

## The Use of Cost Information to Determine Prices at Feed Mills in Northern Vietnam



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**ABSTRACT:** Vietnam's animal feed market is a potential market, but competition pressure between domestic companies and competition with foreign companies is increasing. Product price is the factor that creates the competitiveness of each animal feed producer in the market. Applying cost information to product pricing in feed companies is a key issue in helping managers make the right decisions. The author collects information at 28 feed mills in Northern Vietnam to understand the use of cost information in pricing by Northern Vietnam feed producers. Through descriptive statistical analysis, the study shows that feed producers in the North of Vietnam are using cost information to determine the selling price of their products, but to varying degrees. And business managers are also aware of the importance of cost information in pricing decisions.

**KEYWORDS:** cost information, feed mills, prices.

### 1. INTRODUCTION

In 2022, continuously increasing feed prices and unstable output are the difficulties that enterprises in the livestock industry chain in Vietnam have to face. However, according to a report from Vietnam's Ministry of Agriculture and Rural Development, livestock production value in 2022 still record a growth of 5.93% compared to 2021. Up until now, Vietnam has reached the top 10 in the world in terms of animal and aqua feed production. The Department of Livestock Production also sets a target that, by 2023, the production value of the livestock industry will continue to increase from 4.5% to 5.0%. It shows that Vietnam's animal feed market is a potential market, but competition pressure between domestic companies and competition with foreign companies is increasing. Product selling price is a factor that determines the competitiveness of each animal feed company in the market.

Enterprise managers determine the selling price based on many different sources of information, but the role of cost information is always appreciated. For both large-scale enterprises or small and medium-sized enterprises, the selling price also needs to cover the costs to make a profit for the business. In other words, cost is the basic information managers need to determine the selling price of products. The classification of costs and the way to determine costs will be different depending on the purpose of using cost information by the administrator. Each business is different, and managers are using different cost information to determine the selling price of products. Applying cost information to product pricing in feed-processing enterprises is a key issue in helping managers make the right decisions. This study aims to investigate the use of cost information in pricing by feed producers in the North of Vietnam.

### 2. LITERATURE REVIEW

#### Costs from a management accounting perspective

For managers, costs are a top concern because they provide information for investors to make many decisions and directly affect profits. In particular, it must be mentioned that an important decision of the management is to determine the selling price of the product. The identification and classification of costs is the most important thing needed to be able to manage costs, thereby making the right decisions in the process of organizing and operating the business activities of the administrator. There are many ways to categorize expenses in a business. Each classification will provide cost information from different angles for managers. Cost information varies, and its accuracy varies depending on the intended use of the information. For example, external financial reporting requires that production costs be identified for products. Therefore, for inventory valuation purposes, this cost must be determined for products through an amortization method, even if the attribution basis has no causal relationship to the cost. Furthermore, for inventory valuation purposes, Kaplan & Atkinson (1998) argue that it may not be necessary to measure exact

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product costs because they are required to measure the cost of goods sold and determine the cost of goods sold. inventory value at the aggregate level. On the other hand, for decision-making purposes, non-manufacturing costs may be necessary to determine the product. For decision-making purposes, costing methods need to accurately determine the resource consumption of the product to avoid distorted product cost calculations. More detailed and accurate information on product costs facilitates effective management planning, control, and decision-making. As such, the purposes for which product cost information is used may affect how cost information is handled differently, as required, and to the degree of accuracy of product cost information.

According to Pham Thi Thuy (2007), cost management accounting is a part of management accounting to provide cost information to support the organization in performing the function of managing consumption resources for activities in order to plan, control, evaluate activities and make appropriate decisions. Sharing the same view, Nguyen Thi Mai Anh (2014) stated that cost management accounting is a part of management accounting that processes and provides cost information for managers to perform their functions. Cost management accounting is the collection of cost data and the processing of these data in a sequence to be able to provide cost information to develop cost plans and control costs through performance evaluation and management decision-making. Cost management accounting information is a planning tool, and cost data is the basis for strategic decision-making. These decisions include pricing policies, product structure, procuring machinery and equipment, and eliminating activities that do not create added value. According to Drury (2004), cost accounting provides information to determine the value of inventory and the cost of goods sold, for the purpose of preparing financial statements; both provide information for managers to plan, control, and evaluate business performance.

### Variable cost method

The variable cost method identifies only those production costs that vary with the output and are included in the cost of production. Usually includes direct material costs, direct labor costs, and variable manufacturing overhead. Fixed production overheads are included in period costs, so they will be recorded in each period to determine profit. According to Garrison et al. (2010), the variable costing method is sometimes referred to as the direct or marginal costing method. Drury (2004) disagrees with the use of such terms when referring to variable costs as direct or marginal costs. According to Drury direct costs do not reflect variable costs, direct costs can include fixed costs such as direct labor costs. Direct labor costs are variable or fixed costs depending on how direct labor costs are determined. When businesses calculate wages over time, direct labor costs are fixed costs, when calculating wages by product, direct labor costs are variable costs. The characteristic of the variable cost method is that it considers variable costs and ignores fixed costs. According to Garrison (1991), fixed costs are related to production capacity rather than the production of products during the period. These costs are for machinery and equipment, insurance, wages, etc. These are costs that are of an antecedent nature to production and therefore will arise regardless of whether the production activity takes place. For this reason, fixed costs should be charged for a period rather than for a product.

### Full cost method

The full cost method determines both variable and fixed manufacturing costs for a product. Depending on the costing method used, accountants determine variable costs or both variable and fixed costs to the value of the product. Determining variable costs for cost objects does not pose any problems because all costing methods can track variable costs for the specific product. In contrast, fixed costs are often common to many products, so it is difficult to calculate them separately for each product. Then, fixed costs must be determined for the products using cost allocation. The cost basis uses cause-and-effect as the cost determinant. A cost allocation basis that is not a determinant of cost is called discretionary allocation. Arbitrary cost allocation does not recognize the actual cause of costing and therefore does not charge objects (products) based on cause-and-effect relationships. According to Garrison (1991), it makes no difference whether the cost of production is variable or fixed. Fixed production costs, such as depreciation and wages, are as important as variable costs and therefore cannot be ignored for the product.

## 3. RESEARCH METHODS

Quantitative research to evaluate the level of costs used in decision-making on product selling prices at feed mills in Northern Vietnam.

The questions in the survey apply the 5-point Likert scale: 1- Strongly disagree; 2 - Disagree, 3 - Normal, 4 - Agree, 5- Strongly Agree. The survey will be sent to the respondents at the enterprises in the sample via the Internet from the Google Driver tool, by post or by telephone, or through face-to-face interviews. In each enterprise, the author sends a survey to 02 subjects, who are administrators and accountants.

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Table 1. Survey sample

Doanh nghiệp	Number of businesses sending surveys	Number of businesses responding to the survey	Number of survey votes sent	Number of survey votes received
<b>Big business</b>	<b>5</b>	<b>5</b>	<b>22</b>	<b>15</b>
Administrators			10	05
Accountant			12	10
<b>Small Business</b>	<b>26</b>	<b>23</b>	<b>76</b>	<b>54</b>
Administrators			26	23
Accountant			50	29
<b>Total</b>	<b>31</b>	<b>28</b>	<b>98</b>	<b>69</b>

The author analyzed the data on SPSS 22 software with the following tools: Frequency statistics, mean statistics, and One-Way ANOVA analysis

### 4. RESULTS

#### Method of allocating manufacturing overheads

The companies surveyed in this study are manufacturing companies, and the statistical results from the questionnaire show that companies incur low overhead costs, showing that 100% of companies have overheads of less than 10% of total costs. Direct material costs account for the highest proportion of total production costs (usually over 90%). In feed companies, direct materials include corn (36%), beans (19%), rice bran (6%), semolina (5%), broken rice (2%), micro-organisms substances such as macro minerals, additives, etc. According to statistics, in animal feed enterprises, the overhead cost ranges from 2% to 6% of total production costs and usually fluctuates at 3% (12 enterprises), and 4 % (9 enterprises).

Table 2. The proportion of manufacturing overheads

	Frequency	Valid Percent	Cumulative Percent
Valid			
2.00%	2	7.1	7.1
3.00%	12	42.9	50
4.00%	9	32.1	82.1
5.00%	4	14.3	96.4
6.00%	1	3.6	100.0
Total	28	100.0	
Total	28		

#### Criteria for allocating overheads

The basis for allocating production overheads is included in the accountant's questionnaire. According to the survey results, there are only two criteria used to allocate production overheads in feed processing enterprises: the number of products produced and direct material costs. Large-scale enterprises and small and medium-sized enterprises both prefer to allocate general costs according to the criterion of production output.

Table 3. Criteria for allocating overheads

	QM.1 Production capacity					
	1.00 <60,000tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Production/consumption output	29	3.4546	1.6754	10	3.65456	3.7347
Number of working hours	29	1.0000	.00000	10	1.0000	.00000
Revenue	29	1.0000	.00000	10	1.0000	.00000
Direct labor costs	29	1.0000	.00000	10	1.0000	.00000
Direct material costs	29	2.3453	1.435	10	1.65456	1.4656
Related activities	29	1.0000	.00000	10	1.0000	.00000

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### Use cost information for business goals

In part of this survey, the purpose of using cost information in enterprises is also mentioned. Survey subjects were asked about the purpose of using cost information on a 5-point Likert scale from never to always. The results show that in both small-scale enterprises and large-scale enterprises, deciding on the selling price is the most important content where cost information is used (mean = 4.1901 for small-scale enterprises, mean = 4.7237 for large-scale enterprises). The content that uses the least cost information is "Decide on product structure" (mean = 1.5634 for small-scale enterprises, mean = 2.4342 for large-scale enterprises).

**Table 4. Use cost information for business goals**

	QM.1 Production capacity					
	1.00 <60,000 tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Price	54	4.1901	.69377	15	4.7237	.53163
Product profitability	54	2.4507	1.11456	15	3.6053	1.13230
Measure business performance	54	3.9577	.94436	15	4.0789	1.01670
Decide on product structure	54	1.5634	.58908	15	2.4342	.69925

### The importance of cost information

Survey participants were asked to rate the importance of cost information used within the company. This question, on a Likert scale of 1 to 5, from strongly disagree to strongly agree, was used to indicate the extent to which cost data were used. The results indicate that for small-scale enterprises, the cost data must be accurate to compete in the market of greatest importance (mean = 4.2535). Next, cost data is an important factor in cost reduction (mean = 4.0493), and cost data is an important factor in determining selling price (mean = 3.9718). For large-scale enterprises, the importance of using cost information is different than for small-scale enterprises. These enterprises evaluate the importance of cost information, respectively, as being accurate to compete (mean = 4.1974), an important factor in deciding the selling price (mean = 4.0658), and information to cut costs (mean = 3.5789). Not all businesses consider cost information an important factor in decisions about product structure or production cessation.

**Table 5. The importance of cost information**

	QM.1 Production capacity					
	1.00 <60,000 tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
The cost of the product must be accurate to compete in the market	54	4.2535	.65706	15	4.1974	1.05855
Cost data is crucial in trying to cut costs	54	4.0493	.72765	15	3.5789	1.07410
Cost data is a very important factor when deciding the selling price	54	3.9718	.67313	15	4.0658	1.04990
Cost data is an important factor in product structuring or discontinuing decisions	54	1.8592	.78633	15	1.6053	.98087

### The cost-based pricing

Through the results, the answers provided information on cost-based pricing, and 100% of companies used cost-based pricing, but with different levels of use of cost information.

**Table 6. The cost-based pricing**

	QM.1 Production capacity					
	1.00 <60,000 tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Use cost-plus pricing (full)	54	4.7254	.49314	15	4.7237	.43163
Use the full cost of the production method	54	1.0000	.00000	15	1.0000	.00000
Use variable cost pricing	54	1.0000	.00000	15	1.0000	.00000

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	QM.1 Production capacity					
	1.00 <60,000 tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Use variable costing methods	54	1.0000	.00000	15	1.0000	.00000
Use market-based pricing	54	4.4296	.48828	15	1.2895	.13084
Use a different valuation method	54	1.0000	.00000	15	1.0000	.00000

For small-sized enterprises, using both cost-based and market-based valuation methods with the same level of use of the methods shown in the mean is 4.7254 and 4.4296. For large enterprises, using the cost-based pricing method is more noticeable (mean = 4.7237), while the market price method is less used (mean = 1.2895). All enterprises studied do not use other valuation methods.

### Special order pricing

At the companies surveyed, there are rarely special orders. The biggest reason leading to the generation of orders, especially, is that enterprises have difficulties in the consumption market (30.6%), followed by enterprises that are facing competitors (24.7%). Due to excess capacity, enterprises perform contracts with prices lower than normal prices in the market, which occurs in only one enterprise.

**Table 7. Special order pricing**

	Frequency	Valid Percent	Cumulative Percent
Enterprises have an excess operating capacity	1	1.2	1.2
Enterprises facing difficulties in the consumption market	8	30.6	31.8
Businesses are facing competitors	7	24.7	56.5
Businesses strive to find contracts	3	11.8	68.2
Enterprises do not generate special orders	9	31.8	100.0
Total	28	100.0	

Finally, the study evaluates in detail the frequency distribution of the valuation methods in special cases. For small-sized enterprises, still only use the full cost-based pricing method (mean = 4.1479) and the market price method (mean = 2.9155) to price products in special cases. For large-scale enterprises, special valuation cases rarely occur.

**Table 8. Special product pricing method**

	QM.1 Production capacity					
	1.00 <60,000 tons			2.00 >=60,000 tons		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Total cost	54	4.1479	.72393	15	1.2368	.81435
Full production cost	54	1.0000	.00000	15	1.0000	.00000
Variable costs	54	1.0000	.00000	15	1.1184	.58804
Variable production costs	54	1.0000	.00000	15	1.0000	.00000
Market price	54	2.9155	1.00702	15	1.1579	.61216
Other	54	1.0000	.00000	15	1.0000	.00000

## 5. CONCLUSION

Through the survey results, the author finds that cost information is highly important in the decisions of managers of feed processing companies in the North of Vietnam. According to them, cost information must be accurate 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, deciding on the selling price of a product is the one that uses cost information the most, followed by measuring business performance and evaluating product profitability.

Although managers are aware of the importance of cost information, the method of allocating overhead costs to products is not accurate, leading to the use of cost information for management. The cost information being used is mainly collected from

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the financial accounting system, so the cost information for product selling pricing is complete cost information; almost no information is used for variable costs. Using complete cost information with traditional cost allocation methods leads to inaccurate data when provided to managers as a basis for pricing.

From the research results, it is shown that all feed processing enterprises in the North of Vietnam use cost information in product pricing. However, the level of use is different depending on the size of the business. Large enterprises (capacity > 60,000 tons/year) only use cost information for pricing, small enterprises (capacity < 60,000 tons/year) use both cost information and market price. The level of use of cost information is different, so the application of cost management accounting methods in the pricing of products to outsiders is also different in enterprises. Small-sized enterprises use both cost information and market information in product pricing at the same time, so they pay little attention to investing in cost accounting systems. Meanwhile, large-scale enterprises, where product selling prices are based solely on cost information, are heavily invested in cost accounting systems.

Vietnam is still considered an agricultural country with abundant raw materials, but it still has to import over 3 billion USD annually, accounting for about 50% of raw materials from abroad, especially additives such as soybean meal, protein, etc. Many reports indicate that, in fact, over the years, Vietnam has had to spend billions of dollars to import animal feed and raw materials for production. Particularly in 2021, the import of animal feed and raw materials will reach about 3 billion USD, and the forecast given by the Ministry of Industry and Trade shows that in the next 2 years, the average growth rate of this item will still increase by 20% each year. Therefore, feed mills in the North of Vietnam need to create competitive advantages, especially price competition, to ensure survival in the market and increase profits. The cost of producing the product is a key factor in determining the appropriate selling price. In order for the price to cover the costs and still ensure competitiveness in the market, cost information is extremely important. Therefore, feed processing enterprises in the North of Vietnam need to perfect the cost management accounting method in product pricing in an efficient manner and with the goal of saving.

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