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EFFECT OF SALES GROWTH, PROFITABILITY, LIQUIDITY, AND LEVERAGE ON PROFIT GROWTH

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Abstract

The purpose of this research is to analyze the relationship between sales growth, profitability, liquidity, and leverage at publicly traded food and beverage firms in Indonesia from 2011 to 2019. From 2011-2019, 26 food and beverage companies were listed on the IDX; 11 of these were randomly selected to be included in the study. Here, Eviews is employed to run a random effect panel data regression model. Profit growth of food and beverage firms listed on the IDX between 2011 and 2019 was found to be significantly influenced by sales growth, profitability (ROE), liquidity (Cash Ratio), and leverage (DAR). For the period 2011-2019, food and beverage firms included on the IDX have had a positive and statistically significant impact from Sales Growth on their Profit Growth. Companies in the food and beverage sector that are part of the IDX and have a positive return on equity (ROE) will see their profits increase over the 2011-2019 time period. During the period 2011-2019, the profit growth of food and beverage companies listed on the IDX was negatively and significantly impacted by both liquidity (Cash Ratio) and leverage (DAR).

Keywords: Sales Growth, Profitability, Liquidity, Leverage, and Profit Growth

JEL Clasification: G10, M20, M40

1. INTRODUCTION

Profit is the main purpose of establishing a company. profit is the difference over income minus the costs incurred to obtain the income, profit is generally expressed in units of money (Harahap, 2013). A company can be said to be successful if it can get maximum profit. Companies that experience increased profits indicate that the company can carry out their operational activities effectively and efficiently.

One of the manufacturing sectors that contributes greatly to national economic growth is the food and beverage company. Food and beverage companies are one of the industries that are developing with the increasing population growth of a country. Therefore, food and

beverage companies are considered to have profitable prospects both now and in the future.

the following is a table displaying the average annual growth in profits for the consumer products business segment of the Indonesia Stock Exchange listed companies between 2011 and 2019.

Table 1 shows that the average profit growth of the five sectors is not constant, displaying both increases and decreases throughout time. The average profit growth of the food and beverage subsector is more likely to experience a decline or a downward trend compared to the four subsectors. It can be seen that for four consecutive years starting from 2016 to 2019 the average profit growth of food and beverage companies has decreased and is in the

minus figure. In 2016 it decreased by 14.25% from 2015, in 2017 it decreased by 83.54% from 2016, in 2018 it decreased by 32.57% from 2017 and in 2019 it increased by 73.59% from 2018. Although in 2019 there was an increase, the average value is still in the minus number.

Table 1. Average Profit Growth of the Consumer Goods Industry Sector

Subsector	Average Profit Growth (%)						
Subsector	2013	2014	2015	2016	2017	2018	2019
Food and Drink	46.86	-24.83	44.33	30.08	-53.46	-86.03	-12.44
Pharmacy	-19.48	27.13	17.64	-24.19	26.27	81.16	-29.85
Cigarette	76.1	30.76	2.42	8.73	72.29	11.04	-25.81
Cosmetics and household	-31.77	-18.46	53.39	27.29	2.39	55.91	-33.50
Household appliances	90.16	42.97	-71.78	-19.37	71.72	27.75	-24.35

Source: Data processed by the author

According to Putri & Santoso, (2020) Profit expansion is affected by a number of variables, such as the company's size, age, leverage, sales volume, and historical profit performance.

Financial forecasting can be improved with the help of ratio analysis. According to Endri et al., (2020) Liquidity ratios, solvency ratios, activity ratios, profitability ratios, and growth ratios are the broad categories into which the many different types of financial ratios fall. Sales Growth, Profitability, Liquidity, and Leverage are the only four variables outside of control that this study takes into account to determine how they affect profit growth.

1.1 Research Problem

- 1) Do Sales Growth, Profitability, Liquidity and Leverage, together affect Profit Growth?
- 2) How does Sales Growth affect Profit Growth?
- 3) How does Profitability affect Profit Growth?
- 4) How does Liquidity affect Profit Growth?
- 5) How does Leverage affect Profit Growth?

1.2 Research Purposes

Considering the aforementioned problem statement, it is clear that the goal of this research is to collect data that can provide concrete evidence for:

- 1) The Effect of Sales Growth, Profitability, Liquidity and Leverage, on Profit Growth.
- 2) The Effect of Sales Growth on Profit Growth.
- 3) The Effect of Profitability on Profit Growth.
- 4) Effect of Liquidity on Profit Growth.

5) Effect of Leverage on Profit Growth.

2. LITERATURE REVIEW

2.1 Signalling Theory

According to (Brigham & Houston, 2010) According to signal theory, when a company's management does something, it is sending signals or instructions to investors about the company's future. In this case, the profit growth of the company is the indication that management's efforts have been successful in delivering on the owner's goals. According to (Prihartanty, 2010) A rising trend in annual profits is an encouraging sign for the company's future success. The rate of increase in a firm's net profit is one indicator of its success; the higher the profit the company generates, the more successful it is.

Profit Growth

According to Febrianty & Divianto, (2017) increase in net income as a percentage of the preceding year is the measure of profit growth. The rate of increase in a company's earnings is a useful indicator of how well the business is doing as a whole (Sandjaja & Suwaidi, 2021). Profit expansion is determined by dividing the current period's profit by the prior period's profit and then comparing the result to the previous period's profit expansion (Aisyah & Widhiastuti, 2021) . The formula for calculating profit growth is:

$$Profit \ Growth = \ \frac{Net \ Income_{t} - Net \ Income_{t-1}}{Net \ Income_{t-1}}$$

Sales Growth

According to (Kennedy et al., 2017) An rise in sales from one period to the next, or from one instance to another, is referred to as sales growth. Sales are one indicator that can be used in predicting future growth because sales reflect the success of the investment. Companies whose sales have increased from year to year and effective sales management can increase profits. The formula for calculating sales growth is:

Sales Growth =
$$\frac{\text{Sales}_{t} - \text{Sales}_{t-1}}{\text{Sales}_{t-1}} \times 100\%$$

Profitability

According to (Kasmir, 2018) The profitability ratio is a measurement of a

business's capacity to maximize its profits. A company's profitability can be measured by examining the ratio of its sales, assets, and capital over a specified time period. (Hanafi & Halim, 2012). Investors are primarily concerned with profitability because it is a strong indicator of a company's capacity to remain in operation.

Profitability ratio used is Return On Equity (ROE). According to (Kasmir, 2018) After-tax profit generated from one's own capital is expressed as a ratio known as Return On Equity. Return on equity is a metric for evaluating a company's capacity to create profits from its own resources. Return On Equity can be determined by the following formula:

Return On Equity =
$$\frac{\text{Earning After Tax}}{\text{Total Equity}}$$

Liquidity

According to (Kasmir, 2018) The ratio of a company's liquid assets to its current liabilities is known as its liquidity and is used to assess its financial health. For businesses to be able to pay their bills when they come due, they need to be able to satisfy their short- and long-term commitments, and the liquidity ratio demonstrates this.

The Liquidity Ratio used is the Cash Ratio . According to (Kasmir, 2018) For businesses, the ratio of cash on hand to total debt is an important indicator of financial health. The quick ratio measures a company's liquidity by how easily it can pay off its short-term debt. The Cash Ratio is Determined By:

$$Cash \ Ratio = \frac{Cash + Cash \ Equivalent}{Total \ Current \ Liabilities}$$

Leverage

According to (Kasmir, 2018) The level of debt needed to finance a company's assets is expressed as its "leverage ratio." What this metric indicates is the extent to which the company's debts exceed its assets.

The Debt to Asset Ratio (DAR) is employed as a stand-in for leverage. An asset to debt ratio, as defined by Kasmir (2018), measures how much debt an organization has in relation to its overall assets. Debt-to-Asset Ratio (DAR) is a financial ratio used to evaluate the impact of debt

on asset management. The Debt to Asset Ratio is determined using the following formula:

Debt to Asset Ratio =
$$\frac{\text{Total Debt}}{\text{Total Asset}}$$

2.1 Research Framework

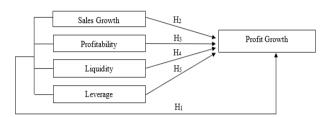


Figure 1. Research Framework

2.1 Hypothesis

The following is a research hypothesis based on the research framework:

- 1) Sales Growth, Profitability, Liquidity and Leverage together affect profit growth.
- 2) Sales growth has a positive effect on profit growth.
- 3) Profitability has a positive effect on profit growth.
- 4) Liquidity has a negative effect on profit growth.
- 5) Leverage has a negative effect on profit growth.

3. RESEACRH METHODS

3.1 Research methods

This study will employ a combination of descriptive and verification research techniques. In research, the descriptive approach is used to identify the existence of one or more independent variables and their associated values, but without drawing any connections between them. Evidence-based research methods like the verification technique use statistical testing to determine whether or not a working hypothesis can be accepted or rejected.

3.2 Population and Sample

Twenty-six companies in the food and beverage sub-sector that were traded on the Indonesia Stock Exchange between 2011 and 2019 make up the population for this analysis.

Purposive sampling was employed for this study. Eleven firms producing food and drink and traded on the Indonesia Stock Exchange between 2011 and 2019 were used as a sample for this study.

3.3 Data

Quantitative secondary sources are employed for this analysis. The financial statements of food and beverage companies traded on the Indonesia Stock Exchange provide the secondary data for this analysis, which covers the years 2011 to 2019. Data collected is documented by an audit trail. Financial statements from food and drink companies between 2011 and 2019 are the source of the data.

3.4 Data Analysis Techniques

Descriptive analysis and verification analysis were used to analyze the data in this study. Mean, median, mode, standard deviation, and graphs are all components of descriptive analysis. Classical assumption testing, panel data regression, coefficient of determination, and hypothesis testing via the f test (simultaneous test) and the t test are all part of the verification study (partial test).

4. RESULT AND DISCUSSION

4.1 Descriptive Analysis

Table 2. Descriptive Analysis Results

	-	- · · · I		J	
	N	Minimum	Maximum	Mean	Standard Deviation
Profit Growth	99	-244.9400	248,8200	16.67788	71.60757
Sales Growth	99	-23.80000	127.3100	14.06879	22.36129
Profitability	99	-19.18000	143.5300	23,76949	30.62312
Liquidity	99	0.640000	6051600	89.27131	120.8844
Leverage	99	14.06000	76.95000	43,34939	15.41201

Source: Eviews Output

As can be seen in table 2, the descriptive analysis of each variable shows that the average value of the profit growth variable is 16,67788, the maximum value is 248, the minimum value is -244, and the standard deviation is 71.60757. The range of values for the sales growth variable was [0, 127.31], [0, 11.06], and [22,36129], with a mean of [14,068.79] and a standard deviation [22,36129]. The computed values for the profitability variable are as follows: mean = 23.769491, max = 143.53, min = -1918, stdev =

30.62312. The standard deviation for the liquidity variable is 120.8844, the mean is 89.27131, the maximum is 605.16, the minimum is 0.64, and the average is 89.27131. An average of 43.3439 was found for the leverage variable, with a high of 76.95, a low of 14.06, and a standard deviation of 15.41201.

4.2 Classical assumption test

1) Normality test

Table 3. Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Profit Growth	Sales Growth	Profitability	Liquidity	Leverage
N		63	84	99	99	99
Normal Parameters a,b	mean	5986	.3833	1.0216	4745	.5614
	Std. Deviation	.60596	.19553	.15702	.69820	.14535
Most Extreme Differences	Absolute	.094	.086	.059	.083	.062
	Positive	.086	.086	.058	.050	.060
	negative	094	081	059	083	062
Test Statistics		.094	.086	.059	.083	.062
asymp. Sig. (2-tailed)		.200 c,d	.182 °	.200 c,d	.092 °	.200 c,d

Source: Eviews Output

The Asymp value was found for the normality test using a one-sample Kolmogorov-Smirnov distribution, as shown in table 3. All factors are statistically significant at the two-tailed 0.05 level or higher. This implies that there is a normal distribution for all variables.

2) Multicollinearity Test Table 4. Multicollinearity Test Results

	X1	X2	X3	X4
X1	1.0000000	0.051048	-0.186978	0.078795
X2	0.051048	1.0000000	-0.042252	0.228447
X3	-0.186978	-0.042252	1.0000000	-0.704561
X4	0.078795	0.228447	-0.704561	1.0000000

Source: Eviews Output

Multicollinearity test findings show that the independent variable has a value of less than 0.8, as shown in table 4. Regression model free of multicollinearity.

3) Autocorrelation Test Table 5. Autocorrelation Test Results

R-squared	0.673957	Mean dependent var	0.161301
Adjusted R-squared	0.660082	SD dependent var	0.277023
SE of regression	0.161511	Sum squared resid	2.452068
F-statistics	48.57628	Durbin-Watson stat	2.164762
Prob(F-statistic)	0.000000		

Source: Eviews Output

Table 5 shows that the Durbin Watson stat for the autocorrelation test is 2.164762. Using the Durbin-Watson table, we get dL = 1.5897 and dU = 1.7575 for N = 99 observations and K = 4 independent variables, it is obtained dL = 1.5897 and dU = 1.7575. So the value of 4-dU = (4 - 1.7575 = 2.2425). So that the Durbin Watson model is in the dU < dw < 4-dU region, namely 1.7575 < 2.164762 < 2.2425. This means that there is no autocorrelation in the regression model.

4) Heteroscedasticity Test Table 6. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.111730	0.061761	1.809071	0.0736
X1	0.018185	0.056204	0.323555	0.7470
X2	-0.012929	0.041986	-0.307945	0.7588
X3	-0.018362	0.014855	-1.236109	0.2195
X4	0.015586	0.117567	0.132572	0.8948

Source: Eviews Output

Each independent variable in table 6 has a significance level greater than 0.05, as determined by the heteroscedasticity test. This indicates that heteroscedasticity is absent.

4.3 Panel Data Regression Model Estimation

1) Common Effect Models

$$Y_{it} = 0.454527 + 0.901275_{X1} + 0.145800_{X2} - 0.064034_{X3} - 0.904725_{X4} + e_{it}$$

2) Fixed Effect Model

$$\begin{array}{llll} Y_{it} &=& 0.351006 &+& 0.107659_{CEKA} &-\\ 0.073540_{DLTA} - 0.003141_{ICBP} + 0.038048_{INDF} \\ - & 0.195807_{MLBI} &+& 0.045515_{MYOR} &-\\ 0.102818_{PSDN} &+& 0.013972_{BREAD} &+\\ 0.091775_{SKLT} + 0.069951_{STTP} - 0.008386_{UTLJ} \\ + & 0.847071_{X1} &+& 0.321442_{X2} &-& 0.039153_{X3} &-\\ 0.795575_{x4} + e_{it} \end{array}$$

3) Random Effect Model

$$\begin{array}{l} Y_{it} = 0.452436 + 0.898515_{X1} + 0.146254_{X2} - \\ 0.063450_{X3} - 0.900454_{x4} + 0.004570_{CEKA} - \\ 0.000977_{DLTA} - 0.000655_{ICBP} + 0.001148_{INDF} - \\ 0.002463_{MLBI} + 0.002860_{MYOR} - \end{array}$$

 $0.009877_{PSDN} + 0.000157_{ROTI} + 0.003486_{SKLT} + 0.002287_{STTP} - 0.000537_{UTLJ} + e_{it}$

4.4 Panel Data Processing Model Selection

1) Chow test

The Eviews Output indicates a value of 0.0942 for the Prob. Cross-Section Chi-Square. In the region where 0.0942 > 0.05, we can infer that H 0 is accepted and the model conforms to the Common Effect.

2) Hausman test

The Eviews output indicates a probability of 0.0886 for a random cross-section. In the case when 0.0886 > 0.05, we know that if H 0 is accepted, the model will adhere to the Random Effects distribution.

3) Lagrange Multiplier Test

The Eviews output indicates a Breuch-Pagan value of 0.0470, which agrees with previous research. If the value of 0.0470 is less than 0.05, then the null hypothesis H 0 is rejected and the Random Effect model is used. It follows that the Random Effect Test is superior for scientific study.

4.5 Model Interpretation

Panel data regression computations have shown that the random effect model is preferable for use in scientific inquiry. The subsequent are the estimated outcomes from employing a random effects model:

```
\begin{array}{l} Y_{it} = 0.452436 \ + \ 0.898515_{X1} \ + \ 0.146254_{X2} \ - \\ 0.063450_{X3} \ - \ 0.900454_{x4} \ + \ 0.004570_{CEKA} \ - \\ 0.000977_{DLTA} \ - \ 0.000655_{ICBP} \ + \ 0.001148_{INDF} \ - \\ 0.002463_{MLBI} \ + \ 0.002860_{MYOR} \ - \ 0.009877_{PSDN} \ + \\ 0.000157_{ROTI} \ + \ 0.003486_{SKLT} \ + \ 0.002287_{STTP} \ - \\ 0.000537_{UTLJ} \ + \ e_{it} \end{array}
```

The equation can be interpreted as follows:

- 1) The constant value in the equation is 0.452436 shows that when all independent variables (Sales Growth, Profitability, Liquidity and Leverage) are considered zero, the profit growth value is 0.452436.
- 2) The regression coefficient value of the Sales Growth variable shows a result of 0.898515, meaning that if Sales Growth has increased by 1% while the other independent variables

- are considered constant, profit growth will increase by 0.898515.
- 3) Profitability variable regression coefficient value shows a result of 0.146254, meaning that if Profitability has increased by 1% while the other independent variables are considered constant, profit growth will increase by 0.146254.
- 4) The regression coefficient value of the Liquidity variable shows the result 0.063450, meaning that if Liquidity has increased by 1% while the other independent variables are considered constant, profit growth will decrease by 0.063450.
- 5) The regression coefficient value of the Leverage variable shows the result 0.900454, meaning that if Leverage increases by 1% while other independent variables are considered constant, profit growth will decrease by 0.900454.

4.6 Coefficient of Determination Table 7. Coefficient of Determination Results

R-squared	0.673957	Mean dependent var	0.161301
Adjusted R-squared	0.660082	SD dependent var	0.277023
SE of regression	0.161511	Sum squared resid	2.452068
F-statistics	48.57628	Durbin-Watson stat	2.164762
Prob(F-statistic)	0.000000		

Source: Eviews Output

Results from the Coefficient of Determination Test are shown in table 7 via the Adjusted R-squared value, which is 0.660082 (66.0082%). Therefore, the independent factors (Sales Growth, Profitability, Liquidity, and Leverage) in the model explain 66.0082% of the variation in the dependent variable (profit growth), whereas the remaining 33.9918% is impacted by other variables.

4.7 Hypothesis testing

1) Simultaneous Test (F Test) Table 8. Simultaneous Test Results

R-squared	0.673957	Mean dependent var	0.161301
Adjusted R-squared	0.660082	SD dependent var	0.277023
SE of regression	0.161511	Sum squared resid	2.452068
F-statistics	48.57628	Durbin-Watson stat	2.164762
Prob(F-statistic)	0.000000		

Source: Eviews Output

Table 8 shows the outcomes of many tests run at the same time, yielding an F-Statistic of

48,57628 and an F-table of 2.47. If we look at the F-Statistics table, we see that the value is 48,57628 > 2.47, which corresponds to a probability of 0.000000 0.05, ruling out the null hypothesis and accepting the alternative hypothesis (Ha). Therefore, it follows that profit growth is significantly impacted by a number of factors, including but not limited to sales growth, profitability, liquidity, and leverage.

2) Partial Test (t Test) Table 9. Partial Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
С	0.452436	0.081267	5.567299	0.0000
X1	0.898515	0.073225	12.27068	0.0000
X2	0.146254	0.056189	2.602872	0.0107
X3	-0.063450	0.019604	-3.236579	0.0017
X4	-0.900454	0.154648	-5.822590	0.0000

Source: Eviews Output

The t-statistic value of the variable "Sales Growth" is 12.27068, and the t-table value is 1.66105. If we compare the t-statistic value to the t-table value, we find that 12.27068 is greater than 1.66105 with a probability of 0.0000 > 0.05. The result is a rejection of H0 and a confirmation of Ha. It follows that an increase in sales will result in an increase in profits.

A t-Statistic of 2.602872, and a t-table value of 1.66105, indicate that profitability is an important factor. If we compare the t-Statistic value to the t-table value, we find that 2.602872 is greater than 1.66105 with a probability of 0.0107 0.05. What this indicates is that we accept Ha and reject H0. We can therefore draw the conclusion that profitability significantly contributes to the rate of profit expansion.

The t-statistic for the liquidity variable is -3.236798, and the t-table value is 1.66105. If we compare the t-Statistic value to the t-table value, we find that -3.236798 is greater than -1.66105 with a probability of 0.0017 > 0.05. Therefore, we accept Ha and reject H0. The conclusion that can be drawn is that liquidity has a major and detrimental effect on profit expansion.

The t-Statistic value of leverage is - 5.822590, while the t-table value is 1.66105.

With a probability of 0.0000 0.05, -5.822590 > -1.66105 when comparing the t-Statistic result to the t table. Therefore, we accept Ha and reject H0. Therefore, it's safe to say that increased leverage has a major and detrimental effect on a company's ability to increase its profits.

5. CONCLUSION

The following are some inferences that can be made based on the results of the research analysis and the talks that have taken place so far:

- 1) During the period 2011-2019, sales growth, profitability, liquidity, and leverage have a substantial impact on the profit growth of food and beverage companies listed on the IDX.
- 2) During the period 2011-2019, sales growth has a favorable and considerable impact on the profit growth of food and beverage companies listed on the IDX.
- 3) Profitability has a positive and large influence on profit growth in food and beverage companies listed on the IDX from 2011 to 2019 to a lesser extent.
- 4) For the period 2011-2019, liquidity has a negative and considerable impact on the profit growth of food and beverage companies listed on the IDX.
- 5) During the period 2011-2019, leverage has a negative and considerable impact on the profit growth of food and beverage companies listed on the IDX.

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