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The Effect of Company Business Strategy on Level of Stickiness Cost

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Abstract—**The aim of this research was to examine the effect of firm's business strategy on its stickiness cost level. The sample used in this research were 74 manufacturing companies listed on the Indonesian Stock Exchange for period of 2013-2016. The data used financial statements. The sampling technique used in this research was purposive sampling. This research used multiple regression analysis. The variables in this research were stickiness cost and strategy. The results of statistical analysis showed that the manufacturing companies which used prospector's business strategy had the level of stickiness cost higher than defenders business strategy. To overcome these issues, the company that used prospector's business strategy need to increase the intensity of cost adjustment to avoid stickiness cost which applied by the companies that used defender's business strategy.**

Keywords: defenders business strategy, firm's business strategy, prospectors business strategy, stickiness cost

I. INTRODUCTION

Cost behavior is a pattern that describes the amount of variation in costs for the change of activity. Its patterns that are not proportional to changes in activity can cause stickiness cost. It is important for companies to consider the expected cost behavior as a basis for making decisions regarding the right time to make cost adjustments to anticipate stickiness cost. Tight business competition requires companies to do their best to stay in business through business strategies that are different from other companies. In a study conducted by Miles and Snow revealed that companies that apply prospector's business strategy have a tendency to increase stickiness cost on selling, general and administrative costs [1]. Whereas in companies that implement defender business strategy, there tends to be no stickiness costs on selling, general and administrative costs. The purpose of this study was to determine the effect of the company's business strategy on the level of stickiness cost that occur in manufacturing companies.

II. THEORETICAL REVIEW

Asymmetric cost behavior arises when there is asymmetric behavior in making resources adjustments, which tends to slow down the process of decline compared to the process of increasing resource use. This study uses the cost of selling, general and administrative as a measure in determining the asymmetric cost behavior that appears in the company. SG&A is used for several considerations: 1) asymmetric cost behavior is more common in SG&A cost compared to other rational operation cost categories [2], 2) SG&A cost are widely considered and calculated by analysts and investors and 3) SG&A cost has a strong relationship with changes in revenue, where many components of SG&A cost are influenced by the level of company income.

Stickiness cost concepts originally was discussed by Malcolm in 1991. Some of the cost are likely to have the characters are not comparable with the change in activity. So these costs tend to be stiff and inherent because of the fix cost that is too high, even if the activity decreases. Therefore, these costs are labeled "stickiness costs". Research Anderson et al. find stickiness costs are costs that increase higher when sales volume rises when sales volume falls that the same proportion [2]. Stickiness costs occur because the balance of resource adjustment is slower in the decreased adjustment process compared to an increased adjustment process. In addition, managers tend to choose to retain unused resources rather than reducing resources when sales decline.

Porter in Baskara states that in a competition a company must have a competitive strategy in order to complete effectively as to obtain a sustainable advantage [3]. Companies can choose to provide products that have lower price in industry (cost efficiency strategy) or be a provider of unique and innovative products (innovation strategy). Companies that adopt a cost efficiency strategy focus on cost control by emphasizing efficiency, reduction and strict overhead costs and minimizing internal cost such as advertising, service, personal service and promotion cost. Conversely, companies that implement an innovation strategy tend to have one or more attributes that will make their product unique by carrying out various innovation. To support this strategy, companies in marketing activities must give managers the freedom to be creative and innovative in acting for growth and success.

Meanwhile, according to Miles and Snows effective companies can create and maintain viable market for their product and services [1]. So the companies must continue to make modifications and improvements to the mechanism to achieve its objectives, by rearranging the structure of roles and relationship as well as decision-making process and its control. There are four different type of corporate strategies in responding to the environment and have specific technological

configuration, structures and process that are in line or consistent with technology. The following are type of strategies according to Miles and Snows which consist of: defenders, prospectors, analyzers and reactors [1].

Bentley et al. states that that the strategy proposed by Miles and Snows can be more harmonized with other research variables [4]. Based on the description of the results of the research that has been done, it can be concluded that there is a possibility of a link between the strategy and the level of stickiness cost on SG&A cost. Based on the theories and previous research, it can be concluded and formulated hypothesis as follows:

H1: an increase in SG&A cost is greater when there is an increase in income compared to a decrease in SG&A cost when there is a decrease in income.

H2: the level of stickiness cost in companies that implement prospector's business strategy higher than the level of stickiness cost in companies that implement defender's business strategy.

III. RESEARCH METHODS

The object of this research is manufacturing company that registered in Indonesia Stock Exchange in the 2013-2016. This research is quantitative research. The data source used in this study is secondary data that contains financial statement. The population of this study is manufacturing companies that listed in Indonesia Stock Exchange in 2013-2016 supported by 124 companies. The samples use a purposive sampling technique with criteria as in Table I.

TABLE I.   PURPOSIVE SAMPLING RESULTS

Criteria	Amount
Manufacturing companies that listed in Indonesia Stock Exchage in 2013-2016	134
Reduced: Companies that do not present information about advertising costs	(60)
Company Total	**74**
Total data for 2013-2016	**296**

The dependent variable of this study is stickiness cost which is measured using a model from Anderson et al. [2]:

$$\log\left[\frac{SG\&A_{i,t}}{SG\&A_{i,t-1}}\right] = \beta_0 + \beta_1 \log\left[\frac{REV_{i,t}}{REV_{i,t-1}}\right] + \beta_2 \cdot DEC_{i,t} \cdot \log\left[\frac{REV_{i,t}}{REV_{i,t-1}}\right] + \varepsilon_{i,t}$$

Hypothesis 1 is accepted if β1> 0 and β2<0 or if β1+β2 <β1 shows that the increase in SG&A costs when income rises is greater than the decrease in SG&A costs when income decrease. This shows the stickiness cost.

While the independent variable is a strategy using model developed by Bentley et al. based on the classification proposed by Miles and Snows using six proxies in the measurement, such as: (1) ratio of advertising cost to sales, (2) ratio of the number of employees to sales, (3) ratio of market to book value, (4) ratio of SG&A burden to sales (5) standard deviation of the number of employees, (6) intensity of fixed assets [1,4]. Each proxy is calculated based on the ratio

calculation at the company every year. Then sorted for each of six variables by circulating based on 2 digit JASICA code (Jakarta Stock Industrial Classification). For the first 5 variables, the sample of companies in the top quintile received a score of 5, the sample in order below obtained a score of 4 and so on. The score for PPEINT is the opposite of the first 5 variables. For the sample of companies that are in the top quintile, get a score of 1, company sample in the order below get a score of 2 and so on. The score of each company sample is summed over all the variables that have been given a score. The maximum score is 30 (prospectors) and the minimum score is 6 (defenders). Hypothesis 2 is to determine the effect of business strategy on the level of stickiness cost by using the following model:

$$\log\left[\frac{SG\&A_{i,t}}{SG\&A_{i,t-1}}\right] = \beta_0 + \beta_1 \log\left[\frac{REV_{i,t}}{REV_{i,t-1}}\right] + \beta_2 \cdot DEC_{i,t} \cdot \log\left[\frac{REV_{i,t}}{REV_{i,t-1}}\right] + \varepsilon_{i,t}$$

$$\beta_{3\,1} \cdot DEC_{i,t} \cdot \log\left[\frac{REV_{i,t}}{REV_{i,t-1}}\right] \cdot STRA_{i,t} + \varepsilon_{i,t}$$

Cluster analysis is carried out to group companies into clusters that have advertising cost ratios, number of employee's ratio, market to book value ratio, ratio of advertising expenses and standard deviation of high number of employees and intensity of fix assets. This cluster of companies that choose prospectors strategy which are then coded 1. The second cluster whose advertising cost ratios, number of employee's ratio, market to book value ratio, ratio of advertising expenses and standard deviation of high number of employees and intensity of fix assets are high. The cluster that choose defenders business strategy which is then given a code 0. The value of stickiness cost increases seen from the negative value in β2 parameter and the level of stickiness cost increases (decreases) seen from the negative (positive) value of the β3 parameter. Hypothesis testing used is multiple linier regression analysis, by previously testing the classical assumptions that must first be met. The classic assumption test in this study consists of a normality test, a multicollinearity test and a heteroscedasticity test.

IV. RESULTS

A. Descriptive Statistical Analysis

Table II presents descriptive statistics which inform that the average change in SG&A costs increased by Rp1,821,405 million in 2013/2014. The manufacturing companies that increase is 50 and 24 is decrease. The percentage increase of 68% of the total sample. While the revenue is increase Rp20,038,047 million and the percentage increase in 69% of the total sample. In 2014/2015 the average change in SG&A cost increased by Rp3,326,447 million with a percentage of 54% of the total sample. While revenue increase Rp 23,032,350 million with the percentage increase in 65% from 48 company, 26 decrease with a percentage of 35%. The average change in SG&A cost in 2015/2016 is Rp4,988,974 million, there 23 companies that decrease and 51 companies increase. The percentage change in income is 72% of total sample where 21 companies decrease and 53 companies increase.

TABLE II.　　DESCRIPTIVE STATISTICS

	Average (in million)	∑Dec	∑Inc	% Dec	% Inc
The change of SG&A cost 2013/2014	1.821.405	23	51	31 %	69 %
The change of SG&A cost 2014/2015	3.326.447	26	48	35 %	65 %
The change of SG&A cost 2015/2016	4.988.974	21	53	28 %	72 %
The change of revenue 2013/2014	20.038.047	24	50	32 %	68 %
The change of revenue 2014/2015	23.032.350	34	40	46 %	54 %
The change of revenue 2015/2016	29.564.636	23	50	31 %	69 %

In this study normality test was conducted by using One Sample Kolmogorov Smirnov Test with a value of 1,132 using alpha 5%. If the value of probability > 0.05 then data is normally distributed. It is known that the probability value (0.154) > 0.05 that it can be concluded the data are normally distributed. For multicollinearity test, VIF value of three independent variables has a value of more than 10. It can be concluded that there is no multicollinearity between independent variables. The heteroscedasticity test using the Glejser Test, because the scatterplot results are less explaining the spread of residuals. It's how the probability value of three variables is greater than alpha (5%), that residual is free from heteroscedasticity. The autocorrelation test use Durbin Watson (DW) Test. DW value is 1.971 at value of dU-(4-dU) that no autocorrelation symptoms occur.

TABLE III.　　RESULTS OF REGRESSION CHANGES IN SG&A COSTS WITH REVENUE

	Coefficient	T Statistic	Prob
β_0	0.854	16.614	0.000
β_1	0.202	2.283	0.024
β_2	-0.124	-2.875	0.005
F-Value	94.630		
Prob (F)	0,000		
Adjusted R²	0.682		

B. Coefficient of Determination

The contribution of LogRev, DecRev and Strategy against LogSG&A can be found through the coefficient of determination (adjusted R2) that is equal to 0.682 which exist in table III. This means that the diversity of LogSG&A variables can be explained by LogRev, DecRev and Strategy variable to LogSG&A by 68.2%, while the remaining 31,8% is contributed by other variable not discussed in this research.

C. Hypothesis Testing

Regression test results for chages in SG&A costs with chage revenue can be seen in table III. Hypothesis 1 results can be seen from table III β1 value of 0.202 (prob.=0.024) its means that revenue increase by 1%, SG&A cost also increase by 0.20%. While the β2 value -0.124 (prob.=0.005) show strong support for stickiness costs. The addition of β1+ β2=0.078 show that SG&A cost decreased by 0.078% when revenue decreased by 1%.

TABLE IV.　　RESULTS OF REGRESSION CHANGES IN SG&A COSTS WITH REVENUE BASED ON COMPANY'S BUSONESS STRATEGY

Variable	Coefficient	T Statistic	Prob
β_0	0.854	16.614	0.000
β_1	0.202	2.283	0.024
β_2	-0.124	-2.875	0.005
B_3	-0.810	-14.532	0.000
F-Statistic	94.630		
Prob (F)	0,000		
Adjusted R²	0.682		

Table IV shows that H0 rejected and H1 accepted, or hypothesis 1: an increase in SG&A cost is greater when there is an increase in income compared to a decrease in SG&A cost when there is a decrease in income is accepted.

The results of second test can been seen in table IV that β1 value of 0.202 (prob.=0.024) it means when revenue increase 1% SG&A cost will have increased by 0.202%. While β2 value of -0.124 (prob.=0.005) show strong support for stickiness cost. Addition between β1+ β2=0.078 show that SG&A cost only decreased by 0.07% when revenue decreased by 1%. This results show an increase in SG&A cost when revenue increase is smaller than the decrease in SG&A cost when revenue decrease. The estimated coefficient value of β3 -0.810 (prob.=0.000) with a probability value < alpha or 0.000<0.05 indicates that the strategy influences level of stickiness cost of SG&A costs. The effect of strategy on stickiness costs can be seen from the value of β3 which is -0.810. the negative value indicates an increase in stickiness cost which refers to prospector's strategy. This means that H0 rejected and H1 accepted, the level of stickiness cost in companies that implement prospector's business strategy is higher than the level of stickiness cost in companies that implement defender's business strategy.

D. Discussion

Regression testing conducted to prove hypothesis 1 shows an increase in SG&A costs when the income period increases higher than the decrease in SG&A costs, when the income period decrease. It can be seen from the value of β1 of 0.202 (prob. = 0.024) this means that when income increases by 1%, the SG&A cost also increases by 0.20%. While the β2 value of -0.124 (prob. = 0.005) shows strong support for stickiness cost. The addition of β1 + β2 = 0.078 shows that SG&A cost only decreased by 0.078% when revenue decrease by 1%. This finding supports H1 1 which states that increase in SG&A costs in the period of income increase is greater than decrease in SG&A costs in the period of income decrease.

Stickiness costs on SG&A costs occur if the manager decides to retain unused resources rather than making adjustment costs when the volume decreases. Therefore, there is a possibility that managers are hesitant to reduce utilization when income decreases so that SG&A costs will increase because they are not adjusted immediately [2]. The results of this study are in line with several previous studies in which stickiness costs occur SG&A cost in manufacturing companies in Indonesia.

The results of multiple regression testing that explains that the strategy variable has reflected the company's business strategy used by the company sample. In the predetermined measurement criteria that cluster that use prospector's business strategy are coded 1, while clusters that use defender's business strategy are coded 0. The value of the level of stickiness cost increase shown from the negative value of $\beta3$ while the level of stickiness cost decrease in the strategy business is shown from positive value of $\beta3$. Table IV strategy variable is symbolized by the value of $\beta3$ -0.810 (prob.=0.000) with a probability value < alpha or 0.000<0.05, the company business strategy influences the level of stickiness cost in SG&A cost. The negative $\beta3$ result show that a company is classified as prospectors, it will influence management behavior in managing the company's resources that will have an impact on the emergence of stickiness costs. Companies that choose prospectors strategies will have intensity fixed asset that company dependence on assets will be high. This company is more likely to have a higher level of stickiness cost compared to companies that choose a defender's strategy. Based on the results of regression analysis interpreted that is relationship between the company's business strategy (between prospectors and defenders) with the level of stickiness cost in the company. Companies that use prospector's business strategy tend to incur higher stickiness costs than companies that implement defender's business strategy. Generally, companies that implement defender's business strategy will further develop greater efficiency in existing operations until exploration that so the companies will often make adjustment to their operational costs to achieve high level of efficiency, so companies tend to reduce or even avoid the occurrence of stickiness costs. Whereas companies that apply prospector's business strategy that prioritize chages in efforts to open new areas in one opportunity and companies pay less attention to operational efficiency levels, so companies are more likely to not be able to avoid stickiness costs.

V. CONCLUSION

This research provides evidence that the business strategy implemented by the company will affect to increase the level of stickiness costs. Companies that use prospector's business strategy have a higher level of stickiness cost than defender's business strategy. This research contributes to developing previous research on factors that influence the presence of stickiness cost. Banker and Byzalov who use chages in earnings between periods as a factor influencing manager behavior [5]. By knowing the company business strategy, the management can make decisions related to the management resources appropriately. Companies that use prospector's business strategies must increase the intensity of cost adjustments to avoid stickiness costs, as has been implemented by companies that implement defender's business strategy.

REFERENCES

[1] R.E. Miles and C.C. Snow, Organizational strategy, structure, and process. New York: McGraw-Hill, 2003.

[2] M.A. Anderson, R.D. Banker, and S. Janakiraman, "Are selling, general, and administrative costs "sticky"?" Journal of Accounting Research, vol. 41, pp. 47-63, 2003.

[3] M. Baskara, Analisis Pengaruh Strategi Bisnis Perusahaan terhadap Tingkat Penghindaran Pajak pada Perusahaan Manufaktur yang Terdaftar di BEI. Jakarta: Universitas Indonesia, 2012.

[4] K.A. Bentley, T.C. Omer, and N.Y. Sharp, "Business strategy, financial reporting irregularities, and audit effort," Contemporary Accounting Research, vol. 3, no. 2, pp. 780–817, 2013.

[5] R.D. Banker and D. Byzalov, "Asymmetric cost behavior," Journal of Management Accounting Research, vol. 26, no. 2, pp. 43-79, 2014.