BANKRUPTCY RISK ANALYSIS OF PROPERTY SECTOR LISTED COMPANIES IN INDONESIA STOCK EXCHANGE USING ALTMAN Z-SCORE

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ABSTRACT

Early warning system for financial problem that threatened the operation of industry is needed to anticipates financial difficulty to company. One prediction model commonly used is Altman Z-score which analyze combination of financial ratios on financial statement to see the different between bankrupt and non-bankrupt companies. In this model, there are 5 financial ratios indicators that combined to differentiate between bankrupt and non-bankrupt companies, i.e. Working Capital to Total Assets, Retained Earnings to Total Assets, Earning Before Income Tax to Total Assets, Market Value of Equity to Book Value of Liabilities and Sales to Total Assets. These financial ratios represent liquidity, profitability, solvability and activity aspects of the company. The original work of Altman is applied to publicly held manufactures companies. In this study, we use Altman Z-score to property sector in Indonesia. We analyzed bankruptcy risk of property companies listed at Indonesian Stock Exchange (IDX) on period of 2004-2008 using Altman Z-score prediction model on their audited financial statements. The result of study of 19 listed property companies show that for 5 (five) consecutive years based on Altman Z-score, only 2 (two) companies, LPCK and JRPT are fit into healthy companies category. While only one company, BMSR is fit into bankrupt company category for 5 (five) consecutive years and one company, LPKR is fit into grey area.

Keywords: *Bankrupt Company, Bankruptcy, Financial Ratio, Altman Z-score, Indonesian Stock Exchange, Property Company*

BACKGROUND

The world economy has experienced another global financial crisis that started as financial crisis in USA caused by property sector that spread to other countries. This crisis has significant impact to business sectors that otherwise is in a growth. This crisis has threatened business sectors and forced them to run business more effective and efficient to survive otherwise they could go bankrupt.

In the property sector, bankruptcy risk becomes more urgent to be predicted. This industry needs an early warning system to detect financial problems that threaten the industry. With early warning of the industry condition it is possible to take precautions and preventive action to prevent financial crisis.

One of popular prediction models is the *Bankruptcy Model* developed by *Professor Edward I Altman* in 1968, who was, at the time, an Assistant Professor of Finance at New York University. The formula known as Altman Z-Score may be used to predict the probability that a firm will go into bankruptcy within two years. The Z-score uses multiple corporate income and balance sheet values to measure the financial health of a company. The Z-score is a linear combination of four or five common business ratios (http://en.wikipedia.org/wiki/Z-Score_Financial_Analysis_Tool)

This study is conducted to analyze bankruptcy risk using Altman Z-score model of property sector company listed in Indonesia Stock Exchange (IDX; formerly Jakarta Stock exchange/JSX) in the period of 2004-2008

RESEARCH QUESTION

1. What is the condition of financial ratios of property sector companies listed in IDX in the period 2004-2008?
2. What is the value of Altman Z-score of property sector companies listed in IDX in the period 2004-2008?

LITERATURE REVIEW

Financial Ratios

One of the most important tools for assessing a company's financial condition or organization in the industry is through the financial reports. Financial reports show the position of the resources owned by the company during a period of time. In addition, the financial report also highlighted the company's financial performance is shown with the ability to generate revenue in the company with the resources owned by the company. Financial reports are assessed and analyzed through the financial analysis. Financial information contained in the financial statements includes historical data and forecasts in the assessment of investment analysis. There are many financial ratios that can indicate a company's financial performance, among them is the liquidity ratios, activity ratios, profitability ratios and solvency ratios.

Financial ratios simplify the information that describes the relationship between specific posts with another post. Financial ratios are very important in analyzing a company's financial condition. According to Harahap (2004:297) financial ratios are as follows:

> *"Financial ratio is the number obtained from comparation of one post of financial reports with the other post that has relevant and significant relation"*

Types of Financial Ratios

According to Lyn M Fraser and Aileen Ormiston (2008:21) and R. Agus Sartono (2001:114) financial ratio analysis can be divided into:

1. Liquidity Ratio:
   the ratio measures a company's ability to meet cash needs to meet short-term financial obligations
2. Activity ratio of activity:
   the ratio measures the liquidity of certain assets and efficiency in managing assets to obtain loans.
3. Solvability ratio:
   the ratio measures the extent of company's debt financing *relative* to equity and the ability to pay interest and other obligation. The ratio show company's capacity to meet this obligations both short and long term.
4. Ratios Profitability:
   the ratio measures company's overall performance and efficiency in managing assets, liabilities and equity; The ratio measure company's ability to generate profit in relation of sales, *assets* and their own capital.

Bankruptcy

Knowing the company's financial condition is very important for investors and creditors in making investment and credit decisions. Problems of financial distress always raise the risk of company's bankruptcy. Rahmat Triaji (1999), states that bankruptcy is the financial distress so severe that the company is not able to run the operations properly. While financial distress is a financial or liquidity difficulty that may be the beginning of bankruptcy. According to Ross, Westerfield, and Jaffe quoted by Lesmana, Rico, and Rudi Surjanto (2003:173) the definition of Financial Distress is:

> *"Financial distress is a situation where a firm's operating cash flows are not sufficient to satisfy current obligations (such as trade credits or interest expenses) and the firm is forced out to take corrective action."*

The notions of the financial difficulties expressed by the Brigham and Gapenski quoted by Rahmat Triaji (1999) are as follows:

1. ***Economic Failure:***
   means that corporate earnings cannot cover the total cost including the cost of capital. Businesses that suffered economic failure can continue operating as long as the creditor intends to provide additional capital and the owner can receive a rate of return below market interest rate.
2. ***Business Failure:***
   the term was used by Dun & Bradstreet which is the main proposer of failure statistic, to define business that ceased operations and cause losses to creditors. Thus a business can be classified as a failure, although not through the normal bankruptcy. Also a business can shut down its operation but is not considered as a failure

3. ***Technical Insolvency:***
   a company can be considered bankrupt if it does not meet its due liabilities. Technical insolvency may indicate a shortage of temporary liquidity at a time where companies can raise money to meet its obligations and remain alive. On the other hand, if this is the technical insolvency of the early symptoms of economic failure, then this is a sign to the financial disaster
4. ***Insolvency in bankruptcy***
   a firm is considered as *bankruptcy insolvency* when the book value of total liabilities exceed the market value of company assets. This is a more serious condition when compared with the *technical insolvency,* because in general this is a sign of *economic failure* that led to the liquidation of a business. Companies that experienced *insolvency in bankruptcy* do not need to go through *bankruptcy legal process.*
5. ***Legal bankruptcy***
   The term bankrupt is used for every company that fails. A company cannot be said to be a bankrupt by law, unless officially filed charges with the law.

According Sunarto (2006:37) bankruptcy is:

> *"Bankruptcy or insolvency is a business failure occurs when the duty / corporate debts greater than the fair market value of assets-assets."*

According Muliaman (2003:10) definition bankruptcy in Indonesia refers to Act No.1 of 1998 on amendments to the Bankruptcy Law, which states:

1. *Debtors who have two or more creditors, or not paying at least one debt which has due and cannot be charged, is declared bankrupt by a competent court, either on his own petition, or request one or more creditors.*
2. *The application as referred to above, can also be submitted for the public interest. Bankruptcy law basically states how to resolve disputes that arise when one company cannot meet debt obligations, as well as how to handle disputes between individuals relating to the business in the run. There are several important criteria:*
   a) *The accounting must be clear. Valuation of assets should be transparent and recognized by the public (international standard).*
   b) *gradation level based on the dependents debts determine who should take precedence in resolving the debt problem for example: a bankrupt company, who is entitled to payment in advance and who later.*
   c) *The civil law regulate who is concerned, the regulator of bankruptcy, where a competent court and how, or processes that must be done to resolve this case.*
   d) *Sanctions authorized by the court if one party said does not meet some actual promise given to a company that was able to settle his debts.*
   e) *Even if declared bankrupt, the company would still be able to continue while in this case must stipulated requirements and who should oversee the process. A company that is declared bankrupt need not immediately stop all its activities, they should be given the opportunity to settle financial and other activities for the sake of the debt collector.*
   f) *Disputes can be settled through arbitration.*
   g) *The Company declared to be insolvent or bankrupt if within a certain period cannot make payments of principal and or interest. Bankruptcy can also prompted by business owners as well as by the debt collectors.*

From the above explanation can be concluded that bankruptcy in Indonesia is the inability of a firm in continuing operations due to financial conditions that have experienced a decline and has an obligation or debt that are greater than the value of its assets. Thus declared bankrupt by a competent court, either on his own petition, or request one or more creditors.

Causes of Bankruptcy

In general, the causes of bankruptcy, according Darsono and Ashari (2004:102) can be divided into two, namely the internal factors and external factors. The internal factor is the factor that comes from the internal part of corporate management. While external factors are factors from outside that are directly related to the company's operations or macro economic factors.

Internal factors that could cause the bankruptcy of the company include:

1. *Management is not efficient*

This will result in continuing losses that eventually led to the company unable to pay its obligations.

2. *Unbalance capital owned by the number of debt-owned receivables*
   Debt that is too large will result in large interest cost, thus reduce profits could even cause harm. Receivables that are too large will also be detrimental because the asset is idle too much, so do not generate revenue.
3. *Moral hazard by management*
   Fraud committed by corporate management can result in bankruptcy. This suspicion would lead to losses for companies that ultimately bankrupted the company. This fraud can take the form of corrupt management, or providing false information to shareholders or investors.

External factors that can lead to bankruptcy include:

1. *Changes in the customer's demand was not anticipated by the company*
   This results in lost of customers, resulting in a decrease in income. To survive the company must always anticipate customer needs by creating products that match customer needs.
2. *The difficulty because suppliers could no longer supply the raw materials used for production activities.*
   To anticipate this company should always be in a good relationship with suppliers and does not rely on single supplier materials so that the risk of raw material shortage can be overcome.
3. *Debtor is cheating by avoiding debt payment*
   Too many accounts given to the debtor's loan term in long period causes many idle assets that do not provide income, resulting in huge losses for the company. To anticipate this, companies should always monitor the receivables and condition of the debtor in order to conduct early protection against corporate assets.
4. *Relationships are not in harmony with creditors can also be fatal to the company's survival*
   In Law No.4 of 1998, creditors can propose to bankrupt company. To anticipate this, companies must be able to manage their debts well, and also maintain good relations with creditors.
5. *Competition is increasing tight business*
   This requires the company to always improve themselves, so they can compete with other companies in meeting customer needs. The more intense competition requires companies to keep improving products, providing value to grow better for customers.
6. *The condition of global economy*
   It is also to be anticipated by the company, so as not to loss competitiveness with other countries.

Bankruptcy Prediction Model

Analysis of financial difficulties will help making the decision to determine attitudes toward companies that experienced financial difficulties. Bankruptcy is a serious problem and costly, therefore it is vital to anticipate the emergence of financial difficulties that could lead to bankruptcy. The prediction model of companies that experienced financial difficulties and possible bankruptcy is become important. Business bankruptcy prediction model will provide guidance to the parties involved about whether the company's financial performance will experience financial difficulties or are not in the future. Management may make improvements needed as early as possible to avoid bankruptcy when it has developed a system that can provide early warning.

An indicator that can be used to assess the company's corporate bankruptcy is a formula coined by Edward Altman (1968) called Altman Z-score. This formula uses the components in the financial statements as a possible predictor of whether or not the company went bankrupt. Altman was the first person to successfully implement *Multiple Discriminant Analysis (MDA)* to develop a prediction model with a high degree of accuracy.

Altman initially use 66 manufacturing firms sample of 35 bankrupt companies and 35 companies that are not bankrupt. Furthermore he also selected 22 variables (financial ratio) is the potential to be evaluated and grouped into 5 groups, namely liquidity, profitability, leverage, solvency, and activity. After his study, from 22 variables only 5 were selected which are he considered as the best combination to predict bankruptcy. Using the sample firms and 5 ratio he formed discriminant function which is also called the Altman Z-Score as follows:

$$Z = 1{,}2\,X_1 + 1{,}4\,X_2 + 3{,}3\,X_3 + 0{,}6\,X_4 + 1{,}0\,X_5$$

Where:

X_1 = *Working capital / Total Assets*

X_2 = *Retained Earning / Total Assets*
X_3 = *Earnings Before Interest and Taxes / Total Assets*
X_4 = *Market Value Equity / Book Value of Total Debt*
X_5 = *Sales / Total Assets*
Z = *Overall Index*

The cut-off value for the calculated value of **Original Z-score,** as follows:

$Z \leq 1.81$

bankruptcy (the company faced a serious threat of bankruptcy).

$1.81 < Z < 2.67$

Gray area (if the company does not make significant improvement in management and financial structure, firms may be in danger of bankruptcy within one or two years).

$Z \geq 2.67$

No bankruptcy (the company does not experience any problems with the financial conditions).

The ratio of *Working Capital to Total Assets* used to measure the liquidity of corporate assets relative to total capitalization. Altman (2000) said the net working capital/total assets ratio, frequently found in studies of corporate problems, is a measure of the net liquid assets of the firm relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities. Ordinarily, a firm experiencing consistent operating losses will have shrinking current assets in relation to total assets. Working capital to total assets measures a company's ability to meet short term obligations. Indicators that can be used to detect any problems at the company's liquidity levels are internal indicators such as lack of cash, debt swells trade, declining capital *utilization,* the addition of uncontrolled debt and some other indicators

Retained Earnings Ratio *to Total Assets* used to measure the cumulative profitability. Altman (2000) said retained earnings is the account which reports the total amount of reinvested earnings and/or losses of a firm over its entire life. Retained earnings to total assets used to measured cumulative profitability during company operations life. A relatively young firm will probably show a low ratio because it has not had time to build up its cumulative profits.

The ratio of *EBIT to Total Assets* used to measure the actual productivity of the assets of the company. *Earnings before interest and taxes to total assets* ratio is a measure of the true productivity of the firm's assets, independent of any tax or leverage factors. . Ratio measures the ability of the company in generating profits from the assets used. This ratio is the largest contributor of the model.

Market Value Ratios *Equity to Book value of Total Debt* is used to measure how much asset a company can decline in value before the amount owed is greater than its assets and the company became *insolvent.*

While last ratio, S*ales to Total Assets* the capital-turnover ratio is a standard financial ratio illustrating the sales generating ability of the firm's assets. It is used to measure management's capacity in dealing with competitive conditions.

In 1983, Altman developed two models namely Model A Z-score and Model B Z-score. Model A Z-score was developed for manufacturing companies closed *(private manufacturer),* with variable X_4 at this function uses the book value of *stockholder's equity* because it does not have a *market value of equity.* While model B Z-score is developed to predict the bankruptcy of companies such as *non-manufacturing* small businesses, *retail, sales, wholesaler,* and the service sector. This B Z-score model does not calculate the value of X_5 *(sales to total assets)* because the constantly changing significantly in the industry.

Rahmat Triaji (1999; 9) said Z-score model is very effective to predict bankruptcy 2 years before the actual occurrence of bankruptcy and in some cases Z-score models can predict the bankruptcy of 4 or 5 years earlier. Besides bankruptcy can predict the exact manufacturing company 2 years before the actual bankrupt, Z-score can also be used for:

1. Recheck the candidate company that would be acquired by suppliers and other companies to detect the financial problems arising from these companies are likely to affect our business.

2. Measuring levels of a company's financial health through information obtained from financial statements.

Factors Led to the Bankruptcy

Not easy to determine with certainty the factors that led to bankruptcy of a company. Often a company's bankruptcy is the result of a combination of many factors, which resulted in the emergence of a new factor that accelerates the process of bankruptcy. It is difficult to determine a fundamental factor that leads to bankruptcy.

However companies must be able to read the signs of the possibility of failing companies in business that could result in financial distress and possible bankruptcy. Rapid changes between competitors and unstable economic conditions, companies must pay attention to indicators of difficulties. According to Rico (2003:183) there are some indicators that could drive a company into difficulties in their business and experiencing financial distress include:

1. Sales or income decreased significantly
2. The decrease earnings or cash flow from operations
3. Stock market prices fell significantly
4. The decrease total assets
5. The high possibility of failure in the high risk industries
6. Young companies generally prone difficulty in the early years of operation, so if it is not supported by strong capital resources it could be facing serious financial distress and end up in bankruptcy.
7. Cutting a significant dividend.

One of the important aspects of the analysis on the financial statements of each company is useful for predicting survival. Predict the company's survival is the most important aspect of all aspects of usability analysis conducted by almost all stakeholders in the company. Because before determining the objectives other than that conducted the analysis, it would have to be guaranteed or at least there is hope that a company is still able to maintain his life. Predict the importance of the company's survival because the fact is, there is no party in the company would expect the occurrence of bankruptcy or the company should be closed.

On the other hand for any reason, the company could face the situation where the company had declared bankruptcy and was not allowed to continue his efforts. Therefore it would be better if the symptoms and signs of bankruptcy is known much earlier, so that they can immediately find a solution.

OBJECT AND STUDY METHODS

Object of Study

Objects of this study is companies in the property sector that have been going public and listed on the Indonesia Stock Exchange/IDX (formerly known as Jakarta Stock Exchange/JSX) in period of 2004-2008.Based on the Indonesian Capital Market Directory (ICMD) in 2008 there are 39 property companies listed in IDX, but only 19 companies of 39 registered from 2004 to 2008, which we used as research samples.

Study Methods

In this study, we use descriptive method aimed at making description, illustration or pictures systematically and accurately about the facts, natures and relationship between the phenomena investigated. According to Nazir (2005:89), definition of the descriptive method is:

> *"A method in studying the status of a group of people, an object, a set of condition, a system of thought, or a class of event at present time"*

Research using descriptive method of analysis, because this study was conducted to obtain a clear picture of a problem, then analyze it to get a conclusion. This is done by examining and processing of secondary data which is combined between the data *time series* and *cross sectional,* then in the analysis to a conclusion in accordance with the purpose of research.

Type and Source of Data

1. Data Type

The data used in this study is quantitative data in the form of a ratio, i.e. the data expressed in figures that show the value of the variable quantity it represents. The data are a combination of *time series* and *cross sectional*.
Data used in this research is secondary data. Secondary data is data collected at a particular time which can describe the situation or activity at this time. Secondary data used in this research is audited financial statement listed *property* companies in the IDX period 2004-2008.

2. Source Data

Sources of data from this study is from the Indonesian *Capital Market Directory*, JSX *annual report*, these data have been published by the BEI (Bursa Efek Indonesia or Indonesia Stock Exchange) through letters of reference-IDX Capital Market. Apart from the IDX, supporting data was also obtained from ITB JSE corner, and a website (www.jsx.co.id, www.bapepam.go.id, www.bi.go.id etc.).

3. Variable Operationalization

In determining the variables studied, the authors distinguish between two variables, namely:

1. Independent Variable (X) or *(Independent Variable)*
   Independent variables are variables that independently affect the other dependent variables. In other words, the independent variable is a variable that exists or occurs before the dependent variable. Independent variables used in this study consisted of 5 financial ratios calculated from the financial reports on industrial *property*. Independent variables in this study are:
   X_1 = *Working capital / Total Assets*
   X_2 = *Earning Retained / Total Assets*
   X_3 = *Earnings Before Interest and Taxes / Total Assets*
   X_4 = *Market Value Equity / Book Value of Total Debt*
   X_5 = *Sales / Total Assets*
2. Dependent Variable
   Dependent variable is the variable that is affected by other variables or which become due because of the independent variables. The dependent variable used in this study is the Z-score which is the total score from the operation of the independent variables that describe the financial health of the company.

4. Data Analysis

In this study, original model *Z-score* is used to because the object are property sector companies which already *go public* (listed in IDX).

Analysis of data in this study conducted quantitatively using descriptive analysis. Stages of this analysis are as follows:

a. Calculate the ratio of each company use data taken from the balance sheet and income statement using formula as follow:
   Working Capital to Total Assets (X_1) = (Current Assets - Current Liabilities) / Total Assets x 100%
   Retained Earnings to Total Assets (X_2) = Retained Earnings / Total Assets x 100%
   EBIT to Total Assets (X_3) = EBIT / Total Assets x 100%
   Market Value of Equity to Book Value of Liabilities (X_4) = Market Value of Equity / Book Value of Liab. x100%
   Sales to Total Assets (X_5) = Total Sales / Total Assets x100%
b. Calculate the *Z-Score* of each company in a given year with a model Altman *Z-Score* using formula as follow:
   $Z = 1{,}2X_1 + 1{,}4X_2 + 3{,}3X_3 + 0{,}6X_4 + 1{,}0X_5$
c. The next step is to conduct a comparison and analysis between the results of calculations with the criteria that if the bankruptcy is interpreted as follows
   1) ***Z-Score*** $\geq$ **2,67**
      The Company does not experience any problems with the financial condition or it can be said is safe from bankruptcy
   2) **1,8 < *Z-Score*** **< 2,67**
      Gray area (if the company does not make significant improvement in management and financial structure, firms may be in danger of bankruptcy within one or two years)
   3) ***Z-Score*** $\leq$ **1,8**
      The Company facing a serious threat of bankruptcy

STUDY RESULTS AND DISCUSSION

1. Condition Working Capital to Total Assets of Listed Property Companies in IDX 2004-2008

Study result for value of *Working Capital to Total Assets* is shown in Table 1. Negative sign on the value of *Working Capital to Total Assets* means that the company has negative net working capital (current debt value is greater than current assets). This means that potentially cannot repay debts maturing smooth using smooth property companies and companies experiencing difficulties working capital. While a positive sign means that there is excess of current assets after paying current debts that have matured for% of total assets. Excess these assets will be used as working capital for company operations.

Based on shown data at the table 1, can be seen that the movement of the variable values *Working Capital to Total Assets* at each company is different, there are rise trend companies and also decline trend companies. However, during these 5 years was stable value. Companies that value trend to increase among others SMDM and the company whose value rises with the very significant, namely DIVI. While the value tend to fall is BMSR, and companies tend to be stable in value is BIPP, CTRA, CTRS, DART, GMTD, OMRE, JRPT, KIJA, LPCK, LPKR, MDLN, PWON, PWSI, RBMS, SMRA, and SMDM

Table 1: *Working Capital to Total Assets / X 1 (In Percentage)*
Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	-0.638	-2.249	-40.347	7.115	3.970	-6.430
2	BMSR	20.870	35.634	40.210	-685.633	-1770.173	-471.818
3	CTRA	-7.762	6.230	-27.409	0.805	2.445	-5.138
4	CTRS	-1.346	4.040	-5.806	1.338	0.850	-0.185
5	DART	6.507	-14.512	-2.684	-1.484	-0.013	-2.437
6	DVTI	-1.484	-2.546	-8.901	15.112	80959.167	16186.225
7	GMTD	4.335	-66.668	78.470	-26.912	17.964	1.438
8	MORE	0.157	-10.138	13.430	5.358	326.148	66.991
9	JRPT	6.880	-1.209	-1.251	-0.653	8.514	2.456
10	KIJA	11.552	-121.895	2.705	-7.510	6.608	-22.790
11	LPCK	5.615	-6.832	15.356	-3.982	-13.871	-0.743
12	LPKR	0.304	7.105	0.448	0.313	1.806	1.995
13	MDLN	4.773	10.414	-0.969	4.028	27.900	9.229
14	PWON	-48.398	-31.972	-1.657	2.916	-0.934	-16.009
15	PWSI	-3.896	1.521	5.432	0.962	-28.829	-4.962
16	RBMS	-25.131	4.898	-32.457	-18.277	-1.102	-14.414
17	SMRA	-3.967	2.094	-0.581	-0.386	4.678	0.368
18	SIIP	-12.415	1.043	3.239	-3.600	7.058	-0.935
19	SMDM	1.785	-42.840	-0.572	249.746	1715.029	384.630
Average		-2.224	-11.994	1.644	-25.840	4277.222	
Max		20.870	35.634	78.470	249.746	80959.167	
Min		-48.398	-121.895	-40.347	-685.633	-1770.173	

Source : Data Calculation

2. Condition Retained Earnings to Total Assets of Listed Property Companies in IDX 2004-2008

Study result for value of *Retained Earnings to Total Assets* is shown in Table 2. Retained earnings is an account which reported that there was some profit from re-invested companies or indicate how much revenue the company is not paid in the form of dividends to shareholders. When the company started losing money, then the value of total retained earnings began to

decline. Value of negative retained earnings show that the total assets used by the company cannot produce a positive retained earnings because of losses exceeds the company's retained earnings beginning of the period.

As shown on the table 2, the movement of the variable *Retained Earnings to Total Assets* value at each company is different, there is likely to decrease, or fluctuate. However, for 5 consecutive years is likely fairly stable value. Company that has tend of decline value is DIVI, while KIJA and SMDM have fluctuate values. Other companies tend to have stable values.

Table 2: *Retained Earnings to Total Assets / X 1 (In Percentage)*
Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	-0.101	-23.299	-13.156	13.654	-33.921	-11.365
2	BMSR	-194.910	-22.695	-109.227	20.742	-648.695	-190.957
3	CTRA	-56.958	-19.392	-215.248	-1.562	2.445	-58.143
4	CTRS	1.258	4.535	-9.949	0.208	-1.084	-1.006
5	DART	210.639	54.023	-5.665	-0.263	0.072	51.761
6	DVTI	-1.251	-1.028	-9.832	161.888	-19037.381	-3777.521
7	GMTD	1.214	2.242	12.303	1.762	0.693	3.643
8	MORE	492.896	125.635	51.603	-87.963	-30.246	110.385
9	JRPT	14.321	14.109	1.555	2.312	2.148	6.889
10	KIJA	-20.149	-6330.428	20.619	-0.532	-16.674	-1269.433
11	LPCK	18.912	50.935	-2.679	22.617	3.088	18.575
12	LPKR	0.133	1.852	-0.263	0.060	0.424	0.501
13	MDLN	49.027	-9.384	-7.994	-286.884	-17.223	-54.492
14	PWON	63.266	-176.643	-1.088	-4.268	-7.753	-25.297
15	PWSI	-5.105	-8.847	1.504	-8.944	7.870	-2.704
16	RBMS	-3.528	85.187	116.110	46.913	-0.312	48.874
17	SMRA	7.684	0.109	0.637	-0.129	-2.074	1.246
18	SIIP	31.131	1.975	1.694	0.130	-3.510	6.284
19	SMDM	-18.235	-5082.933	35.130	-590.548	-180.793	-1167.476
Average		31.066	-596.529	-7.050	-37.395	-1050.680	
Max		492.896	125.635	116.110	161.888	7.870	
Min		-194.910	-6330.428	-215.248	-590.548	-19037.381	

Source: Data Processing

3. Condition of Earning Before Interest and Taxes to Total Assets of Listed Property Companies in IDX 2004-2008

Other profitability ratios related to the method of Altman Z-Score is the ratio of *Earnings Before Interest and Taxes to Total Assets*, which shows the company's ability to produce profit before interest and tax of total assets are used. This ratio can also be used as a measure of how much the income level of operational efficiency of the company that later can affect the viability of the company. Negative sign on the value of *Earning Before Interest and Taxes to Total Assets* shows that the company suffered losses from its operational activities.

Movement of the variable value *Earnings Before Interest and Taxes to Total Assets* of all firms in the *property* industry in Indonesia during the years 2004-2008 be seen from Table 3 as follows:

Table 3: Earnings Before Interest and Taxes to Total Assets / X3 (In Percentage) Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	5.410	-22.134	-14.394	14.282	10.357	-1.296
2	BMSR	-55.306	-16.471	-55.395	30.145	-64.714	-32.348
3	CTRA	-38.787	-41.321	-10.513	0.819	-3.522	-18.665
4	CTRS	1.397	4.868	-9.364	0.155	-1.811	-0.951
5	DART	-85.805	59.074	2.555	-0.217	1.332	-4.612
6	DVTI	-0.737	2.553	-17.212	37.933	-13227.857	-2641.064
7	GMTD	1.386	2.031	21.222	2.591	0.639	5.574
8	MORE	63.137	140.183	106.928	-74.950	-37.256	39.608
9	JRPT	18.828	11.207	1.975	2.278	2.717	7.401
10	KIJA	-19.543	-7851.792	20.316	-0.762	12.699	-1567.816
11	LPCK	34.657	49.068	-20.50713	535.488	44.261	128.593
12	LPKR	-0.007	-6.911	-0.367	0.181	-0.326	-1.486
13	MDLN	80.110	-8.803	-18.325	-347.040	-5.749	-59.961
14	PWON	63.747	49.219	5.381	-3.869	3.203	23.536
15	PWSI	-5.130	-2.637	6.679	0.755	14.599	2.853
16	RBMS	-3.504	-11.223	-131.404	16.965	0.971	-25.639
17	SMRA	7.515	0.123	0.601	0.239	-0.281	1.639
18	SIIP	30.798	1.966	1.829	0.072	-3.163	6.300
19	SMDM	107.110	56.724	46.643	-337.100	-222.031	-69.731
Average		10.804	-399.172	-3.334	-6.423	-709.260	
Max		107.110	140.183	106.928	535.488	44.261	
Min		-85.805	-7851.792	-131.404	-347.040	-13227.857	

Source: Data Calculation

Table 3 shown can be seen that the movement of the variable *Earnings Before Interest and Taxes to Total Assets* at every company is different. For 5 consecutive years can be seen that the value of the variable *Earnings Before Interest and Taxes to Total Assets* tend to be stable. Companies that value was stable variables such as BIPP, BMSR, CTRA, CTRS, DART, GMTD, OMRE, JRPT, LPKR, PWON,PWSI, RBMS, SMRA, and SIPP. Companies that value decline MDLN, SMDM. While the value of the variable that tends to decline with very significant that, DIVI and KIJA and company that has value tend to increase is LPCK.

4. Condition of Market Value of Equity to Book Value of Liabilities of Listed Property Companies in IDX 2004-2008

The ratio of *Market Value of Equity to Book Value of Liabilities* is the ratio that is usually used to measure a company's ability to meet the obligations of the value of their own capital markets. The market value of own capital is obtained by multiplying the number of ordinary shares outstanding with a market price per share of common stock. Negative value means that companies cannot afford to pay all debts of the company's equity valued at market prices.

Table 4: *Market Value of Equity to Book Value of Liabilities / X4 (In Percentage)*
Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	-4.187	-0.180	0.437	-288.367	-3.256	-59.110
2	BMSR	3.209	5.151	1.870	-8.034	-0.011	0.437
3	CTRA	-0.676	5.224	-21.530	1.273	0.188	-3.104
4	CTRS	-1.094	-3.908	-3.427	0.000	0.685	-1.549
5	DART	0.382	-1.870	-307.457	-0.289	5.484	-60.750
6	DVTI	-0.023	19.565	6.931	2.803	1.570	6.169
7	GMTD	-1.657	-26.620	-6.958	-3.35799	-31.43268	-14.005
8	MORE	0.16733	-37.83743	13.18690	-3.42041	0.00000	-5.581
9	JRPT	-7.220	-0.205	-1.756	-0.921	-0.254	-2.071
10	KIJA	-24.069	-0.104	-0.072	0.212	0.605	-4.686
11	LPCK	24.393	12.997	337.056	-7.962	5.038	74.304
12	LPKR	1887.750	0.432	4.731	0.712	1.392	378.447
13	MDLN	2077.072	7.239	0.149	19.751	-3.656	420.111
14	PWON	-12.968	0.669	12.614	-2.736	-41.532	-8.791
15	PWSI	1.71891	62.27536	9.83105	67.39103	9.93992	30.231
16	RBMS	-0.259	-2.297	0.205	35.953	-0.405	6.639
17	SMRA	0.461	1.500	0.855	0.000	-2.856	-0.008
18	SIIP	-0.691	0.604	1.082	-0.053	1.451	0.479
19	SMDM	11.082	-0.867	-121.277	0.176	-2.457	-22.669
Average		208.073	2.198	3.870	-9.835	-3.278	
Max		2077.072	62.275	337.056	67.391	9.940	
Min		-24.06919	-37.83743	-307.45667	-288.36658	-41.53240	

Source : Data Calculation

Based on data on table 4, it can be seen that the movement value of the variable *Market Value of Equity to Book Value of Liabilities* in each company is different. Some companies tend to be stable variable values for 5 consecutive years such as BMSR, CTRA, CTRS, DIVI, GMTD, OMRE, JRPT, KIJA, PWON, RBMS, SMRA, and SIPP. Others have tendency to decline like BIPP, DART, SMDM. While company that have decline significantly is the LPKR and MDLN and fluctuate like PWSI. Meanwhile, company that have increase value is LPCK.

5. *Condition of Sales to Total Assets* of Listed Property Companies in IDX 2004-2008

Aspects of activities related to the model of Altman Z-score ratio is *Sales to Total Assets*. This ratio shows the company's ability to use total assets to generate sales, also reflects the management efficiency in the use of the overall assets of the company to generate sales and profits.

Table 5: *Market Value of Equity to Book Value of Liabilities / X4 (In Percentage)*
Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	1.928	1.572	-0.391	0.036	-2.166	0.196
2	BMSR	-9.185	10.150	123.612	-5144.843	-44.044	-1012.862

3	CTRA	4.686	6.004	-4.478	0.302	-3.692	0.565
4	CTRS	0.750	3.660	-4.461	0.745	-5.223	-0.906
5	DART	9.909	-4.969	3.528	0.132	-2.194	1.281
6	DVTI	-0.832	-0.500	-11.678	-132.542	-9908.571	-2010.825
7	GMTD	-1.652	0.648	15.189	0.708	0.018	2.982
8	MORE	-8.510	-30.676	-0.290	80.320	-33.951	1.378
9	JRPT	15.513	9.502	1.223	2.183	1.443	5.973
10	KIJA	-15.566	-2774.143	6.900	-0.407	1.259	-556.391
11	LPCK	1.985	14.544	-3.076	2.988	8.143	4.917
12	LPKR	0.346	1.632	-0.137	0.404	1.855	0.820
13	MDLN	9.412	32.448	-5.836	57.515	-5.247	17.658
14	PWON	-8.800	-4.224	0.159	0.921	0.148	-2.359
15	PWSI	143.411	-6.823	81.355	-45.289	2.584	35.048
16	RBMS	3.492	-24.846	-56.527	5.926	0.933	-14.204
17	SMRA	11.684	1.003	1.196	0.168	1.178	3.046
18	SIIP	16.927	-0.709	4.685	0.015	-4.080	3.378
19	SMDM	7.333	-33.961	-10.887	29.778	-51.870	-11.921
Average		9.623	-147.352	7.373	-270.576	-528.601	
Max		143.411	32.448	123.612	80.320	8.143	
Min		-15.566	-2774.143	-56.527	-5144.843	-9908.571	

Source: Data Calculation

Based on data on table 5, can be seen that movement value of variable *Sales to Total Assets* at each company is different. However, for 5 consecutive years a lot of companies have value tends to stable, like BIPP, CTRA, CTRS, DART, GMTD, OMRE, JRPT, LPCK, LPKR, MDLN, PWON, RBMS, SMRA, SIIP and SMDM. Companies that have tendency to decline are BMSR and KIJA, while DIVI has decreased significantly. Company with fluctuate value is PWSI.

Value of asset turnover shows that the higher the more effective the company in using assets to generate sales. While sales turnaround time can cause a slow decline in sales value. In addition, the small value of sales will eventually lead to declining earnings / profit company.

6. Overall Condition of Listed Property Companies in IDX 2004-2008

Based on the result above, we see the difficulty in liquidity in the year 2004-2008 as capital gains on *property* industry fluctuated. The tendency of capital difficult to obtain. It was reasonable because the value of profitability, viewed from retained earnings and its EBIT for 5 years tend to be negative. Also resulting in difficulties ability of capital return, which reflected the period of 5 years. The impact is also seen from the market position that is not so attractive and makes this sector tends to slowdown.

7. Analysis of Altman Z-score Values of Listed Property Companies in IDX 2004-2008

Having obtained the values of financial ratios of each company, we calculate *Z-Score* and the results as shown in table 6. The table shows *Z-Score* values of each company and its tendency, whether it is tends to rise, decline, fluctuate or stable for 5 years. The trend value of *Z-Score* can be used to predict the company's financial situation on Indonesian *property* sector will experience bankruptcy or not, and is also located in the *gray area* conditions.

In the years 2004-2008, Indonesian *property* sector in general is experiencing decline in value of *Z-Score*, only two company have fit into Nonbankrupt criteria i.e. LPCK and JRPT. On the other hand, BMSR have fit into bankrupt criteria for 5 consecutive years. Meanwhile

This decline can be influenced by many things, both internal factors such as rising operational costs, availability of raw materials, lack of qualified human resources, and influenced by external factors such as increasing corporate competition, instability of political conditions, low power consumer sales, and macroeconomic instability finance, and so on.

The result of Z-Score can be use to determined which company is having financial problem. However further study needed to conclude whether companies that fit into bankrupt category using Altman Z-Score is really went bankrupt, with the Indonesian condition and law.

Table 5: *Altman Z-Score / Z*
Listed Property Companies in IDX 2004-2008

No	Company	2004	2005	2006	2007	2008	Average
1	BIPP	16.360	-106.895	-114.464	-98.200	-12.668	-63.173
2	BMSR	**-437.598**	-30.126	-162.736	**-5843.905**	**-3289.987**	-1952.871
3	CTRA	-212.771	-146.894	**-386.326**	2.549	-8.843	-150.457
4	CTRS	4.850	28.577	-58.315	3.153	-11.287	-6.604
5	DART	29.684	247.070	-183.664	-2.905	5.577	19.152
6	DVTI	-6.810	15.169	-88.764	202.829	16939.109	3412.306
7	GMTD	8.829	-85.485	192.436	-22.584	5.796	19.798
8	MORE	890.184	**572.949**	**448.846**	-285.788	192.138	363.665
9	JRPT	101.620	64.665	7.361	11.601	23.480	41.745
10	KIJA	-108.847	**-37693.991**	99.520	-12.552	28.117	-7537.551
11	LPCK	164.205	247.376	146.161	1792.205	144.906	498.971
12	LPKR	1133.523	-9.797	1.659	2.699	2.703	226.080
13	MDLN	**1594.384**	7.102	-78.572	-1472.670	-17.044	6.640
14	PWON	224.281	-127.067	21.971	-15.964	-26.176	15.409
15	PWSI	115.692	11.281	117.918	-13.728	33.149	52.862
16	RBMS	-43.324	61.879	366.431	127.227	2.134	-43.703
17	SMRA	42.756	4.976	3.884	0.314	1.249	10.636
18	SIIP	146.891	10.157	17.629	-3.919	-10.043	32.131
19	SMDM	544.059	-7014.806	118.764	-1609.619	1018.879	-1428.544
	MAX	1594.384	572.949	448.846	1792.205	16939.109	3412.306
	MIN	-437.598	-37693.991	-386.326	-5843.905	-3289.987	-7537.551
	Average	210.942	-2312.835	-13.848	-381.034	790.589	

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. Condition of financial ratios of property sector companies listed in IDX in the period 2004-2008 :
   a. The average value of variables *Working Capital to Total Assets* of the years 2004-2008 fluctuates each year. The company that have maximum and minimum values of this variables is varies.

	2004	2005	2006	2007	2008
Max	BMSR	BMSR	GMTD	SMDM	DVTI
Min	PWON	KIJA	BIPP	BMSR	BMSR

   b. The average value of the variable *Retained Earnings to Total Assets* of the years 2004-2008 fluctuate each year. The company that have maximum and minimum values of this variables is varies.

	2004	2005	2006	2007	2008

Max	MORE	MORE	RBMS	DVTI	PWSI
Min	BMSR	KIJA	CTRA	SMDM	DVTI

c. The average value of the variable *EBIT to Total Assets* of the years 2004-2008 tended to decrease each year. This means that the sector have decrease its capacity to produce profits from its operations. The company MORE which have 2 years as number one, has decline in the last two years and replace by LPCK that overall have good value of this variable. While the companies that has minimum value is varies.

	2004	2005	2006	2007	2008
Max	SMDM	MORE	MORE	LPCK	LPCK
Min	DART	KIJA	RBMS	MDLN	DVTI

d. The average value of the variable *Market Value of Equity to Book Value of Liabilities* from years 2004-2008 tended to fluctuate each year. The company PWSI can maintain its position as number one on this variable. While the companies that has minimum value is varies.

	2004	2005	2006	2007	2008
Max	MDLN	PWSI	LPCK	PWSI	PWSI
Min	KIJA	MORE	DART	BIPP	PWON

e. The average value of the variable *Sales to Total Assets* of the years 2004-2008 tended to fluctuate each year. The company that have maximum and minimum values of this variables is varies.

	2004	2005	2006	2007	2008
Max	PWSI	MDLN	BMSR	MORE	LPCK
Min	KIJA	KIJA	RBMS	BMSR	DVTI

2. The average value of Altman Z-score of property sector companies listed in IDX in the period 2004-2008 is experiencing decline. Only two companies fit into Nonbankrupt criteria i.e. LPCK and JRPT. On the other hand, BMSR have fit into bankrupt criteria for 5 consecutive years. LPKR is fit into grey area. The result of Z-Score can be use to determined which company is having financial problem. However further study needed to conclude whether companies that fit into bankrupt category using Altman Z-Score is really went bankrupt, with the Indonesian condition and law.

Suggestions

1. The result of Z-Score can be use to determined which company is having financial problem.
2. Further study needed to conclude whether companies that fit into bankrupt category using Altman Z-Score is really went bankrupt, with the Indonesian condition and law.

BIBLIOGRAPHY

Altman, Edward I., 2000. ***Predicting Financial Distress of Companies. Revisting The Z-Score and Zeta Models***. *www.Default Risk.com*

Brigham F, Eugene. Ehrhardt C, Michael. 2002. ***Financial Management (Theory and Practice)***. *Tenth Edition*. Thomson Learning Inc.

Darsono dan Ashari. 2005. **Pedoman Praktis Memahami Laporan Keuangan.** Semarang: ANDI.

Dedhy Sulistiawan, Liliana, 2007. **Analisis Teknikal Modern pada Perdagangan Sekuritas**. CV. Andi Offset, Yogyakarta.

Gitman, Lwrence J. 2006. **Principle of Managerial of Finance**. 8th ed, addison Wesley. Printed in The US.

Hadad, Muliaman, Mumboh Santoso dan Ita Rulina. 2003. **Indikator Kepailitan di Indonesia**. Jakarta; Bank Indonesia

Husnan, Suad. 2001. **Dasar-Dasar Teori Portofolio dan Analisa Sekuritas** Edisi Kedua. UPP AMP YKPN, Yogyakarta

Husnan, Suad. Enny Pudjiastuti. 2004. **Dasar-Dasar Manajemen Keuangan**. Edisi Keempat. Cetakan Pertama. UPP AMP YKPN, Yogyakarta

Ikatan Akuntan Indonesia. 2002. **Standar Akuntansi Keuangan,** per 1 April 2002. Jakarta: Salemba Empat.

Ikatan Akuntan Indonesia. 2004. **Standar Akuntansi Keuangan,** per 1 Oktober 2004. Jakarta: Salemba Empat.

Lesmana, Rico, Rudy Surjanto. 2004. **Financial Performance Analyzing**. Jakarta: PT. Eek Media Komputing Gramedia

Martono dan Agus Harjito. 2002. **Manajemen Keuangan.** Yogyakarta: Ekonisisa.

Munawir, S. 2002. **Analisis Laporan Keuangan. Edisi Keempat.** Yogyakarta: Liberty

Nazir, Mohammad. 2003. **Metode Penelitian.** Jakarta: Ghalia Indonesia.
Nazir, Mohammad. 2005. **Metode Penelitian.** Jakarta: Ghalia Indonesia.
Nur Indrianto dan Bambang Supomo. 1999. Metodologi Penelitian Bisnis, Edisi Pertama. Yogyakarta.: BPFE.
Rahmat Triaji. 1999. **Penerapan Z-Score Untuk Memprediksi Kesulitan Keuangan dan Kebangkrutan Perbankan Indonesia. _____. _____.**
Ridwan S. Sundjaja, Inge Barlian. 2002. **Manajemen Keuangan 1**. Edisi Kelima. Cetakan Kedua. Literata Lintas Media, Jakarta
Sofyan, Syafri. 2004. **Analisis Kritis Atas Laporan Keuangan**. Edisi 1-5. Jakarta: PT. Raja Grafindo Persada
Sofyan, Syafri. 2006. **Analisis Kritis Atas Laporan Keuangan**. Edisi 1-5. Jakarta: PT. Raja Grafindo Persada
Sugiyarso. 2006. **Manajemen Keuangan**. Yogyakarta : Media Pressindo
www.bapepam.go.id
www.bi.go.id
www.google.com
www.idx.co.id
www.inilah.com
www.kompas.com
www.vivanews.com
www.yahoo.com/finance
http://www.bankcruptcyaction.com/insolart1.htm,
http://www.ventureline.com/glossary.htm.
http://en.wikipedia.org/wiki/Z-Score_Financial_Analysis_Tool