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The Effect of Cost of Goods Sold (COGS) and Profit Contribution on Sales Volume

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ABSTRACT

In general, profit is a goal that must be achieved by the company to realize profits for the company. Where sources (Input), such as raw materials and labor are processed to produce goods or services (Output) for customers. Companies need to have products that can be sold to the general public, these products are non-physical products, raw materials or finished products that can be consumed. Researchers used a quantitative descriptive approach in this research to determine the influence of cost of goods sold and profit contribution on sales volume in manufacturing companies listed on the IDX. Researchers will explain how cost of goods sold and contribution profit affect sales volume. The research results indicate that Cost of Goods Sold (COGS) and Contribution Profit have a significant influence on the Sales Volume of manufacturing companies in Indonesia during the 2020-2022 period.

Keywords: *Cost of Goods Sold, Profit Contribution, Sales Volume*

INTRODUCTION

Many companies in the world are established with the main goal of gaining maximum profit with minimal cost. For that, companies compete to improve their performance so that the company's profit continues to increase. COGS is one of the important elements in calculating profit because companies can determine the selling price of products accurately with measurable sales results. Understanding COGS is very important for companies because it helps determine the profitability of their operations. With accurate COGS calculations, businesses are better prepared to make the right decisions. Profit or loss is often used as a measure to assess company performance. If the company's goals are achieved, the company's survival can be maintained and it can compete with other companies. In increasing sales volume, of course, the problem that often arises is how companies minimize the costs incurred and determine the cost of goods or services.(Zubir, 2022).

Contribution profit shows how much money is left over from each sale after the costs of production have been subtracted. The closer the contribution profit is to 100%, the better. It means the business has more money available to cover its expenses. A business is said to break even when the amount of sales (revenue) is equal to the amount of costs, or when the contribution profit is enough to cover only fixed costs.(Aminus & Sarina, 2022).

Sales volume is an important metric that helps investors assess whether a business is growing or shrinking. The greater the amount of sales generated by a company, the greater the potential profit the company will generate. Sales volume is the main goal of the company, therefore sales volume is one of the important things that must be evaluated for the possibility of the company not experiencing losses. Companies need to monitor the increase in sales volume so that the company can survive and grow sustainably, even though in practice it requires costs(Firmansyah et al., 2022).

The formulation of the problem in this study is to determine whether HPP and contribution profit have an effect on sales volume. The purpose of this study is to analyze the influence of COGS and contribution profit on sales volume. The benefits of this research academically are expected to contribute to the development of cost accounting science, especially regarding sales volume. Adding to researchers' insights and providing references for knowledge about sales volume in management decision making.

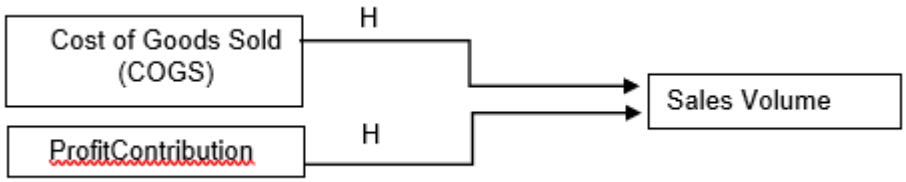
METHODS

Cost of goods manufactured is the total cost incurred by a company to produce goods or services in a certain period of time. The definition of cost of goods manufactured is all costs (including direct material costs, direct labor, and overhead costs) that are sacrificed until the goods are produced ready for sale by taking into account the initial balance and the final balance of goods in process.(Saputra et al., 2024). According to Islahuzzaman in(Satriani & Kusuma, 2020), cost of goods sold (Cost Of Goods Sold) is the cost of goods purchased and resold. According to Gill in(Satriani & Kusuma, 2020), cost of goods sold is the cost of manufacturing or purchase price attached to finished goods products sent from suppliers to customers. Cost of goods sold is the total cost divided by the amount of production.(Balqis et al., 2022). According to Novietta in(Hamidy & Yasin, 2024)Cost of goods sold (COGS) is the cost incurred by a company to produce or acquire goods that are then sold to customers. The main components of COGS include raw material costs, direct labor costs, and factory overhead costs required to produce goods. According to Rodríguez in(Ardiyono et al., 2024)Profit/contribution margin is the amount of income remaining after covering all variable costs that can be used to contribute to fixed costs and operating profit. According to Winarko in(Triana et al., 2020)profit/contribution margin is sales revenue minus total variable costs. According to Mustainah in(Devi et al., 2023), contribution margin is the amount of profit available to cover fixed costs and generate a profit. The contribution rate also provides information about the profitability of different products, so managers can determine which products are profitable.

According to Stapelton in(Hulu et al., 2021)(Ramadhani, 2021)Sales volume is the sales achievement expressed in quantitative form in terms of physical or volume. According to Swatha in(Rahmayani et al., 2023)Sales volume is the amount of goods or services sold in the exchange process. Sales volume is a measure that shows the amount or magnitude of the amount of goods or services sold.(Anjayani & Febriyanti, 2022). According to Kotler in(Martiah & Meirani, 2022)states that it shows the number of goods sold in a certain period of time.

The framework of thought that explains the influence of the hypothesis on cost of goods sold (COGS) and contribution profit on sales volume can be presented in Figure 1.

Fig. 1 Framework



H_1: Cost of Goods Sold (COGS)has a positive and significant effect on the Company's value
H_2: Contribution Profit has a positive and significant effect on the Company's value

The focus of this study is on manufacturing companies listed on the Indonesia Stock Exchange in the period 2020 to 2022. By selecting 15 companies and observing for 3 years and collecting a total of 45 data. This study uses statistical methods including descriptive analysis, multiple linear regression analysis, and hypothesis testing using the following data:

Table 1
Sampling Criteria Study

No	Criteria	Amount
1	Manufacturing companies listed on the Indonesia Stock Exchange (IDX)	226
2	Manufacturing companies that do not publish complete annual financial reports in the 2020-2022 period	(120)
3	Manufacturing companies that experienced losses in the 2020-2022 period	(85)
4	Manufacturing companies that close their books in months other than December	(6)
Companies that can be used as samples		15
Number of years of observation		3
Amount of research data		45

Source : Data Processed in 2025

Table 2
Operational Variables, Indicators, and Scales Measurement

Variables	Subvariables (Dimensions)	Indicator	Measurement scale
Price Main PointSales (X1)	X1.1 Profit and Loss	COGS = Beginning inventory of finished goods + Cost of goods manufactured – Ending inventory of finished goods	Ratio
Contribution Profit (X2)	X2.1 Net profit	Net Profit = gross profit – operating expenses	Ratio
Sales Volume (Y)	Y.1 Total Sales	Sales volume = number of units sold	Nominal

Source : Data Processed in 2025

RESULTS AND DISCUSSION

This study uses data from fifteen manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period 2020-2022. The data taken includes Cost of Goods Sold (COGS), Contribution Profit, and Sales Volume. The following is the company data used in the study:

Table 3
Data on COGS, Contribution Profit and Sales Volume

No	Company name	Year	HPP (Rp Billion)	Contribution Profit (Rp Billion)	Sales Volume (Units)
1	PT Astra International Tbk	2020	150	30	1,200,000
		2021	160	32	1,250,000
		2022	170	35	1,300,000
2	PT Unilever Indonesia Tbk	2020	40	10	800,000
		2021	42	11	850,000
		2022	44	12	900,000
3	PT Indofood CBP Sukses Makmur Tbk	2020	60	20	700,000
		2021	65	22	750,000
		2022	70	23	800,000
4	PT Kalbe Farma Tbk	2020	20	7	400,000
		2021	22	8	450,000
		2022	24	8	500,000
5	PT Semen Indonesia Tbk	2020	30	5	600,000
		2021	32	6	650,000
		2022	34	6	700,000
6	PT Astra Otoparts Tbk	2020	15	4	500,000
		2021	17	5	550,000

		2022	18	5	600,000
7	PT XL Axiata Tbk	2020	10	3	300,000
		2021	11	3	320,000
		2022	12	4	340,000
8	PT Vale Indonesia Tbk	2020	25	8	450,000
		2021	27	9	475,000
		2022	28	9	500,000
9	PT National Gas Company Tbk	2020	35	9	550,000
		2021	36	10	600,000
		2022	37	10	650,000
10	PT Jasa Marga Tbk	2020	45	11	700,000
		2021	47	12	750,000
		2022	48	13	800,000
11	PT Wijaya Karya Tbk	2020	20	6	350,000
		2021	21	7	375,000
		2022	22	7	400,000
12	PT Gudang Garam Tbk	2020	50	15	900,000
		2021	52	16	950,000
		2022	54	17	1,000,000
13	PT United Tractors Tbk	2020	55	16	950,000
		2021	57	17	1,000,000
		2022	59	18	1,050,000
14	PT Indo Tambangraya Negara Tbk	2020	60	18	1,100,000
		2021	62	19	1,150,000

		2022	64	20	1,200,000
15	PT Tower Bersama Infrastructure Tbk	2020	12	5	400,000
		2021	13	5	450,000
		2022	14	6	500,000

Source: Indonesia Stock Exchange

Descriptive Statistical Analysis

Table 4
Descriptive Statistical Analysis

Statistics	***N***	***Minimum***	***Maximum***	***Mean***	***Std. Deviation***
HPP (Rp Billion)	15	20,000	170,000	66,267	50,982
Contribution Profit (Rp Billion)	15	5,000	35,000	15,567	8,383
Sales Volume (Units)	15	400,000	1,300,000	820,000	268,803

Source : Data Processed in 2025

The descriptive statistics table above shows the minimum, maximum, mean, and standard deviation values for the variables COGS, Contribution Profit, and Sales Volume. The average COGS is Rp66.267 billion with a standard deviation of Rp50.982 billion. The average Contribution Profit is Rp15.567 billion with a standard deviation of Rp8.383 billion. The average Sales Volume is 820,000 units with a standard deviation of 268.803 units.

Classical Assumption Test

Normality Test

Table 5
Kolomogorov-Smirnov Normality Test Table

Variable	Kolmogorov-Smirnov Statistics	df	Sig.
HPP	0.216	15	0.200*
Contribution Profit	0.176	15	0.200*
Sales Volume	0.196	15	0.200*

Source : Data Processed in 2025

The results of the normality test show that the significance value (Sig.) for all variables is greater than 0.05, so there is not enough evidence to reject the null hypothesis (H0) that the data is normally distributed.

Multicollinearity Test

Table 6
Multicollinearity Test (VIF)

Variable	Tolerance	VIF
HPP	0.784	1.276
Contribution Profit	0.784	1.276

Source : Data Processed in 2025

A VIF value of less than 10 indicates that there is no multicollinearity problem between the independent variables in this regression model.

Autocorrelation Test

Table 7.

Durbin-Watson Autocorrelation Test

Model	Durbin-Watson
1	2.105

Source : Data Processed in 2025

The Durbin-Watson value is close to 2 indicating that there are no significant problems with autocorrelation in this regression model.

Heteroscedasticity Test

Table 8
Heteroscedasticity Test

Variable	Unstandardized Coefficients (B)	Sig.
HPP	-0.001	0.714
Contribution Profit	-0.003	0.536

Source : Data Processed in 2025

A significance value (Sig.) greater than 0.05 indicates that there is no heteroscedasticity problem in this regression model.

Multiple Linear Regression Analysis

Table 9
Linear Regression Test Multiple

Model	***Unstandardized Coefficients (B)***	***Std. Error***	***Standardized Coefficients(Beta)***		***Sig.***
(Constant)	211,000	57,601		3,665	0.003
HPP (Rp Billion)	6.42	0.466	0.838	13,778	0.000
Contribution Profit (Rp Billion)	13.57	0.809	0.927	16,779	0.000

Source : Data Processed in 2025

The results of multiple linear regression show that both independent variables, namely COGS and Contribution Profit, have a significant effect on Sales Volume. The high t-value and low significance ($p < 0.05$) for both variables indicate that both COGS and Contribution Profit individually play an important role in determining Sales Volume. Standardized Coefficients (Beta) show that Contribution Profit has a greater effect than COGS on Sales Volume.

Determination Coefficient Test (R Test)

Table 10

Model Summary

Model	*R*	*R Square*	*Adjusted Square*	*RStd. Error of the Estimate*
1	0.975	0.951	0.946	63,297.54

Source : Data Processed in 2025

The Model Summary table shows that the R Square value is 0.951, which means that 95.1% of the variation in Sales Volume can be explained by COGS and Contribution Profit.

Partial Test (t-Test)

Table 11
Partial Test (Test)

Model	*t*	*Sig.*
(Constant)	3,665	0.003
COGS (Cost of Goods Sold)	13,778	0.000
Contribution Profit	16,779	0.000

Source : Data Processed in 2025

The T-test results show that both Cost of Goods Sold (COGS) and Contribution Profit have a significant effect on Sales Volume in this regression model. With low significance ($p < 0.05$) for both variables, we can be sure that both play an important role in determining the variability of Sales Volume in the model used. Therefore, these results support the alternative hypothesis (H1) that there is a significant effect of COGS and Contribution Profit on Sales Volume.

Simultaneous Test (F Test)

Table 12
Simultaneous Test (F Test)

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	1.0612	2	5.2811	131.95	0.000
Residual	5.3910	12	4.499		
Total	1.1212	14			

Source : Data Processed in 2025

The results of the F test show that the multiple linear regression model that tests the relationship between Cost of Goods Sold (COGS) and Contribution Profit to Sales Volume is significant overall. The F value of 131.95 with a significance (Sig.) of 0.000 indicates that the difference in the variability of Sales Volume that can be explained by the regression model does not occur by chance. As much as 95.1% of the variation in Sales Volume can be explained by the COGS and Contribution Profit variables based on the Adjusted R Square value of 0.946. The significant contribution of the two independent variables to this model is strengthened by the results of the t test, where COGS and Contribution Profit each have high t values and low significance ($p <0.05$), indicating that both have a positive and significant effect on Sales Volume.

Discussion of Research Results

Regression analysis was conducted to evaluate the effect of Cost of Goods Sold (COGS) and Contribution Profit on Sales Volume of manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the period 2020-2022. The classical

assumption test was conducted previously to ensure the validity of the regression model. The normality test using the Kolmogorov-Smirnov test showed that the residual data had a normal distribution, with significance values (Sig.) for COGS (0.200), Contribution Profit (0.200), and Sales Volume (0.200) greater than 0.05. Furthermore, the multicollinearity test using the Variance Inflation Factor (VIF) shows a VIF value below 10 for all independent variables, indicating no multicollinearity problems. The autocorrelation test with the Durbin-Watson test produces a value of 2.105, close to the ideal value of 2, indicating no significant problems with autocorrelation in the regression model.

The heteroscedasticity test using the Glejser Test shows a significance value (Sig.) above 0.05 for HPP (0.714) and Contribution Profit (0.536), indicating that there is no heteroscedasticity problem in the regression model. The results of the overall regression analysis show that the regression model significantly explains the variability of Sales Volume, with an R Square value of 0.951. This indicates that 95.1% of the variability in Sales Volume can be explained by HPP and Contribution Profit.

ANOVA shows that the overall regression model is significant, with an F value of 131.95 and a significance (Sig.) of 0.000. These results confirm that there is a significant relationship between COGS, Contribution Profit, and Sales Volume. The regression coefficient shows that COGS has a coefficient of 6.42 with a t value of 13.778 and a significance (Sig.) of 0.000, while Contribution Profit has a coefficient of 13.57 with a t value of 16.779 and a significance (Sig.) of 0.000. This indicates that an increase in COGS and Contribution Profit positively contributes to an increase in Sales Volume of manufacturing companies in Indonesia during the period studied.

The results of the study indicate that Cost of Goods Sold (COGS) and Contribution Profit have a significant effect on Sales Volume of manufacturing companies in Indonesia during the period 2020-2022. This finding indicates that an increase in production costs (represented by COGS) and the resulting profit (Contribution Profit) positively affect the increase in the number of products sold. The implication is that company management can consider strategies to optimize COGS and increase Contribution Profit to stimulate an increase in Sales Volume, which in turn can improve the financial performance and overall growth of the company. This study makes an important contribution to understanding the factors that influence the operational performance of manufacturing companies in a competitive market context.

CONCLUSIONS

The increase in COGS and contribution profit positively contributed to the increase in sales volume in manufacturing companies listed on the IDX 2020-2022. This finding shows that the increase in production costs (COGS) and the resulting profit (Contribution Profit) positively affects the increase in the number of products sold. Companies can evaluate the possibility of utilizing technology and automation to reduce labor costs, analyze the company's cost structure to understand the composition of fixed costs and variable costs, monitor changes in sales volume closely and adjust pricing and marketing strategies if necessary in order to optimize contribution profit. Further researchers should update the research period so that the research results can have the latest developments on factors that influence sales volume.

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