



## Identifying Relevant Costs and A Contribution Margin Approach in The Chemical Companies

Sri Wahyuningsih<sup>1</sup>, Vanisia Putri Barus<sup>2</sup>, Iskandar Muda<sup>3</sup>

<sup>1,2,3</sup> Universitas Sumatera Utara, Medan, Indonesia

[sriwn.sri@gmail.com](mailto:sriwn.sri@gmail.com)

**Abstract.** Profit planning is one of the most important factors that must be considered by company management. With good planning, all possibilities and opportunities in the future are known and the best steps are planned as early as possible. Having good planning will also facilitate administrative tasks, because all the arrangements that will be made are included in it. So that management can formulate policies and decide on various profitable alternatives by increasing the company's current resources and potential. In analyzing the cost-volume-profit ratio, the highlight lies in the profit planning technique for a given financial period which bases its analysis on the variation in sales revenue and costs relative to operating volume, so that this technique can be used with good profit. short term Especially when looking for alternative solutions to problems related to costs, operating volume, selling prices and profits. This research is an empirical research conducted using primary data, namely data obtained from internal companies related to the problem under study. The reason for using primary data is because secondary data is difficult to obtain and less relevant to use. Whereas with primary data, the data obtained is more accurate and responses from respondents are faster. However, only 62.5% of all respondents classify costs based on cost behavior, ie. in terms of fixed and variable costs. Meanwhile, the remaining 12% of respondents classify expenses by type or object of expenditure, 25% by activity or part of the company. This means that  $37.5 \times 2.5\% + 25\%$  of respondents did not properly analyze production cost planning. Thus, 62.5% of those surveyed carried out the B-V-L analysis correctly to make a good production plan. When determining the selling price, 75% of those surveyed first analyze the cost. However, only 62.5% correctly analyze costs by classifying fixed and variable costs.

**Keywords:** Margin Approach, Chemical industry, formulate policies

### 1. Introduction

The development of the business world is increasing rapidly every year. This resulted in increasingly intense competition in the business world, especially between companies that issued similar products. To maintain the continuity of the company's life in the face of intense competition, good handling and management is needed. Handling and good management can only be done by good management anyway.

Profit planning is among the strategic initiatives formulated by the management. Profit planning encompasses the strategies and actions implemented by the company to attain the envisioned profit objective (Maulana et al., 2022). Because profit is the difference between income received (from sales) and costs incurred, profit planning is influenced by sales planning and cost planning. Cost-volume-profit analysis is an essential tool that facilitates effective profit planning by providing valuable insights and guidance.

Organizations in general can be defined as follows a group of people who come together to achieve a goal, so there may be different goals from one organization to another. Business, as an economic organization that emphasizes profitability, usually considers profit as its main goal. For a company, profit is an important criterion that must be achieved as a measure of business success.

In an era of increasingly advanced business development, an unstable economy and increasingly fierce competition, creating increasingly complex problems for the business world. It is not easy for companies to earn profits according to the expected target. The company must be able to run its business as quickly as possible. Therefore, business leaders need to run their business well in order to survive and continue to grow and develop in the future.

Profit planning is one of the most important factors that must be considered by company management (Afzalia et al., 2022). With good planning, all possibilities and opportunities in the future are known and the best steps are planned as early as possible. Having good planning will also facilitate administrative tasks, because all the arrangements that will be made are included in it. So that management can formulate policies and decide on various profitable alternatives by increasing the company's current resources and potential. A company's profit is the difference between sales revenue and all expenses in a given accounting period. Therefore, the estimated profit for a given fiscal period refers to the estimated income and expenses for that fiscal period.

Profit as a general goal of a company is influenced by three interrelated factors, namely product selling prices, sales volume and costs. Changes in one profit factor affect other profit factors and ultimately affect profits.

An analysis technique that can assist management in profit planning for various possible price changes. Sales volume and cost is a cost-volume-revenue analysis. Cost-volume-benefit analysis is often used when reviewing initiatives for the purpose of examining alternatives or making decisions.

In analyzing the cost-volume-profit ratio, the highlight lies in the profit planning technique for a given financial period which bases its analysis on the variation in sales revenue and costs relative to operating volume, so that this technique can be used with good profit. short term Especially when looking for alternative solutions to problems related to costs, operating volume, selling prices and profits.

As explained earlier, profit is the difference between sales minus expenses in a certain accounting period. And in order to achieve the expected profit, good profit planning is needed. So it is clear that the B-V-L analysis is very necessary as a management tool in preparing profit planning and the BEP approach is the most important part in the Cost-Volume-Profit analysis. The problem in this paper is whether management has used the BEP approach in B-V-L analysis as profit planning.

## **2. Literature Review**

### **2.1 Planning**

The management function consists of planning, designing, organizing, directing and directing. When design comes first, it shows how important design is to a company. These four activities are usually interrelated and planning is a very important first step for the next activity.

R.A. Supriyono Design explains as follows: Planning basically means the selection of feasible alternatives, taking into account the company's objectives and the company's financial resources and related constraints. For this purpose, management must know important information, especially about income and expenses.

The importance of this statement shows that there are activities carried out by management to achieve business goals and determine the components to be used. At the same time, says Heckert, "a plan is a predetermined course of action. The process of thinking ahead and deciding how to proceed after considering many possible options is the process of planning".

Based on the definition above, the design consists of three elements, namely:

1. The future must be included.
2. Action must be taken.
3. Must be a member

Evaluation of the organizational structure About legal responsibilities and circumstances that can be responsible for activities that occur in a particular company. The definition of planning above clearly shows that planning is a decision-making process. And because it is a decision-making process at the top of the chain, planning requires time, thought and commitment from management, and a systematic approach to planning.

The design process includes the following main activities:

1. Formulation of the problem, goal or task.

2. Data collection.
3. Evaluate various actions.
4. Decisions on Recommendations.

Russell L. Ackoff explains the difference between strategic and tactical planning in his book *A Concept of Corporate Planning*. Strategic planning is year-round plans related to subdivisions that emphasize long-term goals and objectives. Tactical planning, on the other hand, is understood as planning with a maximum time interval of one year, more detailed checks and means to achieve the goal. Tactical planning is the preparation of strategic planning.

## 2.2 Profit Planning

Performance planning is making an action plan to achieve business goals. Profit planning plays an important role in anticipating changes in the business environment both internally and externally which can affect the company's profit level.

The purpose of company performance planning is usually to achieve the expected results of the company, the results of which can be used as a measure of the success of the company's financial performance. The steps taken by managers to generate profits include increasing production and sales volume as much as possible, keeping production and operating costs as low as possible, as long as the selling price level and sales volume are fixed, or the unit selling price is in accordance with the market. . Increase competition to increase sales value.

The advantage of profit planning for companies lies in the discipline and detail of each company's activities to develop company budgets, which guide all levels of company management, help develop awareness of results and increase awareness of cost effectiveness so that companies. can identify and remove many of the obstacles that affect the preparation of the company's budget. Finally, as an organizational effort to increase collaboration between senior management and communicate goals to gain final plan support as a benchmark for evaluating management effectiveness.

The limitation of performance planning lies in the uncertainty of conditions and information that causes errors in budget forecasting. Efficiency planning is often focused on production and is not always in accordance with the general goals of the organization because of the possibility that the budget process does not receive support from top management and the behavior of supervisors who are not effective in using the budget. too many assessment tools.

The advantage of profit planning is planning the level of sales expected by the company using profit targets (profit target analysis), which is determined by knowing the conditions of sales profitability and can be the right decision choice. any changes in sales prices, costs and sales volume that affect the company's bottom line through sensitivity analysis.

## 2.3 Cost-Volume-Profit Analysis (Cost-Volume-Profit Analysis)

Cost-Volume-Benefit Analysis Maryanne M. Mowen et al. (2017) evaluates how changes in costs (both variable and fixed), sales volumes, and prices affect company profits. CVP is one of the most customizable and widely used accountant tools to support managers leaders to make better decisions. Companies use CVP analysis to deal with churn important key figures such as the breakeven point. One of the most important elements of a cost-volume-profit (CVP) analysis is the break-even analysis. Break-even analysis is an analytical technique used to find the minimum turnover so that the company does not experience losses but has not yet made a profit, namely H. the profit is zero. By performing a break-even analysis, management is told what the minimum level of sales must be to avoid losses. From this analysis it can also be seen to what extent the planned sales volume can be suppressed so that the company does not experience losses.

## 2.4 Cost

The definition of cost in general is all the sacrifices that need to be made for a production process, expressed in units of money according to the prevailing market prices, either those that have occurred or those that will occur. Some definitions according to experts are as follows: According

to Mursyidi (2008) costs are tangible and intangible sacrifices of economic resources that can be measured in units of money, which have occurred or will occur to achieve certain goals.

Costs are sacrifices or expenses made by a company or individual with the aim of obtaining more benefits from the activities carried out (Raharjaputra, 2009). Hansen and Mowen (2006) define cost as cash or cash value sacrificed to obtain goods or services that are expected to provide current and future benefits for the organization. Some of the main elements in the definition of costs include:

1. Cost represents the relinquishment of economic resources as a form of sacrifice.
2. Measured in units of money.
3. What has happened or will happen.
4. The sacrifice is for a specific purpose.

According to Mursyidi (2008) cost sharing can be linked to a production process in industrial companies, which has a direct or indirect relationship, namely related to product, product volume, manufacturing department, accounting period. According to Mulyadi (2008), cost classification or cost classification is a process of systematically grouping costs over all existing cost elements into certain more concise groups to be able to provide more concise and important information.

In cost accounting, costs are classified into several types. Generally, the classification of costs is determined on the basis of the objectives to be achieved with this classification, because in cost accounting, the concept of "different costs for different purposes" is known. Costs can be classified according to:

1. According to the object of expenditure

In this classification method, the name of the object of expenditure is the basis for cost classification. For example, the name of the object of expenditure is fuel, then everything related to fuel is called "fuel costs".

2. According to the main function in the company

Costs in relation to companies can be grouped into production costs and non-production costs, namely:

- a.) Production costs

Production costs are costs used in the production process consists of direct raw materials, direct labor, and factory overhead costs or costs that have a direct relationship with a product, where these costs are part of the company.

- 1.) Direct material costs

Direct material costs are raw materials that constitute an integral part of the finished product and can be traced directly to the finished product.

- 2.) Direct labor

Direct labor is labor that can directly convert raw materials into a product and the charging of costs can be traced to each type of product produced.

- 3.) Factory overhead costs

Factory overhead costs are costs incurred or charged in a production process other than raw materials and direct labor (Sitanggang et al., 2021). This cost is part of production costs that are invisible or cannot be traced directly to either the product itself or to production volume. Overhead costs can be grouped into elements:

- a) Indirect materials (auxiliary or auxiliary materials) Indirect materials are materials that are not the main element in a product, only as a complement or to expedite a production process, for example materials similar to fuel, and other materials for capacity maintenance.
- b) Indirect labor. Indirect labor is labor that does not have a direct effect on the formation of a product; for examples supervisors, workshop and maintenance personnel, and factory administrative personnel (Ali et al., 2022).

3. Costs in relation to costs with something that is financed. The factory section can be divided into two major parts, namely the production department and the service or service department.

The production department is a part of the factory that has a direct relationship with the product formation process. Costs incurred in this department can be directly charged to the cost of products produced in that department. While the service department is part of the factory that is providing services for the smooth production process that takes place in the production department.

### **3. Method**

This study uses a qualitative approach. Qualitative is an analytical method based on the philosophy of post-positivism, used to examine the condition of natural objects, where the researcher is the key instrument. The research object is a chemical company in the form of PT and located in the city of Surabaya. The reason the company under study must be in the form of a PT is because it is considered to have good and coordinated planning. This research is an empirical research conducted using primary data, namely data obtained from internal companies related to the problem under study. The reason for using primary data is because secondary data is difficult to obtain and less relevant to use. Whereas with primary data, the data obtained is more accurate and responses from respondents are faster. The primary data used is qualitative data. This is because quantitative data is not needed and cannot be used to achieve the expected research objectives.

If related to the problem, this research can be categorized as descriptive research. Because this research is not used to test certain hypotheses, but only describes what it is about a variable, symptom, or situation. The discussion is carried out using descriptive analysis. This analysis was carried out because the problems of this study could not be solved using statistical formulas. This is because the data used is qualitative data. The data that was successfully collected was grouped using tabulations. After being tabulated, tables are then made to analyze and interpret the data according to the data group.

## **4. Results and Discussion**

### **4.1 Result**

#### **a. Development of Basic Chemical Industry in Indonesia**

Indonesia has now entered the era of the chemical industry because most of the products of the chemical industry are basic products. What used to be imported can now be made domestically. Basic chemistry played an important role in the further development of the industry. This is because the basic chemical industry group processes raw materials into raw materials for other industrial groups. In addition, the basic chemical industry also strengthens the industrial structure, encourages the development of other industries, reduces imports of raw materials and enhances technical mastery capabilities. Efforts to increase the ability to use this technology are very important for expanding human resources, which will then be advanced at the next development stage. Technology management must be a pillar of support and economic growth at the next stage of development.

Currently, the development of the basic chemical industry is in line with national industrial development priorities, including strengthening the vertical, horizontal and diagonal linkages created by the basic chemical industry. The basic chemical industry covers a very broad industrial sector and plays an important role as one of the key industries.

#### **b. The Development of Basic Chemical Industry in the Municipality of Surabaya**

The operation of the industrial sector in the City of Surabaya is part of an economic activity that is very possible in accordance with the characteristics of the City of Surabaya as a City of Industry, Trade, Maritime and Indamardi Education. Meanwhile, the development of the basic chemical industry itself in the city of Surabaya during Pelita V showed quite encouraging results. The results can be observed using indicators of business unit growth, employment, total investment, production value and added value, as well as export growth.

**1. Growth of company units in the basic chemical industry sector.**

Industrial sector activities in the municipality of Surabaya are part of a very potential economic activity, in accordance with the characteristics of the city of Surabaya as a city of Indamardi Industry, trade, maritime and education. Meanwhile, the development of the basic chemical industry itself in the municipality of Surabaya during Pelita V showed quite encouraging results.

These results can be observed through indicators of business unit growth, employment, total investment, production value generated and added value and increased exports.

**2. The growth of the workforce in the basic chemical industry sector**

The number of business units in the basic chemical industry sector in the municipality of Surabaya is 447 units. Growth of business units in the light-sensitive chemical industry sector, and photographic paper. Tire Industry and Tire Retreading This is quite striking due to increased demand because other industries are developing so that the basic chemical industry which processes raw materials into raw materials for other industrial groups is also developing. The location of basic chemical factories in Surabaya mostly accommodated in one industrial area because the nature of the waste is quite dangerous for the surrounding environment.

**3. Investment growth in the basic chemical industry sector**

The total workforce absorbed in the industrial sector is 227,382 people. The absorption of labor in the basic chemical industry sector is not that large because of the hazardous nature of the products, which are made from active ingredients and in the form of formulas.

**4. Growth in production value of the basic chemical industry sector**

This shows that the industrial sector is also one of the helpers to reduce the number of unemployed in Surabaya. Not only was there an increase in production units and employment, in the industrial sector from 2007 to 2012 there was also an increase in investment value. Starting from 2007, which had an investment amount of 71,432,960,478, in 2012 the investment value increased to 73,471,806,636.

**5. Growth of added value in the basic chemical industry sector**

The industrial sector in Surabaya is experiencing rapid development. At least from 2007 to 2012 there has been an increase in the number of production units. Starting from 2007 with 5,763 units, in 2012 there were 7,721 industrial units. The industrial sub-sector, both the agro-chemical industry and forest products as well as the metal, electronics and various machinery industries, has experienced an increase in production units per year. Not only did production units increase, in the two industrial sub-sectors there was also an increase in labor absorption which always increased every year.

**6. The export development of the basic chemical industry sector**

The industrial sector still dominates East Java's non-oil and gas exports in January 2021, with a contribution of 83.16% of the total value of East Java's non-oil and gas exports. However, a significant decrease occurred in the East Java non-oil and gas sector, namely the Agriculture, Manufacturing and Mining sectors

Based on data from the Central Bureau of Statistics (BPS), several industries grew remarkably, reaching double digits, including the transportation equipment industry which grew by 17.82%, subsequently the primary metal industry recorded a growth rate of 11.50%, closely followed by the machinery and equipment industry at 11.43%. Furthermore, the chemical, pharmaceutical, and traditional medicine sectors sustained their favorable trajectory, exhibiting a growth rate of 9.61%. The Minister of Industry emphasized that the performance of the industrial sector in 2021 was the impact of the Ministry of Industry's efforts to take part in proposing various fiscal and non-fiscal incentives to arouse industry players' enthusiasm in the midst of

a pandemic. In addition, the simplification of regulations in all sectors continues to be encouraged, which aims to accelerate national economic growth.

## **4.2 Discussion**

This section discusses the results of data collection in research and testing of data that has been collected. Analysis and discussion were carried out in accordance with the questions asked as described in the research methodology. This discussion only applies to eight basic chemical companies in Surabaya who provided answers, while seven out of fifteen basic chemical companies in Surabaya refused to be interviewed as respondents.

62.5 percent of respondents use break down event analysis as a basis for operational planning to achieve certain benefits. With the help of this design analysis, all activities carried out by the company can be calculated and the possible conditions can be predicted. In addition to promoting participation and coordinating the activities of various segments of the entire administrative organization, so that final decisions and related plans can present the entire organization as a unified and comprehensive plan, so that the profits generated by the company are also taken into account.

62.5 percent of those surveyed use break event analysis as a basis for monitoring ongoing operational activities. In the form of a budget, the budget is compared with its implementation using the break-even analysis that forms the basis of the design. If deviations are found, their causes can be identified and corrected. Coordinate and unite all business efforts in trend budget planning.

62.5 percent of those surveyed use plain analysis when making decisions. Using break-even analysis, it is possible to detect changes that have occurred in the cost mix, sales volume, and selling prices, forcing management to incorporate the problems identified in the initial audit into the operating organization. thorough assessment before making a decision.

To facilitate and clarify understanding, the following is a summary/summary of all the supporting variables of this study. There are several separations/classifications of costs, with 62.55\* respondents classifying costs based on the behavior of variable costs and fixed costs. This shows that the defendant carried out profit planning using B-V-L analysis, because when using the B-V-L analysis method, the separation of costs must be based on the behavior of variable costs and fixed costs.

In addition, the results show that 25% of respondents classify costs based on industry/company function. Respondents who chose this answer in the analysis: "Costs are only in terms of the types of costs, what happens and which part is the responsibility of the company." Meanwhile, 12.5% of respondents classify costs by type/topic of costs. Expenditure Therefore, there are 37.5% of respondents who do not use B-V-L analysis as a yield planning tool.

Sales volume is very important when applying break-even analysis to B-V-L analysis, because you know to what extent the smallest break-even occurs and when the largest profits are made.

In order to achieve the maximum profit anticipated in profit planning, respondents really consider sales volume and sales price. It also shows that 75% of the respondents previously carried out a cost analysis when setting the selling price, which also means that the respondents combined the relationship between cost, volume and selling price to get the maximum profit. In determining the selling price, 50% of respondents use cost accounting, 62.5% market orientation and 62.5% profit analysis.

## **5. Conclusion**

After analyzing costs, all respondents made a breakdown of costs. However, only 62.5% of all respondents classify costs based on cost behavior, ie. in terms of fixed and variable costs. Meanwhile, the remaining 12% of respondents classify expenses by type or object of expenditure,

25% by activity or part of the company. This means that  $37.5 \times 2.5\% + 25\%$  of respondents did not properly analyze production cost planning.

Thus, 62.5% of those surveyed carried out the B-V-L analysis correctly to make a good production plan. When determining the selling price, 75% of those surveyed first analyze the cost. However, only 62.5% correctly analyze costs by classifying fixed and variable costs. The application of break events becomes clearer based on the definition used by companies: 62.5% of respondents use break event analysis. In addition, respondents also use information about the market and competitors so that the prices of the products they produce can compete in the market and benefit consumers. Break event analysis in B-V-L analysis is used as a tool for planning maximum benefits, namely as a basis for planning activities to achieve certain benefits, for controlling ongoing activities and as a basis for evaluating decisions. Although 37.5% other respondents do not use it because of the difficulty of implementing this analysis.

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