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Analysis of Profit Smoothing Practices using the Eckel Index on Manufacturing Companies on the Indonesia Stock Exchange in 2019-2021

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Abstract: Profit, or income smoothing, is profit management by increasing or decreasing the reported profit. Profit smoothing is an effort made by Management to deliberately minimize fluctuations in profit levels that are considered normal for a company. This study aimed to test and provide evidence of the influence of profitability, financial leverage, company size and the winner or loser stock on profit-levelling practices. The practice of profit grading is calculated using the Eckel index. The type of research used is quantitative research. Sampling technique using purposive sampling technique with sample selection type. This research Data is secondary data from the Indonesia Stock Exchange in 2019-2021. Data analysis techniques using logistic regression analysis. The results showed that profitability did not affect the practice of profit levelling. At the same time, financial leverage, company size and the winner or loser stock significantly affected the practice of profit levelling.

Keywords: Profitability, Financial Leverage, company size and Winner or loser Stock, and profit smoothing practices

1. Background

The progress of a company, one of which is a manufacturing company, produces profit developments whose information can be used to assess the company's financial performance and management performance. The result of profits generated by manufacturing companies dramatically affects the company's future; this affects investor interest in companies with stable stock levels compared to high-profit levels. If the profit obtained is high, the company performs well. Otherwise, the yield obtained is low, and the company's Management will likely take actions that may result in inaccurate financial statements. In general, corporate profits are helpful as a tool to assess a company's management performance. This management performance can be evaluated more precisely by considering various factors originating from within and outside Management.

Profit smoothing can be done by deliberately reducing fluctuations in profits that are considered normal for the company so that the company's profits look stable from period to period. Therefore, if done intentionally and artificially, profit smoothing can lead to inadequate or misleading disclosure of profits. The company takes measures to stabilize profits called income smoothing. Income smoothing is a form of Management used by Management to reduce profit fluctuations both through accounting methods (artificial) and through transactions (actual).

Various factors drive the practice of profit smoothing. The driving characteristics for profit smoothing can be distinguished from the elements of economic consequences of accounting choices and profit factors. The significant aspects of accounting choices are conditions that are influenced by accounting figures, so changes in accounting that are influenced by accounting figures will affect these conditions. At the same time, the profit factors influence the periodic profit figures that encourage profit smoothing behaviour.

According to(Biedleman, 1968 in Stefani & Arihadi, 2020), Management conducts profit levelling there are two reasons; the first opinion is based on the assumption that a stable profit flow can support dividends with a higher level than a variable profit flow so that it has a beneficial effect on the value of company shares along with a decrease in the company's risk level. The second argument concerns the flattening ability to counter the cyclical nature of earnings reports. It is also likely to decrease the correlation between the company's expected return and the market portfolio.

According to(Sulistyanto, 2008), the behaviour of managers in preparing financial statements is the basis for the development of positive accounting theory. In positive accounting theory, There are three hypotheses to predict the motivation of Management to make Profit levelling, namely the bonus plan hypothesis, the debt covenant hypothesis, and the political cost hypothesis. Many factors affect the practice of profit levelling, namely profitability, financial leverage, company size, and winner or loser stocks.

The first factor that affects the alignment of profits is profitability. Profitability is one of the essential indicators to measure the company's ability to generate profits to determine the effectiveness of the company in managing its resources. Every company gets a profit or profit called the profitability of the company. The second factor that affects the levelling of profits is financial leverage. Financial leverage uses assets and sources of funds (sources of funds) by companies with fixed costs to increase shareholder profits. The company's size is the third factor that affects the flattening of profits. Company size is the number of assets owned by a company. The last four factors affect the flattening of profits, namely winner or loser stock. Winner stock has a greater return on the average return of the market, which gives a positive return. In comparison, the loser stock is a stock that has a smaller return than the average return of the market that offers a negative return.

2. Theoretical Background

2.1 Agency Theory

Profit smoothing or so-called income smoothing is related to the agency theory approach as based theory. This agency relationship arises when one party (principal) mandates another party (agent) to act in the principal's interests and carry out specific tasks per the agreed employment contract. The employment contract referred to in this study is an employment contract between the owner of the capital with the company manager. The owner of the money is the principal, and the company's manager is an agent.

According to(Jensen and Meckling, 1976 inMulyanto & Raden Arief Wibowo, 2020) explain the agency relationship in agency theory that a company is a collection of contracts (nexus of contracts) between the owner of economic resources (principal) and the manager (agent) who takes care of the use and control of these resources. One of the essential pieces of information for decision-making is profit. The importance of information from this profit is realized by Management so that Management tends to perform dysfunctional behaviour (improper behaviour). Managers have the opportunity to perform dysfunctional behaviour, namely manipulating financial reporting with the information they know to maintain prosperity.

2.2 Positive Accounting Theory

The term "positive " is a theory that can make sound predictions of actual events. The theory pioneered by(Watts and Zimmerman, 1986 dalam Kiky Sany, 2017). explains why a practice is carried out by explaining why an event corresponds to a fact. Positive accounting theory explains the company can choose several accounting policy options to achieve the desired level of profit management. Because the freedom of choice of accounting policies makes managers choose the most profitable policy and maximize company profits, such action is profit management by optimizing reported profits.

In positive accounting theory, state that positive accounting theory has a hypothesis applied to make predictions about company management in carrying out profit levelling actions.

2.3 Profit Smoothing

Profit smoothing or so-called income smoothing is a profit management by increasing or decreasing the reported profit. According to(Bidelman, 1973 in Kiky Sany, 2017), profit smoothing is an effort made by Management to minimize profit fluctuations or fluctuations in profit levels that are considered normal for a company intentionally. Profit smoothing describes abnormal profit at a certain level allowed by sound accounting and management principles. Profit smoothing is carried out to reduce company profit fluctuations in the coming period. Stable profits will encourage investors to invest funds in the company because steady gains indicate that the company's condition looks good.

2.4Profitability

A company's profitability is measured by its ability to use its assets productively by comparing the profit obtained in a period with the number of assets of the company. Profitability is used to measure how much the level of profit generated by the company; the higher the level of profitability, the better the performance of Management in managing a company, while companies with low levels of profitability will tend to flatten profits than companies with high profitability because low ranks indicate that the performance of a company is not good. Consequently, the version performed by managers could be better in the eyes of investors. The practice of profit levelling is done so that the company looks stable; the average profit is expected to show that the company has good performance despite its low profitability.

2.5 Financial Leverage

Financial leverage is the use of a fixed cost. (Weston, 2009 in Dewi, 2010), financial leverage, or leverage factor, is the ratio of the book value of all debts to total assets. The use of debt will determine the level of financial leverage of the company. Because by using more debt than its capital, the fixed burden borne by the

company is high, which ultimately causes profitability to decrease. The use of debt will increase the value of the company. Still, at a certain point, namely in the optimal capital structure, the company's value will decrease with a more significant proportion of debt in its capital structure. This is because the benefits obtained from the use of debt are smaller than the costs incurred from the use of debt.

Financial leverage is a benefit for analysing, planning and controlling the company's finances. Indication of the company in using profit smoothing to avoid violating debt agreements by looking at the company's ability to pay off debts with assets owned. The faster the debt repayment will be, the better the company. Financial leverage raises the proposition of using debt to finance investments. The greater the company's debt, the greater the risk faced by investors, so it will increase the higher profits. Resulting in these conditions, companies tend to practice flattening profits.

2.6 Company Size

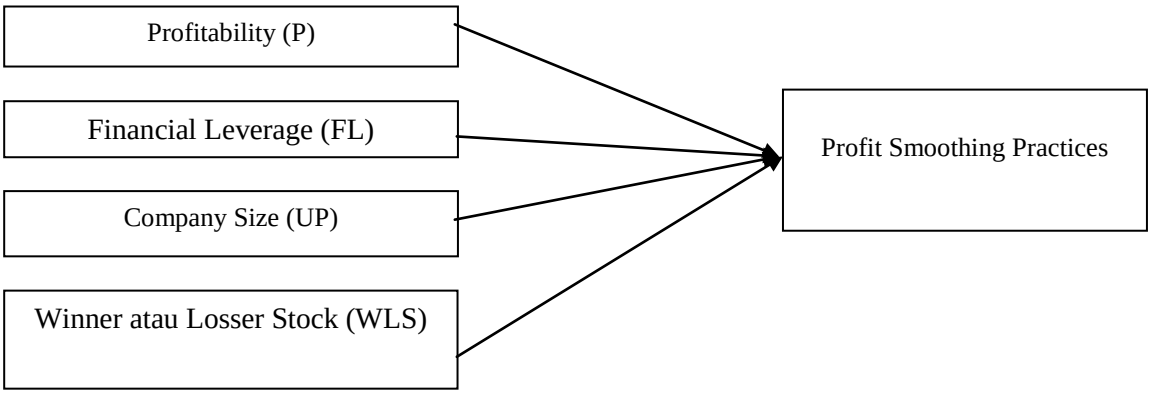
Company size is the scale of the company, as seen from the total assets of the company at the end of the year. Total sales are used to measure the size of the company, according to(Veronica and Siddharta, 2005 inMulyanto & Raden Arief Wibowo, 2020). Company size describes the size of the company. Determination of the scale of the size of the company can be determined based on total sales, total assets, and the average level of sales.

The size of a company can be determined based on sales, total assets, labour, etc., all of which are highly correlated. The size of the company will affect the funding structure of the company. This causes the tendency of companies to require larger funds than smaller companies. The need for greater funding has the tendency for companies to want growth in profits. The size of the company is one of the factors that can affect Management in the practice of levelling profits because large companies tend to be more noticed by the public, so they will be more careful in doing financial reporting. Large companies will always create a situation that can give the impression in society that the company's performance is good by avoiding fluctuations in profits that are too drastic.

2.7 Winner atauLosser Stock

Winner or Losser Stock is a grouping of companies based on the stock return of each company. Winner stock is a stock that has a return greater than the average return of the market or called a stock that gives a positive return, while the loser stock is a stock that has a return equal to or smaller than the average return of the market or called a stock that gives a negative return.

Research Framework



3. Methodology

Research Design

The type of research used in this study is quantitative research by testing hypotheses. Quantitative research is research that aims to determine the relationships between variables by testing hypotheses as well as data used in the form of numbers. The purpose of quantitative research is to develop and use mathematical models, theories, and related hypotheses. The measurement process is a central part of quantitative research, as it provides a fundamental link between empirical observations and the mathematical expression of quantitative relationships.

This research Data was conducted on the Indonesia Stock Exchange(IDX), which is a manufacturing company in the period 2019-2021 that provides information on the company's annual financial statements by

accessing the official website of the Indonesia Stock Exchange, namely www.idx.co.id. a method used to analyze data related to the effect of profitability, financial leverage, company size, and winner or loser stock on profit smoothing practices.

Population and sample

The population in the study was all manufacturing companies listed on the Indonesia Stock Exchange(IDX) in the period 2019-2021 for 3 years. The sample is a portion of the number and characteristics possessed by that population. Sampling techniques in this study using non-probability sampling techniques, namely purposive sampling techniques with a non-random sample selection type whose information is obtained with certain considerations and is generally tailored to the purpose or problem

Data Collection Techniques

The Data used in this study is secondary data that is data obtained by researchers indirectly through intermediate media (obtained and recorded by other parties). The secondary data in this study are company data obtained from the Indonesia Stock Exchange in 2019-2021. Data collection techniques in the form of documentation, namely by collecting, recording and reviewing secondary data in the form of annual financial statements on manufacturing companies on the Indonesia Stock Exchange in 2019-2021. By downloading the profile of each company used as a sample obtained from the Indonesia Stock Exchange website www.idx.co.id

Variables and operational definition of variables

1. Profit Smoothing Practices

The practice of profit levelling is measured using the Eckel index because, through the Eckel index, it can be distinguished between companies that practice profit levelling with companies that do not practice profit levelling(Budiasih, 2009).

The average profit used to calculate the Eckel index is net income. The results of the Eckel index will be classified with dummy variables by giving Category 1 (one) for companies that practice profit levelling and Category 0 (zero) for companies that do not practice profit levelling. The Eckel index (1981) can be calculated by the following formula:

$$\text{Indeks Eckel} = \frac{\text{CV } \Delta\text{I}}{\text{CV } \Delta\text{S}}$$

Description:
CV: coefficient of variation of the variable, that is, the standard deviation compared to the expected value, of the company's profit in 2019-2021
ΔI: change in profit in one accounting period
ΔS : change in sales in one accounting period
CV ΔI: coefficient of variation of changes in profit after tax
CV ΔS: coefficient of variation of change in net sales

$$\text{CV } \Delta\text{I dan CV } \Delta\text{S} = \frac{\sqrt{\Sigma(\Delta x - \Delta\bar{x})^{\wedge 2}}}{n-1} : \Delta\bar{x}$$

Description :
ΔPerubahan = change in profit after Tax (I) or net sales (S)between Year n and year n-1
Δx = average change in profit after Tax (I) or net sales (S) between Year n and year n-1
n = number of years observed

2. Profitability

Profitability (P) is a ratio used to measure how large the level of profit generated by the company. In this study using profitability measured using Return on Assets (ROA). ROA can be calculated by comparing net profit after Tax with total assets. The ROA formula is as follows:

$$\text{ROA} = \frac{\text{Profit after Tax}}{\text{Total Assets}}$$

3. Financial Leverage

Financial Leverage(FL) is useful for Financial Analysis, Planning, and control. In financial Management, leverage is the use of assets and sources of funds by companies that have fixed costs with the intention of increasing shareholder potential. This ratio measures how much total assets are funded from creditors. The higher the Debt to Total Assets Ratio (DTA) means that the entity is trusted by creditors to use the source of funds from creditors. The use of high financial leverage will increase the chances of getting a profit or loss. The

financial Leverage formula is as follows:

$$\text{DTA} = \frac{\text{Total liabilities}}{\text{Total Assets}}$$

4. Company Size

Company size (UP) is an indicator of the size or size of a company. In this study, the size of the company is measured using the natural logarithm (Ln) of total assets. The company size formula is as follows:

Company Size = Ln Total Assets

5. Winner or loser stock

Winner or loser stock (WLS) is a dummy variable. The measurement scale used is the nominal scale. Determining the status of winner or loser stock is done by calculating the stock return of each company and then comparing it with the market return. Market Return in this study is the Composite Stock Price Index (JCI) Indonesia Stock Exchange. The Winner or Losser stock formula is as follows:

$$R_t = \frac{Pt - Pt-1}{Pt-1}$$

Description:
Rt = return on investment in the Year t
Pt = average monthly closing stock price on
year t
Pt-1 = average monthly closing stock price in Year t-1

$$R_t = \frac{\text{IHSG t} - \text{IHSG t}-1}{\text{IHSG t}-1}$$

Description:
Rmt = market Return in Year t
JCI = JCI (closing price) in the Year t
JCI-1 = JCI (closing price) in Year t-1

When:
Rt >Rmt, then the company has the status of a Winner Stock (rated 1)
Rt <Rmt, then the company has the status of a Loser Stock (rated 0)

4. Result andDiscussion

A. Logistic Regression Analysis

Case Processing Summary

Unweighted Cases[a]		N	Per cent
Selected Cases	Included in Analysis	197	100.0
	Missing Cases	0	.0
	Total	197	100.0
Unselected Cases		0	.0
Total		197	100.0

a. If weight is in effect, see the classification table for the total number of cases.

From the case Processing Summary table, it is known that the study used 197 data sampled in the study.

Dependent Variable Encoding

Original Value	Internal Value
Do not practice profit leveling	0
Perform profit leveling practices	1

The dependent variable is the practice of profit levelling has 2 categories, namely, not doing the practice of profit levelling (0)and doing the practice of profit levelling (1).

Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients Constant
Step 0	1	125.174	1.655
	2	116.175	2.205
	3	115.790	2.350
	4	115.789	2.360
	5	115.789	2.360

a. Constant is included in the model.
b. Initial -2 Log-Likelihood: 115,789
c. Estimation terminated at iteration number 5 because parameter estimates changed by less than 001.

In finding The Chi-Square table using the formula DF=N-1, then obtained the value of DF (197-1=196). The Chi-Square value obtained is 229.663, then concluded the value of 2 log Likelihood<Chi-Square table (115.789<229.663) concluded that the model before the inclusion of the variable x already ememnuhi condition.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	2.360	.254	86.494	1	.000	10.588

Before the variable profitability, financial leverage, company size and the winner or loser stock are included in the model, get the value of B (beta coefficient) of 2.360 with Odds Ratio/Exp (B) of 10.588 and the value of Si. From the Wald test of 0,000.

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients Constant	Profitability	Financial Leverage	Company Size	Winner/Losser Stock
Step 1	1	119.336	4.076	.001	.001	.000	.381
	2	103.305	7.853	.002	.002	.000	.878
	3	98.500	10.874	.005	.004	.000	1.392
	4	97.695	12.173	.008	.005	.000	1.704
	5	97.670	12.408	.009	.006	.000	1.778
	6	97.669	12.416	.009	.006	.000	1.781
	7	97.669	12.416	.009	.006	.000	1.781

a. Method: Enter
b. Constant is included in the model.
c. Initial -2 Log-Likelihood: 115.789
d. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

In finding the chi-square table is to use the formula DF=N-K-1 obtained a value (197-4-1= 192), then The Chi-square value obtained is 225.328. So that the value of -2 Log Likelihood < chi-square table (97.669<225.328) model conclusions after inclusion of profitability variables, financial leverage, company size and the winner or loser stock have met the test requirements.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	16.307	4	.001
	Block	16.307	4	.001
	Model	16.307	4	.001

Sig value. the table, Omnibus Test of the Model Coefficient, shows the value of GIS.<0.005 (0.001<0.005) concluded that the variable profitability, financial leverage, company size and winner or loser

stock simultaneously affect the variable practice of profit smoothing.

B. Test Nagelkerke's R Square

Model Summary

Step	Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	99.669[a]	.088	.198

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than 001.

Nagelkerke R Square value of 0.198 then concluded the contribution of the influence of the independent variable to the dependent variable simultaneously at 19.8%.

C. Hosmer and Lemeshow's Goodness of Fit Test

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.472	8	.176

In the table, Hosmer and Lemeshow test known sig value > 0.05 (0.176>0.05) and then concluded there is no significant difference between the variables.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Profitability	.009	.006	2.288	1	.130	1.009
	Financial Leverage	.006	.002	7.667	1	.006	1.006
	Company Size	.000	.000	6.754	1	.009	1.000
	Winner/Losser Stock	1.781	.795	5.011	1	.025	5.934
	Constant	12.416	4.636	7.173	1	.007	246642.873

a. Variable(s) entered on step 1: Profitability, Financial Leverage, Company Size, Winner/Losser Stock.

Effect of profitability variables on the practice of profit leveling

Based on the test results in this study is the effect of profitability on the practice of profit levelling. Based on the calculation results presented in the table, Variables in the Equation know that variable profitability has a significance level of 0.130, greater than the significance level that has been set at 0.05 (0.130>0.05). Therefore, it can be concluded that the profitability variable has no effect on the practice of profit levelling, so the 1st hypothesis is rejected. The results of this study are in line with research (Santoso 2012 in Widana 2013), which obtained the results that profitability does not affect the practice of profit levelling.

The effect of Financial Leverage on the practice of profit levelling

Based on the test results in this study is the effect of Financial Leverage on the practice of profit levelling. Based on the calculation results presented in the table, Variables in the Equation known that variable Financial Leverage has a significance level of 0.006 is smaller than the significance level that has been set 0.05 (0.006<0.05). Therefore, it can be concluded that variable Financial Leverage has an effect on profit-smoothing practices, so the 2nd hypothesis is accepted. The results of this study are in line with research (Agus 2004 in Dewi, diastatic 2010), which obtained the results that Financial Leverage has a significant effect on the practice of profit levelling.

The Effect of Company Size on the practice of profit levelling

Based on the test results in this study is the effect of Company Size on the practice of profit levelling. Based on the calculation results presented in the table, Variables in the Equation known that the variable size of the company has a significance level of 0.009, smaller than the significance level that has been set at 0.05 (0.009 < 0.05). Therefore, it can be concluded that the variable size of the company has an effect on the practice of profit levelling, so the 3rd hypothesis is accepted. The results of this study are in line with research (Iskandar 2016), which obtained the results of the size of the company having a significant effect on the practice of flattening profits. This means that the size of the company has an influence on the practice of levelling profits

assuming other independent variables are considered constant.

The effect of Winner / Losser Stock on profit smoothing practices

Based on the results of testing in this study is the effect of Winner/Losser stock on the practice of profit levelling. Based on the calculation results presented in the table, Variables in the Equation is known that the variable Winner/loser stock has a significance level of 0.025 is smaller than the significance level that has been set to 0.05 (0.009<0.025). Therefore, it can be concluded that the stock Winner/Losser variable has an effect on the practice of profit levelling, so the 4th hypothesis is accepted. The results of this study are in line with research (yulianto, 2007), which obtained the Winner/Losser stock significant effect on the practice of profit levelling.

5. Conclusion

Conclusion

This study aims to determine the effect of profitability, Financial Leverage, company size and Winner/Losser Stock on company value in manufacturing companies in 2019-2021. This study uses a quantitative approach with secondary data. Based on the criteria of this study sample is 197 companies. In accordance with the discussion in the fourth chapter, the conclusions of this study are as follows:

1. Variable profitability has no effect on the practice of profit levelling.
2. Financial Leverage variables affect the practice of profit levelling.
3. Company size variables affect the practice of profit leveling.
4. Variable Winner/Losser Stock effect on the practice of profit levelling.

Limitations

Based on this study, researchers have limitations of research that need to be considered by researchers in the future, namely:

1. The number of samples of 197 is certainly still lacking to provide a comprehensive picture of the condition of companies in Indonesia.
2. This study only conducted an assessment of the effect of profitability, Financial Leverage, company size and Winner/loser Stock, so further research needs to be developed to examine other factors that have not been studied on the value of the company.

Suggestion

On the basis of the conclusions and limitations in this study, the authors have some recommendations for future researchers as follows:

1. Further researchers are expected to expand the sample using the data of all companies listed on the Indonesia Stock Exchange and add years of observation.
2. Researchers further suggested adding independent variables that allegedly affect the value of the company.
3. The use of indices other than Eckel to distinguish between grader and non-grader companies, such as using the Michelson index, which distinguishes grader and non-grader companies into 4 models.

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