The Effect of Financial Distress Probability, Firm Size and Liquidity on Stock Return of Energy Users Companies in Indonesia

Khaira Amalia Fachrudin*, M. Fikri Ihsan

Faculty of Economics and Business, Universitas Sumatera Utara, Medan, Indonesia. *Email: khaira@usu.ac.id

ABSTRACT

Stock return can be one of the representations of a company's performance in investment. This study aims at investigating the factors determining the stock return of the largest users of energy production of oil, gas and coal classified in the manufacturing companies at Indonesia's Stock Exchange for the period of 2016-2018. It involved 134 companies classifies as the largest users of energy production of oil, gas and coal classified as the manufacturing entries in IDX that were used as the target of the population and all were selected for the sample of this study. Financial distress probability, firm size, liquidity and price to cash flow from operating activities ratio become independent variables. The result of multiple linear regression indicated that financial distress probability and liquidity influence significantly on the stock return at alpha five percent in this energy user companies. It implies that the companies must continually maintain their financial health and also invest their idle cash in order to generate the return.

Keywords: Financial Distress Probability, Liquidity, Stock Return
JEL Classifications: G32, L60, O16

1. INTRODUCTION

Stock market prices are formed from investors' expectations of events on the market - such as economic crises, political unrest, even corona virus outbreaks. In addition, they can also be formed from the company's fundamental performance. Signaling theory says that information about what managers do in order to realize the intentions of the owner will intentionally signal to the market. An increase in stock prices will provide a return in the form of capital gains for shareholders. Several studies have found a relationship between stock returns (fundamental stock returns) with the company's fundamental performance, such as financial distress, firm size, liquidity, and price to cash flow from operating activities ratio. Campbell et al. (2011) found that the shares of companies with financial difficulties experienced high stock return volatility, high market risk, underperform, and low returns.

Saji (2018) found that financial distress had a significant effect on stock market failures in India. Gao et al. (2018) found a negative relationship between the probability of default and equity return on low-capitalization stocks in developing countries in North America and Europe. In companies that have declared bankruptcy, Devji and Suprabha (2016) found that there were major negative abnormal returns on the days surrounding the announcement. This bad news also causes the stock price to decrease. The research studies examined the effect of financial distress on stock returns, but no one has tested the effect of financial distress probability which shows the possibility of distress from the lowest to the highest level of stock returns on manufacturing companies listed on the Indonesia Stock Exchange, even though financial distress is the dynamic process towards corporate failure (Fawzi et al., 2015), so that the severity varies. In relation to firm size, Banz (1981) found that the return received by small firms on the New York Stock Exchange was 0.4% averagely more than large firm. Fama

and Schwert (1977) found a negative and significant relationship between firm size and stock returns (Drew et al., 2003; Atidhira and Yustina, 2017). There are also studies that have found positive and significant relationships (Yang et al., 2010; Dahoei and Saidi, 2012; Putri, 2012; Seftianne and Handayani, 2011).

The liquidity ratio shows the company's ability to pay its short-term obligations. The results of research on the effect of current ratio on stock returns in Indonesia give different results. Komala and Nugroho (2013) found no significant effect, but Safitri et al. (2015) and (Ulupui, 2007) found positive and significant influences. Market based ratio proxies that are often used are earnings per share and price to earnings ratio. Both of these ratios were found to have no significant effect on current stock returns and on one period ahead of stock returns (Zeytinoğlu et al., 2012). The price to cash flow ratio is a stock valuation indicator that shows how much a company's cash generates relative to its stock price. The price to cash flow ratio is better than the price income ratio because it shows the actual cash flow generated, not accounting profit, but no research has been found linking the price to cash flow ratio and stock return. The results of previous research indicate that the influence of the probability of financial distress on stock returns has never been done, only financial distress influences; the effect of firm size and liquidity gives different results due to different samples and conditions; and there is no research yet on the effect of price to cash flow from operating activities ratio on stock returns. This research will contribute to the role of financial distress probability and price to cash flow from operating activities ratio. The main objective of this study is to provide empirical evidence about the influence of the probability of financial distress, firm size, liquidity, and price to cash flow from operating activities ratios in energy user companies classified in the manufacturing companies in Indonesia from 2016 to 2018. This entry is one of the largest users of energy production of oil, gas and coal in Indonesia.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In investing, an investor expects returns. Stock returns can come from yields and capital gains. In stock investments, the yield in the form of dividends and returns is the difference between the current price and the previous price. If the share price increases, the capital gain will also increase. This return is obtained from changes in stock prices divided by initial stock prices (Thinagar et al., 2019).

Predict stock returns based on financial ratios can be done by statistical analysis (Barnes, 1987). Financial ratios are categorized as accounting ratios, valuation ratios or multiples; cash flow ratios, and other ratios (Pech et al., 2015). Accounting ratios are further grouped into profitability of ratios and margins, and leverage or debt management of ratios. Profitability and leverage are the accounting ratios most often used by analysts (Pech et al., 2015). The probability of financial distress can be calculated with a formula that includes leverage and profitability ratios, namely:

$P_i = 1/[1+2.718^{-(-5.472+9.555\ X1-32.347\ X2)}]$. Where P_i = Probability of financial difficulties, X_1 = total liabilities/total assets and X_2 = net income/total assets (Fachrudin, 2008)

Financial distress probability is the opportunity for companies to experience financial distress in the coming year. The numbers range between 0 and 1. The number 0 indicates a very healthy company and number 1 indicates the company experiencing financial distress at the most severe level.

Companies that experience financial distress at the most severe level may end up in bankruptcy, thereby reducing investor expectations of gain so that stock prices will likely fall.

Empirical analysis of this research will explain this matter and formulate the hypothesis as follows:

2.1. H_1: The Probability of Financial Distress has a Significant Effect on Stock Returns in Energy User Companies

Firm size is generally measured by total assets. Companies that have a large amount of assets are also expected to generate large profits so as to increase stock return. However, the large amount of assets can be dominated by debt (Fachrudin, 2008) so that there is a possibility that stock returns will also be reduced. In addition, large companies with relatively more stable and bigger total assets are able to generate profits compared to companies that have small total assets (Miswanto, 1999). This research will provide empirical evidence about the actual, positive or negative effects. The hypothesis formulation is as follows:

2.2. H_2: Firm Size has a Significant Effect on Stock Returns in Energy User Companies

Another signal of a company's fundamental performance that might be captured by investors is liquidity. Liquidity refers to the ease and speed of assets that can be converted into cash. One of the measures of liquidity is the current ratio that shows the ability of companies to pay short-term bills using current assets. The higher dependence on current liabilities will reduce company liquidity. High liquidity ratios indicate the ability of the company so that it might be appreciated by investors, but if the ratio is too high it actually shows the condition of idle cash or poor current asset management. This research will provide empirical evidence about the actual, positive or negative effects. The hypothesis formulation is as follows:

2.3. H3: Liquidity has a Significant Effect on Stock Returns in Energy User Companies

Most valuation theories identify time-varying one period expected return, news about cash flows, and news about future expected returns as causes of return variation (Hecht and Vuolteenaho, 2006). They say that the correlation between stock returns and cash flow proxies is due to the association of cash flow proxies with one-period expected returns, news about cash flow, and / or news about expected returns.

There are three categories of cash flow in financial statements, namely cash flow from operating, investing and financing

activities. Cash flow from operating activities is seen as the most important cash flow category because it comes from main-income producing activities. In addition, cash flows from operating activities basically support the dividends and capital expenditures. Changes in cash flow from operating activities will give a positive signal to investors, so investors will buy shares of the company which in turn increases stock returns

Triyono and Hartono (2000) found that cash flows from operating activities have a significant relationship to stock prices and returns. Livnat and Zarowin (1990) in Daniati (2006) who tested the cash flow component found evidence that the cash flow component had a stronger relationship with stock returns than the relationship between total cash flow and stock returns. Oroud et al. (2019) found that operating cash flow had a positive effect on stock prices, but (Yang et al., 2016) found that cash flow-to-price ratio had no significant effect on stock prices and found no significant effect.

Price to earnings ratio is commonly used as an indicator of stock valuation. The price income ratio had a positive and significant effect on stock returns because the greater the ratio the greater the expectations of investors that stock prices would rise again. If Price Income ratio can affect stock return and cash flow from operating activities can affect stock return, this research tries to propose price to cash flow from operating activities ratio as a variable to predict stock return. This variable represents the valuation ratios and cash flow ratios as stated by (Pech et al., 2015)

2.4. H4: Price to Cash Flow from Operating Activities Ratio has a Significant Effect on Stock Returns in Energy User Companies

Referring to the explanation that has been stated, the conceptual framework is described as shown in Figure 1.

3. RESEARCH METHOD

Population are manufacturing companies listed on the Indonesia Stock Exchange in 2016-2018. The target population is manufacturing companies that have been and are still listing during the years 2016-2018, namely 134 companies and all of them are sampled in this study. Thus the unit of analysis is 134×3 years $= 402$ units. Panel data regression analysis will be performed with the views program. Model used is

$$Y_{it} = a + b_1 X_{1it} + b_2 X_{2it} + b_3 X_{3it} + b_4 X_{4it} + e$$

Figure 1: Conceptual framework
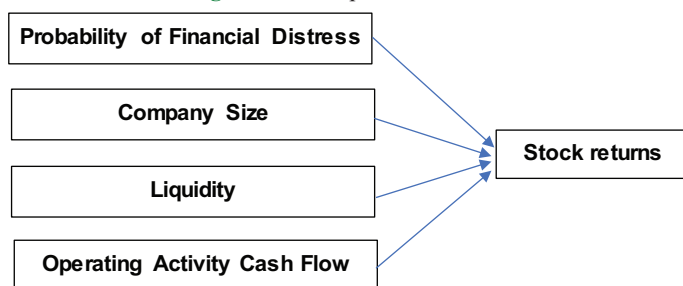
Y = stock return; X_1 = probability of financial distress; X_2 = firm size; X_3 = liquidity; X_4 = price to cash flow from operating activities ratio

4. RESULTS

To test model parameter estimation in energy user companies classified in manufacturing entries in Indonesia is done by common effect model, fixed effect model, and random effect model. After the three models are produced, a test is carried out to determine which model is the most suitable. A Chow test is performed to choose between the common effect model and the fixed effect model. Chow test results show the value of the Cross Section-Chi Square Probability of 0.0182 which is smaller than alpha which in this case 0.05. The chow test results indicate that the model that should be used is the fixed effect Model.

Furthermore, to determine the best model between the fixed effect model and the random effect model, the Hausman test was performed which showed a random Cross Section probability value of 0.4111, which was greater than 0.05. The Hausman test results show that the model that should be used is the Random Effect Model. The classic assumption test is not necessary if the chosen model is (Gujarati, 2015) because the linear regression is based on general least square (GLS).

Goodness of fit from the random effect model test results are determined that the F test yields a probability of 0.005 which indicates that the model is fit; t test shows that there are two variables that have a significant effect (Table 1); and R squared shows the number 0.045.

Based on Table 1, the panel data regression equation is obtained as: Y it = −0.008 − 0.199X1it + 0.0114X2 it − 0.0322X3 it − 0.001X$_4$ it + e.

These results indicate that the probability of financial distress has a negative and significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018. The size of the energy user companies has a negative and not significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018. Liquidity of the energy user companies has a negative and significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018. Moreover, price to cash flow from operating activities of the energy user companies has a negative and not significant effect on stock returns during study period in IDX during 2016-2018.

The probability of financial distress of energy user companies classified in manufacturing entries in IDX that shows the

Table 1: t-Test of random effect model results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	−0.008204	0.376585	−0.021785	0.9826
X_1	−0.198939	0.068323	−2.911733	0.0038
X_2	0.011360	0.012910	0.879968	0.3795
X_3	−0.033005	0.012859	−2.566656	0.0107
X_4	−7.08E−05	6.11E−05	−1.158735	0.2474

condition of the company's financial health is appreciated by investors. Companies that experience very severe financial distress get a fairly low return and those with very good financial health condition receive high returns. This finding is in line with Campbell et al. (2011) and Gao et al. (2018).

Corporate liquidity also has a negative and significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018. This finding is not in line with the findings of Safitri et al. (2015) and Ulupui (2007). The liquidity ratio shows the company's ability to pay its short-term debt with current assets, but in this study the liquidity ratio has an average value of 2.18 with a standard deviation of 1.80 so that investors feel that the amount is too high and shows the ability to manage current assets that are not good. Chances are these companies have a lot of idle cash, as well as large amounts of accounts receivable and inventory.

Firm size has a positive effect on stock returns stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018, but this effect is not significant. Investors who invest in energy user companies classified in manufacturing entries understand that company size does not always show good credibility because the financial health of the company is not necessarily good, this result is supported by the results of the correlation test between the probability of financial distress and company size which shows a negative and significant correlation coefficient.

Stock valuation of energy user companies that measures the value of stock relative to its operating activities ratio has a negative and not significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018. This finding indicates that for some shares investors consider the price high compared to their ability to generate operating cash of energy user companies classified in manufacturing entries in IDX during 2016-2018 so that demand for these shares is reduced, but for other investors it is not a concern.

5. CONCLUSIONS

This research has found fundamental factors that have a significant effect on stock returns of energy user companies classified in manufacturing entries in IDX during 2016-2018, namely the probability of financial distress and liquidity. Firm size and price to cash flow from operating ratio have no significant effect. The energy user companies classified in manufacturing entries with good health condition in the sense of profitability and good debt management and good working capital management will be able to increase returns for shareholders. This finding is important for companies to always manage the energy user companies well.

REFERENCES

Atidhira, A.T., Yustina, A.I. (2017), The influence of return on asset, debt to equity ratio, earnings per share, and company size on share return in property and real estate companies. Journal of Applied Accounting and Finance, 1(2), 128-146.

Banz, R.W. (1981), The relationship between return and market value of common stocks. Journal of Financial Economics, 9(1), 3-18.

Barnes, P. (1987), The analysis and use of financial ratios: A review article. Journal of Business Finance and Accounting, 14(4), 449-461.

Campbell, J.Y., Hilscher, J.D., Szilagyi, J. (2011), Predicting financial distress and the performance of distressed stocks. Journal of Investment Management, 9(2), 14-34.

Dahoei, S.A.M., Saidi, P. (2012), Examining the relationship between company size and stock return in accepted companies in Tehran stock exchange market. European Journal of Business and Management, 4(19), 57-65.

Daniati, N. (2006), Pengaruh kandungan informasi komponen laporan arus kas, laba kotor, dan size perusahaan terhadap expected return saham. Simposium Nasional Akuntansi, 9, 1-16.

Devji, S., Suprabha, K.R. (2016), Corporate financial distress and stock return: Evidence from Indian stock market. Nitte Management Review, 10(1), 34-44.

Drew, M.E., Naughton, T., Veeraraghavan, M. (2003), Firm size, book-to-market equity and security returns: Evidence from the Shanghai stock exchange. Australian Journal of Management, 28(2), 119.

Fachrudin, K.A. (2008), Kesulitan Keuangan Perusahaan dan Personal. Medan: USU Press.

Fama, E.F., Schwert, G.W. (1977), Asset returns and inflation. Journal of Financial Economics, 5(2), 115-146.

Fawzi, N.S., Kamaluddin, A., Sanusi, Z.M. (2015), Monitoring distressed companies through cash flow analysis. Procedia Economics and Finance, 28, 136-144.

Gao, P., Parsons, C.A., Shen, J. (2018), Global relation between financial distress and equity returns. The Review of Financial Studies, 31(1), 239-277.

Gujarati, H. (2015), Ease of doing Business Ranking Reflects the Goodness of the Economy: A Misconception or Fact? Gujarat: Gujarat Technological University. p30-39.

Hecht, P., Vuolteenaho, T. (2006), Explaining returns with cash-flow proxies. The Review of Financial Studies, 19(1), 159-194.

Komala, L.A.P., Nugroho, P.I. (2013), The effects of profitability ratio, liquidity, and debt towards investment return. Journal of Business and Economics, 4(11), 1176-1186.

Livnat, J., Zarowin, P. (1990), The incremental information content of cash-flow components. Journal of Accounting and Economics, 13(1), 25-46.

Miswanto, S.H. (1999), The effect of operating leverage, cyclicality, and firm size on business risk. Gadjah Mada International Journal of Business, 1(1), 29-43.

Oroud, Y., Islam, M.A., Ahmad, T.S.T., Ghazalat, A. (2019), Does audit quality moderate the relationship between accounting information and share price? Evidence from Jordan. International Business Research, 12(3), 58.

Pech, C.O.T., Noguera, M., White, S. (2015), Financial ratios used by equity analysts in Mexico and stock returns. Contaduría y Administración, 60(3), 578-592.

Putri, M.E.D. (2012), Pengaruh Profitabilitas, Struktur Aktiva dan Ukuran Perusahaan terhadap Struktur Modal Pada Perusahaan Manufaktur Sektor Industri Makanan dan Minuman Yang Terdaftar di Bursa Efek Indonesia, Doctoral Dissertation, Universitas Negeri Padang.

Safitri, O., Sinarwati, N.K., Atmadja, A.T., Se, A. (2015), Analisis pengaruh profitabilitas, likuiditas, dan leverage terhadap return saham Pada perusahaan manufaktur yang terdaftar di bei tahun 2009-2013. Jurnal Ilmiah Mahasiswa Akuntansi Undiksha, 3(1), 1-10.

Saji, T.G. (2018), Financial distress and stock market failures: Lessons from Indian realty sector. Vision, 22(1), 50-60.

Seftianne, S., Handayani, R. (2011), Faktor-faktor yang mempengaruhi struktur modal pada perusahaan publik sektor manufaktur. Jurnal

Bisnis dan Akuntansi, 13(1), 39-56.

Thinagar, S., Khalid, N., Karim, Z.A. (2019), The causal direction of equity returns volatility: Evidence from selected developed and emerging market's economies. International Journal of Economics and Management, 13(1), 249-261.

Triyono, T., Hartono, J. (2000), Hubungan kandungan informasi arus kas, komponen arus kas dan laba akuntansi dengan harga atau return saham. The Indonesian Journal of Accounting Research, 3(1), 54-68.

Ulupui, I.G. (2007), Analisis pengaruh rasio likuiditas, leverage, aktivitas, dan profitabilitas terhadap return saham (studi pada perusahaan makanan dan minuman dengan kategori industri barang konsumsi di BEJ). Jurnal Ilmiah Akuntansi dan Bisnis, 2(1), 1-20.

Yang, C.C., Lee, C.F., Gu, Y.X., Lee, Y.W. (2010). Co-determination of capital structure and stock returns—A LISREL approach: An empirical test of Taiwan stock markets. The quarterly review of economics and finance, 50(2), 222-233.

Zeytinoğlu, E., Akarim, Y.D., Çelik, S. (2012), The impact of market-based ratios on stock returns: The evidence from insurance sector in Turkey. International Research Journal of Finance and Economics, 84, 41-48.