THE EFFECT OF PROFITABILITY, LEVERAGE, WINNER/LOSER STOCKS, AND PUBLIC OWNERSHIP ON INCOME SMOOTHING IN IDX FOOD AND BEVERAGE FIRMS 2023

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Abstract. The food and beverage subsector showed a significant contribution to Indonesia's Gross Domestic Product (GDP) from 2020 to 2023, with consistent increases in profit and sales. However, this condition was accompanied by rising debt and declining stock returns, which were not aligned with the positive financial performance, raising suspicions of income smoothing practices as a form of earnings manipulation by management to maintain the company's image in the eyes of investors. This study aims to examine the effect of profitability, leverage, winner/loser stock, and public ownership on income smoothing. The population of this study includes food and beverage subsector companies listed on the Indonesia Stock Exchange (IDX) in 2023, totaling 95 companies. The sampling technique used was purposive sampling, resulting in 56 companies as the sample. Data analysis was conducted using logistic regression through the SPSS 26. The results of the study show that simultaneously, the variables of profitability, leverage, winner/loser stock, and public ownership influence income smoothing. Partially, leverage variable has a significant effect and shows a positive direction toward income smoothing, winner/lose stock variable has a significant effect and shows a negative direction toward income smoothing, while profitability and public ownership have no significant effect.
Keywords: Income Smoothing, Profitability, Leverage, Winner/lose stock, Public Ownership

1 Introduction

Gross Domestic Product (GDP) is a key indicator of economic performance. Rising GDP signals economic growth, while a decline indicates weakening conditions[1]. Despite the COVID-19 pandemic, the food and beverage sub-sector continued to grow from 2020 to 2023. As noted by the Ministry of Finance (2022), this sub-sector remained the largest contributor, accounting for 1.58% of national GDP in 2020, increasing to 3.67% in 2021, 4.90% in 2022, and reaching 6.55% in 2023[2].

The promising growth potential in the food and beverage sub-sector, as reflected in GDP data, encourages companies to maintain a strong financial image in the eyes of investors[3]. To achieve this, many companies attempt to modify their financial statements to remain attractive and retain investor trust a practice known as income smoothing. Income smoothing is a form of earnings management that involves shifting profit recognition between periods [4]. This practice arises due to information asymmetry, meaning that management has more knowledge about the company's condition than external parties, allowing them to manipulate financial reports to reduce profit variability in line withtargets. However, this harms investors because it presents an inaccurate picture of the company's financial health [5].

The phenomenon of income smoothing often occurs in manufacturing companies, including in the food and beverage subsector, compared to other sectors[6]. This study analyzes 56 companies using the Eckel Index with the Coefficient of Variation (CV) from profit and sales data. Results show that 38 companies exhibit signs of income smoothing, It is observed that the average profit after tax and sales in food and beverage subsector companies consistently increased.

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Table 1. Average Profit (Loss) After Tax and Sales of Food and Beverage Sub-sector Companies in 2021–2023.

Average	2021	2022	2023
Profit (Loss) After Tax	90,688,421	111,898,737	129,604,193
Sales	1,438,874,935	1,702,874,835	1,738,588,501

Source : Financial statements processed data, 2025

The table shows a consistent increase in average profit after tax and sales in food and beverage sub-sector companies. However, this raises concerns as debt levels continued to rise, stock returns declined, and Return on Assets (ROA) decreased—indicating reduced efficiency in generating profit from assets despite higher profit and sales.

Table 2. Average ROA, DER, and Stock Return of Food and Beverage Sub-sector Companies in 2021–2023.

Average	2021	2022	2023
ROA	0.14	0.11	0.09
DER	1.18	0.76	0.90
Stock Return	1541.78	1689.21	1657.84

Source : Financial statements processed data, 2025

The rise in debt, as measured by the Debt to Equity Ratio (DER), contradicts the increase in profit, which should reduce the need for external funding. Despite higher profit and sales, the decline in ROA indicates lower asset efficiency. Meanwhile, falling stock returns amid rising profits suggest investor skepticism about earnings quality. This may point to income smoothing—an accounting practice used to reduce earnings fluctuations and present financial stability. Although profits and ROA appear strong, rising debt and declining returns may reflect efforts to maintain a stable image, not actual performance. According to Positive Accounting Theory, managers choose accounting policies that serve their interests, including manipulating reports to meet market expectation [4].

This study is grounded in the concept of financial management. According to [7] , earnings management is defined as the practice of manipulating financial statements to mislead shareholders or influence certain contractual outcomes. [8] also explains that this practice is closely related to agency theory, where information asymmetry between management and investors can trigger dysfunctional behavior [9]. Positive Accounting Theory, as described by [10], reveals that the primary motivations for managers to engage in earnings management include the bonus plan hypothesis, debt-equity hypothesis, and political cost hypothesis. This study also examines profitability, leverage, winner/loser stocks, and public ownership as factors influencing Income smoothing.

Profitability is a ratio used to measure a company's ability to generate profits by utilizing its available resources. Profitability is used to assess the level of success or failure achieved by a company over a specific period [11]. Profit instability reduces investor confidence, prompting management to engage in income smoothing to create stability and enhance stakeholder trust [12]. In this study, Return on Assets (ROA) is used as a proxy for profitability because ROA not only reflects profitability but also indicates the efficiency of company management in utilizing its assets.

Research by [13],[14], and [15] states that profitability has an influence on income smoothing. This indicates that the higher the company's Return on Assets (ROA), the greater the tendency of management to engage in income smoothing. However, there is a gap in the findings of [16] and [17], which suggest that profitability does not affect income smoothing, as profit is not considered a crucial measure for investors in making investment decisions; instead, investors are more concerned with the risks involved. This gap highlights the need for further research on the profitability variable in relation to income smoothing.

H1 : Profitability has a significant effect on income smoothing.

According to [18], leverage is a tool used to measure a company's ability to meet its obligations, thereby reflecting the level of financial risk it faces. By analyzing leverage, investors can determine the extent to which a company utilizes debt to finance its operations and whether this ratio remains within reasonable limits. The Debt to Equity Ratio (DER), as an indicator of leverage, measures the proportion of debt to equity. A higher ratio indicates greater financial risk faced by the company, which may lead management to adopt accounting methods to increase reported profits [19].

Research by [20], [21], and [22] indicates that leverage influences income smoothing. This suggests that the higher a company's Debt to Equity Ratio (DER), the greater the tendency of management to engage in income smoothing. However, a research gap exists, as studies by [23] and [18] show that leverage does not affect income smoothing. This is because some companies are capable of repaying their debts using their own capital without relying on investor funds. This inconsistency highlights the need for further research on the leverage variable in relation to income smoothing.

H2 : Leverage has a significant effect on income smoothing.

According to [24], winner/loser stock refers to the classification of companies based on their stock returns. A company is considered a winner if its stock return is higher than the market return, and it tends to maintain this position by implementing income smoothing to reduce profit fluctuations. Conversely, a company is considered a loser if its stock return is lower than the market return, and it attempts to improve its company value by applying income smoothing [25]. According to [24], the winner/loser stock indicator is measured using market return, which refers to the Composite Stock Price Index (IHSG) listed on the Indonesia Stock Exchange (BEI).

Research by [6], [26], and [27] indicates that winner/loser stock has an effect on income smoothing. This is because stable profits influence stock price stability, providing investors with a perception of high returns and low risk, which in turn reflects positively on the company's performance. However, there is a gap in the studies by [28], which show that winner/loser stock does not affect income smoothing. The stock position, whether a winner or a loser, does not influence the management's decision to implement income smoothing, as stock price changes are influenced by various factors such as exchange rates, policies, and fundamentals, which are not the primary concerns for a company in practicing income smoothing. This gap highlights the need for further research on the leverage variable in relation to income smoothing.

H3 : Winner/loser stock has a significant effect on income smoothing.

[29] defines public ownership as the proportion of shares owned by investors outside of management and major shareholders, which can influence the company's value and the strategic decisions made by management. According to OJK Regulation No. 14 of 2020, companies must have a minimum of 5% public ownership of the company's capital. Higher public ownership increases investor trust in the company, as managers tend to use income smoothing to recognize good performance [19].

Research by [30] and [31] states that public ownership has an effect on income smoothing. This suggests that a high proportion of public ownership can enhance investor confidence in the company, thereby encouraging management to engage in income smoothing. However, there is a gap in the research conducted by [3], which shows that public ownership does not affect income smoothing, as each public investor holds less than 5% of the company's shares, and thus does not have a significant influence on the company.

H4 : Public ownership has a significant effect on income smoothing.

Referring to previous research, there is a gap in the results of studies concerning each independent variable's effect on the dependent variable, indicating the need for further research. This study differs from previous research, which typically only uses one or two independent variables similar to those in the current study. Based on the research gap, this study adds the variables of winner/loser stock and public ownership, which are rarely used, with logistic regression analysis techniques. The focus is on the food and beverage subsector for the year 2023, which differentiates this research from previous studies..

2 Research method

This research uses a quantitative approach with descriptive and associative methods. Descriptive methods describe each variable's values, while associative methods test the relationships between profitability, leverage, winner/lose stock, public ownership to income smoothing. The population includes 95 Food and Beverage subsector companies listed on the Indonesia Stock Exchange (IDX) in 2023. Using purposive sampling with criteria (1) Food and Beverage subsector companies listed on IDX in 2023; (2) consistent financial reports with complete data in 2023; (3) profitable in 2023; (4) using Indonesian Rupiah. Based on these criteria, 56 companies were selected as samples. Data were collected from secondary sources, including financial and annual reports from the official IDX website.

Income smoothing is measured using the Eckel Index, which compares the coefficient of variation in profit changes with the coefficient of variation in sales changes over a period. A company is considered to engage in income smoothing if its smoothing index is less than 1, and the opposite is true for an index of 0 [32].
Income Smoothing index = (CV $\triangle$I)/(CV $\triangle$S)

Explanation:
CV = Coefficient of Variation
ΔI = Change in profit over a period
ΔS = Change in sales over a period
CV ΔI = Coefficient of Variation of profit changes
CV ΔS = Coefficient of Variation of sales changes

Profitability is proxied by Return on Assets (ROA) because ROA not only reflects profitability but also indicates the efficiency of the company's management in utilizing its assets. [11]
ROA = (Net Income After Tax)/(Total Asset)

Debt to Equity Ratio (DER) as an indicator of leverage measures the proportion of debt to equity, where the higher the ratio, the greater the financial risk faced by the company. This may lead the company to implement accounting methods to increase profits [19].

DER = (Total Debt)/(Total Equity)

Winner/loser stock indicator is measured by market returns, referring to the Composite Stock Price Index (IHSG) listed on the Indonesia Stock Exchange (BEI) [24]. The following is the formula used to assess the status of winner/loser stocks:

Rt = (Pt – (Pt – 1))/(Pt – 1) (1)

Rmt = (IHSGt – IHSGt – 1)/(IHSGT – 1) (2)

Explanation:
Rt = Stock return in year t

Pt = Average closing stock price in year t
Pt-1 = Average closing stock price in year t-1
Rmt = Market return in year t
IHSGt = IHSG (closing price) in year t
IHSGt-1 = IHSG (closing price) in year t-1

Public ownership indicator is the percentage of shares owned by the public [3], calculated using the following formula:

PO = (Public Ownership Stocks)/(Stocks Outstanding)

Quantitative analysis involves classifying and processing data to produce the necessary information. The data analysis technique used is logistic regression analysis, assisted by SPSS 26 software. [33]

$$\text{Ln IS/(1-IS)} = \alpha + \beta_1 PB + \beta_2 FL + \beta_3 WLS + \beta_4 PO + \varepsilon$$

Explanation :
IS : (1) if the company engages in income smoothing, (0) if the company does not engage in income smoothing.
α : Regression Constant.
PB : Profitability.
FL : Leverage.
WLS : Winner/Loser Stock.
PO : Public Ownership.
$\beta_1, \beta_2, \beta_3, \beta_4$: Regression coefficient of the variable.
E : Error term.

3 Results and discussion

This descriptive statistical test is conducted to provide a description or overview of the data based on the mean, standard deviation, maximum, and minimum values.

Table 3. Descriptive Statistics Results

	N	Minimum	Maximum	Mean	Std. Deviation
PF	56	1,00	742,00	94,6250	128,87281
LV	56	-1769,00	3805,00	899,2857	854,96823
WLS	56	,00	1,00	,2500	,43693
PO	56	5,00	643,00	231,1071	145,43998
IS	56	,00	1,00	,6786	,47125
Valid N (listwise)	56				

Source: SPSS 26 Output

The average values of the profitability, winner/loser stock, and public ownership variables are low, as indicated by the mean values of each variable being close to the minimum value. On the other hand, the average value of leverage is high, as seen from the mean value of leverage being close to the maximum value. The standard deviation of profitability and winner/loser stock is larger than the average, indicating that the data distribution is not uniform. Conversely, leverage and public ownership have a smaller standard deviation than the average, suggesting a more uniform data distribution.

The multicollinearity test is used to determine if there is a strong correlation between independent variables in the logistic regression model.

Table 4. Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	PF	,962	1,039
	LV	,929	1,076
	WLS	,983	1,017
	PO	,933	1,071
a. Dependent Variable: IS			

Source: SPSS 26 Output

The VIF test results show that all independent variables have a VIF value < 10 and Tolerance > 0.1. Therefore, there is no multicollinearity issue in the regression model.

Table 5. Overall Model Test and Model Feasibility Test

Explanation	Result
Overall Model Fit Test	
-2Log Likelihood Test	First = 70,343 , Final = 59,873
Nagelkerke R Square Test	The R square Value = 0,285 or 28,5%
Model Feasibility Test (Goodness Fit Model)	
Hosmer and Lemeshow's Test	Significant Value = 0,191

Source: SPSS 26 Output

There was a decrease in the value of -2 Log Likelihood from the beginning to the end, indicating that the addition of independent variables improves the regression model. The Nagelkerke R Square value of 0.285 shows that the independent variables can explain the dependent variable by 28.5%, while the remaining 71.5% is explained by other variables outside the model. The test results show a probability value (p-value) of 0.191 ≥ 0.05, thus H0 is accepted. This indicates that there is no significant difference between the model and the data, so the regression model is feasible and capable of predicting the observed values.

Table 6. Classification Table Result

Observation Data	Prediction		Percentage (%)
	The company does not engage in income smoothing.	The company engages in income smoothing.	
The company does not engage in income smoothing	7	11	38,9
The company engages in income smoothing.	4	34	89,5
Overall percentage			73,2

Source: SPSS 26 Output

This model predicts 18 out of 56 companies (38.9%) that do not engage in income smoothing practices, and 38 out of 56 companies (89.5%) that do engage in income smoothing. Overall, the model's accuracy in predicting corporate income smoothing practices is 73.2%.

The analytical model used in this study is logistic regression analysis. This technique is used to determine the effect of the independent variables, namely profitability, leverage, winner/loser stock, and public ownership, on the dependent variable, income smoothing. The results of the logistic regression analysis are presented in Table 5.

Table 7. Hypothesis Test Result

Variabel	F-Test Result (omnibus Test) Sig. F	T-Test Result			
		Hipotesis	Beta	Sig. T	Result
Profitability	0,012	+	0,010	0,101	Rejected
Leverage		+	0,001	0,049	Accepted
Winner/lose Stock		–	-1,706	0,029	Accepted
Public Ownership		+	0,005	0,068	Rejected
Constant		-	-1,451	0,134	

Source: SPSS 26 Output

Based on the results of the test, the logistic regression model equation is obtained as follows.

$$Ln = -1{,}451 + 0{,}010PF + 0{,}001LV - 1{,}706WLS + 0{,}005P0 + \varepsilon$$

The regression capital equation above can be explained as follows:

1. The constant value of -1.451 indicates that if variables such as profitability, leverage, winner/loser stock, and public ownership are considered nonexistent or equal to zero, then the income smoothing in food and beverage companies listed on the IDX in 2023 would be -1.451 units.
2. The regression coefficient of X1 (profitability) is 0.010, indicating that if the profitability variable increases by one unit, the income smoothing index would decrease by 0.010 units, assuming the other variables remain constant.
3. The regression coefficient of X2 (leverage) is 0.001, meaning that if the leverage variable increases by one unit, the income smoothing index would decrease by 0.001 units, assuming the other variables remain constant.
4. The regression coefficient of X3 (winner/loser stock) is -1.706, suggesting that if the winner/loser stock variable increases by one unit, the income smoothing index would decrease by 1.706 units, assuming the other variables remain constant.
5. The regression coefficient of X4 (public ownership) is 0.005, meaning that if the public ownership variable increases by one unit, the income smoothing index would decrease by 0.005 units, assuming the other variables remain constant.

The significance level of the F-test (Omnibus Test) of 0.012 (< 0.05) indicates that the logistic regression model is a good fit. This means that, simultaneously, all independent variables significantly affect the dependent variable, which is income smoothing. The results of the t-test show that leverage has a positive direction and a significance value < 0.05, so **Hypothesis 2 is accepted**. The winner/loser stock variable has a negative direction and a significance value < 0.05, so **Hypothesis 3 is accepted**. Meanwhile, profitability and public ownership have a positive direction with significance values > 0.05, so **Hypotheses 1 and 4 are rejected.**

In 2023, food and beverage companies showed low ROA, reflecting suboptimal profit efficiency from their assets. These companies also tend to have higher debt levels compared to equity, increasing financial risk. Furthermore, many companies experienced loser stocks, with only a few shares held by the public. Around 67.86% of the sample companies are suspected of engaging in income smoothing practices.

Profitability does not affect income smoothing practices in food and beverage companies in 2023. This is due to the low average profitability and the high variation between companies, reflecting differences in internal conditions. Investors prioritize profit stability, considering it to be lower risk, so management focuses on maintaining stable profits rather than increasing profitability. This finding does not support agency theory, as management is not driven to perform income smoothing for personal benefit. Investors also consider other financial ratios, so ROA is not the sole reference in investment

decision-making. This finding aligns with the studies of [16] and [17].

Leverage influences income smoothing. The high average leverage and low variation among food and beverage companies in 2023 indicate significant financial risk. To attract creditors and maintain profit stability, management tends to engage in income smoothing. This finding supports the Debt Covenant Hypothesis in Positive Accounting Theory, where companies smooth income to avoid violating debt covenants. This result aligns with the studies of [20], [16], and [17].

Winner/loser stock has a negative effect on income smoothing in food and beverage companies in 2023. This condition is influenced by the low average winner/loser stock status and high variation among companies. The negative influence shows that companies with loser stock statuses tend to engage more in income smoothing to improve their image and create the impression of being winner stocks in the eyes of investors. This is common, given that many stocks in this subsector have returns below the market average. This finding aligns with the research of [6], [26], and [27], which state that winner/loser stock negatively influences income smoothing practices.

Public ownership does not affect income smoothing in food and beverage companies in 2023. The low average public ownership and variation among companies indicate that companies with low public ownership are less likely to feel significant pressure to smooth income, as accounting decisions are more influenced by controlling shareholders or large institutions that do not focus on short-term profit fluctuations. The level of public ownership, whether high or low, does not affect the company's decision to engage in income smoothing. This explains why public ownership is not significantly associated with income smoothing. This finding aligns with the studies of [3] and [18], which state that public ownership does not significantly influence income smoothing practices.

4 Conclusion and recommendation

Profitability does not influence income smoothing practices, as both high and low profits do not directly encourage management to engage in income smoothing. Leverage has a positive effect, meaning that companies with high debt levels tend to smooth income to maintain creditor confidence. Winner/loser stock has a negative effect, indicating that companies with a loser stock status are more likely to engage in income smoothing to improve their image and attract investor interest. Meanwhile, public ownership does not influence income smoothing, as management decisions are more influenced by controlling shareholders than by pressure from public investors.

This study aims to enrich academic literature on income smoothing and its influencing factors in the food and beverage sub-sector listed on the Indonesia Stock Exchange in 2023. It also provides insights into the impact of economic conditions on these practices and serves as a reference for future research with different variables or approaches. For academics, this study adds to the understanding of income smoothing factors. For investors, it offers guidance to make more informed decisions. For companies, it encourages separating personal and corporate interests to ensure transparent financial reporting and reduce income smoothing.

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