

ANALYSIS OF FINANCIAL DISTRESS DUE TO DELAY OF FERTILIZER SUBSIDY PAYMENT BY THE GOVERNMENT TO FERTILIZER PRODUCERS IN INDONESIA

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Abstract

A company must be able to have attention to its financial condition to running company's operational activities in order not to enter into financial distress condition. This study aims to measure the extent to which fertilizer producers experience Financial Distress due to delays in government subsidy payments through variables that are considered sufficient to represent the condition. These variables are Debt to Asset Ratio (DAR), Change of Operating Cash Flow, Debt to Equity Ratio (DER) and Profit Change. Based on the result of data panel regression analysis Debt to Asset Ratio (DAR) has significant negative effect, Operational Cash Flow Change has no significant effect, Debt to Equity Ratio (DER) has significant negative effect and Profit Change has no positive effect on Z-Score used as indicator financial distress of a company. In determination test result (R²) it is found that independent variable Debt to Asset

Ratio (DAR), Change of Operating Cash Flow, Debt to Equity Ratio (DER) and Profit Change explain financial distress variable equal to 74, 5404%.

Keywords: Subsidy, Debt to Asset Ratio (DAR), Change of Operating Cash Flow, Debt to Equity Ratio (DER), Profit Change, Financial Distress

INTRODUCTION

Indonesia is one of agrarian countries in Southeast Asia which still rely on agricultural sector as mainstay main commodity. Indonesia is a country that has a very large agricultural land, so the availability of land is not a big problem to achieve food security.

One of the government's steps to support food security program in fertilizer supply and subsidy is by establishing agriculture supporting industries in the form of State Owned Enterprises (SOEs), in the course of the Government of Indonesia established several state-owned enterprises engaged in the Fertilizer and Petrochemical Industry, the history of fertilization national starting with the establishment of Pupuk Sriwijaya (Pusri) built with national funding and started production in 1963, followed by Petrokimia Gresik in 1972, Pupuk Kujang in 1978, Asean Aceh Fertilizer (AAF), joint project between ASEAN countries) in 1983 , and Pupuk Kaltim (PKT) and Pupuk Iskandar Muda in 1984, until finally formed Fertilizer Group Holding by the Government of Indonesia in 2011 under the name of PT Pupuk Indonesia (Persero) and made other fertilizer producers namely PT Pupuk Sriwijaya Palembang, PT Pupuk Kujang, PT Petrokimia Gresik, PT Pupuk Kalimantan Timur and PT Pupuk Iskandar Muda as a subsidiary.

PT Pupuk Indonesia as Fertilizer Holding Company must have a vision that is in line with the initial objective of the establishment of Fertilizer Companies by the Government, which provides or ensures the availability of subsidized fertilizers and distributes subsidized fertilizers with the right target to farmers who are entitled to receive subsidized fertilizers throughout Indonesia. The obligation to distribute subsidized fertilizer makes the income from Subsidy Pupuk become the biggest income element in Government Fertilizer Company (PT Pupuk Indonesia holding member) if there is delay in payment of subsidy from the government will have direct impact on the financial performance of the fertilizer producer which can cause financial distress.

Lack of operational funds can cause financial distress for the company that is the stage of declining financial condition that occurred before bankruptcy or liquidation (Platt and Platt, 1990), financial distress occurred before the bankruptcy. Wruck in Parulian (2007) defines financial distress as a decrease in performance (profit), while Elloumi and Gueyie (2001) in

Parulian (2007) categorize the company with financial distress if for two consecutive years experienced a negative net profit. Bankruptcy is not always the case but when it becomes real, it can have a direct impact on the company both economically and socially (Farida and Aldrin, 2017), explained also by Balwin and Scott (1983), companies that are experiencing financial difficulties will generally breaching the debt covenants and accompanied by the abolition or reduction in dividend payments.

Purpose of Research

The purpose of this research is to know whether Debt to Asset Ratio (DAR), Change of Operating Cash Flow, Debt to Equity Ratio (DER) and Profit Change have significant influence to financial distress, and also Debt to Asset Ratio (DAR) Operations, Debt to Equity Ratio (DER) and Profit Change together affect the financial distress.

LITERATURE REVIEW

Subsidy

According to Erwan in his writings (Erwan, 2010) explaining further about subsidies that subsidies are a contribution (money) in the form of money or finance provided by the government or a public body. Such government contributions may include:

1. Direct delivery of funds such as grants, loans and equity participation, transfer of funds or direct guarantee of debt;
2. Loss of government revenue or fiscal exemption (such as tax relief); the supply of goods or services outside public infrastructure or the purchase of goods;
3. The Government makes payments on funding mechanisms or authorizes a private entity to carry out government duties in the provision of funds.
4. In addition to that, all forms of income and price support are also subsidies if they generate a profit.

According to Rudi Handoko and Pandu Patriadi in the Economic and Financial Review in the Evaluation of NonBBM Subsidy Policy (2005), subsidies are payments made by the government to companies or households to achieve certain goals that enable them to produce or consume a product in larger quantities or at a cheaper price. Economically, the purpose of the subsidy is to reduce the price or increase the output.

According to Suparmoko, a subsidy (transfer) is a form of government expenditure that is also interpreted as a negative tax that will increase the income of those who receive subsidies or experience real income increases if they consume or buy government-subsidized goods at low prices. Subsidies can be distinguished in two forms: cash transfers and subsidies in the

form of goods or subsidies in natura (in kind subsidy). Meanwhile, according to Sadono Sukirno in his introduction Micro Economic Theory of subsidy is giving the government to producers to reduce production costs borne by producers. (2005: 143), while in his book Makro Ekonomi, Sadono Sukirno also explained that, subsidies are government assistance to companies that are important in the economy, and assistance to farmers. Subsidies are classified as transfer payments because subsidized recipients do not have to pay back government aid given to the economic sector or farmers (2002: 50).

That is, subsidies can be viewed as the opposite of sales taxes because subsidies can lower prices. The extent to which the profit will be obtained by buyers with the subsidy is dependent on the amount of price reductions that will apply. Then it can be deduced from the above notions that subsidies are government-provided assistance to the economic sectors of both producers and consumers to reduce production costs so that the economic sector can reduce the price to be given or sold to buyers or consumers.

Subsidy of Fertilizer

Based on PMK No. 68 / PMK.02 / 2016, "Fertilizer Subsidy is a subsidy granted by the government to farmer groups to obtain fertilizer in order to support food security which amount is calculated based on the difference between cost of goods sold and the highest retail price."

Financial Distress

Financial distress is the stage of decline in financial conditions that occur prior to the occurrence of bankruptcy or liquidation (Platt and Platt, 1990). This condition is marked if the company can not fulfill its financial obligations (Wahyuningtyas, 2010). Predicted financial distress is an important concern by various stakeholders such as lenders, investors, government, auditors, and Management. Given the importance of this financial distress problem then detecting financial difficulties from the beginning will be very helpful for various parties to make decisions quickly and precisely.

Bankruptcy is a serious and costly issue. Therefore, if there is an early warning system that can detect the initial potential for bankruptcy then management will be very helpful. Management will be able to make improvements as early as possible to avoid bankruptcy. There are several indicators that can be used to predict bankruptcy. These indicators can be internal indicators (from within the company) and external indicators (from outside the company). Some examples of internal indicators of the company is the company's cash flow, corporate strategy, financial statements, sales trends, and management capabilities. While

external indicators can be taken from financial markets, information from related parties such as suppliers, dealers, and consumers.

Altman Z Score

Edward I. Altman in the study predicted the failure rate and bankruptcy of a business found five types of financial ratios that can be combined. These five types of ratios are used to see the difference between a bankrupt company and not bankrupt. Altman uses Multiple Discriminant Analysis which produces a value known as Altman ZScore. Z-Score is a score that is determined from the standard count of times the financial values that indicate the level of possible bankruptcy of the company. Financial distress in this study was measured using the Altman Z-Score formula, with the following model:

$$Z = 1,2 X1 + 1,4 X2 + 3,3 X3 + 0,6 X4 + 0,99 X5$$

Information :

X1 = Working capital / Total Assets

X2 = Retained earnings / Total Assets

X3 = Earnings before interest and tax / Total Assets

X4 = Shareholder equity / Total Liabilities

X5 = Sales / Total Assets

Cash Flow

According to Kieso et al., Cash Flow Statements are all cash inflows and outflows, or sources and uses of cash for a period. Meanwhile, according to PSAK Statement of Cash Flow is the cash inflows and cash outflows or cash equivalents.

Since the cash flow statement is an integral part of other financial statements, its joint use will provide more precise results for evaluating the source and use of the firm's cash in all its activities. Thus it can help the users of financial statements to evaluate the structure and financial performance of a company (Wahyuningtyas, 2010). Researchers make cash flow is one of the important variables used in predicting the condition of a company's financial distress, therefore researchers make changes in operating cash flow as one of the variables in this study.

Financial Ratios

Financial ratios are the most commonly used financial analysis tool. According to Gitman in his book Principles of Managerial Finance, tenth edition (2015), ratio analysis relates methods of calculating and interpreting financial ratios to measure the financial condition and performance of a company. This is required by the shareholders, creditors and management of the company.

There are many financial ratios made according to the needs of analysts commonly used in conducting financial analysis. According to Hanafi and Halim (2003), financial ratios are divided into five groups:

a. Liquidity Ratio

Gitman's liquidity ratio (2015: 54) is "a ratio that measures a company's ability to meet its short-term liabilities". Liquidity refers to a company's ability to fulfill its obligations, due to early signs of financial difficulties and bankruptcy due to the low or decreased liquidity ratio is good for measuring problems in cash flow. There are several kinds of liquidity ratios, among others: current ratio, acid test ratio, cash ratio, and net working capital.

b. Leverage Ratio

Gitman's leverage ratio (2015: 54) is "a ratio that indicates the extent to which a company uses third-party money to generate profits". In general, financial analysts are more concerned about long-term debt, because the company has a policy of payment in the long run. The party most concerned about the solvency ratio of the company is the creditor and shareholder. The greater the amount of funding coming from creditors, the higher the risk the company can not pay all its obligations and interest. For shareholders, the higher the solvency ratio, the lower the rate of return that will be received by the shareholders because the company must make interest payments before the profit is distributed to the shareholders in the form of dividends. There are several kinds of leverage ratios, among others: debt ratio, debt to equity ratio, debt to asset ratio, long term debt to equity, and time interest earned. Leverage ratios are often used in measuring the level of the company's ability to use debt is Debt to Asset Ratio, Debt to Equity Ratio.

c. Activity Ratio

Activity ratio according to Gitman (2015: 54) is "the ratio that measures the speed of some accounts in the change into sales or cash in both cash in and out. In this type of corporate assets there is often a difference in measuring the level of liquidity, which is due to differences in the composition of the company's current assets and current debt can significantly affect the actual level of liquidity. There are several activity ratios, including total turnover assets, receivable turnover accounts, fixed asset turnover, inventory turnover, average collection period, and day's sales in inventory.

d. Profit Ratio

The profitability ratios according to Gitman (2015: 54) are "the ratio that relates earnings resulting from sales to the amount of assets owned or invested by the company owner." Without profits the company can not attract capital from outside. Owners, creditors and management are very interested in raising profits due to the importance of announcing revenue to the market.

There are several kinds of profitability ratios, among others: gross profit margin, operating profit margin, net profit margin, return on assets, return on equity, and basic earning power.

e. Market Ratio

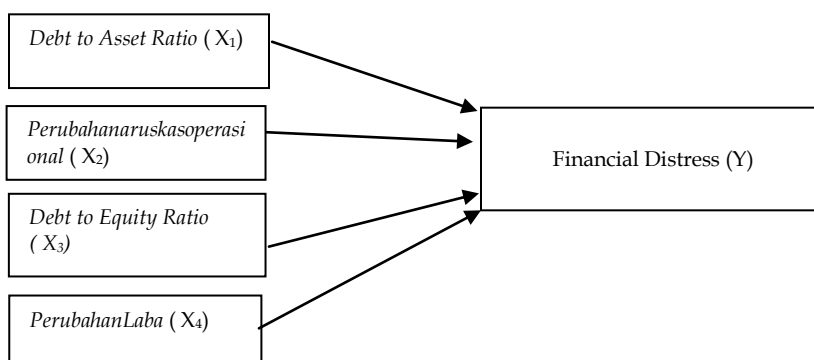
The market ratio according to Gitman (2015: 54) is "the ratio showing the firm's relationship to the firm's market value is measured based on the market value of the firm compared to the value of its accounting record. This ratio provides an overview of how investors in the stock market can measure the risk and return of a company. There are several kinds of market ratios: dividend yield, earning yield, dividend per share, earnings per share, dividend payout ratio, price earning ratio, and price to book value.

Profit

Profit in general is the increase of prosperity in a period that can be enjoyed (distributed or withdrawn) with the record of initial prosperity is still maintained or not changed. Profit or profit can be defined in two ways. Profits in pure economics are defined as an increase in the wealth of an investor as a result of his capital investment, after deducting the costs associated with the investment (including, opportunity costs). Meanwhile, profit in accounting is defined as the difference between the selling price and the cost of production.

Profits or losses are often used as a measure to assess company performance or as a basis for other valuation measures, such as earnings per share. The elements that form the part of profit-making are revenues and costs. By classifying the elements of income and expenses, different earnings measures can be gained, among others: gross profit, operating profit, profit before tax, and net profit.

Figure 1. Conceptual FRAMEWORK



OBJECT OF RESEARCH

The object of research is the variable or what the point of attention of a study, while the subject of research is where the variable attached. Based on that opinion, the object of research investigated in this research is the delay in payment of subsidy income which leads to increased balance of subsidy receivables, operating cash inflows, increased short-term debt balances and profit of the Company.

In this research, the writer conducts research on 5 fertilizer producer companies that receive fertilizer subsidy, namely PT Petrokimia Gresik, PT PupukSriwijaya Palembang, PT PupukKujang, PT Pupuk Kalimantan Timur and PT PupukIskandarMuda in certain period. The period is the year 2011, 2012, 2013, 2014, 2015 and 2016 data used sourced from the company's financial statements listed in the annual report is downloaded on the company's website.

RESEARCH METHODOLOGY

According Sugiyono in his book Management Research Methods (2014), Research Method is a scientific way to get data with a specific purpose and usefulness. The methodology used in this research is descriptive and verifikatif method, according to sugiyono descriptive method is the method used to describe or analyze a research result but used to make wider conclusion. Then according to UlberSilalahi, (2010: 40), verifikatif method is a study that aims to examine or prove the truth of theory or other research conducted previously.

Operational Variable

Independent Variable

1. Debt to Asset Ratio (DAR)

Debt to assets ratio (X1) is one of the solvency ratios. Solvency ratio or leverage ratio is the ratio used to determine the company's ability to pay its obligations if the company is liquidated.

2. Changes in operating cash flow

Operating cash flows (X2) are transactions and events that will determine net income, such as revenue from sales activities or service offerings, receivables collection receivables, or expenditures to purchase inventories, repayment of corporate debt.

3. Debt to Equity Ratio (DER)

Debt to Equity Ratio (X3) reflects the amount of proportion between total debt (total debt) with total shareholder's equity (total equity). This ratio shows the composition of total debt to total

equity. Debt to equity ratio (DER) is the ratio to see how much the company's ability to pay off its debt with the capital they have (Arifin, 2007).

4. Profit Change

Profit Change (X4) represents the difference between revenues after deducted cost of goods sold and expenses both operational and non-operational. Profit can be used to measure the company's operating activities contained in the income statement. Profit change is the changing condition, either increasing or decreasing profit in the corresponding period compared to the previous period.

Dependent Variable

In this research, there is one dependent variable that is financial performance of company experiencing financial distress and non financial distress where company that experiencing financial distress is company having score altman Z Score < 1,81 among fertilizer producer that accept subsidy in Indonesia. The Altman Z-score is expressed in terms of a linear equation consisting of 4 to 5 "X" coefficients representing certain financial ratios:

$$Z = 1,2 X1 + 1,4 X2 + 3,3 X3 + 0,6 X4 + 0,99 X5$$

Where:

X1 = net working capital / total assets

X2 = retained earnings / total assets

X3 = EBIT / total assets

X4 = market value to book equity / value of total liabilities

X5 = sales / total assets

With the discriminant zone as follows:

When $Z > 2.99$ = "safe" zone

When $1.81 < Z < 2.99$ = "gray" zone

When $Z < 1.81$ = "distress" zone

ANALYSIS AND RESULTS

Data Descriptive Analysis

The analysis used in this research is quantitative data by using statistic test tool that is Regression Data Panel, panel data regression is a further development of linear regression with OLS method which has specificity in terms of data type and purpose of analysis. In terms of data types, panel data regression has the characteristics (types) of cross section data and time

series. The nature of the cross section of data is shown by data consisting of more than one entity (individual), while the time series properties are shown by each individual having more than one observation time (period).

The data used in this research is data of 5 fertilizer producer companies that receive subsidy as research subject. The study uses the financial statements as of December 31, 2010 up to December 31, 2015 audited by public accountants of the Annual Report obtained from the official website pages of each company. While Debt to Asset Ratio (DAR), changes in operating cash flow, Debt to Asset Ratio and Profit Change are calculated from the elements of the financial statements of the period 2011 to 2016 each company in each period of the year.

To assess whether the company is included in the financial distress or not calculated using the Altman Z-Score equation where the Z-Score results of each company are classified whether entered into the safe zone, gray area or distress. The Z-Score value will be used to calculate the effect of the dependent variable by using panel data regression to test the hypothesis.

Table 1. Combined Descriptive Statistics

| Variable | Max | Min | Mean | Stdev |
|------------------------|---------|--------|--------|--------|
| DAR | 0,743 | 0,216 | 0,553 | 0,134 |
| Perubahan Arus Kas Ops | 124,652 | -2,961 | 9,570 | 30,251 |
| DER | 9,481 | 0,326 | 3,210 | 2,312 |
| Perubahan Laba | 1,527 | -3,920 | -0,165 | 1,076 |
| Z-Score | 5,361 | 0,746 | 2,183 | 1,144 |

Panel Data Analysis

Estimation of Panel Data Regression Model

Common Effects Model

This model is the simplest technique to estimate panel data model parameters, by combining cross section and time series data as a whole regardless of time and entity differences. Where the approach is often used is the method of Ordinary Least Square (OLS). The Common Effect model ignores the differences in individual dimensions as well as time or in other words the behavior of data between individuals is the same in various periods. Using the help of the EViews 9 program application the estimated results are generated as shown in Table 2. From the Common Effects Model it can be concluded that all the variables included in the research model are all significantly influenced by the error rate $\alpha = 0.05$.

Common Effect Model modeling results can not be used as reference modeling that will be used because it must be calculated and compared first with the model Fixed Effects Model and Random Effects Model.

Table 2. Common Effect Model Estimation Results (CEM)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|----------|
| C | 4.510728 | 0.794027 | 5.680823 | 0.0000 |
| DAR | -4.085068 | 1.684555 | -2.425013 | 0.0229 |
| P_ARUS_KAS_OPS | 0.001306 | 0.006015 | 0.217158 | 0.8298 |
| DER | -0.006201 | 0.092039 | -0.067370 | 0.9468 |
| P_LABA | 0.371134 | 0.181119 | 2.049118 | 0.0511 |
| R-squared | 0.437124 | Mean dependent var | | 2.183088 |
| Adjusted R-squared | 0.347064 | S.D. dependent var | | 1.143590 |
| S.E. of regression | 0.924071 | Akaike info criterion | | 2.830957 |
| Sum squared resid | 21.34769 | Schwarz criterion | | 3.064489 |
| Log likelihood | -37.46435 | Hannan-Quinn criter. | | 2.905666 |
| F-statistic | 4.853694 | Durbin-Watson stat | | 0.891628 |
| Prob(F-statistic) | 0.004905 | | | |

Fixed Effect Model

The Fixed Effect Model approach assumes that the intercept of each individual is different while the slope between individuals is fixed. This technique uses dummy variables to capture the intercept of individual differences. The Fixed Effect Model terminology shows that although intercept varies among individuals, each individual intercept does not vary over time (Ghozali, 2013).

Using EViews 9 program application the estimation results from the Fixed Effects Model can conclude that all the variables included in the research model all have significant effect on the error rate $\alpha = 0.05$. The result of modeling Fixed Effect Model can not be used as modeling reference to be used because it must be calculated and compared first with Random Effects Model. By using the EViews 9 program, we get estimation results for fixed random effects, the following is the model estimation result.

Table 3. Estimation Results Fixed Effect Model.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|------------|-------------|--------|
| C | 5.355183 | 0.697860 | 7.673720 | 0.0000 |
| DAR | -3.392266 | 1.364338 | -2.486381 | 0.0214 |
| P_ARUS_KAS_OPS | 0.002166 | 0.004601 | 0.470847 | 0.6426 |
| DER | -0.406468 | 0.106047 | -3.832917 | 0.0010 |
| P_LABA | 0.074183 | 0.159360 | 0.465504 | 0.6464 |

Effects Specification

| Cross-section fixed (dummy variables) | | | |
|---------------------------------------|-----------|-----------------------|----------|
| R-squared | 0.745404 | Mean dependent var | 2.183088 |
| Adjusted R-squared | 0.648415 | S.D. dependent var | 1.143590 |
| S.E. of regression | 0.678087 | Akaike info criterion | 2.304242 |
| Sum squared resid | 9.655830 | Schwarz criterion | 2.724601 |
| Log likelihood | -25.56362 | Hannan-Quinn criter. | 2.438718 |
| F-statistic | 7.685460 | Durbin-Watson stat | 1.345683 |
| Prob(F-statistic) | 0.000085 | | |

Random Effect Model (REM)

The approach used in the Random Effect Model assumes that each company has different intercept, which is a random or stochastic variable. This model is useful if the individual (entity) taken as a sample is randomly selected and is representative of the population. This technique also takes into account that errors may be correlated along the cross section and time series. Using the EViews 9 program, we have estimated the results for fixed random effects, the following is the model estimation result:

Table 4. Estimation Results Random Effect Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|------------|-------------|--------|
| C | 4.510728 | 0.582660 | 7.741614 | 0.0000 |
| DAR | -4.085068 | 1.236133 | -3.304717 | 0.0029 |
| P_ARUS_KAS_OPS | 0.001306 | 0.004414 | 0.295935 | 0.7697 |
| DER | -0.006201 | 0.067539 | -0.091809 | 0.9276 |
| P_LABA | 0.371134 | 0.132905 | 2.792462 | 0.0099 |

| Effects Specification | | | |
|-----------------------|--|----------|--------|
| | | S.D. | Rho |
| Cross-section random | | 2.12E-07 | 0.0000 |
| Idiosyncratic random | | 0.678087 | 1.0000 |

| Weighted Statistics | | | |
|---------------------|----------|--------------------|----------|
| R-squared | 0.437124 | Mean dependent var | 2.183088 |
| Adjusted R-squared | 0.347064 | S.D. dependent var | 1.143590 |
| S.E. of regression | 0.924071 | Sum squared resid | 21.34769 |
| F-statistic | 4.853694 | Durbin-Watson stat | 0.891628 |
| Prob(F-statistic) | 0.004905 | | |

To select the best model to be used in this research need to be tested from three models. Basically the three techniques (models) panel data estimation can be selected according to the circumstances of the study, seen from the number of individuals and research variables. However, there are several ways that can be used to determine which technique is most appropriate in estimating panel data parameters. According Widarjono (2007: 258), there are three tests to choose panel data estimation techniques.

- First, the F statistical test is used to choose between the Common Effect method and the Fixed Effect method. If the F statistic value in the Chow test is significant, the Hausman test will be performed to select between fixed effect and random effect methods
- Second, Hausman test used to choose between Fixed Effect method and Random Effect method. Hausman test results with a probability value less than α is significant, meaning the fixed effect method selected to process panel data
- Third, the Lagrange Multiplier (LM) test is used to choose between the Common Effect method or the Random Effect method.

Selection of test method is done by using fixed and random effect and combining cross-section, period, and crosssection / period combination. According to Nachrowi (2006, 318), the choice of Fixed Effect method or Random Effect method can be done with the consideration of the purpose of the analysis, or there is also the possibility of data used as the basis of modeling, can only be processed by one method only due to various technical problems mathematical underlying calculations. In Eviews software, the Random Effect method can only be used in the condition of the number of individuals greater than the number of coefficients including intercept.

Chow Test

Chow test is a test to determine the Fixed Effect or Random Effect model used in estimating the panel data model to be used. Chow test results as presented in Table 5 that the value of Cross-section Chi-square of 23.801448 on the degree of freedom 4 then the value of p 0.0001 which is smaller than 0.05, so accept H1 or Fixed Effect Model.

Table 5. Estimates of Chow Test Result

| Effects Test | Statistic | d.f. | Prob. |
|--------------------------|-----------|--------|--------|
| Cross-section F | 6.357015 | (4,21) | 0.0016 |
| Cross-section Chi-square | 23.801448 | 4 | 0.0001 |

Cross-section fixed effects test equation:
 Dependent Variable: FIN_DISTRESS
 Method: Panel Least Squares
 Date: 10/30/17 Time: 21:30
 Sample: 2011 2016
 Periods included: 6
 Cross-sections included: 5
 Total panel (balanced) observations: 30

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|------------|-------------|--------|
| C | 4.510728 | 0.794027 | 5.680823 | 0.0000 |
| DAR | -4.085068 | 1.684555 | -2.425013 | 0.0229 |
| P_ARUS_KAS_OPS | 0.001306 | 0.006015 | 0.217158 | 0.8298 |
| DER | -0.006201 | 0.092039 | -0.067370 | 0.9468 |
| P_LABA | 0.371134 | 0.181119 | 2.049118 | 0.0511 |

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.437124 | Mean dependent var | 2.183088 |
| Adjusted R-squared | 0.347064 | S.D. dependent var | 1.143590 |
| S.E. of regression | 0.924071 | Akaike info criterion | 2.830957 |
| Sum squared resid | 21.34769 | Schwarz criterion | 3.064489 |
| Log likelihood | -37.46435 | Hannan-Quinn criter. | 2.905666 |
| F-statistic | 4.853694 | Durbin-Watson stat | 0.891628 |
| Prob(F-statistic) | 0.004905 | | |

Hausman Test

Hausman test or Hausman test is a test conducted to determine the best model whether using fixed effect model or random effect model. Due to the previous chow test results have been selected fixed effect model then it must be continued with Hausman test. After the calculation using the software Eviews 9, generated regression test data output as below:

Table 6. Table of Hausman Test results with Eviews 9.

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 25.428060 | 4 | 0.0000 |

Cross-section random effects test comparisons:

| Variable | Fixed | Random | Var(Diff.) | Prob. |
|----------------|-----------|-----------|------------|--------|
| DAR | -3.392266 | -4.085068 | 0.333396 | 0.2302 |
| P_ARUS_KAS_OPS | 0.002166 | 0.001306 | 0.000002 | 0.5081 |
| DER | -0.406468 | -0.006201 | 0.006684 | 0.0000 |
| P_LABA | 0.074183 | 0.371134 | 0.007732 | 0.0007 |

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|------------|-------------|--------|
| C | 5.355183 | 0.697860 | 7.673720 | 0.0000 |
| DAR | -3.392266 | 1.364338 | -2.486381 | 0.0214 |
| P_ARUS_KAS_OPS | 0.002166 | 0.004601 | 0.470847 | 0.6426 |
| DER | -0.406468 | 0.106047 | -3.832917 | 0.0010 |
| P_LABA | 0.074183 | 0.159360 | 0.465504 | 0.6464 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|--------------------|-----------|-----------------------|----------|
| R-squared | 0.745404 | Mean dependent var | 2.183088 |
| Adjusted R-squared | 0.648415 | S.D. dependent var | 1.143590 |
| S.E. of regression | 0.678087 | Akaike info criterion | 2.304242 |
| Sum squared resid | 9.655830 | Schwarz criterion | 2.724601 |
| Log likelihood | -25.56362 | Hannan-Quinn criter. | 2.438718 |
| F-statistic | 7.685460 | Durbin-Watson stat | 1.345683 |
| Prob(F-statistic) | 0.000085 | | |

From the hausman test table above can be seen that the value of Cross-Section Random probability is less than 0.05 ie 0.0001 then H1 accepted which means the best method used in this research is fixed effect model compared with random effect model.

Classic assumption test

Residue Normality Test

The assumption test of residual normality is performed to test whether the residue or error of the fixed effect model is selected whether the distribution is normal or not. A good regression model

is a normal or near-normal distribution of data. This normality test calculation uses Eviews software by comparing Jarque-Bera (JB) and Chi Square values of tables. This JB test will be obtained from the normality histogram with the hypothesis used

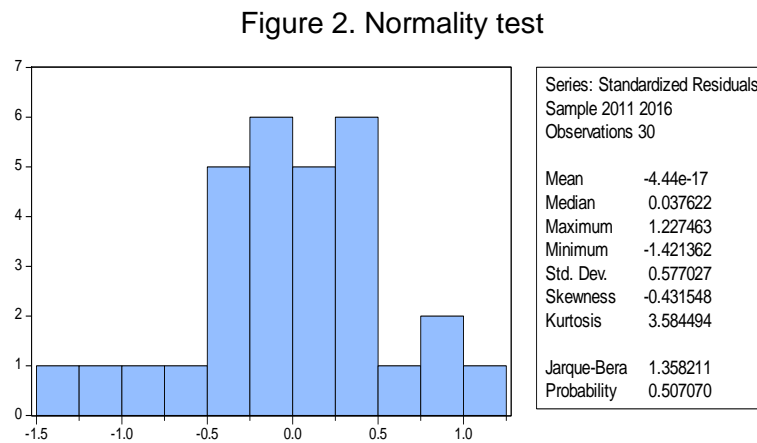
H0: Normally distributed data

H1: Data is not normally distributed

If the result of JB calculate > Chi Square table, then H0 is rejected

If the result of JB Count < Chi square table, then H0 is accepted

Here the results using software eviews 9.



From the histogram above the JB value of 1.538211 while the value of Chi Square by looking at the number of independent variables used in this study i.e. 4 independent variables and significant value we use in this case 0.05 or 5%. Obtained value of Chi Square table equal to 9,49 which mean value of JB smaller than Chi Square value (1,538211 <9,49). So it can be concluded that the data in this study is normally distributed.

Multicollinearity Test

Multicollinearity test is to see whether or not there is a high correlation between the independent variables in a multiple linear regression model. (Sunjoyo, 2013: 53 - 75). A good model is a model that does not occur correlation between independent variables. Multicollinearity arises if among the independent variables have a high correlation and make it difficult to separate the effects of an independent variable to the dependent variable from the effects of other variables. This is due to changes in a variable will cause changes in the variable pair because of high correlation. Some indicators in detecting the presence of multicollinearity, such as (Gujarati, 2006):

1. The value of R2 is too high, (more than 0.8) but there is no or little significant t-statistics.

2. The value of F-statistics is significant, but the t-statistics of each independent variable is not significant.

To test the problem multicollinearity can see the correlation matrix of independent variables, if there is correlation coefficient more than 0.80 then there is multikolinearitas (Gujarati, 2006).

Table 7. Correlation between Independent variables

| Correlation | | | | |
|--------------|-----------|--------------|----------|-----------|
| | DAR | P_ARUS_KA... | DER | P_LABA |
| DAR | 1.000000 | 0.223581 | 0.512221 | -0.253796 |
| P_ARUS_KA... | 0.223581 | 1.000000 | 0.142459 | 0.176029 |
| DER | 0.512221 | 0.142459 | 1.000000 | 0.152892 |
| P_LABA | -0.253796 | 0.176029 | 0.152892 | 1.000000 |

From the table above can be seen the value of correlation coefficient between independent variables below 0.80 Thus the data in this study did not occur a problem with multicollinearity test.

Autocorrelation Test

A good regression equation is not having an autocorrelation problem. If an autocorrelation occurs then the parasitic becomes unfavorable or unfeasible for prediction. Size in determining whether or not there is an autocorrelation problem with the Durbin-Watson test (DW), with the following conditions:

- There is a positive autocorrelation if DW is below -2 ($DW < -2$).
- No autocorrelation occurs if DW is between -2 and +2 or $-2 < DW < +2$.

The result of autocorrelation test shows that DW value is 1,345,683 where > -2 and < 2 , so it can be concluded that model of Fixed Effect Model no problem with autocorrelation issues.

Result of Panel Data Regression

Based on model test that has been done by using chow test and Hausman test for this research, then selected fixed effect model as best model chosen. In accordance with the results of fixed effect model estimation produced by software eviews are as presented in table 8.

From the table above can be made regression equation as follows:

$$\text{Financial Distress} = 5,355183 - 3,392266 \text{ DAR} + 0,002166 \text{ Changes in Operating Cash Flow} - 0,406468 \text{ DER} + 0,074183 \text{ Profit Change} + \epsilon$$

Table 8. Regression Model with Fixed Effect Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---------------------------------------|-------------|-----------------------|-------------|--------|
| C | 5.355183 | 0.697860 | 7.673720 | 0.0000 |
| DAR | -3.392266 | 1.364338 | -2.486381 | 0.0214 |
| P_ARUS_KAS_OPS | 0.002166 | 0.004601 | 0.470847 | 0.6426 |
| DER | -0.406468 | 0.106047 | -3.832917 | 0.0010 |
| P_LABA | 0.074183 | 0.159360 | 0.465504 | 0.6464 |
| Effects Specification | | | | |
| Cross-section fixed (dummy variables) | | | | |
| R-squared | 0.745404 | Mean dependent var | 2.183088 | |
| Adjusted R-squared | 0.648415 | S.D. dependent var | 1.143590 | |
| S.E. of regression | 0.678087 | Akaike info criterion | 2.304242 | |
| Sum squared resid | 9.655830 | Schwarz criterion | 2.724601 | |
| Log likelihood | -25.56362 | Hannan-Quinn criter. | 2.438718 | |
| F-statistic | 7.685460 | Durbin-Watson stat | 1.345683 | |
| Prob(F-statistic) | 0.000085 | | | |

The results of testing coefficient of Determination and F statistic test

Table 9. Coefficient of determination and F statistic test

| | |
|--------------------|----------|
| R-squared | 0,745404 |
| Adjusted R-squared | 0,648415 |
| S.E. of regression | 0,678087 |
| F-statistic | 7,685460 |
| Prob(F-statistic) | 0,000085 |

The coefficient of determination (R-Squared) can be used to predict how big the influence of independent variable (X) to the dependent variable (Y) provided that the result of F test in regression analysis is significant. Conversely, if the result in the F test is not significant then the value of coefficient of determination (R Squared) can not be used to predict the contribution of the influence of variable X to variable Y.

In the results of this study after calculated using the equation of fixed effect model with eviews obtained R-squared value of 0.745404 which means a set of predictor variables in this model can explain the response variable of 74.5404%. While the rest is explained by other variables outside the model that are not researched. The value of adjusted R-squared is 0.648415, it means that the contribution of independent variable to dependent variable is 64,8415%.

F statistic test

H0: Debt to Assets Ratio (DAR), changes in operating cash flow, Debt Equity Ratio (DER), and earnings changes have no effect on Financial Distress.

H1: Debt to Assets Ratio (DAR), changes in operating cash flow, Debt Equity Ratio (DER), and earnings changes affect jointly to Financial Distress.

Then the significance test for the hypothesis is

- If significance > 0.05 then H0 is accepted, H1 is rejected
- If significance < 0.05 then H0 is rejected, H1 is accepted

From table 9 can be seen the value of F statistic of 7.685460 and the value of Prob (F-statistic) of 0,000085 smaller than 0.05 then H1 accepted. This means that with a 95% confidence level that the Debt to Assets Ratio (DAR), changes in operating cash flow, Debt Equity Ratio (DER), and earnings change simultaneously affect z-score as a Financial Distress indicator.

CONCLUSION

Based on data processing and analysis conducted in the previous chapter, the conclusion is as follows:

1. Debt to Asset Ratio (DAR) has significant negative effect on z-score as financial distress indicator of fertilizer subsidy recipient. It is seen from the coefficient of Debt to Asset Ratio (DAR) shows the number -3,392266 and p value $0,0214 < 0,05$ in the calculation of panel data regression using fixed effect model method. If the DAR score increases then the producers of recipients of fertilizer manufacturers should be wary if not anticipated from the beginning will bring the company into bankruptcy / financial distress
2. Changes in operating cash flow does not significantly affect the z-score as an indicator of financial distress this is seen from the coefficient of changes in operating cash flow shows the figure of 0.002166 and p value $0.6426 > 0.05$ in the calculation of panel data regression using fixed effect method model. This is due to the fact that despite the company's operating cash down due to delayed subsidy payments, the company can still cover it by making short-term working capital credit loans to the banks by making the subsidy receivable as collateral.
3. Debt to Equity Ratio (DAR) has significant negative effect to z-score as financial distress indicator of fertilizer subsidy recipient. It is seen from Debt to Equity Ratio (DER) coefficient shows -0,406468 and p value $0,0010 < 0,05$ in the calculation of panel data regression using fixed effect model method. If the DER score increases continuously then if not anticipated from the beginning will bring the company into bankruptcy.
4. Changes in earnings does not positively affect the z-score as an indicator of financial distress this is seen from the coefficient Profit change shows the number 0.074183 and p value $0.6464 > 0.05$ in the calculation of panel data regression using fixed effect model method. This is

because the profit of some companies tend to be stable even if they have to bear the interest cost of working capital loan loan part of the interest expense is still borne by the subsidy.

5. The results of this study found that Debt to Asset Ratio (DAR), Operational Cash Flow Changes, Debt to Equity Ratio (DER) and Profit Change if tested together have a significant influence on Z-Score as an indicator of Financial Distress seen from value of F statistic equal to 7,685460 and value of Prob (F-statistic) equal to 0,000085 less than 0,05.

SUGGESTION

Based on the results of research, it can be concluded that only debt to asset ratio and debt to equity ratio that affects the financial distress, while changes in profit, changes in operating cash flow and no effect on financial distress in fertilizer subsidy companies.

1. for Management / Company

Management must be wary if the company has a Debt to Assets Ratio (DAR) and Debt to Equity Ratio (DER) score is increasing, because according to this research DAR and DER can give signs of company will experience financial distress, therefore management must be able as much as possible to be able to pay or reduce its short-term debt to get out of the Financial Distress, it can be done with funds derived / generated from profit margins obtained from non-subsidized or commercial sales and as a long-term plan the company must be able to diversify not too dependent on the subsidized fertilizer business and more broadly out of the fertilizer business and developing in the petrochemical sector to obtain a larger margin, than the mere fertilizer business.

2. for Government as Regulator

The result of this study concludes that Debt to Assets Ratio (DAR) and Debt to Equity Ratio (DER) which continue to increase can give the sign of company will experience financial distress, therefore Government through Ministry of Agriculture and Ministry of Finance in order to pay off fertilizer subsidy so that fertilizer manufacturer subsidy out of financial distress condition.

SCOPE FOR FURTHER RESEARCH

1. Further research should be considered to use other independent variables that are deemed to be representative of this study.
2. Further research is expected to be a reference to do similar research in state-owned companies receiving subsidies outside the fertilizer field, or for research in the private sector.

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