



## Cost Volume Profit Analysis as a Profit Planning Tool (Case Study of CV Barokah Jaya in Mojokerto)

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### Abstract

Keywords:

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MoS, Operating  
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*Cost Volume Profit analysis is one of the analytical tools that can be used in planning company profits. With CVP analysis the company can more easily plan, control and make the right decisions in the company. The object of this research is CV. Barokah Jaya Kemantren – Mojokerto. This type of research is Quantitative Descriptive with Quantitative data type. The data sources used are Primary Data and Secondary Data. The data collection technique is by interview and documentation of CV. Barokah Jaya. The results of the CVP analysis are Contribution Margin is Rp. 9.838.448.030 or 17,1%, Operating Leverage shows the number 1.2. BEP in rupiah is Rp 10.208.420.750,63 and BEP in unit is 17.210. Margin of Safety is Rp 47.297.779.682,37 or 82%. Planning profit of Rp 9.710.328.496,8 assuming sales of Rp 66.999.041.595,32 and variable costs follow the increase in production costs while fixed costs are constant.*

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### INTRODUCTION

The business sector is a competitive world, either between companies operating in the same or different fields. Competition in the business sector can be either positive or negative. Positive competition can encourage companies to improve product or service quality, reduce costs, develop innovations, and expand markets. Negative competition can cause companies to lose market share, suffer losses, or even go bankrupt.

To be able to survive and thrive in the middle of fierce competition, companies must have careful and systematic planning. Planning involves the process of determining the tools and facilities that will be utilized to achieve planned goals. (Akbar et al., 2021). Planning helps companies to identify opportunities and threats, evaluate strengths and weaknesses, and allocate resources efficiently and effectively. One important aspect of planning is profit planning. According to (Chalil, 2018) Profit planning is a work plan that has been considered and explained in real terms in the form of numbers in financial statements for the short and long term. Profit planning is very crucial for companies because it can provide useful information for managerial decision making, such as determining selling prices, selecting products or services to be produced or offered, controlling costs, and measuring performance.

Cost-Volume-Profit (CVP) analysis acts as a useful tool to measure the profit planned by the company. CVP is the basis for pricing, determining short-term plans, cost targets, and exchange rates (Punniyamoorthy, 2017). CVP analysis is an approach used to analyze how operational and marketing decisions affect the amount of operating profit, based on the relationship between variable costs per unit of product, total fixed costs, the amount of selling price, and the level of output. (Hery, 2018). By practicing CVP analysis, companies can more easily plan, control, and make wise decisions. The CVP approach allows companies to more efficiently plan future steps, compete with other companies, and prevent the risk of collapse. Therefore, the application of CVP analysis is a strategic necessity to maintain the sustainability and success of the company in a competitive market.

This research takes the object of CV Barokah Jaya in Mojokerto. CV Barokah Jaya is a company which operates in the rubber production sector. This study will explore how the application of Cost-Volume-Profit analysis can be an effective tool in profit planning through an understanding of key elements such as fixed costs, variable costs, selling prices, and sales volume, it is expected that this study can provide a better view of how CV Barokah Jaya can improve operational efficiency and optimize its profits.

The problem faced by CV Barokah Jaya is the low level of profit obtained from its operations. This is caused by several factors, including: intense competition from other rubber product manufacturers, fluctuations in the price of rubber raw materials, and unstable market demand. Therefore, this company needs a CVP analysis that can assist management in making the right strategic decisions to improve company performance.

Research related to CVP has been conducted by several previous researchers, such as: (Rahmi et al., 2023) calculating Cost Volume Profit (CVP) on UMKM Pempek MWR Palembang as a profit planning tool, so that alternatives can be taken to get higher profits and determine the sales that must be obtained by UMKM Pempek MWR Palembang to achieve the profit target that has been set. Then research by (Sa'adah & Azizah, 2023) to determine the calculation and profit planning at CV. Zam-Zam Collection as a whole using cost-volume-profit (CVP) analysis with reference to the last year, which was in 2022. (Saputra & Purnomo, 2018), (Rahayu et al., 2019), (Citra, 2019) stated that the use of CVP analysis is very influential in achieving profit.

The aim of this study is to analyze CVP at CV Barokah Jaya and provide recommendations to management related to setting selling prices, controlling costs, and increasing sales volume. This research is expected to provide benefits for companies in increasing profits and competitiveness in the market.

## RESEARCH METHODS

This research used a quantitative approach with a case study method. Case study research is a research that is conducted intensely, specifically, and deeply on an organization, institution, or certain phenomenon (Arikunto, 2013). This research is descriptive using qualitative and quantitative data obtained from primary and secondary data sources. This data can be obtained by interview and observation. Primary data obtained in the form of financial statements, production capacity and selling prices. While secondary data is obtained based on literature sources of CVP analysis methods. The analysis method used by the author is quantitative data analysis using cost-volume-profit (CVP) analysis as follows (Mokoginta et al., 2018):

### Contribution Margin

Contribution margin is the difference between the selling price per unit and the variable costs per unit. Contribution margin is calculated by deducting all variable costs from revenue (Gutiérrez, 2021).

Contribution margin = Sales Revenue – Variable Cost

### Break Even Point Analysis

Break Even Point (BEP) occurs when the amount of sales is equal to the sum of variable costs plus fixed costs. BEP analysis is an analytical method used to recognize the relationship between fixed costs, variable costs, profits, and volume of activities (Maruta, 2018). Break Even Point is the volume of activity which total revenue equals total cost, or the point at which profit equals zero (Budiyanti et al., 2018). Conditions at the Break Even Point:

Sales = Total variable costs + Total Fixed Costs

### Margin of Safety

Margin of Safety is the surplus of budgeted sales over break-even sales volume (Salman & Farid, 2017). Margin of Safety is a maximum limit of sales decline in the company. The objective is that the company avoids losses due to a decline in sales. The higher percentage of Margin of Safety, the safer the company is from losses due to declining sales. On the other hand, if the percentage of Margin of Safety is small, the company will easily experience losses due to a decline in sales (Haeruddin et al., 2023). To find out the percentage of Margin of Safety, it can use the following formula:

MoS = Sales – BEP (Rupiah)

### Profit Planning Analysis

Profit planning analysis is a tool used by companies to determine the desired profit volume. Profit is the excess of sales over the total costs incurred in producing goods or services. (Blocher et al., 2012). For profit planning in calculating expected profit using the following formula:

Target Profit = Net profit + (X% x Net profit)

## Operating Leverage

Operating Leverage is the ratio of estimated fixed operating costs to sales in a year behind. (Gu et al., 2018). Operating Leverage is the utilization of funds with fixed costs, which is expected that the income obtained from the use of these funds can cover fixed costs and variable costs. (Sa'adah & Azizah, 2023). Operating leverage is a representation of how the owner of the company can determine the level of operating costs that are variable with fixed costs, either at a relatively small or high level.

$$OL = \text{Margin Contribution} / \text{Operating Income}$$

## RESULT

### Identify Volume and Revenue of Sales

Table 1. Volume and Revenue of Sales 2022

Uraian	Volume	Selling price	Total
Vulkanisir	1.456.847	Rp 28.000	Rp 40.791.721.786
Sol	160.719	Rp 30.000	Rp 4.821.570.000
Vulk. Dingin	73	Rp 35.000	Rp 2.549.999
Rubber	1.452	Rp 1.200.000	Rp 1.742.575.032
Cakar	3.145	Rp 500.000	Rp 1.572.407.382
Hammer	1.580	Rp 900.000	Rp 1.421.829.490
Karpet Sapi	12.002	Rp 400.000	Rp 4.800.966.900
Bahan & Kompon	78.419	Rp 30.000	Rp 2.352.579.844
Total Sales	1.714.238		Rp 57.506.200.433

Source: CV Barokah Jaya

### Cost Classification

The following is the classification of Fixed Costs and Variable Costs of CV Barokah Jaya:

Table 2. Fixed Cost

Fixed Cost	Nominal
General & Administrative expenses	Rp 436.626.904
Machine Repair Expenses	Rp 1.309.880.712
Total Fixed Cost	Rp 1.746.507.616

Source: CV Barokah Jaya

Table 3. Variable Cost

Variable Cost	Nominal
Raw Material Expenses	Rp 40.488.912.948
Direct Labor expenses	Rp 4.001.485.000
Electricity & Telephone Expenses	Rp 1.259.333.881
Expedition Expense	Rp 698.207.870
Other expenses	Rp 1.219.812.704
Total Variable Cost	Rp 47.667.752.403

Source: CV Barokah Jaya

### Contribution Margin Analysis

Contribution Margin= Sales – Variable Cost

= Rp 57.506.200.433 – Rp 47.667.752.403

= Rp 9.838.448.030

Rp 9.838.448.030

Contribution Margin Ratio =  $\frac{\text{Rp 9.838.448.030}}{\text{Rp 57.506.200.433}} \times 100\%$

= 17,1%

The Contribution Margin result obtained is Rp 9.838.448.030 and the contribution margin ratio is 17,1% This means that the contribution margin will increase by 17.1% of sales every time sales increase.

Tabel 4. Weighted Average Contribution Margin

Products	Sales	VC	CM	CM Per unit	Sales Proportion	Weighted Average CM
Vulkanisir	Rp 40.791.721.786	Rp 40.510.506.089	Rp 281.215.697	Rp 193	70,93%	136,93
Sol	Rp 4.821.570.000	Rp 4.469.108.358	Rp 352.461.642	Rp 2.193	8,38%	183,87
Vulk. Dingin	Rp 2.549.999	Rp 2.025.936	Rp 524.063	Rp 7.193	0,004%	0,32
Rubber	Rp 1.742.575.032	Rp 40.379.776	Rp 1.702.195.256	Rp 1.172.193	3,03%	35.520,24
Cakar	Rp 1.572.407.382	Rp 87.447.769	Rp 1.484.959.613	Rp 472.193	2,73%	12.911,30
Hammer	Rp 1.421.829.490	Rp 43.929.744	Rp 1.377.899.746	Rp 872.193	2,47%	21.564,80
Karpet Sapi	Rp 4.800.966.900	Rp 333.750.852	Rp 4.467.216.048	Rp 372.193	8,35%	31.072,93
Bahan & Kompon	Rp 2.352.579.844	Rp 2.180.603.879	Rp 171.975.965	Rp 2.193	4,09%	89,72
Total Sales	Rp 57.506.200.433	Rp 47.667.752.403	Rp 9.838.448.030		100%	101.480,11

Source: Primary data processed, 2023

### Break Even Point Analysis

CV Barokah Jaya has more than 1 type of product (multiproduct) so that the break even point calculation used is more complex because each product has a different selling price, cost and contribution margin (Dahtiah et al., 2022).

$$\begin{aligned} \text{BEP (Multiproduct)} &= \frac{\text{Total Fixed Cost}}{\text{Weighted Average Contribution Gross Profit Rate}} \\ &= \frac{\text{Rp 1.746.507.616}}{101.480,11} \\ &= 17.210,34 \end{aligned}$$

$$\begin{aligned} \text{BEP (Rupiah)} &= \frac{\text{Total Fixed Cost}}{\text{Contribution Margin Ratio}} \\ &= \frac{\text{Rp 1.746.507.616}}{17,1\%} \\ &= \text{Rp 10.208.420.750,63} \end{aligned}$$

### Margin of Safety Analysis

$$\begin{aligned} \text{MoS} &= \text{Sales} - \text{BEP (Rupiah)} \\ &= \text{Rp 57.506.200.433} - \text{Rp 10.208.420.750,63} \\ &= \text{Rp 47.297.779.682,37} \end{aligned}$$

$$\begin{aligned} \text{Margin of Safety Ratio} &= \frac{\text{Margin of Safety}}{\text{Sales}} \times 100\% \\ &= \frac{\text{Rp 47.297.779.682,37}}{\text{Rp 57.506.200.433}} \times 100\% \\ &= 82\% \end{aligned}$$

### Analisis Operating Leverage

$$\begin{aligned} \text{Operating Leverage} &= \frac{\text{Contribution Margin}}{\text{Operating Income}} \\ &= \frac{\text{Rp 9.838.448.030}}{\text{Rp 8.091.940.414}} \\ &= 1,22 \end{aligned}$$

### Profit Planning Analysis

Realized profit = Rp 8.091.940.414

Target Laba tahun berikutnya:

$$\begin{aligned}\text{Profit Target} &= \text{Operating Income} + (\text{Expected profit} \times \\ &\quad \text{Operating Income}) \\ &= \text{Rp } 8.091.940.414 + (20\% \times \text{Rp } 8.091.940.414) \\ &= \text{Rp } 8.091.940.414 + \text{Rp } 1.618.388.083 \\ &= \text{Rp } 9.710.328.496,80\end{aligned}$$

$$\begin{aligned}\text{Sales} &= \frac{(\text{Fixed Cost} + \text{Profit Target})}{\text{Contribution Margin Ratio}} \\ &= \frac{(\text{Rp } 1.746.507.616 + \text{Rp } 9.710.328.496,8)}{17,10\%} \\ &= \text{Rp } 66.999.041.595,32\end{aligned}$$

### DISCUSSION

Cost-volume-profit (CVP) analysis is an efficient, strategic, and adaptive approach for managers in determining comprehensive short-term plans (Guo, 2023). By applying the grouping of fixed and variable costs, this analysis can be used to increase company profits. Some factors to consider in an effort to increase profits include contribution margin, contribution margin ratio, unit Break Even Point, sales value Break Even Point, margin of safety, margin of safety ratio, and degree of operating leverage. All these aspects help managerial in formulating steps to maintain company stability and achieve the desired profit goals. CV Barokah Jaya has experienced several years of discrepancies between sales and fixed and variable costs that have been incurred. The company needs to estimate the selling price, fixed costs, and variable costs to achieve maximum operating profit. It is important to calculate the Break Even Point in units and sales value so that the company can determine the sales limit to avoid the risk of loss (Lulaj & Iseini, 2019). The contribution margin and operating profit approaches are used to set profit targets. To identify sales risk, margin of safety is used as a rough analysis to determine how many units or revenue in rupiah are earned above the volume Break Even Point.

### CONCLUSION

Based on the results of research conducted at Cv Barokah Jaya using CVP (Cost, Volume, Profit) analysis as a short-term planning tool, it can be concluded;

- a) With the number of products sold amounted to 1.714.238 pieces obtained revenue of Rp 57.506.200.433 with a net profit of Rp 2.030.833,33 with total fixed costs of Rp. 1.746.507.616 and variable costs of Rp 47.667.752.403.
- b) Contribution Margin is obtained at Rp. 9,838,448,030 or 17.1%.

- c) DOL ratio or operating leverage obtained is equal to 1.2, BEP in rupiah of Rp. 10,208,420.750.000.000. Rp 10.208.420.750,63, BEP in unit is 17.210, Margin of Safety Rp 47.297.779.682,37 or 82%
- d) Profit planning for the next stage of production is Rp 9,710,328,496.8 with sales of Rp 66.999.041.595,32.

Based on research (Sa'adah & Azizah, 2023) and (Rosianna et al., 2019) shows that many companies have not implemented CVP analysis. Likewise, CV Barokah Jaya has not carried out profit planning, but judging from the profit target and the reality of the profit generated, CV Barokah Jaya has been able to achieve it. The results of the calculation of the profit target analysis, if in the following year CV Barokah Jaya wants to expect a 20% increase in profit, CV Barokah Jaya must be able to achieve a sales target of Rp 66.999.041.595,32.

The results of this study have a considerable impact on the management of CV Barokah Jaya in detailing the cost-volume-profit (CVP) analysis, which can be applied in company decision making. This is especially true in the context of managing variable costs and fixed costs. CVP analysis can also be an effective tool to increase company profitability. In addition, by utilizing break-even analysis, management can determine the number of product units that need to be sold to achieve the desired profit target.

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