DETECTION FRAUD AND BANKRUPTCY IN FINANCIAL STATEMENT USING BENFORD AND ALTMAN MODEL

Koen Hendrawan, Dwi Kristanto, Aris Wahyu Kuncoro,
Lecture at FEB Universitas Budi Luhur
Jakarta Selatan, Indonesia

Abstract

This study examines how fraud and bankruptcy can be combined as an analytical tool in the company's financial statements. This study is one of proving financial analysis from Indonesia. The findings indicate that there is a risk zone that management needs to investigate further. It is advisable for the company to establish an internal audit unit to provide assurance over the company's operations, the accuracy of financial reporting and regulatory compliance.

Keyword: Altman Z score, Banford model, financial ratio.

I. INTRODUCTION

Various models of reference to the financial analysis and financial statements of the company, has grown. The most commonly used models are Altman Z score and Benford law. In addition, according to SAA 99 and SAS 113, an auditor also has responsibilities in planning and conducting audits of the financial statements obtained, so that users can use financial statements that are generated in the interests of business. This study examines how the effectiveness of two popular forensic tools in detecting financial statements in the form of bankruptcy and bankruptcy in one of the fertilizer companies in Indonesia for the fiscal year ending 2005-June 2017. The two tools are Model Altman Z score and Benford model. Of the two models in use, will be in the results and discussion of the relative effectiveness of the analyzer tool that is in use.

II. LITERATURE

According to research by Beasley et al. (1999), FFS often involves excessive income and assets. A deliberate misstatement in financial statements is recorded much more often in earnings than in asset misuse. Beasley et al. noted that overall, cumulative, average cheating was USD $ 25 million, and average cheating was USD $ 4.1 million. In addition, Cynthia. H (2005) expresses the same opinion regarding the prevention and detection of manipulated financial statements, noting that detecting FFs using normal audit procedures is very difficult, not only for auditors but for all stakeholders. There are three main reasons for this, according to Fanning et al., (1998). First, the lack of knowledge about the characteristics of fraud management. Second, the auditor is less experienced in detecting manipulated financial statements. Third, managers get new techniques to mislead auditors and investors.

III. DATA AND RESEARCHA METHOD

This study was conducted during August 2017, using the Benford and Altman model analysis models. This study was conducted at a company in Indonesia, named PT PK. This study uses the data of the company's financial statements during fiscal year 2015, 2016 and until June 2017.

IV. RESULT AND DISCUSSION

Here are the results of the analysis for the financial statements of PT PK using the Altman model and Benford law for financial statements ending in 2015, 2016 and June 2017.

Table 1 : CALCUATIONS FOR THE YEAR 2017

		Factor	Z Public Mfg	Z1 Private Mfg	Z2 General Use
Working capital/Total assets	X1	0.0714971	1.2	0.717	6.56
Retained earning /Total assets	X2	0.558343	1.4	0.847	3.26
EBIT/Total assets	X3	0.0136656	3.3	3.107	6.72
Market value of equity/Total liabilities	X4	0.2247662	0.6		
Book value of equity/Total liabilities	X4A	0.8990648		0.42	1.05
Net sales/Total assets	X5	0.2247031	1	0.998	

Source : Proceed by author

Z-Score	1.27	1.17	3.33

Table 2 : CALCULATIONS FOR THE YEAR 2016

		Factor	Z Public Mfg	Z1 Private Mfg	Z2 General Use
Working capital/Total assets	X1	0.0701784	1.2	0.717	6.56
Retained earning /Total assets	X2	0.5931491	1.4	0.847	3.26
EBIT/Total assets	X3	0.036992	3.3	3.107	6.72
Market value of equity/Total liabilities	X4	0.2671801	0.6		
Book value of equity/Total liabilities	X4A	1.0687203		0.42	1.05
Net sales/Total assets	X5	0.4643292	1	0.998	

Source : Proceed by author

Z-Score	1.66	1.58	3.76

Table 3 : CALCULATIONS FOR THE YEAR 2017

		Factor	Z Public Mfg	Z1 Private Mfg	Z2 General Use
Working capital/Total assets	X1	0.16748	1.2	0.717	6.56
Retained earning /Total assets	X2	0.22189	1.4	0.847	3.26
EBIT/Total assets	X3	0.07975	3.3	3.107	6.72
Market value of equity/Total liabilities	X4	0.27155	0.6		
Book value of equity/Total liabilities	X4A	1.08621		0.42	1.05
Net sales/Total assets	X5	0.80967	1	0.998	

Source : Proceed by author

Z-Score	1.75	1.82	3.50

Table 4 : Calculation for benford law model

No	Num	Range	DA	Diff	No	Num	Range	DA	Diff	No	Num	Range	DA	Diff
1	12	0.324	0.301	-0.023	1	9	0.243	0.301	0.058	1	10	0.294	0.301	0.007
2	6	0.162	0.176	0.014	2	6	0.162	0.176	0.014	2	6	0.176	0.176	0.000
3	8	0.216	0.125	-0.091	3	5	0.135	0.125	-0.010	3	3	0.088	0.125	0.037
4	2	0.054	0.097	0.043	4	4	0.108	0.097	-0.011	4	3	0.088	0.097	0.009
5	2	0.054	0.079	0.025	5	6	0.162	0.079	-0.083	5	5	0.147	0.079	-0.068
6	2	0.054	0.067	0.013	6	2	0.054	0.067	0.013	6	3	0.088	0.067	-0.021

From the results of table 1 to table 4, it looks altman model and benford model, giving excellent final analysis result about the condition of the company as a whole.

V. CONCLUSION

Analysis of Altman's Z-Score and Benford model is very easy to use and quickly provide an

overview of the company's financial condition in the study. The current study found that Z-Score and benford models are the most accurate models for testing analysis. The study results show that all forensic tools can be useful with respect to financial statements. This forensic and bankruptcy analysis tool is useful to indicate the presence of red marks and caution about the scope of fraud and analysis for capital investment in PT PK, although no one can know the actual location or fraud area, but can be traced.

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