

Company Strategy Based on Linier Regression of Stocks Return to the EPS and Dollar Exchange at Pharmaceutical Industry in Indonesia Stock Exchange 2010-2016

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Abstract— **Pharmaceutical Industry one of industry that has a great effect on health aspect and it affects the economy in a country. This study aims to determine the effect of Earning Per Share, Debt to Equity Ratio, Return On Asset, Inflation and Dollar Exchange at simultaneosly and partially to stock return in pharmaceutical sector. This research purpose to formulate strategy of pharmaceutical industry to improve the performance of stocks return. The sample used is 7 companies from pharmaceutical industry on the Indonesia Stock Exchange (IDX) during the period 2010-2016. Data type used are secondary data, time series and cross section by using data panel regression with an output linier regression. This research found that EPS, DER, ROA, inflation, and dollar exchange have significant effect on stock return. While variables that have a partial effect in stock return are EPS and dollar exchange with EPS have a positive effect and dollar exchange have a negative effect. A tool for formulating a strategy is to create an AHP questionnaire for experts and SWOT analysis. The result SWOT analysis is a recommendation strategy for increase of EPS value with six operational strategy.**

Keywords—**Linier Regression, EPS, Dollar Exchange and Strategic**

I. INTRODUCTION

Indonesia with a population of over 260 million people requires the presense of hospital and pharmaceutical companies to sustain a healthy life for the people. According to data from the ministry of health, the number of hospital in

Indonesia in 2016 increased by 5% from previous year by 2623 from 2490 hospital [1]. To fulfill the needs of medicines in every hospital and other organizations, pharmaceutical companies as providers of medicine an important role for the health on indonesian society. Pharmaceutical companies is one of the many business lines in the business world that exist today. Pharmaceutical company are focus on research, develop and distributing medicine for health. Pharamaceutical company are industry that take advantage of intellectual capital. The pharmaceutical industry is an intensive industry conducting research, innovative and balance industries in the use of human and technology resource [2]. Pharmaceutical industry has a big influence on the needs of medicine in every hospital and other health care organizations. Medicine turn over may account for 50-60% of the hospital budget [3]. Pharmaceutical company also have a large market share in Indonesia, it also supported by the number of people in Indonesia reaching approximately 260 million people. Sales of medicine at national level annually grow by an average of 12-13% and more than 70% of total drugs on the market are controlled by national companies.

TABLE I. LISTED COMPANY AT INDONESIA STOCK EXCHANGE 2010-2016

No.	Symbol Company	Company	Years IPO
1	DVLA	Darya Varia Laboratoria Tbk	11st November 1994
2	INAF	Indofarma Tbk	17th April 2001
3	KAEF	Kimia Farma Tbk	04th July 2001
4	KLBF	Kalbe Farma Tbk	30th July 1991
5	MERK	Merck Indonesia Tbk	23rd July 1981
6	PYFA	Pyridam Farma Tbk	16th October 2001
7	TSPC	Tempo Scan Pasific Tbk	17th June 1994

Sources : IDX.com, 2018

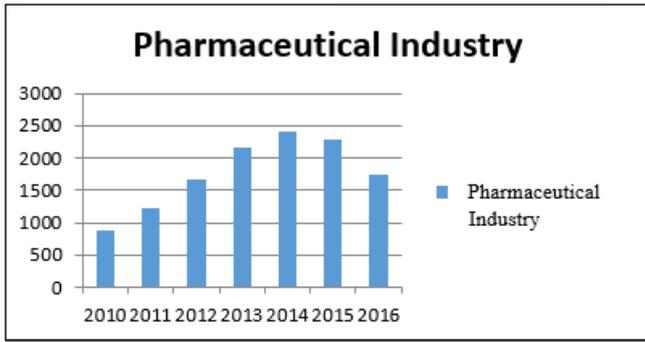


Fig. 1. Stock Price of Pharmaceutical Industry
Sources: IDX.com, 2018

Based on the picture above shows that the stock price of research companies that always rise from 2010 to 2014 and decreased in 2015-2016. Increase and decreased in stock process influenced by several factor and will also affect the stock returns will be obtained by investor. The fundamental factor of the company that will focus on this research are Earning per Share (EPS), Return on Asset (ROA) and Debt to Equity Ratio (DER) while for macro economic factor in Inflation and Dollar Exchange Rate.

The research objective is to find out whether variables such as EPS, DER, ROA, inflation and dollar exchange rate affect the stock returns of pharmaceutical companies. Then formulate SWOT strategy to increase the performance of company to increase value of the stock return.

II. LITERATURE REVIEW

A. Capital Market

Based on the Law of Capital Market in Indonesia No 8 of 1995 Article 1 point 13: The capital market is an activity concerned with the public offering and securities trading, the public company relating to the securities it publishes, as well as the institutions and potentials relating to securities.

B. Stock

Stocks are proof of equity ownership in a company. Stocks are popular among investors as they provide an attractive rate on return. Stocks can be define as a sign of capital participation of a person or a business entity in a company of limited liability company [4]

C. Internal Factor

1. EPS (Earning Per Share)
Is the income given to shareholders form each share owned [5]

$$EPS = \frac{\text{Net Profit}}{\text{Number of Share Outstanding}}$$

2. DER (Debt to Equity Ratio)
Measure used in analyzing financial statements to show the amount of collateral available to creditors

$$DER = \frac{\text{Total Liabilities}}{\text{Total Shareholders Equity}}$$

3. ROA (Return On Asset)
Measure the company's ability to generate profits.

$$ROA = \frac{\text{Net Profit}}{\text{Total Assets}}$$

D. External Factor

In external factor there are 2 variable, dollar exchange rate and inflation.

E. Previous Study

There are previous research that discuss about company strategy based on stock return analysis of EPS, DER, ROA, PER, inflation and BI rate on telecommunication subsector in Indonesia Stock Exchange 2007-2015 which have conclusion EPS, DER, ROA, PER, inflation and BI rate simultaneously have a significant effect on stock return in telecommunication subsector with ROA and inflation partially have a significant effect [6].

In another study with the title analysis of earnings per share before and after ipo and the strategy (case study: companies perform IPO in indonesia stock exchange year 2013) there are conclusion that manufacture sector; trade, services and invesment; infrastructure and property sector have no significant different in average EPS value before and after IPO [7].

III. RESEARCH METODOLOGY

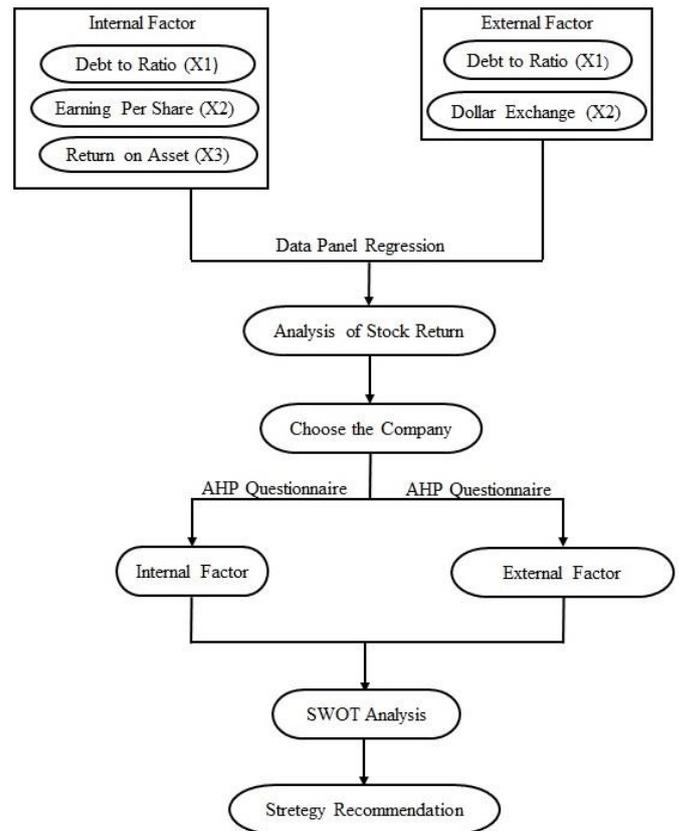


Fig. 2. Research Methodology

The conceptual model in this research start with 2 factor, internal such as Debt to Equity Ratio (DER), Earning Per Share (EPS) and Return on Asset (ROA) and external factor

like a Inflation and Dollar Exchange. In the picture above shows a conceptual model with output strategy recommendation.

A. Analytical Hierarchy Process (AHP)

AHP is a measurement theory or method through pairwise comparison and relies on expert judgement to obtain scale priority [8]. AHP is useful for formulate problems into a structured hierarchy and for solving unstructured problems, as in this study is to determine the priority or weighting of internal and external factors in the SWOT analysis.

B. SWOT Analysis

SWOT Analysis is a strategic planning method used to evaluate strengths, weakness, opportunities and threats. Swot is an acronym for a company’s Strength, Weakness, Opportunity, and Threats [9]. SWOT Analysis is an analysis of the strenghs and weakness of a company or organization and the opportunities and threats in its external environment. This involves determine the business or project objectives and identifying internal and external factors that are both favorables and profitable to achieve those goals. In SWOT analysis can be divided into two, namely External Factor Analysis Summary (EFAS) and Internal Factor Analysis Summary (IFAS). In swot analysis there is a swot matrix. Swot matrix have 4 quadrant, you can see in down below

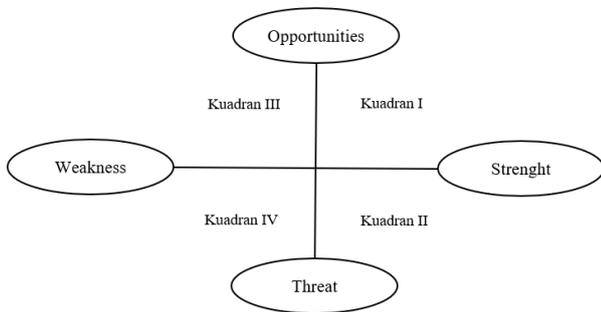


Fig. 3. Matrix Quadrant

1. Quadrant 1 (Positive, Positive)

This position mean the organization is strong. The recommendation strategy is progressive, use the strenght for the opportunity.

2. Quadrant 2 (Positive, Negative)

This position mean a strong organization but face great challenge. The recommendation strategy is strategy divesification, use a lot of tactical strategy to face the challenges.

3. Quadrant 3 (Negative, Positive)

This position mean a weak organization but have a opportunity. The recommendation strategy is change strategy, the organization advise to change the previous strategy.

4. Quadrant 4 (Negative, Negative)

This position mean a weak organization and faces great challenges. The organization strategy is survival strategy, control internal condition as not to get collapse. [10]

C. Data Panel Regression

Data panel is a method used to determine the effect of independent variables on the dependent variable used regression analysis Ordinary Least Square (OLS) toward the model with a combination of time series and cross section. Time series data is usually data in the form of certain characteristics, such as stock proce data or inflation consisting of several periods either daily, weekly, monthly, quarterly or yearly. Approaches in panel data regression model are Common Effects Model, Fixed Effects Model, Random Effects Model.

D. DESCRIPTION DATA

TABLE II. DESKRIPTIVE STATISTIC

	RETURN_STOCK	DER	EPS	ROA	INFLATI ON	DOLLAR_E XCHANGE
Mean	0.38	0.54	33.87	0.11	0.05	10896.21
Median	0.24	0.39	10.31	0.09	0.04	10451.37
Maximum	2.33	1.71	149.95	0.39	0.08	13391.97
Minimum	-0.58	0.18	-17.49	-0.04	0.03	8779.490
Std. Dev.	0.62	0.37	43.42	0.08	0.02	1841.969
Observations	49	49	49	49	49	49

From the above table, can be seen about the minimum, maimum, mean and standar deviation value each variable in this study.

E. ESTIMATION REGRESION DATA PANEL

TABLE III. ESTIMATION REGRESSION DATA PANEL

Test	Result	Conclusion
Chow Test	Value Prob. Cross-section chi-square (0,3059) more than Alpha 0,05.	H0 accepted, common effect model better than fixed effect model.
Breusch-Pagan LM Test	Value Breusch-Pagan amount (0,3466) more than Alpha 0,05.	H0 accepted, common effect model more precise than random effect model.

Based on test that already used, model data panel regression, common effect model more precise than fixed effect model and random effect

F. CLASSIC ASSUMPTION TEST

TABLE IV. CLASSIC ASSUMPTION TEST

Classic Assumption Test	Result	Conclusion
Normality Test	Value of significance (0.056) > 0.05	The research data is normally distributed
Heterokedastisiticity Test	Prob. Chi-Square (0.2924) > α (0,05).	There's no heterokedastisiticity in tis research
Autocorrelation Test	Durbin Watson test results fulll criteria (4-dU) < DW < (4-dL)	There's no conclusion
	The result run test, value ofi Asymp. Sig. (2-tailed) (0.998) more than α (0,05)	There's no autocorrelation in this research
Multicolinearity Test	Correlation coefficient of each independent variable < 0,80	There's no molicolinearity in this research

In that figure explains that there is no problem in the classic assumption test so that research on panel data regression can be done.

IV. RESULT AND ANALYSIS

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A. F Test and T Test

TABLE V. F TEST AND T TEST

Prob(F-statistic) = 0.0032		
EPS	Prob> t	0.0337
DER	Prob> t	0.4151
ROA	Prob> t	0.6848
Inflation	Prob> t	0.6235
Kurs Dollar	Prob> t	0.0007

Based on F test and T test, the F test (Prob>F) =0,0032 it means that EPS, DER, ROA, Inflation and Dollar Exchange simultaneously have an effect on stock return. The result of the F test with value (Prob>t) less than significance 5% is EPS and Dollar Exchange with value of probability 0,0337 and 0,0007.

B. Analysis Data Panel Regression

Based on hypothesis has been done EPS and Dollar Exchange that has a significant influence on stocks return so the formulation is :

$$Y = 1.766205 + 0,004165 X_{it3} - 0,000166X_{it5} + e_{it}$$

Based on the regression equation above it can be ssen that :

1. In the regression equation above, the constanta is 1,766205 It means that if the all independent variable are zero, then the stock return is predicted at 1,77205
2. EPS has a positive coefficient of 0,004165. This indicate that each 1 point increase in the EPS ratio is estimated to raise 0,004165 stock return by assuming the value of constant in other variables.
3. Dollar exchange has a negative coefficient of -0,000166. This indicate that each 100% increase in dollar exchange is estimated to decreased - 0,00166 stocks return by assuming the value of constant in other variabels.

C. SWOT Analysis

The company selected to represent the sector pharmaceutical and conducted the SWOT analysis is PT Kalbe Farma, Tbk because the company has the highest average return value of 7 companies and has EPS which is always growing every year

1. Internal Factor Analysis Summary (IFAS)

TABLE VI. INTERNAL FACTOR ANALYSIS SUMMARY (IFAS)

No	Strength	Weight	Rating	Weighted Score
1	Quality of Health Products	0,171	4	0,683
2	Wider Distribution	0,119	4	0,475
3	Products Research and Development	0,119	3	0,357
4	HR Experienced and Development	0,101	3	0,304
5	Revenue Achievement	0,087	3	0,262
6	Implementation of GCG	0,089	2	0,179
Total Strength				2,261
Weakness				
1	Increase in Raw Materials	0,141	4	0,565
Total Weakness				0,565

Based on the above calculation, it can be seen that the IFAS score is 1,695. The total score of IFAS obtained by means of total strengths is subtracted by total weakness.

2. External factor Analysis Summary (EFAS)

TABLE VII. EXTERNAL FACTOR ANALYSIS SUMMARY (EFAS)

No	Opportunities	Weight	Rating	Weighted Score
1	Changes in Consumer Behaviour on Health	0,251	4	1,004
2	Competitive Price	0,228	4	0,911
3	Continuity and Quality of Suppliers	0,146	3	0,438
Total Opportunities				2,353
Threats				
1	Government Health Programs	0,251	4	1,004
2	Number of Competitor Companies	0,228	3	0,684
3	Technology Competitors	0,146	3	0,438
Total Threats				2,125

Based on the above calculations, it can be seen that the total EFAS is 0,228. EFAS total score is obtained by means of total opportunities reduced by total threats.

D. Recommendation Strategy

Based on the results of IFAS and EFAS score, then the score becomes the input to know the position of SWOT matrix, so it can be known the right strategy recommendations for the company.



Fig. 4. Position of Company in Matrix SWOT

SWOT matrix above shows that the position of PT Xyz is in quadrant 1. Based on quadrant position PT Kalbe Farma can use progressive strategy that is using the strength to take advantage of opportunity. The following recommended strategy based on priority:

1. Maintaining the quality of health products so the product produced in accordance with public health behavior and this will avoid the threat of many competitor
2. Distribution of product all over Indonesia to gain opportunities in product sales. There are many places that can't be reached by the company such as eastern Indonesia and the outer island of Indonesia is expected with the continuous development of infrastructure can provide an easier access to the distribution channel.
3. Product innovation has been done by the company, then the company also need to research for raw materials because the cost of raw materials for pharmaceutical company are still many come from oversea where the price of cost for raw materials may rise at any time as rising exchange rate of the rupiah againts the dollar, it is expected that the future company can do their own raw materials production.
4. Increase the harmony among employee can also maintain the quality of the company, in maintain the quality of human resources can be done by increasing the number of training conducted by the company so that the ability of employee more equitable
5. The company need to maintain their own market share. Always provide good service for customer, products that support the needs of customer. Company also need to maintain an increase revenue that can be done by reduce operating cost, ncrease marketing and increase revenue from the previous period.
6. The company has done good corporate governance, this is proven by obtaining various achievement on GCG management.

V. CONCLUSION

Based on the result of research the above, there are conclusion that can be known that DER, EPS, ROA, Inflation and Dollar exchange simultaneously have a significant effect on stock return in pharmaceutical industry with EPS has a significant positive effect and dollar exchange has a significant negative effect.

Based on SWOT calculation, it was found that the matrix SWOT Kalbe Farma company are in quadrant 1 by using a progressive strategy that is using the strength of the company and take advantage of existing opportunities. There are 6 recommendation strategy for pharmaceutical industry such as quality of health products, wider distribution, products research and development, HR experienced and development, revenue achievement and implementation of GCG. For suggestions in this study, there are 2 suggestion for investor and pharmaceutical industry.

For investor can consider EPS and exchange rate when they want to invest in pharmaceutical sector because these two variables have a significant effect on stock return, and for company itself the company must be able to oversee financial performance and consider EPS in the financial statement.

The further result, researcher can increase the amount of research data, so the results obtained are more significant.

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