

The Influence Of Profitability On Financial Distress : A Research On Agricultural Companies Listed In Indonesia Stock Exchange

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The Influence Of Profitability On Financial Distress : A Research On Agricultural Companies Listed In Indonesia Stock Exchange

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Abstract: The aim of this research is to analyze the influence of profitability on financial distress in agricultural companies listed in Indonesia stock exchange from 2012 to 2014. Altman Z's Score, net profit margin, cash ratio, and natural logarithm total assets are used as the proxy of financial distress, profitability. Through purposive sampling method, 18 companies were used as a sample in this research. Data used in this research were secondary ones which obtained from company's financial statement and Indonesian Capital Market Directory (ICMD) from 2012 to 2014. The analysis methods of this research is used multiple regression analysis. The result is showed that partially profitability have effect but no significant towards financial distress.

Index Terms: Influence, Profitability, Financial Distress, Altman Z's Score

1. Introduction

The company operates goal is to improve the welfare of its owner. Management must also keep the company meet the assumption of going concern. Kieso going concern assumption in (2011), meaning the company will continue to operate for a period of time is not limited. The information that a company will experience financial distress very helpful. Given these predictions, the company can make managerial action to prevent problems before they occur bankruptcy. On the investor side, the prediction model of financial distress can also give an early warning sign of bankruptcy in the future. Kahya and Theodossiou (1999) suggests companies experiencing financial distress generally experienced a decline in growth, profitability, and fixed assets. In addition the company experiencing difficulties in paying their obligations and they tend to increase their capital. Financial distress model then further developed using multivariate discriminant analysis by Altman (1968). The discriminant analysis is a statistical technique to identify several kinds of financial ratios that are considered most important in influencing the value of an event, and then develop it into a model with a view to facilitate the exciting conclusion of an event. The first study Altman have an object that manufacturing companies listing on the stock market. Altman make revisions to the model so that it can be used not only for a manufacturing company listings but also can be applied in the private sector. Along with time and adjustment to various types of companies. Altman then modify the model that can be applied to all companies, a case of manufacturing, non-manufacturing, and the company issuing a bond in developing countries (emerging markets). The financial statements published by the company is one source of information regarding the company's financial position, performance and changes in financial position of the company, which is very useful to support appropriate decision making, financial data must be converted into information that is useful in making economic decisions.

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This is achieved by performing the analysis in the form of financial ratios. Foster (1986) suggest four things that drive financial statement analysis is done with a model financial ratios, namely:

- 1) To control for the effect of differences in the amount of inter-company or inter-time.
- 2) To make the data more to meet the assumptions of statistical tools used.
- 3) To investigate the theory associated with the financial ratios.
- 4) To examine the empirical relationship between financial ratios and estimates or predictions of certain variables (such as bankruptcy or financial distress).

Financial Ratios, in Gitman (2006), can be divided into five basic groups is the ratio of liquidity, activity, debt, profitability, and market ratio. Liquidity, activity and debt ratios can measure risk. Profitability ratios can be used to measure income. While the ratio of the market can measure both risk and revenue. One ratio that can be used to view the company's profitability is the net profit margin. Net profit margin is a ratio that measures the percentage of any income earned after deducting all costs and expenses, including interest, tax and dividends to preferred shareholders. The higher the value of net profit margin shows the better profitability of the company. From climatic factors, agricultural commodities are also sensitive to the economic growth and world oil prices. In Indonesia Economic Outlook 2009 - 2014 published by Bank Indonesia, the world economic slowdown causes the volume of world trade is projected to experience a sharp decline. After reaching an average growth of 8.1% over the last 5 years, in 2008 the growth in world trade volume declined sharply to 4.1% in line with weakening global demand. This condition is immediately followed by the decline in world commodity prices. World oil prices in the last five years continued to rise, even briefly hit USD147 / barrel in July 2008, declined sharply to reach USD47 / barrel in December 2008. The drop in oil prices was also followed by a sharp decline in prices of other commodities, especially metals, minerals and agricultural products. Indonesian exports vulnerability to shocks in external conditions are actually not independent of the characteristics contained in Indonesia's export commodities. With the main export destination countries that tend to be concentrated in a single country as

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well as the type of export commodities in general are relatively less diversified, the impact of the global crisis on exports to be very significant. The intensity is also likely to deteriorate in line with the sharp contraction in the world economy. The sectors most affected by the global crisis is the sector that rely on external demand (tradable), such as manufacturing, agriculture and mining. Companies in the agricultural sector contained in the Indonesia Stock Exchange is dominated by the oil palm company. After the 2008 global financial crisis, the price of palm oil is still showing a downward trend until 2015. The impact of the economic crisis and climate change is happening is if not addressed can lead to potential bankruptcy in agricultural enterprises. It's important for the owners of capital, management and investors to determine the position of the company's financial condition in order to determine the company's strategy for the future. Luciana (2003) in the journal Financial Ratio Analysis To Predict Financial Distress in Manufacturing Company concluded the most influence on the ratio of financial distress is the current ratio, net profit margin, net income growth. Subsequent studies of Atmini (2005) has the result that cash flow does not have a strong influence on the financial distress. The difference with research Imam Mas'ud (2008) which examined the financial ratio analysis to financial distress at a manufacturing company with the result does not affect the current ratio financial distress. The ratio of net profit margin also had no effect on the financial distress (Yuniarti, 2012). Based on the phenomenon described above researchers took the title: "The Influence of Profitability on Financial Distress (Empirical Study on Agricultural Sector Companies Listed in Indonesia Stock Exchange 2012-2014)".

2 LITERATURE REVIEW

2.1 Profitability

Profitability is a ratio that measures how much the effectiveness of management as evidenced by the ability to create profits. Analysis of the profitability of the company is a major part of financial statement analysis. The results of this study allow for estimates return and risk the company well. Profitability analysis is very useful for users of financial statements, especially for investors and creditors. For investors, income is one determinant of the value of an effect. As for creditors profit from operating cash flow is a source of funds for interest and principal payments of debt. (Wild, Subramanyam, Hasley, 2005). According to Brigham and Daves (2003: 112) profitability is: "A group of ratios that show the combined effects of liquidity, asset management, and debt on operating results": In general, there are four main types of analysis were used to assess the level of profitability that is comprised of:

- 1) Net Profit Margin (NPM)
- 2) Gross Profit Margin (GPM)
- 3) Return On Assets (ROA)
- 4) Return On Equity (ROE)

The explanation of these ratios as follow :

- 1) Net Profit Margin
Net profit margin is a ratio that measures the percentage of any income earned after deducting all costs and expenses, including interest, tax and dividends to preferred shareholders (Gitman, 2006).
- 2) Gross Profit Margin
According to Gitman (2006:79), the gross profit margin is:

"The gross profit margin measures the percentage of each sales dollar remaining after the firm has paid for its goods. The higher the gross profit margin, the better (that is, the lower the relative cost of merchandise sold)."

- 3) Return on Assets
Return On Assets (ROA) is an assessment of profitability on total assets, by comparing the profit after tax to average total assets. Return On Assets (ROA) indicates the effectiveness of the company to manage the assets either from their own capital or from borrowed capital, investors will look at how effectively a company to manage assets.
- 4) Return On Equity (ROE) is used to measure the ratio of net profit after tax with their own capital. This ratio indicates the power to generate a return on investment based on the book value of the shareholders.

2.2 Financial Distress

Financial distress is a condition in which the company is facing financial difficulties problem. According to Platt and Platt (2002) defined as the stage of financial distress financial downturn that occurred prior to the bankruptcy or liquidation. Financial distress drawn from the company's inability or unavailability of a fund to pay for obligations that have matured. Financial difficulties began when the company can not meet the payment schedule or when the cash flow projections indicate that the company will soon be unable to meet its obligations (Brigham and Daves, 2003). There are several definitions of financial difficulties, according type, namely economic failure, business failure, technical insolvency, insolvency in bankruptcy, and legal bankruptcy (Brigham and Gapenski, 1997). Here is the explanation:

- 1) Economic failure
Economic failure or economic failure is a situation where the company's revenues can not cover the total cost, including the cost of capital. The business can continue to operate throughout the lenders would provide capital and its owner will accept return rate (rate of return) in the bottom of the market. Although there is no injection of new capital assets when parents had to be replaced, the company can also be economically viable, new capital assets when the parents had to be replaced, the company can also be economically viable.
- 2) Business failure
Business failure is defined as a business that ceased operations with consequent losses to creditors.
- 3) Technical insolvency
A company is said to be in a state of technical insolvency if it can not meet current liabilities as they fall due. Inability to pay the debt technically indicate a temporary lack of liquidity, which if given the time, the company may be able to pay its debts and survive. On the other hand, if the technical insolvency are the first signs of economic failure, this may be the first stop toward financial disaster.
- 4) Insolvency in bankruptcy
A company is said to be in a state of insolvent in bankruptcy if the debt book value exceeds the market value of assets. This condition is more serious than technical insolvency because, generally, it is economic failure sign, and even lead to the liquidation of the business. Businesses in insolvent circumstances in bankruptcy does not need to be involved in bankruptcy claims legally.

5) Legal bankruptcy

Companies say bankruptcy law if it has been filed formally with the demands of the legislation (Brigham and Gapenski, 1997).

2.3 Factors Contributing to Financial Distress

According to Damodaran (1997), the causes of financial distress of the company is more micro. The factors of the companies are:

- 1) Difficulty cash flow
Occurs when the revenue receipts of the company's results of operations are not enough to cover expenses arising from activities of business operations. In addition to the cash flow difficulties can also be due to the fault of management when managing the company's cash flow, in paying the company's activities which can worsen the company's financial condition.
- 2) The amount of debt
Debt collection policy of the company to cover the costs resulting from the company's operations will create liability for the company to return the debt in the future. When bills are due, while the company did not have sufficient funds to pay the bills, then it is likely that creditors do is perform the confiscation of the company to cover the payment of the charge.
- 3) Losses in company operations for several years
In this case the operational losses of companies which can give rise to a negative cash flow in the company. This can occur because the operating expense is greater than the income received by the company.

Although a company can solve three problems mentioned above, is not necessarily the company can avoid financial distress, it is because there are external factors that can lead to financial distress. According to Damodaran (1997), external factors more macro level, where the scope is wider. The external factors may include government policies that can increase operating expenses borne by the company, such as increasing tax rates can increase the burden on companies. In addition there is a policy loan interest rate increases, which could lead to an increase in the interest expense of the company. Storey (1994) in Dylan (1996) also stated that the factors that affect bankruptcy, namely:

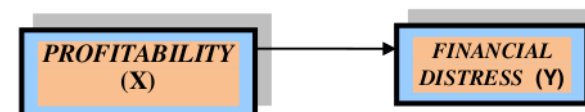
- 1) Age of the company, the longer the company exists, the less likely bankruptcy.
- 2) The size of the company, the larger the company, the less likely bankruptcy.
- 3) Growth, growth companies are more likely to survive.
- 4) The macroeconomic conditions, the failure rate increased during the recession.
- 5) Sector, the failure rate is high in some industrial sectors.
- 6) Man, there is evidence that the rate of business failures is inversely proportional to the level of education, age and previous experience of the owner – manager.
- 7) Type the company, there is a bit of a failure in franchising.
- 8) The location, the failure rate is somewhat lower in rural areas.

3 THEORETICAL FRAMEWORK

Delegation of authority from the principal to the agent indicates that the agent has the power and in control of a company in its survival, because that agency is required to be always transparent in their management activities on a company. For

that, through the financial statements agent can show one form of accountability for the performance that has been done to the company (Wahyuningtyas, 2010). The information in the financial statements of principle can be used as a tool to assess the condition of the company. Altman (1968) divides the condition of the company into three groups, the first group is a healthy company, the second group is a company that is in the gray area is the condition between healthy and bankrupt, and the third group is the company which is in a state of bankruptcy. Platt and Platt (2002) defines financial distress as a stage of decline in financial condition that occurs prior to the bankruptcy or liquidation. While Foster (1986) states: "Financial distress is used to mean severe liquidity problems that can not be resolved without a sizable rescaling of the entity's operations or structure". Financial distress can be used as early warning of bankruptcy so that management can take action quickly to prevent problems before bankruptcy. If management knows where the company's financial position now then management can determine the strategy that should be taken for the future. Analysis of financial statements is an important tool to obtain information relating to the company's financial position and the results that have been achieved in connection with the election of the company's strategy has been applied. The ratio can be used to measure profitability, among others, return on assets, return on equity, and net profit margin. This study uses the ratio of net profit margin as an indicator of profitability. Net Profit Margin shows the magnitude of the difference between the income earned by the end of the company's revenue after deducting operating expenses and financial expenses. High profitability may prevent the company from financial distress. However, many companies that have a low profit margin net profit because of its business owned thinner or have a higher cost of goods sold. Brigham and Daves (2003) said one feature of the company's initial financial distress is failing to pay duty. Obligations that must be paid for a period of one year after the reporting referred to short-term liabilities. Ratios can be used to view a company's ability to pay short-term obligations is the cash ratio. Luciana and Kristtajadi (2003) Analysis of Financial Statements To Predict Financial Distress Condition In Manufacturing Companies Listed in Indonesia Stock Exchange net profit margin ratio, financial leverage, and the current ratio has an influence on financial distress. Atmini (2005) results showed Profitability can be used to predict financial distress but less strong cash flow. Hill, Ferry, and the Andes (1996) research found that Cash to Total Assets, Return on Assets, Total Liabilities to Total Assets, Natural Log of Sales influence on Financial Distress.

4 STUDY MODEL AND HYPOTHESIS



Based on the framework that has been stated above, the hypothesis proposed in this study are:

H1: The firm size has an influence on the financial distress in the company.

5 RESEARCH METHODOLOGY

The method used by the writer is descriptive method. Descriptive method is a method in researching the status,

groups of people, an object, a set of conditions a system of thought or a class of events in the present. The purpose of descriptive research is to create a description, picture or painting in a systematic, factual, and accurate information on the facts, properties and relationships between phenomena investigated (Sugiyono, 2013). In addition, this study is verification. Sugiyono (2003), verification is research evidence to test hypotheses through descriptive research results with a statistical calculation in order to get results that show proof of the hypothesis is rejected or accepted. The type of data in this research is secondary data. The data used in this study of the financial statements of agricultural companies listed on the Indonesia Stock Exchange in the period 2012 - 2014, published through pages www.idx.co.id and Indonesia Capital Market Directory. Another data source that references the author of some books, journals, news articles, and some earlier research... The population used in this research are agricultural companies listed in Indonesia Stock Exchange. This study using multiple regression analysis (multiple regression analysis), to test whether the profitability, liquidity and firm size as independent variables have an effect on the dependent variable is financial distress.

6 FINDING, DISCUSSION AND CONCLUSION

Liquidity in agricultural companies listed on the Indonesian Stock Exchange (BEI) the highest average of .681 there in 2012, while the average lowest was in 2014 with a value of 0,308. If you look at the chart the development of liquidity in agricultural companies listed on the Indonesian Stock Exchange (BEI) in the period from 2012 to 2014 had a downward trend. Companies that have the highest liquidity in 2014 was Sinar Mas Agro Technology, Tbk with a value of 3.382. In 2013 the company with the highest liquidity is Austindo Nusantara Jaya, Tbk with a value of 2,154 and in 2014 the company with the highest liquidity is PP London Sumatra Tbk with a value of 1.813. While the company with liquidity to its lowest in 2012 held by the Central Proteinaprima, Tbk with a value of 0.018. In 2013 the company with the lowest liquidity is Wahana Pronatural, Tbk to 0,009 and in 2014 was Bakrie Sumatra Plantation Tbk with a value of 0.007. Financial distress in the agricultural company listed on the Indonesia Stock Exchange (IDX) on average there is a high of 4.489 in 2012, while the average was lowest for the year 2014 is equal to 3.788. If you look at the chart the development of financial distress in the agricultural companies listed on the Indonesian Stock Exchange (BEI) in the period from 2012 to 2014 had a downward trend. Companies with the highest value of financial distress in the year 2012 to 2014 was Inti Agri Resources Tbk with consecutive values 17.206, 18.983, and 22.062. While companies with the value of financial distress in 2012 and 2014 the lowest was Centarl Proteinaprima, Tbk with consecutive values -8.255, -5.259, and -6.386. The significance level (α) of 5%, $dk = (n-k-1) 54-3-1 = 50$, with testing two parties in order to obtain t-table is 2.009. Profitability (X_1) does not significantly influence financial distress (Y) because the value of t-test (-1.898) are located in acceptance area H_0 , in other words H_a is rejected, meaning that there is no significant influence between profitability and the value of financial distress. Statistical tests showed that the profitability effect but not significant distress on financial companies. No significant question is the assertion that these results do not apply to the population, that means that conclusion only applies to the sample in the study is not to

generalize to the population (Sugiyono, 2013). The results are consistent with previous research, ie Revelation and Dobby (2009) which states profitability has a significant influence in financial distress on automotive company listed on the Stock Exchange in 2004 -2006. From 2008 to 2014 the price of agricultural commodities according to World Bank data still show a declining trendline. Subramanyam, et.al (2005) only profitability ratios measure the effectiveness of management as evidenced by the ability to create profits. Although the company has a good ability in creating a financial but still must be reviewed if such benefits can meet the requirements for operation and used to satisfy the obligations of both short and long term. Disadvantages of this makes the profitability ratios profitability can not be used as factors that affect the value of significant financial distress. Based on the analysis results that have been presented above, the authors conclude as follows: profitability has an influence on financial distress.

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REFERENCES

- [1] Anna Candrawati. (2008). Analysis of Factors Influencing the Success of Turnaround in Businesses Experiencing Financial Distress. Thesis. Diponegoro University.
- [2] Altman, E. J. 1968. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance* (September).
- [3] Altman, Edward I. 1983. *Corporation Financial Distress - A Complete Guide to Predicting, Avoiding, and Dealing with Bankruptcy*. John Wiley & Sons. New York.
- [4] Altman and R. Haldeman. 1995. "Corporate Credit Scoring Models: Approaches and Test for Successful Implementation". *Journal of Commercial Bank Lending*.
- [5] Bank Indonesia. 2009. *The Indonesian Economic Outlook 2009-2014*.
- [6] Beaver, W. H. 1966. Financial ratios as predictors of failures. *Empirical Research in Accounting, Supplement to the Journal of Accounting Research*.
- [7] Bernard S. Black, Woochan Kim, Hasung Jang and Kyung-Suh Park. 2013. *How Corporate*.
- [8] Governance Affects Firm Value: Evidence on Channels from Korea, *Journal of Corporate Finance, USA*. Social Science Electronic Publishing, Inc.
- [9] Brigham, Eugene G and Louis C. Gapenski. 1997. *Financial Management - Theory and Practice*. The Dryden Press. Eight Edition. p. 1034-1067.
- [10] Brigham, Eugene F and Phillip R. Daves. 2003 *Intermediate Financial Management*. Eight Edition. Thomson. South-Western. p.837- 859.
- [11] Chirinko.R., Singha.A., 2000. Testing Static Trade Off against Pecking Order Models of Capital Structure: A

- Critical Comment. *Journal of Financial Economics* from 58.417 to 425.
- [12] Damodaran. 1977 *Corporate Finance: Theory and Practice*. John Wiley & Sons Incorporated - Business & Economics.
- [13] Foster, George. 1986 *Financial Statement Analysis*. Prentice Hall, Englewood Cliffs, New Jersey.
- [14] Gitman, Lawrence. 2006. *Principles of Managerial Finance*. 11th Edition. Pearson.
- [15] Godrey, J., Hodgson, A., Tarca, A., Hamilton, J., & Holmes, S. (2010). *Accounting Theory*. Milton: John Wiley & Sons Australia, Ltd.
- [16] Frank, M. and V. Goyal. 2002. Testing the Pecking Order Theory of Capital Structure. *Journal of Finance Economics* 67.
- [17] Hill, T. N., S. E. Perry, and S. Andes. 1996. "Evaluating Firms in Financial Distress: An Event History Analysis". *Journal of Applied Business Research* 12 (3): 60-71.
- [18] Indonesian Institute of Accountants. 2012. Statement of Standard Accounting Iramani Rr. Prediction of Financial Distress 2008. Model Companies Go Public in Indonesia (Studies in Manufacturing Sector), *Journal of Management Applications*. Volume 6, Number.1. April, hlm.183-194.
- [19] Jensen, M. C. (1986). Agency Cost of Free Cash Flow, Corporate Finance and Takeovers. 98TH Annual Meeting of the American Economic Association (pp. 323-329). American Economic Association.
- [20] Kahya and P.Theodossiou. 1999. Predicting Corporate Financial Distress: A Time Series CUSUM Methodology ", *Review of Quantitative Finance and Accounting* Of V.13 no.4.
- [21] Khaira, Amalia Fachruddin. 2014. Analysis of Effect of Capital Structure, Company Size, and Agency Cost to Company Performance. 2011. *Journal of Accounting and Finance*.
- [22] Kieso, Donald E., Weygand, Jerry J., Warfield, Terry D. 2011. *Intermediate Accounting*. Volume 1 & 2. John Wiley & Sons.
- [23] Luciana Spica Almilia, Meliza. 2003. Analysis of Financial Ratios to Predict Financial Distress Condition Manufacturing Companies Listed on the Jakarta Stock Exchange. *Journal of Accounting and Auditing Indonesia (JAAI)* Vol. 7 No. 2. December ISSN: 1410-2420.
- [24] Myers, Stewart C. and Nicholas S. Majluf (1984): Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have: *Financiak Journal of Economics* 13: pp187-22.
- [25] Myers, Stewart C. 1984 "The Capital Structure Puzzle". *The Journal of Finance*.
- [26] Palepu, Krishna G., Healey, Paul M., Bernard, Victor L., 2004. *Business Analysis and Valuation Using Financial Statement*. Third Edition. Thomson Smith Western.
- [27] Platt, Harlan D. and Majorie B. Platt. 2002. Predicting Corporate Financial Distress: Reflections on Choice-based Sample Bias. *Journal of Economic and Finance*, Illinois.
- [28] Sambas Ali Muhidin, Maman Abdurrahman. 2007. *Correlation Analysis, Regression and Path in Research*. Faithful Reader: Bandung.
- [29] Sari, Atmini 2005. Benefits Earnings and Cash Flow Conditions To Predict Financial Distress in the Company textile Mill Products, Apparel, and Other Textile Products which have been registered on the Stock Exchange Jakarta. SNA VII: Solo.
- [30] Sekaran Uma., & Bougie, R. (2010). *Research Methods for Business* .: New Jersey: John Wiley and Sons.
- [31] Sugiyono. (2003). *Statistics For Research*. Bandung: Alfabeta.
- [32] Sugiyono. (2013). *Statistics For Research*. Bandung: Alfabeta.
- [33] Suharsimi, Arikunto. 2005. *Management Research*. Seventh Edition. Jakarta: PT Cipta Rhineka
- [34] Tanti (2010). *Impact of Global Financial Crisis on the Economy Indonesia*: IPB.
- [35] Widarjo and Doddy Setiawan. 2009. Effect of Financial Condition Financial Ratios Against Distress Automotive Company. *Journal of Business and Accountancy*.
- [36] Wild, John J., Subramanyam, K.R., Hasley, Robert F. 2005. *Analysis of Financial Statements Translation Edition* 8. Yanivi S. and S. Nurwahyu Bachtiar. Jakarta: Salemba 4.
- [37] Wahyuningtya Fitria. 2010. Use of Earnings and Cash Flow Conditions To Predict Financial Distress (Case Study On Non-Bank Companies Listed in Indonesia Stock Exchange Period 2005-2008).
- [38] White, Gerald I., Sondhi, Ashwinpaul C., Fried, Dev. 2003. *The Analysis and Use of Financial Statement*. Third Edition. John Wiley & Sons, Inc.
- [39] Yuniarti. 2012. Analysis Of Financial Distress Financial Ratios Basic and Chemical Company Listed on the Stock Exchange. *Journal of Economics* Vol 6 No 2.
- [40] www.bps.go.id
- [41] www.idx.co.id
- [42] www.data.worldbank.org

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