

The Cost-Based Pricing at Traphaco Joint Stock Company in Vietnam



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ABSTRACT: This study presents some basic theories on cost-based product pricing methods in manufacturing enterprises. The study also analyzed and clarified the current situation of cost-based product pricing accounting at Traphaco Joint Stock Company in Vietnam, thereby evaluating the achieved results and pointing out some limitations of the current situation of product pricing at this company. From there, provide solutions to improve product pricing accounting on the basis of cost at Traphaco Joint Stock Company.

KEYWORDS: cost-based pricing, product Traphaco.

1. INTRODUCTION

In a market economy, businesses are free to compete and grow. To ensure that each of their businesses exists and develops sustainably, managers must make optimal decisions for all their business activities. In particular, the decision on product selling price is one of the difficult decisions for managers of all types of businesses. This decision, if not appropriate, will affect profits, affect the volume of products consumed, and especially affect the reputation and brand of the business in the long term. In production and business enterprises, the ultimate goal is to maximize profits, so when making decisions on product selling prices, the principle is to cover costs and earn profits. Therefore, in order to set a selling price that is both suitable for the market and profitable, managers need to determine how much the limited cost of manufactured products is. Therefore, operating the management accounting system to provide cost information in product pricing is a core issue to maintain and develop the business.

Currently, pharmaceutical manufacturing enterprises in Vietnam almost exclusively focus on financial accounting to provide cost information for product pricing. This accounting system is unable to provide relevant, timely, and reliable cost information for product pricing decisions. The application of modern management accounting methods in product pricing in pharmaceutical enterprises is a key issue to help managers control costs and make more competitive pricing decisions in the global market. As a basis for businesses to both bring products to the market at a reasonable price and have an investment budget for research and development of new products, choose appropriate marketing measures, thereby generating more profits for the business. The authors find that the current situation of product pricing at TRAPHACO Joint Stock Company is still inadequate. Therefore, the authors identified a gap in their research and went to find out about the situation "*The cost-based pricing at Traphaco Joint Stock Company in Vietnam*".

1. Theoretical foundations of cost-based pricing in manufacturing enterprises

According to Bruegelmann et al. (1985), the cost information provided by cost management accountants for pricing decisions is called cost-based pricing. This method uses the cost of the product to form the basis from which a price can be established.

- **Variable costing pricing method**

Using variable costs in product pricing, the cost elements in the base cost are calculated as variable costs without taking into account fixed costs.

Garrison (1991) calculates the base cost including all variable costs including production and sales, and business administration. Since no element of the fixed cost is included in the base cost, the additional amount should be enough to cover the fixed costs as well as generate an expected profit.

In addition, base costs can also include only variable production costs, so all fixed costs and variable selling and administrative expenses are included in the plus so that the price can fully cover the entire costs and set generate profits.

Thus, according to the authors, it is possible to choose a base cost including production variation or including production

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variation and sales change, and business management.

Base costs are all variable costs

$$\text{Price} = \text{Variable costs} + \text{Extra rate} * \text{Variable costs}$$

Base cost is the variable cost of production

$$\text{Price} = \text{Variable cost of production} + \text{Extra rate} * \text{Variable cost of production}$$

(Source: compiled by the author's team)

- **Full cost basis pricing method**

Garrison (1991) emphasizes that, in full measure, the base cost is defined as the cost of producing one unit of output. Selling and administrative expenses are not included in the base costs, they are included in the surcharge. The bonus should then be large enough to cover these costs and generate a satisfactory profit margin.

According to Drury (2004), background costs can be all costs, including production costs, selling and administrative expenses. The bonus is then calculated only to provide an acceptable margin.

According to the authors, the full cost-based pricing method determines the base cost as the cost to produce a unit of product or the total cost of a product unit.

Base cost is the cost of production

$$\text{Price} = \text{Production cost} + \text{Extra rate} * \text{Production cost}$$

Base cost is the total cost

$$\text{Price} = \text{Total cost} + \text{Extra rate} * \text{Total cost}$$

(Source: compiled by the author's team)

- **Activity cost-based pricing method**

Cooper and Kaplan (1988) emphasize that most pricing and other decisions affect a firm's long-term performance and that these decisions should be made based on long-run price coverage, not short-term. In fact, much recent research in management accounting has focused on the design of cost accounting methods where product costs are more precisely determined. Many researchers have advised businesses to use activity-based costing (ABC) to provide product costing information for decision-making. Shim and Sudit (1995) explain the rationale for continuing to use full-cost pricing. According to them, implementing the ABC method has the potential to streamline the allocation of fixed costs and make them appear variable or semi-variable. In addition, the ABC method enhances the way fixed costs are determined for a particular product and leads to a better allocation of costs. They conclude that the ABC method provides a more accurate product cost estimate, which is the basis of pricing on a full cost basis. Implementation of the ABC method, which tends to provide information for the common use of prices on a full-cost basis in practice.

Drury (2004) states that the activity-based method measures all of the organization's resources required to produce the product and calculates the average long-run product cost. This method calculates long-term product costs more accurately than the full method. Therefore, it is recommended to use the costs from the ABC method for long-term price decisions and the variable method to determine the incremental costs for short-term price decisions.

As such, ABC streamlines the allocation of fixed costs providing more accurate product cost information for pricing decision-making. Using ABC overcomes the inherent limitations of full-cost pricing

- **Target cost pricing method**

Target costing is a technique used in the product design process to calculate manufacturing, engineering, or sales costs by deriving the desired profit margin from the estimated price. The product is then designed to meet that desired cost (Cadez, 2006). In other words, according to CIMA definition: Target costing is "estimated product cost derived from competitive market price".

Target costing = Estimated price - Desired profit

2. RESEARCH METHODS

This study focuses on analyzing the current situation of the product selling price at Traphaco Joint Stock Company, thereby proposing some solutions to apply modern product pricing method at Traphaco Joint Stock Company.

Primary data collection: Primary data is collected through interviews with accountants and managers from the research company.

Secondary data collection: Secondary data is collected, classified, and selected information related to the issue of product selling price at Traphaco Joint Stock Company. At the same time, based on the company's production cost accounting process and

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product costing methods to know the actual situation of the company as well as the outstanding problems, general and specific problems that need to be resolved at the company.

Information analysis method: After collecting and synthesizing answers from accountants and managers, the author uses methods including information synthesis, comparison, collation, analysis, data processing, data... information evaluation.

The authors conducted interviews and surveys of the Board of Directors and staff of the accounting department in the company in March 2023. A number of people were interviewed: 10 people, including the Deputy General Director, Deputy Production Director, Deputy Sales Director, Team Leader of the production workshop, and accountants of Traphaco Joint Stock Company.

4. Actual situation of applying product pricing accounting at Traphaco

4.1 Overview of Traphaco Joint Stock Company

Traphaco Joint Stock Company, formerly known as the Drug Production Team of the Railway Medical Company, was established on November 28, 1972. After many transformations, on January 1, 2000, Traphaco Pharmaceutical and Medical Equipment Joint Stock Company officially started operating in the form of a joint stock company with 45% state capital. On July 5, 2001, the Company changed its name to Traphaco Joint Stock Company. On November 26, 2008, the company was officially listed on the Ho Chi Minh City Stock Exchange.

After nearly 50 years of establishment and development, Traphaco has always persisted in pursuing the path of sustainable development, the "Path of Green Health". At the same time, maintaining the Traphaco brand as the most famous brand in the pharmaceutical industry in Vietnam with the best product quality and service. Currently, Traphaco is implementing the Sustainable Development Strategy, aiming to build the leading modern production technology in Vietnam and bring the world level by investing in the latest technological equipment to build a drug factory "smart". The Company's distribution system continues to be improved by using high technology and solutions to strengthen customer relationships. Currently, Traphaco has 26 branches and 4 subsidiaries representing all 63 provinces. The number of products trusted by customers increased. With the mission of creating green products to take care of people's health, Traphaco's vision to 2025 is to become the number 1 pharmaceutical enterprise in Vietnam in terms of revenue and profit growth, specifically, total revenue increases 13.3% compound growth, 15% compound profit before tax, increased technology transfer with Korean partner Daewoong with about 70 products, breakthrough development in sales of new products.

Table 1: Operational results of Traphaco Joint Stock Company

Unit: million VND

Content	Year 2021	Year 2022
1. Revenue from sales of goods and provision of services	2,167,898	2,408,435
2. The deduction from revenue	7,058	9,517
3. Net Revenue	2,160,840	2,398,918
4. Cost of goods sold	1,013,404	1,056,721
5. Gross profit	1,147,436	1,342,197
6. Selling expenses	554,762	661,729
7. Enterprise Cost Management	266,093	331,886

• Product characteristics and production process at Traphaco Joint Stock Company

Pharmaceutical products are special goods that directly affect the health and life of consumers. Therefore, each medicinal product from production to consumption must meet strict national and international standards. These are products with high use value, requiring meticulous attention to the prescribed formula. All drugs that enterprises want to produce must be registered and permitted by the Drug Administration of Vietnam and must also register the active ingredients used in the drug.

Up to now, the company has had a large number of products for the treatment of many human diseases. The products are meticulously researched by the company, with clean and safe natural origins. Based on folk experience and natural sources of

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raw materials such as string ..., the company has applied extraction and preparation technology to high-utility products such as boganic, etc. The company is constantly researching to come up with new products of high quality and voted by consumers.

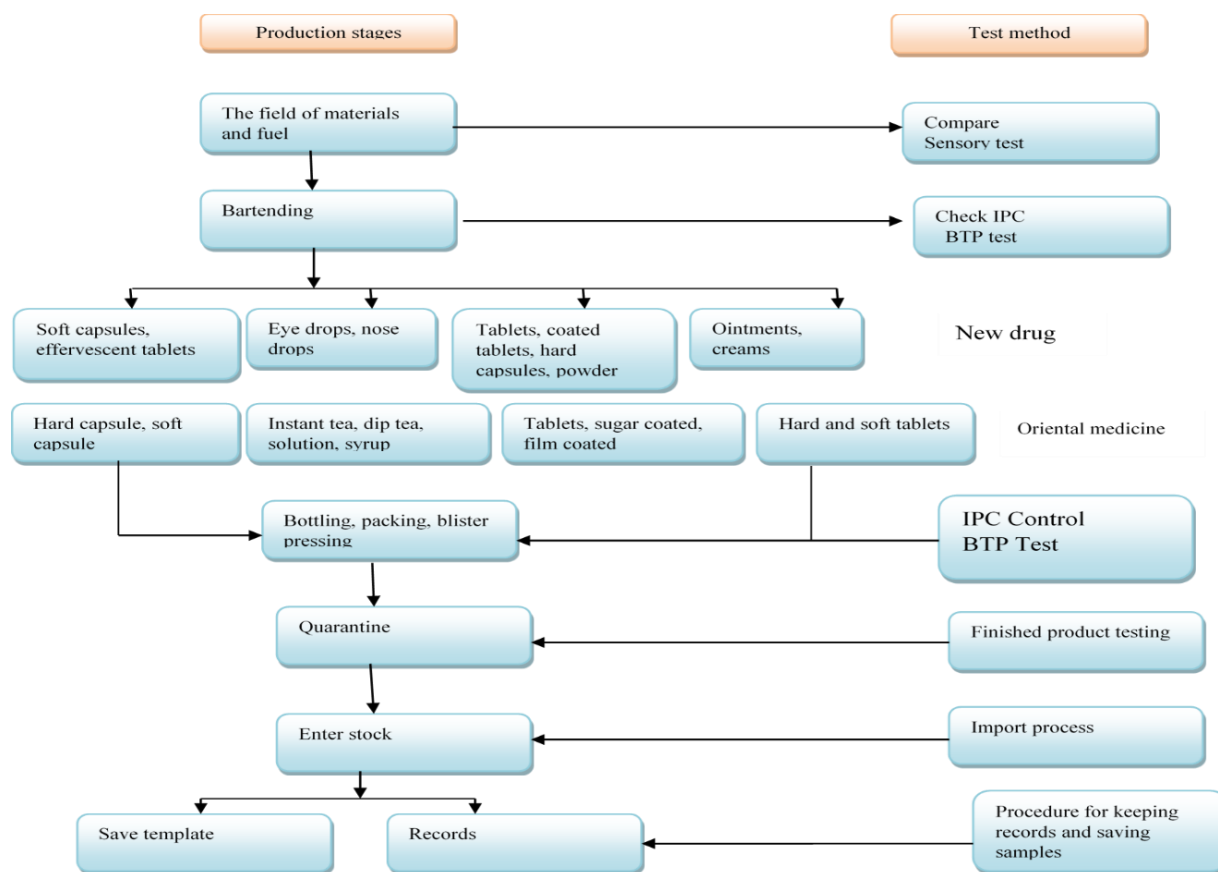


Figure 1. Production process

4.2 Actual situation of product pricing accounting at Traphaco Joint Stock Company

Currently, Traphaco Joint Stock Company performs accounting work according to Circular No. 200/2014/TT-BTC issued by the Ministry of Finance on December 22, 2014.

- **Product pricing department**

Traphaco Joint Stock Company is a large-scale enterprise with a charter capital of 414,537,730,000 VND. At the company, the product selling price is determined through the valuation committee, including the Management Board, the financial accounting department, and the sales department.

- **Product pricing goals**

Product selling price is an important decision of the management, a decisive factor for the success of the business. The pharmaceutical industry is highly competitive, so the company's top valuation goal is "the survival of the business". The next most concerned goals are "increasing sales", "maximizing profits", "developing new products" and finally "leading in quality".

- **Product pricing method**

Cost classification

Production costs at Traphaco Joint Stock Company are very diverse and rich, including many types with different contents and use. Manufacturing costs are classified according to the cost category in cost: direct materials costs, direct labor costs, and manufacturing overheads.

- Element of raw material and material cost: the waste of raw materials and materials in the process of production and business. Each different product will have different raw material requirements. The main raw materials are domestically grown medicinal herbs such as artichoke extract, purple morning glory powder, dried chrysanthemum, grass seeds, biogeo... and imported medicinal materials such as ginkgo Biloba ext, nifedipine, vinpocetine, group of vitamins...

- Auxiliary material elements: including excipients, packaging materials, and other materials. Depending on the type of product, the auxiliary materials will be different. Usually labels, cotton, grease, glue, bags, boxes...

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- Direct labor factor: is the cost of wages and salary deductions for direct workers in production workshops. At Traphaco, direct workers are workers involved in the production of products, from loading materials, grinding, and mixing... to the final stage of product packaging.
- Depreciation factor of fixed assets: the cost of depreciation of production equipment, factories, etc. The company has many production workshops, so the production equipment has many specific characteristics, values, and other depreciation times. Factory such as tablet factory, capsule factory, packing factory... Production lines such as soft capsule line, film coating line, automatic sugar coating, vacuum circulation extraction line...
- Element of the cost of services purchased from outside: is the cost of external purchases for the pharmaceutical production process (costs of electricity, water, etc.)
- Other cost elements in cash: are costs that have not been included in the above factors and are involved in the production process...

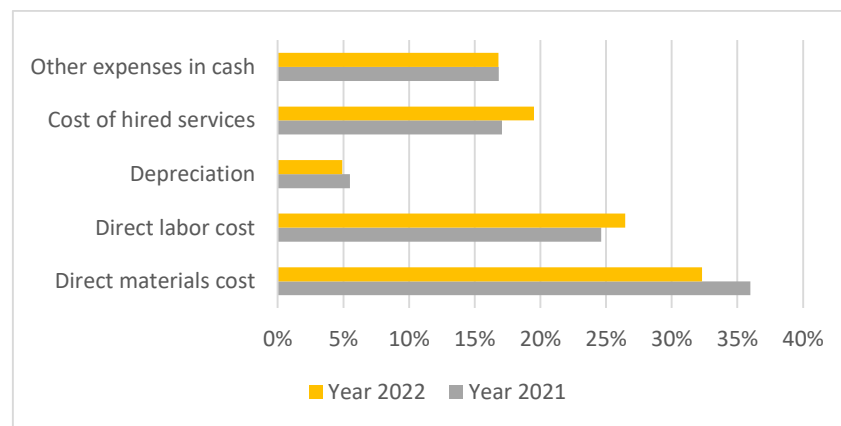


Figure 2. Cost structure

5. METHOD OF ALLOCATING PRODUCTION COSTS

General production costs incurred at the company include many types: depreciation of factories, machinery, and equipment; wages for workshop staff; costs for services purchased from outside and other expenses in cash.

Manufacturing overheads incurred in relation to a particular workshop will be aggregated for that workshop on the basis of cost factors incurred. Account 627 is opened in detail for each element and for each workshop. The object of accounting for general production costs is the production workshop, so for each drug, the general production cost is an indirect cost.

In order to serve the cost calculation, at the end of the month, the accountant will allocate the general production costs gathered in the workshop for each product in the period. The company chooses the general production cost allocation criterion, which is the cost of direct materials.

Pricing products on a cost basis

The company uses a cost-based pricing method with a base cost of all costs: direct materials, direct labor, manufacturing overhead, selling and business management. Enterprises use the extra money at full cost. Pricing is based on full cost plus a portion of the desired profit. This part of the desired profit is based on the estimated sales volume combined with the market price of the same product to estimate. Usually, the desired profit is 8-10% of the base cost.

At Traphaco, when there is a new product, the determination of the selling price is based on: customer demand when creating products, production costs to create new products, and competing companies already have products. new product or not, price of the new product compared to other competitors, new product to increase market share or to increase profit, estimated cost, new product strategy...

Traphaco Company researched and developed a new product Boganic Forte for the market. The company manager determines the selling price of the product through the full cost estimate.

According to the production estimate, the cost of the Boganic Forte product is 96,700 VND/kg (Table 2). For selling and administrative expenses, Traphaco Joint Stock Company made estimates. Selling and administrative expenses are estimated at VND 8,900,258,000 and VND 19,250,250,000. The estimated number of products produced by the whole company is 5,000,000 boxes of products.

The base cost for 1kg of Boganic Forte product = $96,700 + (8,900,258,000 + 19,250,250,000) / 5,000,000 = 102,330$ VND. The expected return on Boganic Forte product is 8% of the base cost. The initial selling price of the Boganic Forte product is $102,330 + 8\% \times 102,330 = 110,516$ VND/kg. This is the initial price and also the exercise price that Traphaco sells Boganic Fortera products to the market. Because

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each pharmaceutical product has its own formula, including the percentage of each type of material in a finished capsule, the estimated cost and the actual cost have almost no significant difference. If there is a difference, when determining the final selling price, the company will adjust the selling price according to this difference.

Table 2. Estimated production costs Product: Boganic Forte

COST STRUCTURE	Rate (%)	Amount (VND/box))
Raw materials, labor	75%	72,525
Pack	2%	1,934
Depreciation	10%	9,670
Other costs	13%	12,571
Total cost	100%	96,700
BACKGROUND COSTS		102,330
EXPECTED PROFIT LEVEL		8,186
ESTIMATE PRICE		110,516

At Traphaco Company, in June, the input factors changed, the price of Boganic Forte production materials increased by 5%. The CP Valuation Board re-determines the selling price in the period. The selling price of this product in the previous period was 110,516 VND/kg. The manager wants the same profit as the previous period and when the price increases, it does not affect the output of Boganic Forte. Therefore, the valuation board decided to increase the selling price enough to cover the increased costs. The new selling price is expected to be 114,142 VND/box (Table 3).

Table 3. Production cost in June Product: Boganic Forte

COST STRUCTURE	Rate (%)	Amount (VND/box))
Raw materials, labor	76%	76,151
Pack	1.9%	1,934
Depreciation	9.6%	9,670
Other costs	12.5%	12,571
Total cost	100%	100,326
BACKGROUND COSTS		105,956
EXPECTED PROFIT LEVEL		8,186
ESTIMATE PRICE		114,142

4.3 Limited and causes

About cost classification: At the company only classify production costs according to the content and function of costs (cost of direct materials, direct labor costs, manufacturing overheads). Without mentioning the allocation of production costs in relation to the level of activity (variable costs, fixed costs). Usually manufacturing overhead is a mixed cost that includes both variable and fixed costs, and tends to stay the same when volume changes slightly. Moreover, the characteristics of variable costs and fixed costs are completely different, so the management's assessment of these two types of costs is also different. Basically, the cost classification has not met the requirements of providing information for cost management.

General production cost allocation: based on direct material cost criteria. Selecting this criterion facilitates simple accounting work, but the obtained data do not reflect reality. For each pharmaceutical product itself, the cost of direct materials accounts for a very large proportion, but not products that use a lot of direct materials are products that use more modern machinery and equipment, the cost of which is purchased from outside sources and other expenses. The choice of allocation criteria unrelated to the cause of cost generation will lead to an incorrect assessment of the cost price of each product, affecting cost control and the business decision-making of managers.

4.4 Offer a solution

Complete cost classification

Variable and fixed cost information is used extensively in short-term and long-term pricing. Therefore, according to the author, in order to provide useful cost information for cost-based pricing decisions, it is necessary for Traphaco to classify costs into variable and fixed costs...

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Finalize general cost allocation

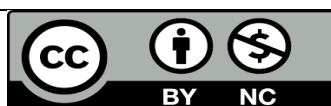
Long-term pricing typically uses full-cost pricing. This full cost includes production costs (cost of direct materials, direct labor costs, manufacturing overhead) and non-manufacturing costs (sales, general and administrative expenses). The problem is how to allocate the overall cost to be effective. To achieve the best effect, it is necessary to choose a reasonable allocation criterion. Normally, according to the traditional method, enterprises will allocate production overheads in two ways: choose a single allocation criterion for the whole enterprise, or each department or workshop will choose a distribution criterion private. These two ways are simple and easy to calculate, but the allocation results do not reflect the actual costs incurred by the accounting object. The reason is that the selection allocation criteria often do not have a causal relationship with the general cost categories, and the cost allocation does not take into account the complexity and variety of products. Pharmaceutical products, are highly standardized products, with little complexity, but with a wide range of products. General costs only account for a small proportion (<20%), but the level of industry competition is high. Therefore, the accurate calculation of product costs is a prerequisite for creating competitive advantages in the market. According to the author, the method of determining cost by activity will overcome the above disadvantages. However, applying the ABC method to businesses is not easy. The purpose of ABC is to provide information for managers to make decisions. This is a supplemental method, not an alternative. Enterprises will have to use both methods of providing information on the financial statements and providing information on the management reports. In fact, ABC is successfully used in both manufacturing and non-profit organizations. There are big companies like American Express and Tampa Electronics company. However, the application of the ABC system requires large resources. Once implemented, enterprises must use parallel two traditional costing systems and ABC. ABC data involves many activities, so it needs to be collected, checked, and recorded periodically. With a large amount of work and large costs, in the present time how to apply this method to bring efficiency is a big problem for administrators.

6. CONCLUSION

Cost information is considered to be of high importance in the decisions of the management of Traphaco. Cost information must be accurate in order to compete in the market, is a determining factor in product pricing, and is essential information in efforts to cut costs. In the decisions of managers, the decision on the selling price of the product is the decision that uses the most cost information, followed by the measurement of business performance and the evaluation of the profitability of the product. Although managers are aware of the importance of cost information, the use of the method of allocating overhead costs to products is not accurate, leading to the use of cost information for management efficiency is not high. The cost information being used is mainly collected from the financial accounting system, so the cost information for product selling pricing is complete cost information, almost no information is used for the variable costs. Using complete cost information with traditional cost allocation methods leads to inaccurate data when provided to managers as a basis for pricing.

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