

THE IMPACT OF LIQUIDITY, PROFITABILITY AND ACTIVITY RATIO TO THE PROBABILITY OF DEFAULT FOR BANKING COMPANIES LISTED IN INDONESIA STOCK EXCHANGES FOR THE PERIOD 2006 TO 2012

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Abstract

The purposes of this study is to examine the probability of default for banking companies listed in Indonesian Stock Exchange (IDX) for the period from 2006 to 2012. A high probability of default in the future have worried the companies and public. Therefore several urgent and important actions need to be taken to improve the performance of these listed companies. Several measures which might be related to performance could be liquidity, profitability and activity ratio to examine the performance of these companies.

The population of this study is all the banking companies listed in IDX for the period of 2006 until 2012. To evaluate banks' probability of default, we use some sample of banks by using Altman's approach.

The result shows Altman's Z score ratio for almost banks in A category still have ratio under 1.11. Bank that has Z-Score ≤ 1.11 indicate that the bank in A category are in financial distress and has high risk. This study shows that the Z-Score of the companies doesn't always indicate about the existence of the companies consistently.

Keywords : default, banking, altman z-score, ratio, financial distress

1. INTRODUCTION

Financial crisis that has happened in Indonesia in 1998 added with growing inflation, currency (IDR) depreciation. The impact of this crisis for Indonesia is more serious than the other Asia country. Because of this unemployment rate increased, interest rate of money increased, the amount of import decreased and performance of companies that listed at Indonesia Stock Exchange (IDX) decreased.

The weaken of the companies's performance that listed at IDX is caused by many factors. We can say there are at least two factors that caused crisis, first is economy distress and the second one is financial distress. Economy distress related to revenue and expense. The economy distress is also caused by capital expenditure of the companies more than return from investment. Financial distress happened was caused by foreign loans in foreign currency.

The depreciation of Indonesia's currency (IDR) that followed with the increased of interest rate have caused companies's foreign loans to be huge. Especially for the companies didn't do swap or hedging for the foreign loans. As a result solvency of the companies has been disturbed due to the huge foreign currency in loans. The companies that experienced financial distress would make investors and creditors lose confidence that can lead to bankruptcy. Edward Altman (1968) observed the cases of the bankruptcy companies but didn't have the going concern clarification of the companies before. Altman has found five financial ratios that can be used to detect the bankruptcy of companies.

2. REVIEW OF RELATED LITERATURE

Gibson (2007:165) said that financial statement analysis is a judgemental process. One of the primary objectives is identification of major changes (turning points) in trends, amounts, and relationship and investigation of the reasons underlying those changes. Often a turning points may signal an early warning of a significant shift in the future success of failure of those business.

Edward I. Altman, Alessandro Danovi and Alberto Falini (20XX) said that one of the most well-known distress prediction models, due to its ability to predict and easy application, is the Altman Z-Score, originally formulated in 1968. That study signaled out four balance sheet and income statement variables, with an additional stock market variable, useful for predicting the likelihood of a company going bankrupt. The chosen variables regarded liquidity, profitability, leverage, solvency and activity and were based on two distinct criteria: their popularity in literature and their potential relevance for the study. Each company was given a score (Z-Score) composed by a discriminant function of the five variables weighted by coefficients.

Morten Reistad Aasen (2011) found that The estimated probability of default for the listed enterprises increased substantially during the crisis. The findings also indicate that the Z-Scores ability to predict bankruptcies significantly worsened during the financial crisis.

Nishi Sharma and Mayanka (2013) found that with only two exceptions the financial position of Indian banks found satisfactory as per Altman model and the study result the conclusion that capital adequacy ratio cannot be treated as a whole indicator financial soundness along with a other parameters.

Subramnyam and Venkateswarlu (2012) found that the percentage total of public sectors banks share is decreasing year to year and foreign sector banks share is fluctuating. The study reported that operating profit percentage of public sector banks to total has decreased from 72.69 percent to 67.20 percent during 2001 to 2002. The operating profit percent to total percent of private sector banks has increased from 15.52 percent to 21.92 percent during 2001 to 2002 to 2011 to 2012 period.

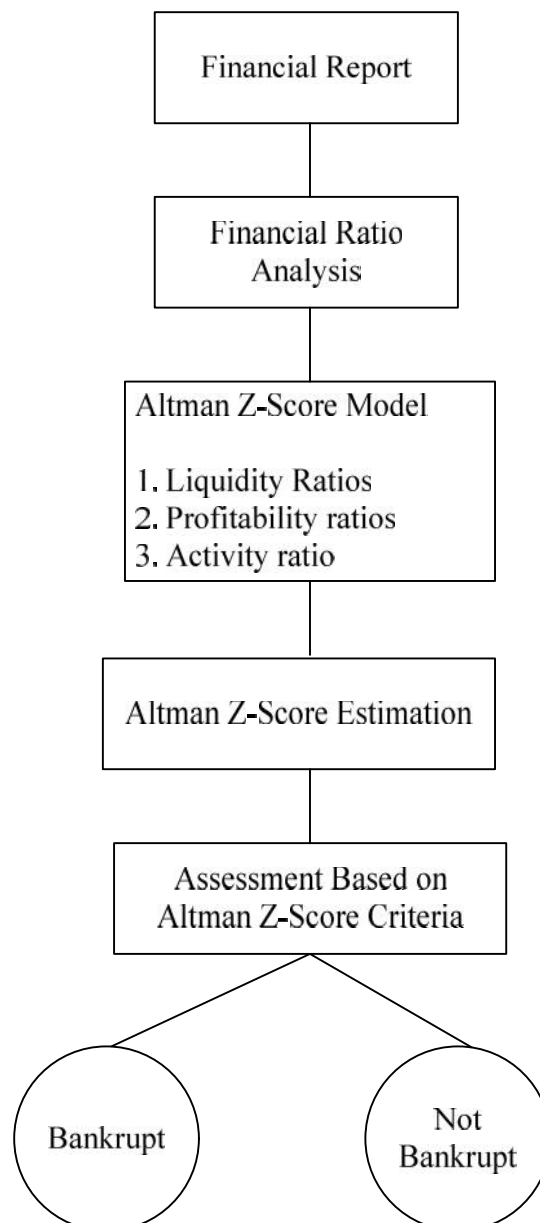


Figure 1 The Scheme of this study

3. THE RESEARCH METHODOLOGY

The present study estimates z scores for 23 banks in Indonesia for periods seven years from 2006 to 2012. The study applies Altman Z Score model to Indonesian banking industry. This model is a calculates Z score on the basis of five variables working capital, retained earning, earning before interest and tax, market value of equity, sales and total assets. The data used in the study is secondary data collected Indonesian Stock Exchange (IDX).The calculation of Z score has been done with the help of following equation :

$$Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4$$

Where,

X1 = *Working Capital /Total Assets*

X2 = *Retained Earning/Total Assets*

X3 = *Earning Before Interest and Tax (EBIT)/Total Assets*

X4 = *Market Value of Equity/Book Value of Debt*

Altman model suggests that if a financial institute secure more than 2.6 score, it should be placed in safe zone. But if it is unable to secure even 1.1 Z score it should be assumed in distress and it is more prone to bankruptcy. If the value of Z score is in between 1.1 and 2.6, it should be treated in grey zone. The present study computes Z score for all 23banks in Indonesia during a period of 7 years from 2006 to2012.

4. RESULTS AND FINDINGS

Table 1 Descriptive Statistics

Particulars	Working Capital/Total Asset	Retained Earning/ Total Asset	EBIT/ TotalAsset	Market Equity/ Book Debt	Sales/ Total Asset	Total Liability
Number of Observations	161	161	161	161	161	161
Mean	0.2132	0.0481	0.0127	0.2427	0.1069	
Maximum	0.7727	6.6812	1.054	0.9337	0.2713	
Minimum	0.0227	-1-1397	-1.286	0.0159	0.0253	

Source : Author's calculation

The descriptive statistics of selected banks shows that average liquidity (ratio of working capital to total assets) of Bank MAYA is the highest at 0.5012 and lowest for INPC at 0.0541. The profitability (ratio of EBIT to total assets) is highest for INPC at 0.1549 and worst for BCIC at -0.1710.

Table 2. shows the Altman's Z scores for selected banks of period 2006 to 2012

Table 2. Altman's Z score for the banks from the year of 2006 to 2012

No	Name of Bank	2006	2007	2008	2009	2010	2011	2012	Average Z score
1	INPC	29.7999	0.2875	0.0811	0.2632	0.3949	0.3336	0.3978	4.5083
2	BNBA	3.2665	2.8057	0.9055	1.3401	1.4298	1.2248	1.3420	1.7592
3	BBKP	1.1186	0.9029	0.4958	0.6046	0.7917	0.8549	0.8517	0.8029
4	BBCA	3.1701	3.5185	2.9419	3.7100	4.2325	4.5162	4.5409	3.8043
5	BNGA	2.1195	1.8192	0.9812	1.4412	2.7169	1.7543	1.3844	1.7452
6	BDMN	3.5104	3.9482	1.4745	3.4052	3.6425	2.6564	3.2567	3.1277
7	SDRA	2.2065	1.5068	0.5509	1.5811	1.8736	1.0510	2.2461	1.5737
8	BABP	0.6605	0.8396	0.3833	0.6805	0.6814	0.4598	2.4741	0.8827
9	BNII	1.8831	2.0890	3.1755	2.1482	4.6263	2.0630	1.8518	2.5481
10	BMRI	1.8981	2.0027	1.1730	2.2378	2.7019	2.5887	2.8663	2.2098
11	MAYA	1.5700	4.4607	6.1723	4.4432	3.2796	2.8436	5.7509	4.0743
12	MEGA	0.9222	1.2731	1.4945	1.6644	1.8046	1.7891	1.8878	1.5480
13	BCIC	0.4717	0.7604	-9.0746	-2.0617	-1.3959	1.0768	1.0034	-1.9115
14	BBNI	1.1820	1.3728	0.4862	1.1982	2.5095	2.1436	2.0566	1.5641
15	BBNP	0.7021	1.1735	1.2156	1.0486	0.9767	0.8806	0.8234	0.9743
16	BSWD	1.9697	2.0710	3.3312	3.0718	3.0334	2.3721	4.6746	2.9320
17	NISP	1.5813	1.6271	1.1593	1.5064	1.9548	1.2261	1.6786	1.5334
18	PNBN	2.5880	2.3600						2.4740
19	BNLI	1.1525	1.1999	1.7084	0.7985	1.7354	1.0299	1.0666	1.2416
20	BKSW	0.8552	0.8858	1.2159	1.5448	1.9446	5.5917	3.9897	2.2897
21	BBRI	3.5587	3.8473	2.1705	2.6709	2.8811	3.2653	3.3289	3.1032
22	BVIC	0.6786	0.6868	0.5938	0.7126	0.6577	0.7745	0.7174	0.6888

Source: Author's calculation

Altman model shows that bank BCIC has the lowest z score and is in financial distress condition. Other banks which are in distress zones are INPC and BVIC. There are two other banks which were BBKP and BBNP were in distress zone also. Bank MAYA has the highest z score then followed by BBCA. There are many banks that survived financial distress and financial crisis of the year 2007 and 2008.

BBCA is a sound and healthy bank, it has an average z score of 3.8043, it is affected by the financial crisis a little bit but then it improves and shows a solid and a strong position. The model ranked MAYA as the best performer and followed by BBCA.

Table 3. Ranking of banks based on certain criteria

Banks	Profitability based ranks	Liquidity based ranks	Z score based ranks
INPC	1	23	1
BNBA	10	11	11
BBKP	13	21	20
BBCA	3	2	3
BNGA	9	10	12
BDMN	4	3	4
SDRA	5	14	13
BABP	21	19	19
BNII	19	6	7
BMRI	6	8	10
MAYA	15	1	2
MEGA	12	13	15
BCIC	23	17	22
BBNI	11	12	14
BBNP	17	20	18
BSWD	7	5	6
NISP	16	15	16
PNBN	8	9	8
BNLI	14	18	17
BEKS	22	16	23
BKSW	20	7	9
BBRI	2	4	5
BVIC	18	22	21

Source: Author's calculation

INPC was rank the first based on profitability and z score but the lowest based on liquidity. MAYA rank the first based on liquidity, second based on z score but fiftieth based on profitability. BBCA ranked second based on liquidity, the third based on profitability and z score. Some banks like INPC, MAYA show good ranking based on z score but it does not exist anymore. From this observation it tells us that z score does not always show the existance of the banks in Indonesia consistently.

5. CONCLUSION:

From this study we can conclude that we should look at several important variables to determine if a bank is in solid and helathy financial condition. Altman's z score alone can not tell the existance of the banks in Indonesia.

Bank INPC and MAYA does not exist anymore but the z score shows it is not in financial distress condition, it ranked first and second based on z score.

We should look at some other important factor like governance and law that might influence the existance of banks in Indonesia. Profitability, liquidity and capital adequacy ratios are other important factors to be considered besides Altman's z score.

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