leverage has a positive and significant effect on financial performance of oil and gas companies.

### 2.3. Liquidity, Firm Value and Financial Performance

In analyzing the effect of profitability, operating leverage, liquidity, on firm value, Wulandari (2013) shows the results that profitability proxied by return on assets (ROA), has a relationship with firm value as the dependent variable and capital structure as an intervening variable. Operating leverage which is proxied by degree of operating leverage (DOL) has a relationship with firm value as the dependent variable and capital structure as an intervening variable, but liquidity which is proxied by the current ratio (CR) has no relationship with the firm's value as the dependent variable and capital structure as intervening variable. Tahu and Susilo (2017) show that high cash capability has a positive effect on the ability of short-term liabilities of the company and in turn affects positively on the value of the company. In connection with the effect of liquidity on financial performance, Omondi and Muturi, (2013) showed that liquidity has a significant positive

effect on financial performance. Demirgüleş (2016) also states a significant positive relationship between financial performance and liquidity using long-term parameters.

H<sub>5</sub>: There is a positive and significant effect of liquidity on the value of oil and gas companies.

H<sub>6</sub>: Liquidity has a positive and significant effect on financial performance of oil and gas companies.

## 2.4. The Mediating Effect of the Performance on Oil and Gas Companies

In analyzing the effect of mediating corporate performance, Hantono (2015) shows that simultaneous current ratio (CR) has a significant effect on return to equity (ROE), and DER has a significant effect on ROE on Metal Manufacturing Sector companies listed on the Indonesia stock exchange Period 2019-2013. Furthermore, Kurniawan (2014) tested the effect of VAICTM as an independent variable, and financial performance (ROE and EPS) as an intervening variable analyzed using the path analysis method. The results show that VAICTM has no effect on ROE and EPS. ROE has no effect on stock prices and EPS has an influence on stock prices on manufacturing listed companies in Indonesia stock exchange period (2008-2012). This study also found that VAICTM had no effect on stock prices. The final result is that ROE and EPS are not mediating variables because they are not able to mediate the relationship between VAICTM and stock prices.

Suwardika and Mustanda (2017) show that company growth has a significant positive effect on profitability (ROA), and leverage (DAR) has a significant negative effect on company value (PBV). Moreover, profitability (ROA) has a significant positive effect on company value (PBV). Fitriati et al. (2018) showed that the current ratio (CR) and institutional ownership (IO) have a significant negative effect on the debt to equity ratio (DER). Moreover, firm size (FS) and the current ratio significantly positive effect on the dividend payout ratio (DPR). However, the debt to equity ratio has a significant negative effect on the dividend payout ratio. In examining the mediating effect, the debt to equity ratio is able to mediate the effect of the current ratio on the dividend payout ratio and the effect of institutional ownership on the dividend payout ratio.

H<sub>7</sub>: Company performance mediates the influence of institutional ownership on the company value.

H<sub>8</sub>: Company performance mediates the effect of operating leverage and company value.

H<sub>9</sub>: Company performance mediates the effect of liquidity and company value.

## 3. THEORETICAL FRAMEWORK

Based on previous theoretical studies, this study empirically analyzed the relationship between institutional ownership, operating leverage, liquidity and financial performance effects on the oil and gas mining company in Indonesia (Figure 1).

**Table 1: Oil consumption in Indonesia**

| Year   | 2007  | 2008  | 2009  | 2010  | 2011  | 2012  | 2013  | 2014  | 2015  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Amount | 1,318 | 1,287 | 1,297 | 1,402 | 1,589 | 1,631 | 1,643 | 1,676 | 1,628 |

Source: BP Statistical Review of World Energy 2016

## 4. RESEARCH METHODS

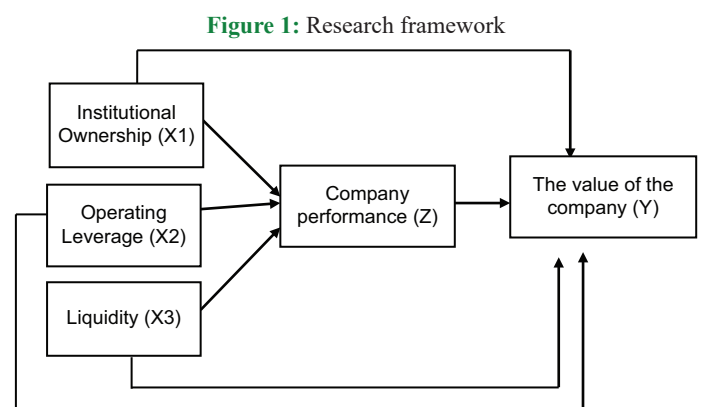
The object of research is to analyse the effect of institutional ownership, operational leverage, liquidity and company performance on the oil and gas mining company value listed in Indonesian stock exchange between 2014 and 2018. In this study, the population used is the mining company sub-sector of crude oil and natural gas that has been and is still registered in the Indonesia Stock Exchange in 2014-2018.

Based on the criteria, ten companies listed that meet these criteria will be sampled in this study. The sample companies are apexindo pratama duta (APEX), ratu prabu energy (ARTI), astrindo nusantara infrastructure (BIPI), elnusa (ELSA), energy mega persada (ENRG), surya eka perkasa (ESSA), medco energi internasional (MEDC), mitra investindo (MITI), radiant utama interinsco (RUIS), and super energy (SURE) (Table 2). In this study, the variable and proxies used to reflect the condition of construct used. PBV (price-to-book ratio) was used as the proxy of firm value; DOL (degree of operating leverage) was the proxy of operating leverage; CR (current ratio) was the proxy of liquidity and ROE (return on equity) was the proxy of company performance. Data analysis using Partial least squares/PLS analysis with Structural Equation Modeling/SEM analysis model.

## 5. RESULTS

Descriptive analysis shows the results of tabulating data for the dependent and independent variables presented in Table 3.

The results of descriptive statistical calculations show that during the period of 5 years 2013-2018, the average value of institutional ownership during the study period was 0.18 with a standard deviation of 0.28. The distance between the minimum and maximum values, where the minimum value of 0.0000 owned by the mining company crude oil and gas sub-sector in 2013-2018 and the maximum value of 1.09. From 2013 to 2018, the average value of the Degree of Operating Leverage during the study period was 0.19 with a standard deviation of 2.31. The distance between





**Table 2: Selected indicators of financial performance of oil and gas mining companies in Indonesia**

| Ticker symbol | CR     |       |        | ROE    |        |       |
|---------------|--------|-------|--------|--------|--------|-------|
|               | 2016   | 2017  | 2018   | 2016   | 2017   | 2018  |
| APEX          | 2.31   | 0.22  | 0.17   | -72.6  | 218.2  | 69.1  |
| ARTI          | 0.94   | 0.81  | 0.66   | 6.23   | 12.53  | 13.73 |
| BIPI          | 5.24   | 14.1  | 14.77  | -58.04 | 11.02  | 3.11  |
| ELSA          | 1.62   | 1.44  | 1.49   | 10.8   | 8.1    | 8.37  |
| ENRG          | 0.62   | 0.47  | 0.39   | 616.31 | -26.36 | 51.18 |
| ESSA          | 2.19   | 0.68  | 1.48   | 3.13   | 0.55   | 16.47 |
| MEDC          | 1.6    | 2     | 1.3    | 1      | 27     | 20.8  |
| MITI          | 170.32 | 124.5 | 179.65 | -26.8  | -28.15 | 9.9   |
| RUIS          | 0.87   | 0.89  | 1.00   | 12.2   | 7.2    | 5.5   |
| SURE          | 0.36   | 0.08  | 0.11   | 104.73 | -15.69 | -7.67 |

**Table 3: Descriptive statistics**

| Variable | Min    | Max   | Mean  | Std. dev. |
|----------|--------|-------|-------|-----------|
| IO       | 0.00   | 1.09  | 0.18  | 0.28      |
| DOL      | -2.87  | 9.42  | 0.19  | 2.31      |
| CR       | -1.10  | 2.40  | 0.28  | 0.82      |
| ROE      | -0.52  | 5.58  | 2.35  | 1.21      |
| PBV      | -27.62 | 11.12 | -0.12 | 6.55      |

the minimum and maximum values, where the minimum value of -2.87 owned by the mining company sub-sector of crude oil and natural gas in 2013-2018 and the maximum value of 9.42.

The average value of the current ratio during the study period was 0.28 with a standard deviation of 0.82. The distance between the minimum and maximum values, where the minimum value of -1.10 owned by the mining company sub-sector of crude oil and natural gas in 2013-2018 and a maximum value of 2.40. Furthermore, the average value of financial performance (ROE) during the study period was 2.35 with a standard deviation of 1.21. The distance between the minimum and maximum values, where the minimum value of -0.52 owned by the mining company sub-sector of crude oil and natural gas in 2013-2018 and the maximum value of 5.58. The average value of the company value (PBV) during the study period was -0.12 with a standard deviation of 6.55. The distance between the minimum and maximum values, where the minimum value of -27.62 owned by the mining company sub-sector of crude oil and natural gas in 2013-2018 and the maximum value of 11.12.

R-square value of company value of 0.300 indicates that the influence of institutional ownership, operating leverage, liquidity and company performance variables on company value is 30.0%. Meanwhile, the R-square value of company performance of 0.140 shows that the influence of institutional ownership, operating leverage, liquidity and firm value variables on company performance is 14.0% (Table 4).

The first hypothesis testing states that institutional ownership (IO) has a positive and significant effect on firm value (PBV). The test results show the IO variable has a T-statistics value of 2.744 and  $P < 0.05$  and the original sample of 0.245. The test results show that the T-statistics value is greater than the critical value of 2.014 (Table 5). Thus, the hypothesis stating that there is a positive and significant effect of institutional ownership on firm value was accepted. This means that the higher the institutional ownership, the higher the firm value (Figure 2).

**Table 4: Test the coefficient of determination ( $R^2$ )**

| Indicator                      | $R^2$ | $R^2$ adjust |
|--------------------------------|-------|--------------|
| The value of the company (PBV) | 0,300 | 0,238        |
| Company performance (ROE)      | 0,140 | 0,084        |

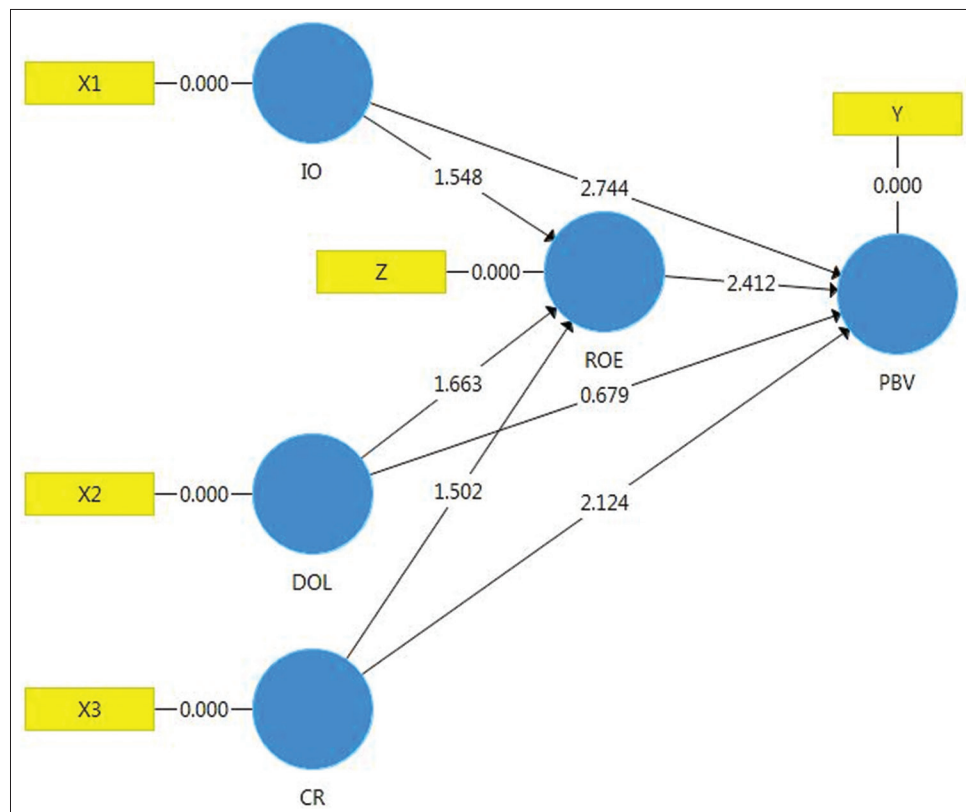
Next, IO has empirically proven to have a negative and significant effect on company performance (ROE). The test results show that the IO variable has a T-statistic value of 1.548 and the  $P > 0.05$  with the original sample of -0.172. The results also show that the T-Statistics value is smaller than the critical value of 2.014. This means that the hypothesis stating that institutional ownership has a positive and significant effect on company performance was rejected.

The third hypothesis states that CR has a positive and significant effect on firm value (PBV). The test results show the CR variable has a t-stat. of 2.124 and  $P = 0.034 < 0.05$  with the original sample of -0.310 and the t-stat of 2.124  $> C.R$  of 2.014. Moreover, the results also show that CR has a negative and significant effect on company performance (ROE), indicated by t-stat. of 1.502 and  $P = 0.133 > 0.05$ . The results also showed the original sample of -0.219 with t-stat. of 1.502  $< 2.014$ .

The results showed that DOL as the proxy of the variable of operating leverage has a positive and significant effect on firm value (PBV). The test results show the DOL variable has a T-statistics value of 0.679 and  $P > 0.05$  with the original sample of 0.086, and t-statistics of 0.679  $< \text{critical value of } 2.014$ . Thus, the hypothesis stating that liquidity has a positive and significant effect on firm value was rejected. Next analysis was conducted to examine the hypothesis stating that DOL also has a negative and significant effect on company performance (ROE). The test results show the DOL variable has a t-stat. of 1.663 and  $P = 0.096 > 0.05$  with the original sample of -0.276 and t-stat. of 1.663  $< C.R$  of 2.014.

Statistical analysis also showed that ROE has a positive and significant effect on company performance (PBV), indicated by t-stat. of 2.412 and  $P = 0.016 < 0.05$ . The results of the original sample is of 0.325 and the t-stat. of 2.412  $> C.R$  of 2.014.

Furthermore, the analysis was also to examine the mediating effect of firm performance (ROE) on the relationship between institutional ownership (IO) and firm value (PBV). The mediating

**Figure 2:** Partial least squares path diagram

**Table 5: Hypothesis testing**

| Hypothesis | Original samples (O) | Average sample (M) | Std. dev (STDEV) | T statistics (O/STDEV) | P-value  |
|------------|----------------------|--------------------|------------------|------------------------|----------|
| IO – PBV   | 0.245                | 0.247              | 0.089            | 2.744                  | 0.006 A  |
| DOL – PBV  | 0.086                | 0.082              | 0.127            | 0.679                  | 0.497 R  |
| CR – PBV   | -0.310               | -0.322             | 0.146            | 2.124                  | 0.034 R- |
| IO – ROE   | -0.172               | -0.177             | 0.111            | 1.548                  | 0.122 R  |
| DOL – ROE  | -0.276               | -0.268             | 0.166            | 1.663                  | 0.096 R- |
| CR – ROE   | -0.219               | -0.229             | 0.146            | 1.502                  | 0.133 R  |
| ROE – PBV  | 0.325                | 0.337              | 0.135            | 2.412                  | 0.016 A  |

IO: Institutional ownership, PBV: Price-to-book ratio as indicator of firm value, DOL: Degree of operating leverage as the proxy of operating leverage, CR: Current ratio as the proxy of liquidity, ROE: Return on equity as the proxy of company performance

investigation was conducted by using Sobel test. The results show that the firm performance (ROE) is able to mediate the influence of institutional ownership on corporate value (PBV), with  $P = 0.077 > 0.10$  (Table 6). Thus, the hypothesis is accepted. This means that the mediating role of diversification of company performance turns out to be able to add to the institutional ownership of company value. Thus, the company (ROE) is empirically proven to be able to mediate the effect of institutional ownership (IO) on firm value (PBV) of oil and gas mining companies in IDX.

In testing the mediating effect on the relationship between operating leverage (DOL)- firm performance (ROE)- firm value (PBV), the sobel test show that the company's performance (ROE) mediates the effect of operating leverage (DOL) on the firm's value (PBV), with  $p$ -value of  $0.052 < 0.10$  (Table 7). Thus, the hypothesis is accepted. This means that the mediating role of diversification of the performance of oil and gas mining companies in IDX turns out to be able to give an additional effect of operating leverage (DOL) to the company's value. This

**Table 6: Sobel test of institutional ownership- firm performance (ROE) - firm value (PBV)**

| Sign | Input | Indicator    | Test statistic | Std. error | P-value    |
|------|-------|--------------|----------------|------------|------------|
| a    | 0.112 | Sobel test   | 1.76730455     | 0.00868215 | 0.07717724 |
| b    | 0.137 | Aroian test  | 1.70118776     | 0.00901958 | 0.08890774 |
| Sa   | 0.047 | Goodman test | 1.84178243     | 0.00833106 | 0.06550698 |
| Sb   | 0.052 |              |                |            |            |

revealed that the company (ROE) is empirically proven to be able to mediate the effect between operating leverage (DOL) on company value (PBV).

The Sobel test of the mediating effect of company's performance (ROE) on the relationship between liquidity (CR) on firm value (PBV) showed the significant effect with  $p$ -value of  $0.058 < 0.10$  (Table 8). Thus, the hypothesis is accepted. This showed the mediating role of diversification of company performance to be apparently able to provide additional effect of liquidity (CR) to the value of oil and gas mining companies in IDX.

**Table 7: Sobel test of operating leverage (DOL) - firm performance (ROE)- firm value (PBV)**

| Sign | Input | Indicator    | Test statistic | Std. error | P-value    |
|------|-------|--------------|----------------|------------|------------|
| a    | 0.164 | Sobel test   | 1.94306314     | 0.01156319 | 0.05200853 |
| b    | 0.137 | Aroian Test  | 1.88221105     | 0.01193702 | 0.05980737 |
| Sa   | 0.057 | Goodman Test | 2.01022655     | 0.01117685 | 0.04440722 |
| Sb   | 0.052 |              |                |            |            |

**Table 8: Sobel test of liquidity (CR)- company performance (ROE)- firm value (PBV)**

| Sign | Input | Indicator    | Test statistic | Std. error | P-value    |
|------|-------|--------------|----------------|------------|------------|
| a    | 0.150 | Sobel test   | 1.89486471     | 0.0108451  | 0.05811033 |
| b    | 0.137 | Aroian Test  | 1.83222461     | 0.01121587 | 0.06691796 |
| Sa   | 0.055 | Goodman Test | 1.96440251     | 0.0104612  | 0.04948343 |
| Sb   | 0.052 |              |                |            |            |

## 6. CONCLUSIONS

The high level of profitability, especially in an energy and mining company is one of the main expectations of investors. To get the maximum return, investors in making decisions to invest in a company need to know the financial fundamentals of energy company and assess the company's prospects regarding the achievement of objectives in obtaining profitability during a certain period.

The results of the study revealed that institutional ownership, operating leverage and liquidity have a positive influence on the value of oil and gas mining companies in IDX. This means that the higher the IO number, the lower the PBV. The results mean that the higher the CR, the higher the PBV. Lastly, the results showed that the higher the IO, the higher the PBV. The firm performance represented by ROE has a positive and significant effect on firm value (PBV), meaning that the higher the ROE, the higher the PBV in oil and gas mining companies in IDX. The mediating test by using the Sobel test showed that the firm's performance is able to mediate the effect of institutional ownership, operating leverage, liquidity on the the value of oil and gas companies in Indonesia

The findings suggest the oil and gas mining companies in Indonesia that have gone public to achieve the prosperity of shareholders by increasing the value of the company. Investor's perception of the company's success rate is reflected through the company's value. Increasing company value due to high stock prices will make the market believe in the company's performance and prospects in the future. Since the benchmark often used to measure the value of a company is the price to book value, the high price to book value in oil and gas companies in Indonesia Stock Exchange shows the level of prosperity of shareholders as the main goal of the company.

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