

THE INFLUENCE OF COMPANY PROFITABILITY, LEVERAGE AND SIZE ON INCOME SMOOTHING IN FOOD AND BEVERAGE SUB-SECTOR MANUFACTURING COMPANIES LISTED IN INDONESIA STOCK EXCHANGE (IDX) FOR THE YEAR 2015-2018

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***Abstract** - This study aims to determine Profitability, Leverage and Company Size on Income Smoothing in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2015-2018 period. In this study, the authors used quantitative data in the form of annual report data obtained through the official website of the IDX www.idx.co.id and the official website of the related companies. The method used in sampling used is purposive sampling method using certain criteria so that a sample of 10 (ten) companies can be obtained for the 2015-2018 period or for 4 (four) years of observation. This research was conducted using logistic regression analysis techniques and for data processing using a computer program application called Economic Views (EViews) version 9.0.*

The results showed that the profitability as measured by ROA has a significant effect on income smoothing. Leverage as measured by DER has no significant effect on income smoothing. Company size as proxied by LNTA has an effect on income smoothing.

Keywords: Profitability, Leverage, Company Size, and Income Smoothing

I. INTRODUCTION

One of the parameters used to measure management performance is earnings. Profits and their components contained in financial reporting can show information about a business entity regarding its achievements. Reported profit is valuable information for internal and external parties. Earnings information in financial reports aims to assess the risk of investing or lending funds, helping to estimate profitability, and assessing management performance (Marpaung and Latrini, 2014) in (Hermawati et al., 2017). Financial statements are important evidence of record of the financial information of a company in a certain period and as a result of an accounting process designed to convey information about the company's financial position and performance. The information generated by financial reports is very useful for interested parties to make business decisions, make economic decisions, make projections and so on. Therefore, the information contained in financial reports must be understandable, relevant, reliable and comparable (Ratih et al., 2017).

Income smoothing is often stated whether it is good or not, or whether it is okay or not. Income smoothing is good if in practice there is no fraud. This income smoothing action is usually carried out in an effort to reduce taxes, increase the confidence of investors who think that stable earnings will reduce stable dividend policy and maintain the relationship between managers and workers to reduce the volatility of profit increases in earnings reporting which is quite sharp. Basically, this income smoothing practice has been carried out for a long time and by some parties it is still considered reasonable, that is, as long as the income smoothing practice still uses the applicable accounting method (Azizah, 2018).

Furthermore, there are other factors that affect income smoothing, namely leverage. The leverage used in this research is the ratio of debt and assets. The greater the debt of a company compared to its assets, the greater the risk faced by the company to pay its obligations (I Ketut and Nyoman, 2015). Research related to leverage conducted by Alfonsa (2017) states that leverage has a significant positive effect on income smoothing. This is inversely proportional to research conducted by Theresia et al. (2018) which states that leverage has a negative and insignificant effect on income smoothing.

Based on the description above, which illustrates the differences in the results of research on variables that affect the practice of income smoothing. The difference between this study and previous studies is the study period, the company chosen, and the inconsistent research results. The study uses the 2015-2018 period, with the assumption that in that time space there were many changes that occurred in the food and beverage sub-sector Manufacturing Company, as well as getting the latest results regarding income smoothing carried out by companies, especially in the food and beverage sub-sector Manufacturing company. Based on the background described above, the author intends to conduct a research entitled "THE EFFECT OF COMPANY PROFITABILITY, LEVERAGE, AND SIZE ON INCOME SMOOTHING IN FOOD AND BEVERAGE SUB-SECTOR MANUFACTURING COMPANIES LISTED IN INDONESIA STOCK EXCHANGE (IDX) 2015-2018 PERIOD".

Formulation of the problem

Based on the background description of the problem that has been described above, the authors identify problems that affect income smoothing, namely as follows:

1. Does profitability affect income smoothing in the food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange for the 2015-2018 period?
2. Does leverage affect income smoothing in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange for the period 2015-2018?

3. Does company size affect income smoothing in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange for the period 2015-2018?

II. LITERATURE REVIEW

2.1. Agency Theory

According to Jensen and Meckling (1976) in Herlina (2019), agency theory shows the relationship between the party who gives authority (principal) and the party who is given authority (agent). Agency theory states that shareholders (principal) give authority to make business decisions to management (agents) who are believed to fulfill the interests of shareholders. However, in practice, in this relationship, a conflict called agency conflict may occur.

Conflicts that occur are not always caused by differences in interests or goals between managers and shareholders or between shareholders. Agency conflicts can occur between shareholders represented by the agent and the lender (debtholder). This conflict occurs when the company uses external funds to finance business and investment activities. In principle, the use of external funds (debt) can reduce agency conflict type I because debt can become one of the limitations on manager's actions that can harm the principal. In addition, according to the capital structure approach, the use of debt at a certain level can increase firm value. However, the use of debt will create another conflict, namely the type III agency conflict. This conflict arises when as lenders assume that they have to bear a greater risk than the owners of capital and vice versa when the company is in profit, they feel neglected. This difference in views has led to agency conflict type III (Syarifah, 2017: 3).

2.2 Positive Accounting Theory (Agency Theory)

Positive accounting theory is clearly stated by Watts and Zimmerman (1986) in Ita and Lailatul (2017) that positive accounting theory can be interpreted to explain why accounting policies become a problem for companies and parties with an interest in financial statements, and to predict policies. accounting that the company wants to choose under certain conditions.

According to positive accounting theory, the accounting procedures used by companies do not have to be the same as others, but companies are given the freedom to choose one of the available alternative procedures to minimize contract costs and maximize firm value. With this freedom, according to Scoot (2006) in Ita and Lailatul (2017), managers have a tendency to take action which according to positive accounting theory is called opportunistic behavior.

Profit Management

Earnings management according to Scott (2014: 445) states "Earnings management is the choice by a manager of accounting policies, or real actions, affecting earnings so as to achieve some specific reported earnings objectives". That can be interpreted, earnings management is a choice by managers of accounting policies, or concrete actions, that affect earnings to achieve some specific reported profit objectives.

From the existence of several management patterns in managing earnings, managers often do one or even combine the four strategies, but in this study we will only discuss more about income smoothing (income smoothing).

Income Smoothing

Income smoothing is a part of earnings management to avoid fluctuations in company profits. Income smoothing includes the use of certain techniques to reduce or increase the amount of profit in a period equal to the amount of the previous period (Iskandar and Suardana, 2016).

According to Nejad et al., (2013) in Alfonsa (2017) income smoothing is a special practice of earnings management that involves temporary internal reporting of income smoothing, which makes earnings look stable without too high fluctuation. Meanwhile, income smoothing according to Beidlement (1973) in Herry (2017) states that it is a deliberate reduction of reported earnings fluctuations to be at a level considered normal for the company.

Leverage

According to Kasmir (2014: 153) there are several goals for companies to use leverage ratios, namely:

1. To find out the company's position on obligations to other parties;
2. To assess the company's ability to fulfill its permanent obligations;
3. To assess the balance between asset value, especially fixed assets and capital;
4. To assess how much the company's assets are financed by debt;
5. To assess how much influence the company's debt has on asset management.

According to Home (2007) in Wiyadi (2016), the leverage in the financial statements consists of two types, namely operational leverage and financial leverage. Operational Leverage serves to increase the effect of changes in sales over any changes resulting in operating profit. Meanwhile, Financial Leverage, which serves to increase the effect of any changes resulting in operating profit on changes in EPS (Earning Per Share).

Company Size

According to Sudarsi et al (2012) in Brilliano (2016) and Meliza et al, (2018) company size can be measured, one of which is the total assets by means of the natural logarithm of the company's total assets. The measurement of total assets uses the logarithm of total assets, the use of the natural logarithm (Ln) in this study is intended to reduce data fluctuations and the magnitude of excessive numbers. If the total asset value is directly used, the variable value will be very large, namely billions or even trillions. By using the natural logarithm, the total asset value of billions and even trillion can be simplified, without changing the proportion of the original original value.

2.3 Hypothesis Development

Profitability on Income Smoothing

The relevant research states that companies with higher profitability will be more likely to do income smoothing. This is because company management knows the company's ability to earn profits in the future, making it easier to delay or accelerate profits. This is supported by research according to Ramanuja (2015), Zarnegar (2016) and Josep (2016) in Pandu and Vaya (2018) which conclude that profitability has a significant effect on income smoothing practices, meaning that there is also a higher indication of companies engaging in income smoothing practices. But it is not in line with research conducted by Nurcahaya (2016), Ginantra and Putra (2015) which states that return on assets does not have a significant effect on income smoothing. Based on the explanation above, the hypothesis that can be formulated is as follows:

H1: Profitability has an effect on income smoothing.

Leverage on Income Smoothing

The bigger the company's debt, the greater the risk faced by investors so that investors will ask for a higher level of profit. The higher the leverage ratio, it shows that the financing issued by the company is paid through debt. Based on research conducted by Setyaningrum (2016), leverage

measured using the debt to equity ratio (DER) has a significant positive effect on income smoothing practices in manufacturing companies listed on the IDX. The results of this study indicate that companies with high leverage, company managers tend to practice income smoothing because high leverage makes the company try to provide better earnings information, so that investors still trust the company. The results of this study are reinforced by research conducted by Astuti and Widyarti (2013) in Fitri (2015) which states that leverage affects income smoothing. but it is not in line with research conducted by Linda (2018) which states that leverage has no effect on income smoothing practices.

H2: Leverage affects income smoothing.

Effect of Size on Income Smoothing

According to Jensen & Mecking (1976) institutional ownership has a role in minimizing agency conflicts that occur between shareholders and managers, because it is assumed that the principal is only interested in the interest rate of return so that the principal will try to direct the company to minimize the tax burden on investors. This is in line with the research conducted by Shleifer & Vishy (1997) which states that institutional ownership plays a very important role in monitoring manager behavior and forces managers to be more careful in making opportunistic decisions.

Previous research from Novitasari (2017) and Amril et.al. (2015) regarding institutional ownership of tax aggressiveness, from his research it can be concluded that if the greater the institutional ownership, the company tends to be less tax aggressive. Based on the explanations and theories from previous studies, this research proposes the following hypotheses:

H2: Firm size affects income smoothing

III. RESEARCH METHOD

3.1. Research Strategy

This type of research used in this research is quantitative. According to Sugiyono (2008) in Vittorio (2019), the quantitative research method can be interpreted as a research method based on the philosophy of positivism used to research on certain populations or samples, data collection using research instruments, quantitative / statistical data analysis with the aim of testing hypotheses that have been set. With the type of problem in the form of two variables, namely the affected variable (dependent variable), namely income smoothing (income smoothing) and the influencing variable (independent variable), namely profitability, leverage and company size.

3.2. Population and Sample

The documentation method is carried out by recording data related to the problem to be examined from documents held by relevant agencies, generally regarding the financial statements of the food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange companies for the period 2015-2018. To get a sample from a population, the researcher needs a sampling method to find out how many samples to be studied. Researchers determine the sample using purposive sampling technique. In this research, the data were processed using the computer program E-Views (Econometric Views).

3.3. Data and Data Collection Methods

The data used in this research is secondary data. The definition of secondary data sources according to Sugiyono (2016: 137) in Dimas and Anny (2019) is data whose sources are not direct, but through other people or through company documents. Secondary data was chosen because it

was considered more effective and efficient considering the type of information required was already contained in the company's financial statements.

Secondary data in this study, researchers obtained data, information, and instructions by indirect collection, namely through data on the internet in the form of annual reports which were obtained by downloading from the Indonesia Stock Exchange (BEI) website www.idx.co.id. and also the official website of each company studied.

3.4. Operationalization of Variables

3.4.1. Definition of Research Variables

According to Sugiyono (2017: 39) the definition of variable operationalization is an attribute of a person or object, or an activity that has certain variations that are determined by researchers to be studied and then conclusions drawn.

Operationalization of Variables

1. Income Smoothing (Y)

Income smoothing is calculated using the Eckel Index to determine whether the company practices income smoothing or not. The formula used is as follows:

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

Referring to Eckel's (1981) research in Abel and Yudi (2019), if the income smoothing index < 1 means that the company is one of the ones that does income smoothing. On the other hand, if the income smoothing index is ≥ 1 , it means that the company is not one of those that do income smoothing. The dependent variable in this study uses a dummy variable with a measurement of 1 (one) = income smoothing and 0 (zero) = non-income smoothing.

2. Profitability (X1)

Companies that have a higher ROA are likely to take income smoothing action because management knows the ability to earn future profits, making it easier for management to accelerate profits. the higher the Return on Assets (ROA) of a company means that the company has a good performance in generating net income for the return of total assets owned. That is, the high and low ROA will affect investor interest in investing so that it will affect the sales volume of the company's shares (Yuniar and Deannes, 2019). The higher the ratio obtained, the more efficient the company's asset management. The formula used in measuring ROA is as follows:

$$ROA = \frac{\text{Earnings After Tax}}{\text{Total Aset}} \times 100\%$$

3. Leverage (X2)

According to Kasmir (2016: 151) the leverage ratio is a ratio used to measure the extent to which the company's assets are financed using debt. In this study, leverage is proxied by the Debt to Equity Ratio of stockholders and managers. (DER). Debt to Equity Ratio (DER) reflects the company's ability to fulfill all of its obligations, which is indicated by some of the parts of its own capital used to pay debts. The use of debt will determine the level of the company's debt to equity ratio (Alifia et al., 2016). So, the formula used for calculating the Debt to Equity Ratio (DER) is as follows:

$$DER = \frac{\text{Total Utang}}{\text{Ekuitas}}$$

4. Company Size (X3)

Company size is a scale which can be classified as large or small company according to various ways, including log size, total assets, sales and stock market value. In this study using a proxy for total assets. The total asset value reflects the total wealth owned by the

company, so it is assumed that the greater the value of the total assets owned by the company, the greater the size of the company. The size of the company will affect its ability to bear the risks that may arise due to various situations faced by the company related to its operations (Supriastuti, 2015) in Meliza et al., (2016). So, company size can be measured using the following formula:

$$\text{Ukuran Perusahaan} = \text{Logaritma natural (total aset)}$$

IV. RESEARCH RESULT

Descriptive Statistical Analysis Results

The data in this study were analyzed using descriptive statistics. Descriptive statistics are used to describe the variables in the study. According to Ghozali (2013: 19) in Ibram and Woni (2019) descriptive statistics are needed to see the overall picture of the samples that have been collected and meet the requirements to be the sample of researchers.

a. Income Smoothing (Income Smoothing)

Income smoothing variable is the dependent variable (dependent) in this study. To find out whether a company practices income smoothing and does not practice income smoothing, it can be calculated using the Eckel Index formula (1981).

Table 4.4: Calculation Results of Profit and Non-Income Smoothing

No	Nama Perusahaan	Tahun	CV ΔI	CV ΔS	Indeks Eckel	Status
1.	PT Akasha Wira International Tbk	2015	-0,7332	0,0555	-13,2038	1
		2016	0,5402	0,2600	2,0774	0
		2017	4,7784	1,2718	3,7571	0
		2018	-6,8518	-0,4779	14,3383	0
2.	PT Tiga Pilar Sejahtera Food Tbk	2015	-0,9837	0,0687	-14,3153	1
		2016	10,4364	0,1512	69,0082	0
		2017	-0,9905	-1,2529	0,7906	1
		2018	-1,7181	-0,2182	7,8727	0
3.	PT Indofood CBP Sukses Makmur Tbk	2015	0,0872	0,3054	0,2854	1
		2016	0,1821	0,1432	1,2717	0
		2017	0,8122	0,2592	3,1332	0
		2018	0,7409	0,2670	2,7753	0

No	Nama Perusahaan	Tahun	CV ΔI	CV ΔS	Indeks Eckel	Status
4.	PT Indofood Sukses Makmur Tbk	2015	4,2617	0,5624	7,5780	0
		2016	3,9092	0,4451	8,7833	0
		2017	0,4390	0,0772	5,6844	0
		2018	2,7514	0,0217	126,6714	0
5.	PT Multi Bintang Indonesia Tbk	2015	-0,0735	-0,2055	0,3577	1
		2016	2,6454	1,9773	1,3378	0
		2017	0,1114	0,4018	0,2771	1
		2018	1,1394	0,2185	5,2149	0
6.	PT Mayora Indah Tbk	2015	3,8602	0,3391	11,3847	0
		2016	0,4536	0,4359	1,0406	0
		2017	0,1725	0,1122	1,5367	0
		2018	0,1919	1,1913	0,1611	1
	PT Industri	2015	0,2614	-0,8021	-0,3259	1

7.	Jamu dan Farmasi Sido Muncul Tbk	2016	0,2010	0,5607	0,3585	1
		2017	0,0671	0,5896	0,1139	1
		2018	0,2649	0,5569	0,4756	1
8.	PT Sekar Bumi Tbk	2015	-2,7864	2,9168	-0,9553	1
		2016	-0,2979	7,9990	-0,0372	1
		2017	-0,9281	0,2659	-3,4900	1
		2018	-1,2725	0,3184	-3,9967	1
9.	PT Ultra Jaya Milk Industry & Trading Comp Tbk	2015	0,8993	0,0139	64,4963	0
		2016	0,0786	0,1522	0,5166	1
		2017	0,6200	0,1283	4,8340	0
		2018	-0,9180	0,3213	-2,8572	1
10.	PT Unilever Indonesia Tbk	2015	0,3454	0,1968	1,7554	0
		2016	0,4127	0,1823	2,2644	0
		2017	0,0412	0,3241	0,1270	1
		2018	0,3468	0,2001	1,7331	0

Source: Data processed using Eviews 9, 2020

Based on table 4.3 above, it shows that the sample data of companies that were processed were 40, there were 18 or 45% of 100% who carried out income smoothing. Meanwhile, 22 or 55% were those who did not do income smoothing. From the sample data that has been studied, it can be seen that some companies do not perform income smoothing.

b. Profitability (ROA)

The profitability variable that is measured using return on assets (ROA) is an independent variable (independent) in this study. The results of the calculation are as follows:

Table 4.5
Profitability Calculation Results

No	Kode Perusahaan	2015	2016	2017	2018
1.	ADES	5,0272	7,2902	4,5513	6,0092
2.	AISA	4,1248	7,7716	-9,7058	-6,7999
3.	ICBP	11,0056	12,5642	11,2057	13,5559
4.	INDF	3,5192	5,9051	5,8507	5,1398
5.	MLBI	23,6527	43,1698	52,6704	42,3882
6.	MYOR	11,0223	10,7463	10,9344	10,0072
7.	SIDO	15,6458	16,0839	16,9020	19,8898
8.	SKBM	5,2520	2,2508	1,5946	0,9007
9.	ULTJ	14,7769	16,7443	13,7206	12,6282
10.	UNVR	37,2017	38,1631	37,0486	46,6601

Source: data processed using eviews9, 2020

Based on table 4.4 above, from 10 sample companies for the 2015-2018 period, it shows that PT Multi Bintang Indonesia Tbk (MLBI) has the highest return on assets (ROA), which can be said to be the company's ability to generate returns on assets used of 52.6704 or 52,67% in 2017. While the company that has the lowest return on assets (ROA) is PT Tiga Pilar Sejahtera Food Tbk (AISA), whose arrests have the ability to generate return on assets used of -9.7058 or -9.71 % in 2017. This is due to a significant decrease in sales so that the profit for the year also decreased.

Table 4.6: Descriptive Statistics of Return on Assets (ROA)

Variabel	N	Minimum	Maksimum	Mean	Std. Deviasi
ROA	40	-9.705843	52.67036	14.67673	14.62446

Source: data processed using eviews9, 2020

From the results of the descriptive ROA statistics above, if the greater the value generated, it can be said that the company's ability to generate profits is also large. In table 4.5 above which uses descriptive statistics, it shows that the minimum value is -9.705843, the maximum value is 52.67036 with an average (mean) of 14.67673 and a standard deviation of 14.62446.

c. Leverage (DER)

Leverage variable as measured by using debt to equity ratio (DER) is an independent variable (independent) in this study. The results of the calculation are as follows:

**Table 4.7
Leverage Calculation Results**

No	Kode Perusahaan	2015	2016	2017	2018
1.	ADES	0,9893	0,9966	0,9863	0,8287
2.	AISA	1,2841	1,1702	2,2121	-1,5264
3.	ICBP	0,6208	0,5622	0,5557	0,5135
4.	INDF	1,1296	0,8701	0,8808	0,9340
5.	MLBI	1,7409	1,7723	1,3571	1,4749
6.	MYOR	1,1836	1,0626	1,0282	1,0593
7.	SIDO	0,0761	0,0833	0,0906	0,1499
8.	SKBM	1,2218	1,7190	0,5862	0,7023
9.	ULTJ	0,2654	0,2149	0,2324	0,1635
10.	UNVR	2,2585	2,5597	2,6546	1,5762

Source: data processed using eviews9, 2020

Based on table 4.6 above, from 10 sample companies for the 2015-2018 period, it shows that PT Unilever Indonesia Tbk has the highest debt to equity ratio of 2.6546 or 2.65%. Meanwhile, the company with the lowest debt to equity ratio was PT Tiga Pilar Sejahtera Food Tbk (AISA), which was -1.5264 or 1.53%.

**Tabel 4.8
Statistik Deskriptif Debt to Equity Ratio (DER)**

Variabel	N	Minimum	Maksimum	Mean	Std. Deviasi
DER	40	-1.526351	2.654552	0.956024	0.782438

Sumber: data diolah EViews 9 diubah dalam bentuk Ms.Word.

From the results of the descriptive DER statistics above, the greater the resulting value, it can be said that the ratio of debt to equity is greater. In table 4.7 above which uses descriptive statistics, it shows that the minimum value is -1.526351, the maximum value is 2.654552 with an average (mean) of 0.956024 and a standard deviation of 0.782438.

d. Company Size

The profitability variable which is proxied by using the natural logarithm of total assets (LNTA) is the independent variable (independent) in this study. The results of the calculation are as

follows:

Table 4.9
Company Size Calculation Results

No	Kode Perusahaan	2015	2016	2017	2018
1.	ADES	27,2052	27,3664	27,4569	27,5046
2.	AISA	29,8350	29,8561	29,7972	28,2279
3.	ICBP	30,9105	30,9949	31,0848	31,1681
4.	INDF	32,1510	32,0399	32,1077	32,2010
5.	MLBI	28,3734	28,4530	28,5513	28,6921
6.	MYOR	30,0596	30,1900	30,3334	30,4984
7.	SIDO	28,6593	28,7255	28,7810	28,8363
8.	SKBM	27,3625	27,6327	28,1153	28,2028
9.	ULTJ	28,8951	29,0754	29,2772	29,3459
10.	UNVR	30,3866	30,4492	30,5705	30,6026

Sumber: data diolah, 2020

Based on table 4.9 above, from 10 sample companies for the 2015-2018 period, it shows that PT Indofood Sukses Makmur Tbk (INDF) has the highest company size of 32.2010 or 32.20% in 2018 and it can be said that this company is included in the category of large companies. While the company that has the lowest company size is PT Akasha Wira International Tbk (ADES) amounting to 27,2052 or 27.21% in 2015 and is included in the small company group.

Table 4.10
Descriptive Statistic of Company Size

Variabel	N	Minimum	Maksimum	Mean	Std. Deviasi
LNTA	40	27.20519	32.20096	29.49940	14.50015

Source: data processed using evIEWS9, 2020

From the results of the descriptive statistics on company size above, if the greater the value generated, it can be said that the company has a large number of assets. In table 4.9 above which uses descriptive statistics, it shows that the minimum value is 27,20519, the maximum value is 32,20096 with an average (mean) of 29,49940 and a standard deviation of 14,50015.

Logistic Regression Analysis

According to Gujarati and Porter (2012: 173: 175) and Ghazali (2013: 281-282) in Ibram and Woni (2019) the logistic regression / logit model is called a probability model. Probability models do not use normality because just like independent variables, errors or residuals have only two values, namely they follow the Bernoulli probability distribution (1 if the event occurs and 0 if the event does not occur).

Table 4.11
Logistic Regression Analysis Test Results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
ROA	-0.068948	0.034879	-1.976787	0.0481
DER	0.256097	0.607286	0.421707	0.6732
LNTA	-1.004252	0.362313	-2.771777	0.0056

C	30.15425	10.69112	2.820494	0.0048
McFadden R-squared	0.316143	Mean dependent var	0.450000	
S.D. dependent var	0.503831	S.E. of regression	0.410338	
Akaike info criterion	1.141177	Sum squared resid	6.061580	
Schwarz criterion	1.310064	Log likelihood	-18.82353	
Hannan-Quinn criter.	1.202241	Deviance	37.64706	
Restr. deviance	55.05111	Restr. log likelihood	-27.52555	
LR statistic	17.40404	Avg. log likelihood	-0.470588	
Prob(LR statistic)	0.000584			
Obs with Dep=0	22	Total obs	40	
Obs with Dep=1	18			

Source: Data processed using eviews9, 2020

Based on the table 4.11 above, the logistic regression equation can be obtained as follows:

$$\ln\left(\frac{p}{1-p}\right) = 30.15425 - 0.068948 \text{ ROA} + 0.256097 \text{ DER} - 1.004252 \text{ LNTA}$$

From the regression equation model above, it can be explained as follows:

1. Based on the regression equation, the constant is 30.15425. This indicates which means that if all independent variables are constant or equal to 0 (zero), then the income smoothing variable increases by 30.15%.
2. The coefficient of the profitability variable as measured by ROA is -0.068948 and has a significant effect on $\alpha = 5\%$. If you calculate the odds ratio of -0.07, the result is $e^{-0.07} = 0.93$. This means that if the percentage of ROA increases by 1%, then the possibility of decreasing income smoothing action is 0.93%, assuming the other variables are constant.
3. The coefficient of the leverage variable as measured by DER is 0.256097 and has no effect on $\alpha = 5\%$. If you calculate the odds ratio of 0.26, the result is $e^{0.26} = 1.30$. This means that if the other variables are considered constant, then DER will not have a significant effect on income smoothing.
4. The coefficient of the firm size variable as proxied by LNTA is -1.004252 and has a significant effect on $\alpha = 5\%$. If you calculate the odds ratio -1.00, the result is $e^{-1.00} = 0.37$. This means that if the percentage of LNTA increases by 1%, then the possibility of decreasing income smoothing action is 0.37%, assuming the other variables are constant.

Goodness of Fit Test (Hosmer & Lemeshow)

According to Ghozali (2013: 343), the goodness of fit test can be done by looking at the results of the chi-square at the bottom of Hosmer and Lemeshow. If the value of the hosmer and lemeshow statistical test is equal to or less than 0.05, then the H_0 hypothesis is rejected and H_a is accepted, this means that there is a significant difference between the model and its observation value so that the goodness of fit test model is not good because the model cannot predict its observation value. Conversely, if the value of the hosmer and lemeshow statistical test is more than 0.05 then the hypothesis (H_0) cannot be rejected, which means that the model is able to predict the value of the observation or it can be said that the model is acceptable because it matches its observations.

Table 4.12

Goodness of Fit Test (Hosmer & Lemeshow)

Quantile of Risk	Dep=0	Dep=1	Total	H-L
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	Low	High	Actual	Expect	Actual	Expect	Obs	Value
1	0.0325	0.0872	4	3.71548	0	0.28452	4	0.30630
2	0.0912	0.1104	4	3.60537	0	0.39463	4	0.43783
3	0.1246	0.1554	4	3.42332	0	0.57668	4	0.67383
4	0.1843	0.2906	2	3.01406	2	0.98594	4	1.38417
5	0.3103	0.4638	3	2.49922	1	1.50078	4	0.26745
6	0.4640	0.4838	2	2.12002	2	1.87998	4	0.01446
7	0.5271	0.5589	1	1.81318	3	2.18682	4	0.66708
8	0.5778	0.8681	1	1.12498	3	2.87502	4	0.01932
9	0.8754	0.9186	0	0.41812	4	3.58188	4	0.46693
10	0.9255	0.9394	1	0.26625	3	3.73375	4	2.16632
	Total		22	22.0000	18	18.0000	40	6.40368
H-L Statistic			6.4037	Prob. Chi-Sq(8)		0.6021		
Andrews Statistic			19.3049	Prob. Chi-Sq(10)		0.0366		

Source: Data processed using eviews9, 2020

Based on the results of the data processing above, it shows the results of the HL statistical 6.4037 with a probability of $0.6021 > \alpha (0.05)$, which means that the value exceeds 0.05 and it can be interpreted that H_0 is rejected and H_a is accepted, which means that the model is able to predict the value of the observation or it can be said that the model is acceptable. because it matches his observations.

Z statistical test

The Z test can be done by comparing the probability value to α , if the probability value $< \alpha$, then H_0 is rejected, which means that the independent variable affects the dependent variable, whereas if the probability value $> \alpha$, then H_0 is accepted, which means that the independent variable does not affect the dependent variable.

Table 4.13
Z statistical Test Results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
ROA	-0.068948	0.034879	-1.976787	0.0481
DER	0.256097	0.607286	0.421707	0.6732
LNTA	-1.004252	0.362313	-2.771777	0.0056
C	30.15425	10.69112	2.820494	0.0048

Source: Data processed using eviews9, 2020

Based on table 4:12 above, the results of the Z statistical test of each independent variable on the dependent variable are as follows:

1. Profitability variable

The results of data processing in the table above profitability as measured by return on assets (ROA) have a value indicating a probability value of 0.0481. When compared between $\alpha = 5\%$, the probability value is 0.0481

<value α (0.05) so that a decision can be taken to reject H_0 and accept H_a . In this case, it is concluded that the profitability variable has a significant negative effect on income smoothing (income smoothing).

2. Leverage variable

The results of data processing in the table above the leverage as measured by the debt to equity ratio (DER) show a probability value of 0.6732. When compared between $\alpha = 5\%$, the probability value is $0.6732 > \alpha$ (0.05) so that it can be concluded that H_0 is accepted and H_a is rejected, which means the leverage variable has no effect on income smoothing (income smoothing).

3. The firm size variable

The results of data processing in the table above company size show a probability value of 0.0056. When compared between $\alpha = 5\%$, then the probability value is $0.0056 < \alpha$ (0.05) so it can be concluded that H_0 is rejecting and H_a is accepted. This means that the firm size variable has a significant negative effect on income smoothing (income smoothing).

Likelihood Ratio Test (LR Test)

The likelihood ratio (LR) test is the same as the F test to simultaneously analyze the effect of independent variables on the dependent variable. The LR test can be done by comparing the calculated chi-square value with the chi-square table, if the calculated chi-square value > the chi-square table value, then rejecting H_0 , which means that all independent variables jointly affect the dependent variable. On the contrary, it accepts H_0 , which means that all independent variables together do not affect the dependent variable Tevi et al, (2019).

Table 4.14
Likelihood ratio test results

McFadden R-squared	0.316143	Mean dependent var	0.450000
S.D. dependent var	0.503831	S.E. of regression	0.410338
Akaike info criterion	1.141177	Sum squared resid	6.061580
Schwarz criterion	1.310064	Log likelihood	-18.82353
Hannan-Quinn criter.	1.202241	Deviance	37.64706
Restr. deviance	55.05111	Restr. log likelihood	-27.52555
LR statistic	17.40404	Avg. log likelihood	-0.470588
Prob(LR statistic)	0.000584		

Sumber : data diolah menggunakan *eviews9*, 2020

Based on the estimation results, the calculated LR statistical or chi-square value is 17.40404, while the chi-square value of the df 4 table, $\alpha = 0.05$ is obtained at 9.48773. So it can be concluded that the LR statistic or chi-square <value of the chi-square table and can also be seen from the LR test by comparing Prob (LR Statistic) at α , the value of Prob (LR Statistic) $0.000584 < 0.05$, then the decision is to reject H_0 and accept H_a which This means that all the independent variables, including profitability, leverage and company size, jointly affect the dependent variable, namely income smoothing.

Determination Coefficient Test (McFadden R-Squared)

The summary model in logistic regression is the same as testing the coefficient of determination R^2 on the linear regression equation. The purpose of the summary model is to find out how much the combination of independent variables is able to explain variations in the dependent variable (Ibram and Woni, 2019)

Table 4.15

Results of the Determination Coefficient Test (Mc Fadden R-Squared)

McFadden R-squared	0.316143	Mean dependent var	0.450000
S.D. dependent var	0.503831	S.E. of regression	0.410338
Akaike info criterion	1.141177	Sum squared resid	6.061580
Schwarz criterion	1.310064	Log likelihood	-18.82353
	1.20		
Hannan-Quinn criter.	2241	Deviance	37.64706
Restr. deviance	55.05111	Restr. log likelihood	-27.52555
LR statistic	17.40404	Avg. log likelihood	-0.470588
Prob(LR statistic)	0.000584		

Sumber : data diolah menggunakan *eviews9*, 2020

In the table above, it shows that the McFadden R-Squared value is 0.316143. This means that the independent variables in this study, namely profitability (ROA), leverage (DER) and company size in the model are able to explain the change in probability of the dependent variable income smoothing (income smoothing) by 31.61% and the remaining 68.39% is explained by the variable independent other than the research.

Analysis and Discussion of Research Results

1. Profitability Variable

Based on the Z test, it can be seen that the profitability variable which is proxied by return on assets (ROA) has a significant negative effect on income smoothing (income smoothing) and can prove that H1 is accepted. The regression coefficient shows negative direction -0.07 with a significance level of 0.0481 smaller than $\alpha = 0.05$. This study proves that profitability has a negative effect on income smoothing. When viewed from calculating the odds ratio -0.07, the result is $e^{-0.07} = 0.93$. It means that in this case it can be interpreted that if every 1% addition of profitability, the company's tendency to perform income smoothing will decrease by 0.93 times.

This research shows that if companies with low profitability tend to practice income smoothing because companies with low profitability tend to get fluctuating profits. This condition has a negative impact, for example if the excessive fluctuation in profit can trigger an increase in the cost of capital or lower the stock price. In addition, there is a relationship between profitability and the management bonus compensation scheme, which is one of the factors in management's practice of income smoothing. One of the criteria for measuring management performance can be seen from how effective and efficient the company is in managing its assets so that it can earn a profit. Unstable or fluctuating profits result in the interference of shareholders to replace management by replacing or directly taking over management. Judging from the threat of replacement, this will encourage management to produce performance reports in accordance with the wishes of shareholders.

2. Variable Leverage

It can be concluded that the results in this study indicate that the leverage variable as measured by the debt to equity ratio (DER) has no effect on income smoothing. Because it is suspected that the management (agent) is of the view that leverage is not the main reference for investors in assessing the risks that will be faced on the risks or loans given to the company. There is also the possibility for investors or creditors to assess a company's risk, for example by considering the type of industry. Therefore, management (agent) is less motivated to stabilize profits in order to influence the size of the company's leverage ratio.

The results of this study are consistent with research conducted by Ginantra and Putra (2015), Abel and Yudi (2019) which state that leverage as measured by DER has no significant effect on income smoothing measures. However, the results of this study contradict research conducted by Nina Styaningrum (2016) which states that financial leverage has a significant effect on income smoothing practices.

3. Firm Size Variable

Based on the Z test, it can be seen that the company size variable as measured by using the natural logarithm of total assets has a negative significant effect on income smoothing and can prove the hypothesis that is built means that H3 is accepted. The regression coefficient shows a negative direction of -1.00 with a significant level of 0.0056 smaller than $\alpha = 0.05$. When viewed from calculating the odds ratio -1.00, the result is $e^{-1.00} = 0.37$. This means that if each additional 1% of total assets, the company's tendency to perform income smoothing (income smoothing) decreases by 0.37 times.

V. CONCLUSIONS AND SUGGESTIONS

Based on the results and analysis of this study to test profitability, leverage and company size on income smoothing in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2015-2018 period with a sample of 40 companies.

Based on the results of the analysis and discussion described in the previous chapter, the conclusions of this study are as follows:

1. Based on the results of the hypothesis test, it has a probability value of 0.0481, which means that the probability of $0.0481 < 0.05$ indicates that the profitability variable as measured by return on assets (ROA) has a significant negative effect on income smoothing. This can be seen if companies with low profitability tend to practice income smoothing because companies with low profitability tend to get fluctuating profits. This unstable or fluctuating profit has resulted in the interference of shareholders to replace management by replacing or directly taking over management.
2. Based on the results of the hypothesis test, it has a probability value of 0.6732 which means that the probability of $0.6732 > 0.05$, which indicates that the leverage variable as measured by the debt to equity ratio (DER) has no significant effect on income smoothing. This is because management (agent) is of the view that leverage is not the main reference for investors in assessing the risks that will be faced on the risk or loans given to companies. The possibility of investors or creditors in assessing company risk is by considering the type of industry of the company.
3. Based on the results of the hypothesis test, it has a probability value of 0.0056 which means that the probability is $0.0056 < 0.05$, which indicates that the company size variable as measured by the natural logarithm (LN) of total assets has a significant negative effect on income smoothing. This can be seen if the size of the company with a small size is more likely to perform income smoothing than a large company size. So small companies will try to hide the fluctuating or varied pattern of profit growth of the company in order to attract investors' attention and give creditor confidence.

Limitations and Further Research Development

This research was conducted with several research limitations which with these limitations can affect the research results. The limitations that exist in this study are as follows:

1. The research period used is only 4 years of observation, namely 2015 to 2018
2. This study only examines the profitability variable as measured by return on assets (ROA), leverage as measured by debt to equity ratio (DER) and company size to income

smoothing. Meanwhile, there are a lot of financial ratio variables and other factors that can affect income smoothing.

3. There is still a lack of use of sample data in this study, namely using financial report data from manufacturing companies in the food and beverage sub-sector listed on the IDX.



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