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Effect of working capital efficiency, liquidity, and solvency on the profitability of automotive industry companies and their components listed on the Indonesian stock exchange in 2004-2008

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ABSTRACT

This study aims to determine the effect of working capital efficiency, liquidity and solvency on company profitability in food and beverage companies listed on the Indonesia Stock Exchange. The research design is casual associative research. The research population is all food and beverage companies listed on the Indonesia Stock Exchange in the 2004-2008 period. The sampling technique used was purposive sampling. The population data for the study were 15 companies and a sample of 14 companies was obtained. The independent variables in this study are working capital efficiency, liquidity and solvency. The dependent variable in this study is company profitability. The data analysis method used is correlation, regression, determination, t test and F test with a significant level of 0.05. Based on the results of the analysis using multiple correlation tests on the relationship between working capital efficiency, liquidity and solvency on company profitability with an R square value of 0.433, this shows a fairly strong influence. The multiple linear regression equation in this study is formulated as Y = -80.823 + 3.259 WCT + 12.988 CR - 0.013 DER + e, working capital turnover and currentratio has a positive effect and the depth to equity ratio has a negative effect with constant assumptions. Regression analysis produces an adjusted R^2 of 0.406 or 40.6%.

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1. INTRODUCTION

Today's community needs, both basic and secondary needs, are growing and increasing in number along with the times. This resulted in the establishment of various companies with various types of businesses to meet the needs of the community and lead to competitive competition. A strong company will grow, develop, and succeed. Meanwhile, companies that are unable to compete will likely experience a decline or bankruptcy. The company's readiness to face intense competition must start from within the company itself, one of which is readiness in terms of capital owned by the company. Working capital is needed by a company to finance daily operational activities. The larger a company, the greater its working capital needs.

According to Keown, Martin, Petty, and Scott (2005), working capital is the company's total investment in the form of current assets which are expected to be converted into cash within 1 (one) year or less. Working capital or what is often referred to as (net working capital) is the difference between the company's current assets and current liabilities. Determination of the amount of working capital needed by the company varies, one of which depends on the type and size of the company itself. Effective and efficient working capital management will expedite the operational activities of a company. To measure the efficiency of the use of working capital, we can use the working capital turnover ratio,

Van Horne (1997) in Hernawati (2007) states that in determining efficient working capital policies, companies are faced with the problem of a trade off between liquidity and profitability factors. In the process of maintaining the availability of liquidity and fulfilling short-term obligations, a discrepancy between assets and debts may occur which, among other things, can result in increased profitability in the short term but raises the risk of bankruptcy. Increasing working capital can increase company productivity so that it will encourage sales and ultimately increase high profits. However, loans from third parties will incur new costs/burdens for the company, including interest expenses, which will ultimately affect the company's profitability.

Wijayanti (2007) conducted research on the effect of working capital and working capital turnover on return on equity (ROE) in manufacturing companies listed on the Jakarta Stock Exchange. The results of the regression analysis show that partially working capital has an effect on ROE, while working capital turnover has no effect on ROE. Simultaneously, this study shows that there is a significant influence between working capital and working capital turnover on ROE. Putri (2006) conducted a study on the effect of working capital efficiency on the profitability of open PTs in Indonesia. From the results of statistical tests that have been carried out, it can be concluded that working capital efficiency has a significant influence on company profitability, in which the relationship is positive. It means,

From the description above, the writer wants to re-examine the hypothesis from the research conducted by Hernawati (2007) using different objects and observation periods. This study uses go-public companies in the automotive and component industry sector in 2004-2008. This object was chosen because working capital management is very important to be considered by companies in the automotive and component industry sector. In this sector, companies have operating activities/operation cycles related to the process of producing goods and selling on credit. The operating cycle (operating cycle) according to Wild, Subramanyam, and Halsey (2005), is the amount of time from the commitment to cash on purchases until cash is obtained from the sale of goods or services.

In addition, the reason for choosing this research object is because the automotive industry in Indonesia is currently quite developed. Based on the internet site kompas.com (10 March 2010), in the first two months of 2010 the motor vehicle market, particularly the automotive sector, experienced rapid growth.

2. RESEARCH METHOD

This research is categorized into the type of correlational study (correlational study). Correlational research aims to analyze the relationship of one variable with other variables or how a variable affects other variables. The object of research or what is the point of attention in this thesis is the use of company financial statements to determine the effect of working capital efficiency, liquidity, and solvency on profitability in automotive and component companies listed on the Indonesia Stock Exchange in 2004-2008.

Data Collection Methods. Data sources that will be used by the authors in conducting this research are secondary data obtained by studying literature and documents related to research. Secondary data is information collected from pre-existing sources, which can be internal or external data from the organization and can be accessed via the internet or published information. The data

to be examined are financial statements of automotive industry companies and their components listed on the Indonesia Stock Exchange during the 2004-2008 period and have been published.

Sampling Method, the population is the whole group of people, events, or other things that the researcher wants to investigate. While the sample is part of the population, whose members are selected from the population. The selection of samples from this study was carried out by purposive sampling, with the aim of obtaining a representative sample according to predetermined criteria. These criteria include the following: 1). Automotive industry companies and their components listed on the Indonesia Stock Exchange, 2). Registered on the Indonesia Stock Exchange in 2004-2008 and published complete financial reports successively during that period, 3). The company's financial statements have a financial year ending on December 31.

Table.1 Sampling

Information	Amount
Registered automotive and component companies Indonesia Stock Exchange until the end of 2008.	13
Automotive and component companies listed on the Indonesia Stock Exchange that do not meet the criteria election.	(4)
Registered automotive and component companies Indonesia Stock Exchange as sample.	9

Source: Processed data

Data Collection Techniques, 1). Documentation method. This method is carried out by viewing and studying documents and recording written data related to the object of research. In this study the documentation method was carried out by taking data on the financial statements of automotive industry companies and their components listed on the Indonesian Stock Exchange for the period 2004-2008 via the Indonesian Stock Exchange internet site and from Indonesian 2). Literature Study Method. This method is carried out by understanding the literature that discusses matters relevant to the topic under study, for example related books and journals, as well as related previous studies.

Data Analysis Techniques, 1). Data Processing Techniques. Data processing in this study was carried out to test the hypotheses that had been made previously. The initial step of data processing is to convert raw data into predetermined proxies using the Microsoft Excel program. After obtaining the proxy value for each variable, classical assumption testing is then carried out so that the regression model built meets the characteristics of BLUE (Best Linear Unbiased Estimator). 2). Hypothesis Testing Techniques, a). Classical Assumption Test, One method of estimating parameters in a linear regression model is Ordinary Least Square (OLS). The OLS method is used based on a number of certain assumptions. b). Normality test, The normality test aims to test whether the dependent variable and independent variable in the regression model have normal data distribution or not. A good regression model is one that has a normal or close to normal data distribution. c). Heteroscedasticity Test, Heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one residual observation to another. If the residual variance from one observation to another observation remains, then it is called homoscedasticity, whereas if it is different it is called heteroscedasticity. d). Autocorrelation test. Autocorrelation test aims to test whether in a model, the disturbance is in period t with errors in period t-1 (previous). If there is a correlation, then it means there is an autocorrelation problem.

Table.2 Autocorrelation Test Decision Making

dU < DW < 4-dU	There is no autocorrelation
DW < dL	There is a positive autocorrelation
DW > 4-dL	There is a negative autocorrelation
dU < DW < dL or 4-dU < DW < 4-dL	Can't be concluded

Source: Ghozali (2006)

Descriptive Statistics Descriptive statistics aim to provide an overview or description of a data seen from the average, standard deviation, minimum, and maximum (Ghozali, 2006). Multiple Regression Analysis In this study the authors used multiple regression analysis as a method of data analysis. This regression analysis aims to determine the relationship of two or more independent variables (X) to one dependent variable (Y). With this multiple regression analysis it can be seen the effect of working capital turnover, current ratio, and debt to total assets ratio on return on investment. The formulation of the multiple regression equation in this study is as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + e \quad \ldots\ldots(1)$$

Where:

Y : Return on Investment

a : Constant

b1-b3 : Regression Coefficient

X1 : Working Capital Turnover

X2 : Current Ratio

X3 : Debt to Total Assets

e : Confounding Variable

The coefficient of determination (R2), the coefficient of determination (R2) is used to determine the percentage influence of all independent variables on the value of the dependent variable. The magnitude of the coefficient of determination is 0 to 1. The small value of R2 means that the ability of the independent variables to influence the dependent variation is very limited. Individual Parameter Significance Test (t statistical test), the t statistical test is used to test whether each independent variable included in the model has an influence on the dependent variable.

Ho: the independent variable partially has no significant effect on the dependent variable.

Ha: the independent variable partially has a significant influence on the dependent variable.

If,

Probability > 0.05 then Ho is accepted.

Probability <0.05 then Ho is rejected.

3. RESULTS AND DISCUSSIONS

This research was conducted to determine the effect of working capital efficiency, liquidity, and solvency on company profitability. The research object used in this study is the financial statements of automotive industry companies and their components listed on the Indonesia Stock Exchange from 2004 to 2008. Data were obtained by accessing the Indonesian Stock Exchange internet site and from the Indonesian Capital Market Directory (ICMD).

Table.3 Summary of Company Profiles in the Automotive Industry and Its Components

No.	Company name	Code	Date Stand	Date *Listing*
1.	PT Astra Internasional Tbk.	ASII	20-Feb-1957	4-Apr-1990
2.	PT Astra Otoparts Tbk.	AUTO	20-Sep-1991	15-June-1998
3.	PT Gajah Tunggal Tbk.	GJTL	24-Aug-1951	8-May-1990
4.	PT Goodyear Indonesia Tbk.	GDYR	11-Jan-1901	22-Dec-1980
5.	PT Indo Kordsa Tbk.	BRAM	8-Jul-1981	5-Sep-1990
6.	PT Indospring Tbk.	INDS	5-May-1978	10-Aug-1990
7.	PT Multi Prima Sejahtera Tbk.	LPIN	11-Jan-1901	5-Feb-1990
8.	PT Prima Alloy Steel Universal Tbk.	PRAS	20-Feb-1984	12-Jul-1990
9.	PT Selamat Sempurna Tbk.	SMSM	19-Jan-1976	9-Sep-1996

1. Results of Data Processing
   a. Classical Assumption Test, Classical assumption test is a prerequisite for multiple regression analysis. This classic assumption test includes the normality test, heteroscedasticity test, autocorrelation test, and multicollinearity test.
   b. The normality test aims to test whether the dependent variable and independent variable in the regression model have normal data distribution or not. A good regression model is one that has a normal or close to normal data distribution. The Kolmogorov-Smirnov test is carried out by making a hypothesis:
      Ho : the data is not normally distributed
      Ha : data is normally distributed
   c. Heteroscedasticity Test, Heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from one residual observation to another. One way to detect heteroscedasticity is to use the Glejser test.
   d. Autocorrelation test. The autocorrelation test aims to test whether in a linear regression model there is a correlation between the confounding errors in the t period and the errors in the t-1 period (previously). Detection of the presence or absence of autocorrelation problems can be done using the Durbin-Watson test (DW test).
   e. Multicollinearity test. The multicollinearity test aims to test whether the regression model finds a correlation between the independent variables. A good regression model is one that does not have a correlation between the independent variables.

2. Descriptive Statistics Descriptive statistics aim to provide an overview or description of a data seen from the average, standard deviation, minimum, and maximum (Ghozali, 2006). An overview of the variables return on investment, working capital turnover, current ratio, and debt to total assets used in this study can be seen in Table 4.8 below:

Table.4 Descriptive Statistics

	N	Minimum	Maximum	Means		std. Deviation
	Statistics	Statistics	Statistics	Statistics	std. Error	Statistics

ROI	39	-.08	.13	.0222	.00797	.04977
WCT	39	-32.38	19.46	3.3501	1.27870	7.98547
CR	39	-.17	3.12	.9681	.10119	.63191
DTA	39	-.03	.65	.2761	.02586	.16150
Valid N (listwise)	39					

Source: SPSS 16.0 output

3. Multiple Regression Analysis, Regression analysis is used to determine whether there is influence between the independent variables and the dependent variable. Based on data processing with the SPSS 16.0 program, the results of multiple regression analysis are obtained to determine the effect of working capital efficiency, liquidity, and solvency on profitability as follows:

Table 5. Regression Analysis Results

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	std. Error	Betas	t	Sig.
(Constant)	.078	.020		3,920	.000
WCT	003	001	.503	3,519	001
CR	-.001	011	-.019	-.137	.892
DTA	-.236	048	-.766	-4,922	.000

4. Hypothesis testing
   a. Partial Significance Test (Statistical Test t), The t statistical test is used to test whether each independent variable included in the model has an influence on the dependent variable.
   b. Simultaneous Significance Test (Statistical F Test), The F statistical test is used to test whether all the independent variables included in the regression model have a joint effect on the dependent variable. The fourth hypothesis (Ha4) of this study suspects that working capital turnover (X1), current ratio (X2), and debt to total assets (X3) jointly affect return on investment (Y),

Table .5 Statistical Test Results F

Model		Sum of Square	df	MeanSquare	F	Sig.
1	Regression	043	3	014	9,838	.000a
	residual	051	35	001		
	Total	094	38			

4. The coefficient of determination (R2), the coefficient of determination (R2) is used to determine the percentage influence of all independent variables on the value of the dependent variable. In general, the coefficient of determination for cross-sectional data is relatively low because

there is a large variation between each observation, while for time series data it usually has a high coefficient of determination.

5. Discussion of Hypothesis Testing Results, The first hypothesis in this study states that the efficiency of working capital partially affects profitability. Based on the results of the hypothesis testing conducted, it can be seen that the working capital turnover variable used to measure the efficiency of working capital partially has a positive and significant effect on profitability (ROI).

4. CONCLUSION

Based on the results of testing the regression model and the discussion, the following conclusions can be obtained: The efficiency of working capital partially has a significant effect on the profitability of automotive companies and their components listed on the Indonesia Stock Exchange in 2004-2008. Partially, liquidity has no significant effect on the profitability of automotive companies and their components listed on the Indonesia Stock Exchange in 2004-2008. Solvability partially has a significant effect on the profitability of automotive companies and their components listed on the Indonesia Stock Exchange in 2004-2008. The efficiency of working capital, liquidity, and solvency together have a significant effect on the profitability of automotive companies and their components listed on the Indonesia Stock Exchange in 2004-2008.

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