

JOURNAL OF BUSINESS AND MANAGEMENT

Vol. 3, No.3, 2014: 305-315

THE EFFECT OF NET PROFIT MARGIN, PRICE TO BOOK VALUE AND DEBT TO EQUITY RATIO TO STOCK RETURN IN THE INDONESIAN CONSUMER GOODS INDUSTRY

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Abstract- In the recent years, stocks have become one of the most chosen investments in Indonesia. One of the most interesting sectors for investors is the consumer goods sector, for this sector managed to survive during the crisis and negative sentiments in Indonesian stocks market. Having the fact that the consumer goods sector is promising, investors would like to know the return of shares in this sector. One of the parameter that can be used to project the stock return is ratio from financial statement. This research is conducted to find out the relationship between net profit margin, price to book value, and debt-equity ratios with stocks return in the Indonesian consumer goods industry. The samples in this research are the consumer goods companies listed in Indonesia Stock Exchange during the period of 2009 – 2013. The multiple linear regression analysis is chosen as the method to analyze it. Results shown that the net profit margin, price to book value, and debt equity ratio have significant effects towards stocks return. Two of them, which are net profit margin and debt equity ratio have the positive significant impacts to the stocks return, while the price to book value has a significantly negative relationship to stocks return. Results also show that the R-square of the variable values 54.9%. NPM gives the most significant influence to the stocks return, followed by the PBV, and the last one is the DER.

Keywords: Net profit margin, price to book value, debt to equity, stock return, multiple linear regression.

Introduction

In the globalization era, capital market holds an important role for the economic development of a country. The role occurs because of the two functions of capital market, the economic function and financial function, respectively. In Indonesia, stocks have become one of the choices for investment in the recent years. This was proven by the increasing number of stocks traded annually. Consumer goods industry is one of the most attractive sectors for investors in Indonesia, since it was able to last and grew regardless the global crisis. In 2008, due to the global sentiment, the economy of Indonesia suffered, but most of the companies listed on the consumer goods sector still reported a net profit growth. Based on the data obtained from Bisnis Indonesia Intelligence Unit, companies listed in this sector reported the accumulated net profit of IDR11.8trillion. This causes the industry to be the highest net profit growth in 2008.

So was the year 2013 reporting the consumer goods index stock return as the highest level of increasing stocks return than all other sectors, with 13.81% year-to-date increase (Melani, 2013). Despite the negative sentiments hitting the Indonesia stocks market in 2013 like the increasing price of subsidized gasoline, increasing of the central bank risk-free asset rate, BI Rate, and the weakening of rupiah to US dollar, the increasing number of consumption rate in Indonesia was not affected that much. This is due to the GDP of Indonesia which almost raised to US\$4,000 and the increasing number of middle class in Indonesia which triggered the consumer goods stocks sector

(Kunardi, 2013). Moreover, the increasing number of Indonesian citizen also affects the growth of the consumer goods industry. As the population grows, the needs of consumer-based goods become necessary for the daily life of each politician. This research accommodates three ratios, which are NPM, PBV and DER. NPM indicates the real profit gained by a company. PBV shows the comparison of a stock price in the stock market and the book value of the stock price. DER indicates the amount of the debts being used for financing a company, compared with the investment obtained from investors' own wealth. The data obtained for the research has a period of 5 years, beginning 2009 until 2013. Based on the economic cycle theory by Schumpeter (1939), five years have become the suitable period for a company to complete a business cycle. Since the cycle keeps repeating itself periodically, a research with 5 years data period has fulfilled the big pictures of company performance.

Literature Review

Financial Statement

"Financial statement is a collection of facts and figures organized according to systematic accounting procedures" (Rao, 2011:22). By reading financial statements, readers can get information about the financial performance and operations of a company. The objective of financial statement is to provide information about the financial position, performance and changes in financial position of an organization that is useful to wide range of readers (or users) in making economic decision. There are several groups that usually used financial statement, such as creditor and investor. Creditors use financial statements to make a decision on loans it might make to the company. While stock investors use these statements to determine whether the company represents a good investment.

Capital Market

According to Rusdin (2008:1), capital market is the activity which is related to public offering and trading of the securities, public company, as well as institution and professions that is related to the effect. Capital market acts as a liaison between investor and company or government institution through long-term trades of financial instrument such as bonds, stocks and other.

Stock

Stock is a share of a company held by individual or group. There are several types of stocks and the two types of stock based on benefits for shareholder are common stock and preferred stock. According to Arthur J. (2004:228), "common stock is a certificate that indicates ownership in a corporation. Common stock doesn't have a maturity date but exists as long as the firm does."

Stock Return

Gitman (2009:228) stated "stock return is the total gain or loss experience on an investment over a given period of time. It commonly measured as the change in value plus any cash distributing during period of time, expressed as a percentage of the beginning period investment value."

Jogiyanto, H.M. (1998:85) divides the return concept into two groups, which are single return and portfolio return. "Single return is the result obtained from investment form realized return and expected return. Realized return is a return that calculated based on historical data and has the function as one of measure for company performance. Expected return is the return that expected by investor in the future."

According to Jogiyanto (2008), the formula to calculate stock return is:

$$\text{Stock Return} = \frac{P_t - P_{t-1}}{P_{t-1}}$$

Where:

P_t = stock price t period

P_{t-1} = stock price t-1 period

Net Profit Margin

"Net profit margin measures how much profit out of each sales dollar is left after all expenses are subtracted-that is, after all operating expenses, interest, and income tax are subtracted" (Andrews,2007:92). A higher margin means the firm is more profitable. The formula of net profit margin is:

$$\text{Earning per share} = \frac{\text{net income}}{\text{sales}}$$

Price to Book Value

"Price to Book Value measures the market value of a company's equity and divides it by book value of the company's equity" (Fischer,2007:55). A lower price to book value means that the stock is undervalued. The formula of price to book value is:

$$\text{Price to Book Value} = \frac{\text{price per share}}{\text{book value of equity per share}}$$

Debt to Equity Ratio

"Debt-Equity Ratio measures that reflects the proportion of equity and debt that the company has employed to finance its assets" (Mint, 2011). Lower percentage of DER means that a company is using less leverage and has a stronger equity position. The formula of debt equity ratio is:

$$\text{Debt-Equity Ratio} = \frac{\text{long term debt}}{\text{stockholders' equity}}$$

Methodology

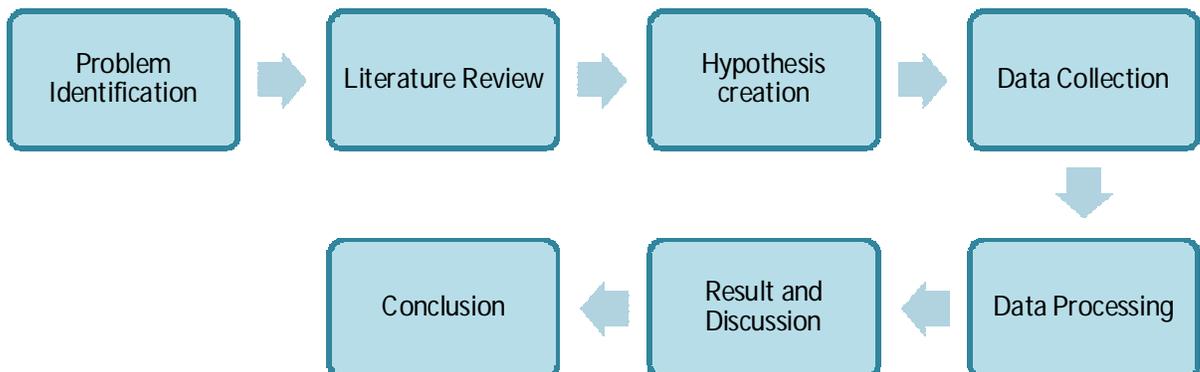


Figure 2. Research Methodology

Problem Identification and Research Questions: from the early observation, several problems are generated and the research questions are listed.

Research Objectives: the main objective of the research is to figure out the influence of net profit margin, price to book value and debt equity ratio towards the stock return.

Literature Study: a deeper literature study is conducted to fully understand the methodology and the model used during the research process.

Data Collection: The data gathering process that related with the main research topic

Data Analysis: The analyzed and calculated data as the core of this research

Conclusion: Upon conclusion the summary of all the research process and analysis is constructed.

Data Collection & Analysis

Data used in this research are secondary data. The data are obtained from financial report of consumer goods companies that are listed in Indonesia Stock Exchange from period 2009 until 2013. The list of consumer goods companies is obtained from saham.ok. The financial reports are obtained from Pusat Informasi Pasar Modal Bandung. The stock price for calculating the stock return of each company are obtained from www.yahoofinance.com

Stocks Selection

From 20 companies that suit with the criteria for sample of this research, the author only used 18 companies for sample in this research. There are two companies have outlier value that makes the other data to be abnormal. Because of that, both companies are excluded from the sample of this research. Both companies are PT Kedaung Setia Industrial and PT Multi Bintang Indonesia. The stocks on the table 1 below:

Table 1. List of Consumer Goods Company listed in Indonesia Stock Exchange 2009-2013

1. Akasha Wira International Tbk.	11. Merck Tbk.
2. Delta Jakarta Tbk.	12. Multi Bintang Indonesia Tbk.
3. Darya Varia Laboratoria Tbk.	13. Mustika Ratu Tbk.
4. Gudang Garam Tbk.	14. Mayora Indah Tbk.
5. HM Sampoerna Tbk.	15. Prasida Aneka Niaga Tbk.
6. Indofood Sukses Makmur Tbk.	16. Siantar Top Tbk.
7. Kimia Farma Tbk.	17. Mandom Indonesia Tbk.
8. Kedaung Indah Can Tbk.	18. Tempo Scan Pasific Tbk.
9. Kedaung Setia Industrial Tbk.	19. Ultrajaya Milk Tbk.
10. Kalbe Farma Tbk.	20. Unilever Indonesia Tbk.

Normality Test

The Normality test is aimed to test whether the regression model, the dependent variables, and independent variables both have normal distribution or not. A good regression model is indicated by the data having normal distribution or close to normal distribution.

This project used the Kolmogorov-Smirnov test. Data is distributed normally if the significant value is more than 0.05.

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		90
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.00167910
Most Extreme Differences	Absolute	.138
	Positive	.138
	Negative	-.071
Kolmogorov-Smirnov Z		1.306
Asymp. Sig. (2-tailed)		.066

a. Test distribution is Normal.

b. Calculated from data.

Figure 1. Normality Test Result

Based on the figure 1 above it is informed that the significant value for this project is 0.066. This means the data used for the observation had fulfilled the normality assumption.

Multicollinearity Test

Multicollinearity test is used for testing the correlation between the independent variables in the regression model. A good regression model indicates no perfect correlation or close to perfect correlation between the independent variables (the correlation is 1 or close to 1). In order to test whether a regression model is free from the multicollinearity, a value of Variance Inflation Factor (VIF) can be the indicator. A regression model which has no multicollinearity will have VIF value less than 10 and the Tolerance number of more than 0.1.

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	NPM (X1)	.885	1.130
	PBV (X2)	.700	1.428
	DER (X3)	.775	1.290

a. Dependent Variable: RETURN (Y)

Figure 2. Multicollinearity Test Result

Figure 2 above shows that in this observation, the multicollinearity test conducted has tolerance value of each independent variable of more than 0.1 and VIF value of less than 10. This indicates that there is no multicollinearity between independent variables within the research.

Heteroscedasticity Test

The heteroscedasticity test is intended for detecting whether there is any non-similarities of variants of residual. This becomes one of the prerequisites a regression model needs to fulfill because the heteroscedasticity affects the efficiency of the predicted value.

To test the homogeneity of the variants of residual a Rank Spearman test is conducted, which is done by correlating both independent variables to the absolute value of residual (error). If there is a significant coefficient correlation of the independent variables on the error point of 0.05, this means

there is a heteroscedacity within the data.

			Unstandardiz ed Residual
Spearman's rho	NPM (X1)	Correlation Coefficient	-.075
		Sig. (2-tailed)	.483
		N	90
	PBV (X2)	Correlation Coefficient	.085
		Sig. (2-tailed)	.427
		N	90
	DER (X3)	Correlation Coefficient	.020
		Sig. (2-tailed)	.852
		N	90

Figure 3. Heteroscedacity Test Result

Based on the figure 3, it is shown that all independent variables mentioned above have values of more than 0.05. Therefore, it is concluded that there is no heteroscedacity occurred on this regression model.

Auto-Correlation Test

The test method being used for this research phase is the Durbin Watson test. This test is aimed for analyzing whether there is any autocorrelation between each of the observation phase from time to time.

With the sample size of $n = 90$, $\alpha = 0,05$ and the number of independent variables of $k = 3$, the critical value is $dL = 1,5889$ and $dU = 1,7264$.

The result of the auto correlation is represented on the table below:

Model	Durbin-Watson
1	2.045

b. Dependent Variable: RETURN (Y)

Figure 4. Auto-Correlation Test Result

According to the table above, the Durbin-Watson value obtained is 2,045. Since the DW value is between the $dU (1,7264) < DW (2,045) < 4 - dU (2,2736)$, it can be concluded that there is no autocorrelation occurred.

Multiple Linear Regression

The multiple linear regression analysis is conducted to analyze the connection line of NPM, PBV, DER, and the stock return. The method analyzed whether each of the independent variable positively or negatively correlated, and to predict the value of the dependent variables if the independent variables changes (increase or decrease in terms of value).

Model	Coefficient Regression	Std. Error	t	Sig.
(Constant)	-0,000972	0,000426	-2,281	0,025
X1	0,000369	0,000037	9,890	0,000
X2	-0,000128	0,000024	-5,316	0,000
X3	0,000885	0,000380	2,328	0,022

Figure 5. Multiple Linear Regression Result

Based on the calculation from the table above, the multiple linear regression equation is obtained as below:

$$Y = -0.000972 + 0,000369 X_1 - 0.000128 X_2 + 0.000885 X_3$$

From the multiple linear regression equation above a constant value of -0.000972 is obtained. This means if a RETURN (Y) variable is not affected by the three independent variables, which are NPM (X₁), PBV (X₂), and DER (X₃) has a zero value, the average value of RETURN is -0.000972.

The independent variable of regression coefficient mark shows a relationship tendency of the variable and RETURN. The coefficient of regression for independent variable X₁ is positive, showing a relationship between NPM (X₁) and RETURN (Y). The regression coefficient of variable X₁, which valued 0.000369, has a meaning of every additional 1% in NPM (X₁), there will be an increase in the value of RETURN (Y) of 0.000369.

The regression coefficient for independent variable X₂ has a negative value, showing an opposite relationship between the value of PBV (X₂) and RETURN (Y). A regression coefficient variable X₂ of -0.000128 means that in every addition of PBV (X₂) of 1% will decrease the RETURN (Y) value by 0.000128.

The regression coefficient for independent variable X₃ has a positive value, indicating a relationship between DER (X₃) and RETURN (Y). The regression coefficient variable X₃ of 0.000885 means that in every addition of DER (X₃) of 1%, there will be an increase of RETURN (Y) by 0.000885.

Coefficient Determination Test

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.741 ^a	.549	.533	.00171

a. Predictors: (Constant), DER (X3), NPM (X1), PBV (X2)

Figure 6. Coefficient Determination Test

R-squared is a statistical method which shows until what extent a variability of a factor is affected or explained by the relationship with another factor. From figure 6 above, R squared for this regression model is 0.549 or 54.9%. It means independent variable variability (NPM, PBV and DER) can explain dependent variable variability by 54.9%. The rest about 45.1% explained by other variables that are not included in this regression model.

F-Test

In order to find out the significantly of an influence by the independent variables altogether to a dependent variable, an F-test is conducted.

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	3	.000	34.836	.000 ^a
	Residual	.000	86	.000		
	Total	.001	89			

a. Predictors: (Constant), DER (X3), NPM (X1), PBV (X2)

b. Dependent Variable: RETURN (Y)

Figure 7. F - Test

Based on the table mentioned above, the value of F 34.836 is obtained from the calculation. Since the $F_{\text{calculation}} (34.836) > F_{\text{table}} (2.711)$, then H_0 is rejected. By this means it can be concluded that there is a simultaneously significant influence from NPM (X_1), PBV (X_2) and DER (X_3) to the RETURN (Y).

t-Test

In order to test the significance of the influence of the independent variables partially on dependent variables, a t-test is conducted.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations
		B	Std. Error	Beta			Zero-order
1	(Constant)	-.001	.000		-2.281	.025	
	NPM (X1)	.000	.000	.762	9.890	.000	.633
	PBV (X2)	.000	.000	-.460	-5.316	.000	-.112
	DER (X3)	.001	.000	.192	2.328	.022	.079

a. Dependent Variable: RETURN (Y)

Figure 8. t - Test

The analysis for NPM variable:

Based on figure 8 above the Variable X_1 has the $T_{\text{calculation}}$ greater than the T_{table} . Since the t-calculation (9.890) $>$ t-table (1.988), then H_0 is rejected. In conclusion, there is a partially significant influence from NPM (X_1) to the RETURN (Y).

The analysis for PBV variable:

Based on the figure 8 above it can be drawn that the Variabel X_2 has $T_{\text{calculation}}$ lower than T_{table} . Since the $T_{\text{calculation}}$ value ($-5,316$) $<$ T_{table} ($-1,988$), then H_0 is rejected. Therefore, there is a significant influence from PBV (X_2) to the RETURN (Y).

The analysis for DER variable:

Based on the figure 8 it can be seen that Variabel X_3 has a value of $T_{\text{calculation}}$ greater than T_{table} . Since the $T_{\text{calculation}}$ value ($2,328$) $>$ T_{table} ($1,988$), then H_0 is rejected. Therefore, it can be concluded that there is a partially significant influence from DER (X_3) to RETURN (Y).

Result Analysis**The Relationship between Net Profit Margin and Stock Return**

Net Profit Margin or NPM measures how much the ratio of each dollar generated from sales to the company profit. This ratio shows the company ability to generate profits on a certain level of sales.

The result of this multiple regression research shows that NPM has the significant and positive relationship to the stock return. This means that the increase of NPM of a company can influence the increase of its stock return. The research is strongly backed by the previous research conducted by Khairurizka, Martani, and Mulyono (2009) who stated that the NPM has a significantly positive relationship to the stock return of the company.

High profit margin suggests that a firm can control its costs or has a solid competitive position within its industry. A high NPM value also signals the investor to invest in the particular company as a higher NPM indicates the ability of the company to increase the net profit. A high net profit raises the hope of investors to gain higher return.

The Relationship between Price to Book Value and Stock Return

Price to Book Value or PBV measures the relative value of a company compared to its stock price or market value. This ratio shows how much equity investors are paying for each dollar in net assets. It is an essential figure to potential investors and analysts because it provides a simple way of judging whether a company is undervalued or overvalued.

The result of the multiple regression shows that the price to book value has the negative and significant relationship to the consumer goods industry stocks in Indonesia. This shows that in any increasing value of PBV, there will be a decrease in the value of the stock return. The research is supported by the previous study by Utama and Santosa (1998) and also Prasetya (2007), stating the negative and significant relationship between PBV value and the stock return.

A high PBV ratio also indicates an overvalued in price of the stocks, where the price in the stock market is higher than the book value of equity on the balance sheet. This can affect the investors for not willing to buy the stocks of a particular company because of the overvalued price. The decrease in demand of the stock will affect the stock price to decrease, and thus it can affect to the low return of the stock price.

The Relationship between Debt to Equity Ratio and Stock Return

The debt-to-equity ratio or DER is a measure of the relationship between the capital contributed by creditors and the capital contributed by shareholders. It indicates what proportion of equity and debt the company is using to finance its assets.

In this research it is acknowledged that the debt to equity ratio has a positive and significant correlation to the stock return. Thus, if a DER value of a company increase, it will be followed by the increase of the stock of the company itself. This research is in line with the previous study done by Setiawan and Oktariza (2013) which mentioned that DER has a positive and significant relationship to the return of both sharia and conventional stocks.

According to Ross, Westerfield dan Randolph (2002), a company which has a high DER can give potentially higher profit to the stock holders, if the company uses the debt to expand the sales or revenue.

In other words, a high DER can be beneficial for the stockholders in terms of the availability of fresh money the company receives. The fresh money can be budgeted to support the long-term development plan of it and giving a higher profit in return. Therefore, a high DER highly influences the increase of the stock return.

Conclusions

The result of adjusted R-square from this multiple regression model is 0.549 or 54.9%. It means independent variable variability (NPM, PBV and DER) can explain dependent variable variability by 54.9%. The rest, which is about 45.1%, is explained by other variables that are not included in this regression model.

In order to find out the significance of an influence by the independent variables altogether to a dependent variable, an F-test is conducted. The result shows that H_0 is rejected and H_a is accepted. That means all of the independent variable (NPM, PBV and DER) significantly influence the stock return.

In order to test the significance of the influence of the independent variables partially on dependent variables, a T-test is conducted. The result is as follows:

Table 2 t-Test Conclusion

Variable	Relationship	Significantly Affect
Net Profit Margin	Positive	Significantly Affect
Price-to-book Value	Negative	Significantly Affect
Debt Equity Ration	Positive	Significantly Affect

$$\text{Stock Return} = -0.000972 + 0.000369 \text{ NPM} - 0.000128 \text{ PBV} + 0.000885 \text{ DER}$$

This regression function means if the value of Net Profit Margin, Price to Book Value, and Debt Equity Ratio are equal to zero, then the stock return value will be -0.000972. It can be concluded that the regression line intercepts Y-axis at -0.000972. By this equation, it is also shown that if net profit margin and debt equity ratio has positive correlation toward stock return while price to book value has negative correlation towards stock return.

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