



Analysis of Break Even Point in Tough Factory Businesses in Batu Merah Village, Sirimahu District, Ambon City

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Abstract: *This tofu factory industry has existed since 2000 and in general, the people who set up the tofu factory were originally a meatball seller who had lived in Batu Merah village for a long time. From the beginning, the tofu factory industry was established until now, the industry is still operating and has never done production cost classification, break even point calculations, profit planning calculations, and margin of safety percentage ratios. The purpose of this study was to determine the break-even point that must be achieved in the tofu factory business of Mr. Haji Rahim in Batu Merah Village, Sirimahu District, Ambon City. The results showed that the total cost of production in March 2024 was Rp. 33,400,000 consisting of a total fixed cost of Rp. 27,700,000 and a total variable cost of Rp. 5,700,000. By showing that the total sales of tofu during March 2024 were Rp. 39,200,000. The number of tofu sold during March was 1,120 units with a unit price of Rp. 35,000 per unit.*

Keywords: *BEP, Tofu, Industry, Cost, Sales.*

1. INTRODUCTION

The agricultural sector is a strategic sector and plays an important role in the national economy and community survival. Apart from that, Indonesia is also an agricultural country where most of the population lives in rural areas with their livelihoods in the agricultural sector. Awareness of this role means that most people still maintain their agricultural activities, even though the country has become an industrial country.

Processed tofu in Indonesia varies, starting from white or yellow vegetable tofu, Bandung tofu, Sumedang tofu, Kediri tofu (taqwa tofu), Chinese tofu, and Japanese tofu. Tofu comes from Chinese with the name Tao-hu or teu-hu. The syllable tao or teu means soybeans while hu means crushed into mush, which means tofu is soybeans crushed into mush.

Break Even Point Analysis in tofu factories is an analysis technique that studies to determine the relationship between fixed costs, variable costs, profits and volume of tofu factory activities. Therefore, this analysis is called costs, profits and volume of activities (Riyanto, 2010).

The company will know its financial condition for the next period by looking at the BEP results generated from sales. Therefore, entrepreneurs need basic concepts in determining the break even point.

Break even point analysis in tofu factories is a form of preparation that is considered very important in tofu factories because it is usually used more often when the tofu factory company produces a tofu product, where in producing a tofu product it will definitely be related to the issue of costs incurred, then determining the selling price of the product, as well as the

number of goods or services that will be produced or will be offered to consumers (Kasmir, 2013).

The break even point solution for tofu factories is to make it easier to calculate fixed costs, variable costs and selling prices per unit of goods or services produced or to find out the balance between expenditure costs and tofu factory income.

This tofu factory industry has been around since 2000 and in general the people who set up the tofu factory were originally meatball sellers who had lived in Batu Merah village for a long time. The management method for this tofu factory industry still uses traditional and manual methods without using modern equipment, because here some of the tofu producers are home-based tofu producers with marketing methods that are still narrow.

Since the tofu factory industry was founded until now, the industry is still operating and has never classified production costs, calculated break-even points, calculated profit planning, and margin of safety percentage ratios.

Based on the background and problems described above, the author only limits the scope of writing to calculating the break-even point for Mr. Haji Rahim's tofu factory business in Batu Merah village, Sirimahu District, Ambon City in March 2024.

2. LITERATURE REVIEW

Understanding Costs

Cost is a sacrifice that must be made to carry out a production process which is expressed in units of money according to the prevailing market price, whether it has occurred or will occur. However, others also say that costs are a form of expenditure made by a party, be it an individual or a company, to gain more benefits from the action.

According to Darsono Prawironegoro (2013) costs are cash and cash equivalents sacrificed to sell or obtain goods or services that are expected to obtain benefits or profits in the future.

According to Carter (20019) costs are an exchange rate, expenses, sacrifices incurred to guarantee the company's benefits. Costs can only be defined as an exchange rate, expenses incurred to guarantee obtaining benefits, costs which can be defined as an economic sacrifice to achieve or obtain what is a good goal in the form of expenditure in the form of goods or services so as to obtain benefits as needed.

Cost Classification

In general, in management accounting there are two types of costs, namely variable costs and fixed costs. One of the most important elements in preparing a break-even analysis is the cost element. In the break-even point, costs are classified based on their nature as follows:

a. Fixed costs

According to total costs that do not change, even though there are changes in production or sales volume (within certain limits). According to Muliadi (2010), fixed costs are costs whose amount remains fixed within a certain volume range.

b. Variable Costs

Variable costs are costs that change in total according to the volume of production and sales. Variable costs, costs whose total changes are not proportional to the volume of activity. According to Kartadinata (2010) variable costs are the amount of costs that increase in direct proportion to production/sales. The higher the production level/sales level, the greater the variable costs that must be incurred. Variable costs contain elements of fixed costs.

Understanding and Basic Assumptions of Break Even Point (BEP) Analysis

a. Understanding Break Even Point

Break even point analysis is often used in analyzing company finances, where this technique tries to find and analyze aspects of the relationship between the amount of investment and the amount of rupiah volume required to achieve a certain level of profit.

Many experts argue about the meaning of break even point, where the meaning is different from one another but in principle has the same basic concept. According to Alwi (2010) states that "Break Even Point is a situation where in a company's operations, the company does not make a profit and does not suffer a loss (Income = Total costs).

Meanwhile, Mulyadi (2019) states that "Break-even analysis is a situation where a business does not make a profit and does not suffer a loss, in other words a business is said to break even if the total income (revenue) is equal to the total costs, or if the contribution profit can only be used to cover fixed costs only."

However, break even point analysis is not only used to find out the condition of a company that is breaking even, but break even analysis is able to provide information to company leaders at various levels of sales volume and its relationship with the possibility of making a profit according to the level of sales generated.

From this understanding, it can be concluded that the company reaches the break even point if in one work period it does not make a profit but also does not suffer a loss, where the profit is zero. So it can be said that the break even point is the relationship between sales volume, costs and the level of profit that will be obtained at a certain level of sales, so that Break Even Point analysis is often called cost, volume, profit analysis.

Apart from that, Break Even Point analysis is also useful for determining policies in companies, both companies that are already advanced and companies that are just starting to plan. The break even point or break even point can be interpreted as a situation where in its operations the company does not make a profit and does not suffer a loss (total income = Total costs). The importance of break even point analysis for company managers in making financial decisions is as follows, namely:

- 1) To determine the minimum quantity that must be produced so that the company does not experience losses.
- 2) Determining the number of sales that must be achieved to obtain a certain profit.
- 3) Determining how far the decline in sales can be tolerated so that the company does not suffer losses.

b. Purpose of Break Even Point Analysis

The use of break-even analysis for companies provides many benefits. In general, break-even analysis is used as a tool for making decisions in financial planning, sales and production. From the previous explanation, it is clear that there are several advantages for managers in making decisions if they know the break-even analysis. For example, with this information, managers are able to minimize losses, maximize profits, and predict expected profits. The use of break-even analysis has several objectives to be achieved, namely:

- 1) Design product specifications
- 2) Determine the unit selling price
- 3) Determine the minimum production or sales price to avoid losses
- 4) Maximizing production quantities
- 5) Planning the desired profit

c. Benefits of Break Even Point Analysis

According to Sutrisno (2010) break even point analysis can be used to help set company targets, uses for management include:

- 1) As a basis or basis for planning operational activities in an effort to achieve profits
- 2) As a basis or basis for controlling ongoing operational activities, it is a tool for matching realization with numbers in calculating break even points or in break even drawings.
- 3) As a consideration in determining the selling price, after knowing the results of the calculation according to the results of the break even analysis and the target profit.
- 4) As a basis for consideration in making decisions that must be made by a manager of a company.
- 5) Know the amount that must be maintained so that the company does not experience losses.

d. Break Even Point Formation

Considering that the break even point is a crucial point in business that must be calculated carefully, recognizing the factors that form it will guide you in finding it. What are these factors?

1) Fixed Costs

Also known as fixed costs, fixed costs have a constant value even though you will face various changes at the production stage. The factors that form BEP can be labor costs, building or warehouse rental costs, or machine maintenance costs.

2) Variable Costs

If fixed costs are constant, then variable costs have a value that tends to change according to intention. Changes can be caused by an increase or volume of production capacity, let alone break even points. Some examples of costs that are included in variable costs include raw material costs, electricity costs and so on.

3) Selling price

As one of the forming factors, the selling price is obtained from all the costs needed to carry out the production of goods to which the profit value (margin) that you want to achieve is added. You can calculate the selling price based on units of goods that have been completed in production.

4) Income

The final factor that will form BEP is income (revenue), income is calculated from the selling price multiplied by the number of products sold, the value is also needed as a projection of the next income with a different value or number of units and prices.

3. METHODS

Research Location

This research was conducted at Mr. Haji Rahim's tofu factory business in Batu Merah village, Sirimahu District, Ambon City

Data Type

- a. Qualitative data is data expressed in the form of information or sentences.
- b. Quantitative data is data expressed in the form of numbers or numbers.

Data source

- a. Primary data: data obtained directly from Mr. Haji Rahim's tofu factory business in Batu Merah village, Sirimahu District, Ambon City.
- b. Secondary data: data obtained from literature studies related to the problem discussed.

Method of collecting data

The methods the author uses in collecting this data are:

a. Literature Study

Literature study is a data collection technique by conducting literature studies of books, newspapers, magazines and scientific writings that are related to the problem being studied.

b. Interview

Interviews are a way of collecting informational materials which are carried out by asking questions and answers verbally, one-sidedly, face to face and with a predetermined goal in mind.

c. Observation

Observation is a way of collecting informational materials which is carried out by systematically observing and recording phenomena that are used as objects of observation.

Data Analysis Techniques

The analysis technique uses algebraic and graphic methods which are carried out using quantitative analysis based on the break-even point calculation formula and then analyzed using the words that have been collected.

Calculation of the break-even point using algebraic formulas can be done in two ways, namely:

On the basis of

$$\text{BEP (Q)} = \frac{(\text{fixed costs})}{(\text{unit selling price} - \text{unit variable costs})}$$

Information:

Q = number of goods produced and sold

FC = total fixed costs

P = selling price per unit

V = variable costs per unit

On the basis of sales in rupiah

$$\text{BEP} = \text{FC} / (1 - \text{vc/s})$$

Information:

FC = fixed costs

VC = variable costs

S = sales

4. RESULTS

General description of the Batu Merah Village tofu factory business

a. History of the Batu Merah Village tofu factory business

This tofu factory industry has been around since 2000 and in general the people who set up these tofu factories are Javanese people who have lived in Batu Merah for a long time. This tofu factory's industrial home processing method still uses traditional and manual methods without any assistance from modern equipment because here some of the tofu producers are home-based tofu producers with a marketing area that is still narrow, they market the tofu to the Mardika market, however there are also people who come directly to the industrial site itself.

b. Business location

The address of the tofu factory business is in Batu Merah Village, Sirimau District, Ambon City.

The duties and functions of each field include:

a. Owner

Owners are shareholders or full capital owners who have great authority in decision making and have full rights to control the industry.

b. Manager

The manager serves as the right hand of the owner in all matters and can also replace the owner if obstacles occur. This section is also responsible for all production processes.

c. Supervisor

Tasked with supervising the running of the production process so that the production process will run well, apart from that, maintaining raw materials in the building so that they are not lost and storing dregs from the production process which will later be resold.

d. Marketing

This section can be said to be an intermediary between producers and consumers where the marketing department is tasked with marketing the production results to markets and delivering finished tofu orders to consumers.

e. Soaking and washing section

Making tofu requires raw materials, namely soybeans. Before processing the soybeans to be processed into tofu, the soybeans need to be washed until they are clean and then soaked in water for several minutes to ensure that the raw materials used are clean, which is where this part is responsible for the quality of the soybeans which will later be put into production. raw material.

f. Grinding section The grinding section is tasked with grinding the soybeans until they are smooth using a grinding machine so that they can be processed or molded into tofu.6.

g. Boiling and filtering section

This section is responsible for boiling the ground soybeans until cooked and filtering them to separate the soybean juice from the dregs.

h. Cutting part

This part is part of the final stage of making tofu where the tofu that has been finished in the mold is cut according to the size of the tofu which has been placed into the tofu vat for sale to consumers.

Employment

The number of employees in this tofu business consists of several parts, namely 1 owner, 1 person in the management department, 4 people in the production department, 1 person in the supervisory department, 3 people in the marketing department, 2 people in the dampening and washing department, 2 people in the milling department, 3 people in the boiling and filtering and 2 people in the cutting section. So the number of employees in the tofu factory business in Batu Merah Village is 18 people.

For the final education of employees at the tofu factory business in Batu Merah Village, there are 9 junior high school graduates, while there are 9 high school graduates with working hours starting from 08:00 WIT (morning) – 17:00 WIT (afternoon)

Table 1.
Production costs for the March period 2024

Fee Type	Mark
Fixed costs	
Electricity costs	Rp. 700.000
Labor costs	Rp. 27.000.000
Total fixed costs	Rp. 27.700.000
Variable costs	
The cost of soybeans is	Rp. 4.200.000
Vinegar costs	Rp.200.000
Plastic costs	Rp. 100.000
Firewood costs	Rp. 1.200.000
Total variable costs	Rp. 5.700.000
Total production costs	Rp 33.400.000

Data source Tofu Factory

1) Researcher Data

The data collected from the tofu factory business in calculating the cost of production and selling price of tofu production is as follows:

a. Production data

In March the sources of production costs in the tofu factory business consisted of fixed costs and variable costs. The total production costs can be seen in the table below:

Table 1 shows that the total production costs in March 2024 are IDR 33,400,000 which consists of total fixed costs of IDR. 27,700,000 and total variable costs of IDR 5,700,000.

b. Sales data

Table 2.
Sales Per Unit For The Period March 2024

Period	Tofu product		
	Unit	Selling price per unit	Total sales
Week 1	280	Rp 35.000 / unit	Rp 9.800 .000
Week 2	280		Rp 9.800.000
Week 3	280		Rp 9.800.000
Week 4	280		Rp 9.800.000
Total			Rp 39.200.000

Data source: tofu factory

Table 2 shows that total sales of tofu during March 2024 amounted to Rp. 39,200,000. The number of tofu sold during March was 1,120 units with a unit price of Rp. 35,000 per unit

5. DISCUSSION

Analysis results

a. Calculation of Break Even Points (BEP)

Steps in calculating BEP are done in the following way:

Calculation of Break Even Points in sales units and rupiah

A recap of the data needed to calculate BEP is presented in the following table:

Table 3.
Data on units, prices, sales and factory costs for the period March 2022

No	Description	Mark
1	Production 1,120 units	
	Selling price per unit	Rp 35.000
	Total unit revenue x price	Rp. 39.200.000
2	Fixed costs	
	Electricity costs	Rp 700.000
	Labor costs	Rp 27.000.000
	Total fixed costs	Rp 27.700.000
3	Variable costs	
	The cost of soybeans is	Rp 4.200.000
	Vinegar costs	Rp 200.000
	Plastic costs	Rp 100.000
	Firewood costs	Rp 1.200.000
	Sub Total variable costs	Rp 5.700.000
	Total cost	Rp 33.400.000
	Net profit (loss): income – costs	Rp. 5.800.000

Data source: tofu factory

From the table data above, look for the BEP values in units and sales as follows:

b. Breakeven point (BEP)

BEP in units for tofu products during March 2024 is calculated as follows:

$$\text{BEP (unit)} = \frac{\text{Total fixed costs}}{\text{Selling price per unit} - \text{Total variable costs}}$$

$$\text{BEP (unit)} = \frac{\text{Rp 27.700.000}}{\text{Rp 35.000} - \text{Rp 5.700.000}}$$

$$1.120 \text{ Unit}$$

$$\text{BEP (unit)} = \frac{\text{Rp 27.700.000}}{\text{Rp 35.000} - \text{Rp 5.089}}$$

$$\text{BEP (unit)} = \frac{\text{Rp 27.700.000}}{\text{Rp 29.000}}$$

$$\text{BEP (unit)} = 955 \text{ unit}$$

Based on the calculation above, it can be seen that during March 2024, the break-even point for tofu products will be achieved

a total of 955 units. This means that if the Batu Merah Village tofu factory wants to make a profit from selling tofu, then in March 2024 it must sell more than 955 units of tofu products.

c. BEP break-even point in rupiah

$$\text{BEP (rupiah)} = \frac{\text{Rp 27.700.000}}{1 - \text{Rp 5.809}}$$

$$\text{Rp 35.000}$$

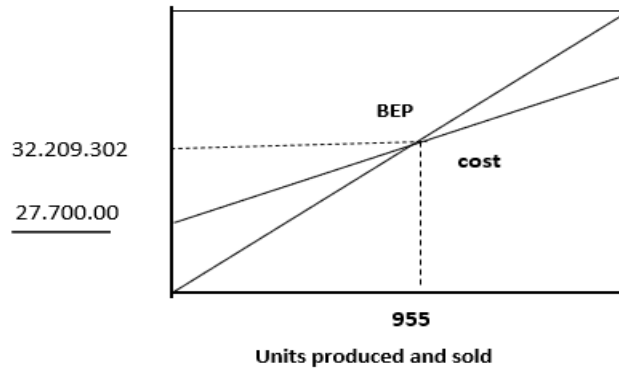
$$\text{BEP (rupiah)} = \frac{\text{Rp 27.700.000}}{1 - 0,14}$$

$$\text{BEP (rupiah)} = \frac{\text{Rp 27.700.000}}{\text{Rp 0,86}}$$

$$\text{BEP (rupiah)} = \text{Rp 32.209.302}$$

Based on the calculation results above, it can be seen that in March 2024 the Batu Merah Village tofu factory must produce sales of tofu products of more than IDR 32,209,302 if it wants to make a profit.

d. BEP graph



Based on the graph above, the break even point is at the points of 32,209,302/month while the line that circles upwards shows a production cost of 27,700,000 with tofu production output of 955 units/month

6. CONCLUSION

After conducting a focus group discussion or FGD with MSME actors in Larike village, it was discovered that there was still a lack of knowledge regarding the importance of understanding simple bookkeeping and the importance of carrying out or making bookkeeping in the businesses they run. The simple bookkeeping that they make is just records of purchases and sales that they make simply as well as the financial reports they only make in a simple way to the extent of what they understand to see the profit or loss they make in one production process without separating them into forms of reports such as balance sheets, profit/loss and capital change reports.

7. LIMITATION

Suggestions from the author for MSME players to understand and apply bookkeeping and financial reports by studying them through book sources or the internet and discussing with other business actors to be more informative in carrying out their business, remembering how important it is that financial reports are prepared well and correctly if you want to expand its business through funding institutions and also banks. Apart from that, the Larike regional government should carry out socialization regarding financial relations and financial reports by collaborating with related agencies to develop MSMEs in Larike village in an even better direction.

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