

Evaluating Financial Risk and Pricing Accuracy Using Full Costing: A Case Study on UMKM Tempe Mbak Novi in Purworejo

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Abstract

This study examines how pricing inaccuracies expose micro and small enterprises (MSMEs) to financial risk and evaluates the effectiveness of the full costing method in improving pricing decisions. Using a case study of UMKM Tempe Mbak Novi in Purworejo, Indonesia, the research analyzes how incomplete cost allocation (particularly the omission of direct labor and overhead) affects liquidity risk, profitability risk, and underpricing risk. Data were collected through interviews, observations, and documentation and analyzed using a descriptive quantitative approach. The results indicate that the firm's existing cost calculation understates total production costs by IDR 4,074,000, leading to underpricing of IDR 2,090 per unit and an estimated profit margin reduction of 24.1%. The findings demonstrate that implementing full costing improves cost accuracy, stabilizes profit margins, and reduces financial risk, highlighting its strategic role in enhancing MSME financial sustainability.

Keywords: Financial risk, pricing accuracy, full costing, MSMEs, risk management.

JEL Classification: G00, G32, G33, M41



Introduction

Micro, small, and medium enterprises (MSMEs) play a critical role in Indonesia's economic development, particularly in employment creation and income generation. Despite their strategic importance, many MSMEs continue to experience difficulties in determining accurate selling prices due to incomplete production cost calculations. Pricing inaccuracies commonly arise from the omission of key cost components, such as direct labor and manufacturing overhead, leading to understated Cost of Goods Sold (COGS), underpricing, and increased exposure to financial risk.

For MSMEs, inaccurate COGS calculation does not merely affect accounting records but has direct financial consequences. When direct labor, fixed overhead, or variable overhead are excluded from cost computation, selling prices may fall below actual production costs, resulting in margin compression, cash-flow instability, and heightened liquidity pressure. Prior studies (Dariana, 2020; Novietta et al., 2022; Badriah & Nurwanda, 2019) confirm that incomplete cost allocation distorts pricing decisions and undermines business sustainability. However, these studies largely focus on cost accuracy and pricing outcomes, without explicitly examining how such inaccuracies translate into measurable financial risk.

The full costing method provides a comprehensive framework for determining production costs by incorporating all direct and indirect cost components. From a financial economics perspective, accurate cost information is fundamental not only for price-setting but also for ensuring full cost recovery, stabilizing profit margins, and reducing cash-flow volatility. By contrast, simplified costing practices commonly adopted by MSMEs may conceal true production costs, thereby weakening capital efficiency and increasing vulnerability to financial distress.

UMKM Tempe Mbak Novi in Purworejo exemplifies these challenges. The enterprise relies on a simplified pricing approach that excludes several overhead components, resulting in undervalued COGS and potential underpricing. Such conditions place the business at risk of declining profitability and unstable liquidity, particularly given its reliance on continuous daily sales turnover. The application of the full costing method is therefore essential to improve pricing accuracy and strengthen financial resilience.

The novelty of this study lies in its integration of full costing analysis with a focused evaluation of financial risk at the MSME level—an area that remains underexplored in existing literature. Rather than treating cost accounting solely as a technical exercise, this

study examines how the completeness of cost computation affects pricing accuracy and financial vulnerability.

In this research, financial risk is conceptualized in a specific and measurable manner, encompassing three dominant forms of risk faced by MSMEs: (1) liquidity risk, reflected in unstable cash flow resulting from underpricing; (2) profitability risk, arising from margin compression due to incomplete cost recognition; and (3) underpricing risk, which occurs when the selling price fails to recover total production costs. Other forms of financial risk, such as market, credit, and interest rate risk, fall outside the scope of this study.

Accordingly, this study entitled “*Evaluating Financial Risk and Pricing Accuracy Using Full Costing: A Case Study on UMKM Tempe Mbak Novi in Purworejo*” aims to analyze how comprehensive cost computation through the full costing method influences selling-price accuracy, profit margin stability, and financial risk exposure. By linking full costing with liquidity, profitability, and underpricing risk, this research provides practical insights into how MSMEs can enhance financial sustainability and reduce the likelihood of financial distress.

Literature Review

The literature shows that cost accounting plays an essential role in supporting managerial decisions, especially in pricing and profit planning (Hansen & Mowen, 2019; Putra, 2021). However, existing studies tend to focus on the technical accuracy of COGS measurement without examining its financial consequences. Studies by Dariana (2020), Novietta et al. (2022), and Badriah & Nurwanda (2019) demonstrate the usefulness of the full costing method for improving cost accuracy but do not analyze how incomplete costing contributes to liquidity pressure, margin instability, and financial distress—risks that are particularly critical for MSMEs.

Thus, this research fills the gap by integrating cost calculation with financial-risk theory, arguing that cost accuracy is not only an accounting issue but also a determinant of financial resilience. This perspective extends the literature by connecting full costing to risk indicators such as liquidity risk, profitability risk, and underpricing risk, drawing on Risk Management Theory (Froot et al., 1993), Capital Efficiency Theory (Modigliani & Miller, 1958), and Financial Distress Theory (Altman, 1968).

Cost accounting functions as an information system that provides cost data for planning, control, and managerial decision-making (Putra, 2021). Dewi and Kristanto (2013) emphasize that cost accounting is no longer limited to manufacturing but is widely applied across service industries and MSMEs. Within the financial economics framework, cost accounting plays a strategic role because it affects pricing accuracy, profit margins, and liquidity risk. Misclassification or incomplete recognition of costs distorts financial reports and weakens firm value.

Concepts and Classification of Costs in Managerial and Financial Perspectives

Costs represent the economic sacrifice incurred to obtain present or future benefits (Hansen & Mowen, 2019; Firdaus et al., 2019). According to Mulyadi (2016), cost classification, including by cost object, function, relation to production, cost behavior, and period of benefit, forms the foundation for preparing a relevant cost structure. Financial literature such as Brigham and Ehrhardt (2022) shows that cost variability (especially variable costs sensitive to production volume) increases cash-flow volatility; therefore, accurate cost identification is essential not only for operational control but also for mitigating financial risk.

Cost of Goods Sold (COGS) and Its Role in Financial Performance

COGS represents the total production cost of goods completed during a specific period (Hansen & Mowen, 2019). Accurate COGS is crucial for measuring profitability, cost control, and pricing decisions. Novietta et al. (2022) found that COGS that excludes indirect production costs, such as overhead, leads to underpricing, weaker margins, and inaccuracies in profit reporting. For MSMEs, such miscalculations create financial instability due to limited working capital and high sensitivity to cash-flow disruptions.

Elements and Benefits of Proper Cost Identification

Production costs consist of direct materials, direct labor, and manufacturing overhead (Mulyadi, 2016). Accurate identification ensures transparency in cost structure and supports the determination of selling prices that maintain profitability (Ariyanti et al., 2018). Failure to account for certain cost elements results in understated COGS, increased *profitability shocks*, and heightened risk of *financial distress*, consistent with Altman's (1968) findings regarding early indicators of corporate distress.

Full Costing Method and Its Implications for Financial Decision-Making

Full costing allocates all production costs, both fixed and variable, to determine a complete and accurate production cost (Wiratna, 2019; Mulyadi, 2016). The method supports long-term decision-making because it reflects the true economic cost. The relevance of full costing aligns with several financial theories:

Risk Management Theory (Froot et al., 1993): accurate cost information stabilizes cash flows and reduces liquidity risk.

Capital Efficiency Theory (Modigliani & Miller, 1958): complete cost information enhances the efficiency of working-capital allocation.

Financial Distress Theory (Altman, 1968): mispriced products and underestimated costs increase the probability of business failure.

Empirical studies (Badriah & Nurwanda, 2019; Dariana, 2020) confirm that MSMEs applying full costing achieve more accurate pricing and more stable profitability.

Risk Management Theory (Froot, Scharfstein & Stein, 1993)

Risk Management Theory explains that firms must coordinate investment, financing, and operational decisions to minimize cash-flow volatility. According to Froot et al. (1993), fluctuations in cash flow are a primary source of financial risk because they disrupt a firm's ability to meet short-term obligations, maintain working capital, and ensure operational continuity. The theory highlights that uncertainty in production costs—including unrecorded or improperly allocated expenses—can increase liquidity risk and reduce financial flexibility.

In cost-accounting applications, accurate COGS measurement plays a central role in stabilizing cash inflows and outflows. When costs are fully captured through the full costing method, firms can set prices that reflect economic reality, preserve profit margins, and avoid cash deficits. Conversely, ignoring indirect labor, depreciation, or overhead costs causes underestimation of total cost, creating unstable cash flows and raising liquidity vulnerability.

For micro and small enterprises (MSMEs), which typically operate with limited working capital, cash-flow stability is critical. Thus, Risk Management Theory provides a theoretical basis showing that full costing is not merely an accounting tool but also a mechanism for mitigating financial risk by reducing volatility and enhancing liquidity resilience.

Capital Efficiency Theory (Modigliani & Miller, 1958)

Capital Efficiency Theory posits that firms achieve optimal performance when capital allocation, cost determination, and financial decisions are based on accurate and complete information. Modigliani and Miller (1958) argue that investment and operational decisions require precise cost data to ensure that capital resources are used efficiently.

Within cost management, COGS accuracy affects how a firm allocates working capital to production, inventory procurement, labor payments, and overhead management. Full costing provides a comprehensive view of the total cost structure, enabling firms to evaluate whether resources are deployed efficiently relative to output and profitability.

If an MSME miscalculates its production cost, capital allocation becomes distorted. For example, an excessively low selling price, resulting from understated COGS, reduces cash inflows and limits the availability of working capital for subsequent production cycles. Accordingly, Capital Efficiency Theory explains that accurate cost calculation supports better decision-making, enhances productivity, and strengthens long-term operational capacity.

Financial Distress Theory (Altman, 1968)

Financial Distress Theory focuses on identifying conditions that lead firms toward financial difficulty or potential bankruptcy. Through the Z-score model, Altman (1968) shows that declining profitability, insufficient working capital, and repeated losses are key indicators of distress. Inaccurate cost estimation contributes to these conditions because it creates misleading financial statements and undermines managerial decisions.

Errors in cost determination, especially when overhead, indirect labor, or depreciation are excluded, cause products to be priced below their actual economic cost. This leads to shrinking profit margins, limited operational cash, and a higher probability of cumulative financial losses. Over time, such practices increase the likelihood of insolvency or business failure.

For MSMEs like Tempe Mbak Novi, financial distress can emerge more quickly than in larger firms due to limited capital buffers, small cash reserves, and daily dependency on sales revenue. Therefore, this theory highlights that full costing functions as a preventive measure by ensuring that selling prices fully cover production costs and help maintain financial viability.

Table 1 Prior Empirical Studies and Research Gap

Researcher	Key Findings	Limitations / Gaps
Dariana (2020)	Full costing improves COGS accuracy for woven textile products	Does not incorporate financial-risk analysis
Novietta et al. (2022)	COGS affects price optimization in MSMEs	Focuses only on pricing, not margins or risk
Badriah & Nurwanda (2019)	Full costing is essential for housing construction projects	Object differs from traditional MSMEs
Mariani (2014)	Full costing improves COGS precision	Does not analyze cash-flow implications

Theoretical Framework

Based on the theoretical foundation discussed earlier, this study develops a framework that explains the financial consequences of applying the full costing method in MSMEs. Risk Management Theory (Froot et al., 1993) suggests that firms must maintain stable cash flows by ensuring that operational decisions, including pricing, are supported by accurate cost information. In the context of MSMEs, the application of full costing provides a comprehensive allocation of all production costs, including direct materials, direct labor, and both fixed and variable factory overhead. When these costs are fully recognized, the resulting COGS reflects the true economic cost of producing each unit. This complete cost representation enables firms to determine prices with greater precision, reducing the likelihood of underpricing and minimizing unnecessary cash-flow fluctuations.

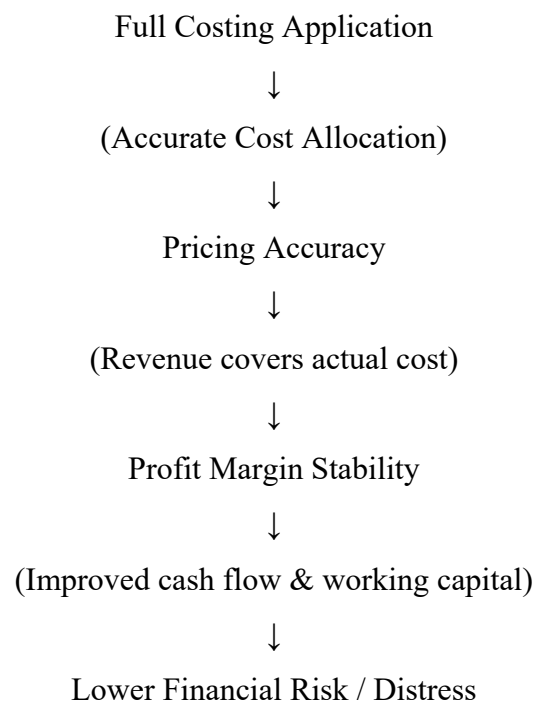
Pricing accuracy plays a crucial intermediary role in linking cost determination to financial performance. Drawing from Capital Efficiency Theory (Modigliani & Miller, 1958), the ability of a firm to allocate working capital efficiently depends on the reliability of its cost and revenue computation. A price that accurately corresponds to the full cost of production ensures that revenue streams are sufficient to cover operational expenses, maintain inventory cycles, and support future production activities. Thus, when firms price their products based on full costing, profit margins become more stable because they are no longer eroded by unaccounted costs. Stable margins not only improve short-term profitability but also strengthen internal financing capacity, allowing MSMEs to operate efficiently without relying excessively on external capital.

The stability of profit margins subsequently shapes the firm's financial risk profile. Financial Distress Theory (Altman, 1968) posits that declining profitability, insufficient working capital, and recurring losses are early indicators of financial distress. When prices fail to incorporate all production costs, profit margins shrink, cash reserves weaken, and liquidity pressure intensifies, conditions that elevate the likelihood of distress. Conversely, when pricing is accurate and profit margins remain consistent, cash flows become more predictable and the firm is better positioned to withstand operational shocks, such as rising input prices or fluctuations in sales volume. Therefore, margin stability derived from full costing contributes to lowering financial risk and enhancing long-term financial resilience.

Integrating these theoretical perspectives, the framework of this research proposes a logical causal chain: the application of full costing leads to higher pricing accuracy, which in

turn improves profit margin stability. Stable margins reduce volatility in cash flow and strengthen the firm's financial position, ultimately lowering the exposure to financial risk and the probability of financial distress. Through this mechanism, full costing functions not only as an accounting approach but also as a strategic financial management tool that supports sustainable business performance in MSMEs.

Conceptual Framework



The framework of this study illustrates the sequential relationship between the application of the full costing method and the financial condition of MSMEs. The process begins with the implementation of full costing, which ensures that all production costs—direct materials, direct labor, and manufacturing overhead—are allocated comprehensively. This step leads to accurate cost allocation, meaning that the calculation of the Cost of Goods Sold (COGS) fully reflects the economic resources consumed during production.

Accurate cost allocation subsequently enhances pricing accuracy. When selling prices are determined using complete cost information, firms avoid underpricing and ensure that the price charged to customers corresponds to the actual cost incurred. As a result, revenue becomes capable of fully covering the real production cost, preventing profit erosion and strengthening the financial basis of the business.

With revenue aligned to actual costs, the firm experiences profit margin stability. Stable margins reduce fluctuations in earnings and create predictable financial outcomes. This stability then supports improvement in cash flow and working capital, as profit generated from

each production cycle contributes to liquidity, reduces dependence on external financing, and ensures the availability of funds for operational needs.

Ultimately, the improvement in cash flow and working capital leads to lower financial risk and reduced likelihood of financial distress. Firms are better equipped to absorb cost increases, market shocks, and production uncertainties. In this way, the application of full costing functions not only as a cost calculation method but also as a mechanism that enhances financial resilience and minimizes the probability of distress in MSMEs.

Research Methods

In this research, the author utilized a descriptive research approach with quantitative data analysis. The quantitative analysis to be carried out in this research is the calculation of COGS using the full costing method, because this study is presented in the form of numbers.

According to Moleong (2007), data sources in research refer to the subjects or origins from which data are obtained. In this study, data sources are classified into two categories: primary and secondary data. Primary data, as defined by Slat (2013), consist of data collected directly by the researcher from the main source. In this research, primary data were obtained through direct observation and in-depth interviews with the owner and managers of UMKM Tempe Mbak Novi, providing firsthand information on operational processes, cost structures, and management practices. The use of both primary and secondary data enables a more comprehensive analysis of the research problem by integrating firsthand empirical evidence with relevant theoretical and supporting documentation.

To align the method with the theoretical framework, this study operationalizes financial risk into three measurable indicators:

Liquidity Risk

Defined as the cash-flow shortfall caused by underpricing. It is measured by comparing total revenue under the company's selling price with total revenue required to cover full-costing COGS.

Profitability Risk

Represented by margin compression, measured as the percentage difference between expected profit margin (based on company pricing) and actual margin after full costing.

Underpricing Risk

Calculated as the difference between the company's selling price per unit and the full-costing-based selling price per unit.

These operational definitions ensure that theoretical constructs are directly linked to the quantitative analysis conducted in the results section.

The object of this research is the *Mbak Novi's Tempe* MSME located in Grantung Village, Bayan District, Purworejo Regency. The study was conducted on August 23, 2024, by collecting production data for a one-month period. The calculation of the Cost of Goods Sold (COGS) in this research employs the full costing method. In this study, the researcher conducted a direct visit to the company to gather the required data and information from individuals related to the research topic. The methods used in data collection include interviews and observations.

In addition to interviews and observations, this study also employed the documentation method to support the accuracy of the data collected. The documentation process involved compiling a detailed list of all production-related costs, including direct raw material costs, direct labor costs, and factory overhead costs. Through this method, each cost component was systematically recorded and verified based on actual production records and financial documents from *Tempe Mbak Novi's* MSME. The collected data then served as the basis for calculating the Cost of Goods Sold (COGS) using the full costing method, which allocates both direct and indirect costs to the production process. This approach enables a comprehensive and transparent cost analysis, ensuring that all expenses incurred in *tempe* production are accurately reflected in the final calculation of the product's cost structure.

To validate the accuracy of the full costing method, a comparative analysis was conducted between the company's cost calculation approach and the theoretical full costing computation. The analysis followed the formula:

$$\text{COGS} = \text{Direct Material} + \text{Direct Labor} + \text{Factory Overhead (Fixed + Variable)}$$

The percentage deviation between the company's COGS and the full costing result was calculated to determine the extent of underpricing and its impact on profit margins. This

quantitative comparison allowed the researcher to evaluate how incomplete cost recognition influences financial outcomes. Furthermore, to ensure data reliability and minimize bias, triangulation was applied by cross-verifying information obtained through interviews, field observations, and documentation records.



Figure 1 Visiting the Tempe Factory

The analysis procedure includes the following steps:

1. Calculating COGS using the company's existing method.
2. Calculating COGS using the full costing method, which includes direct materials, direct labor, fixed overhead, and variable overhead.
3. Computing the deviation percentage between both COGS values.
4. Measuring underpricing per unit and total monthly financial impact.
5. Conducting selling-price simulations at +10%, +20%, +30%, and +40% to evaluate pricing adequacy relative to full-costing COGS.

6. Assessing liquidity risk, profitability risk, and underpricing risk using the operational definitions described earlier.
7. Interpreting results using financial theories (Risk Management Theory, Capital Efficiency Theory, and Financial Distress Theory).

This structured analysis ensures coherence between theory, method, and empirical results.

Results and Discussions

COGS calculations using the company method and the full costing method show different results. Calculated using the full costing method, the Cost of Goods Sold (COGS) tends to be higher than the company's calculation. This is because the full costing method includes all production cost components in detail, such as raw materials, direct labor, and factory overhead, both fixed and variable. In contrast, the company's method produces a smaller COGS since it excludes factory overhead and direct labor costs. Consequently, the production cost calculated using the company's method is lower than that derived from the full costing method.

After describing and analyzing the data, it was discovered that the company had not calculated all the cost elements that should have been considered. Production costs for *Tempe Mbak Novi's* MSME consist of raw material costs, direct labor costs, and factory overhead costs.

Table 1 Costs - Raw Material Costs for Mbak Novi's UMKM Tempeh in August 2024

Tempeh Raw Materials	Price
Soybeans	IDR 12.780.000
Yeast	IDR 60.000
Plastic Bags	IDR 180.000
Amount	IDR 13.020.000

Source: UMKM Tempe Mbak Novi

Costs that have not been taken into account are:

1. Direct labor costs, namely packaging labor costs.
2. Factory overhead costs are variable and fixed overhead.

Calculation of Raw Material Costs

The costs of raw materials used by the company are:

1. 900kg of soybeans for one month multiplied by the price of 1kg of soybeans of IDR14,200 ($900 \times 14,200 = \text{IDR}12,780,000$)
2. Tempeh yeast in one month requires 5 packs of yeast weighing 350 grams, the price for one yeast is IDR 12,000 ($\text{IDR } 12,000 \times 5 = \text{IDR } 60,000$)
3. 20 packs of $\frac{1}{2}$ plastic bags. The price for one pack of plastic bags is IDR 9,000 ($9,000 \times 20 = \text{IDR } 180,000$)

Cost raw (CR) according to the company is IDR 13,020,000 Ms. Novi produces 2,000 tempeh for 1 month and the selling price calculated by the company is IDR. 6,510.

Direct Labor Costs

In the process of making tempeh, there are two workers involved, both of whom are tasked with packaging the tempeh. Calculation of direct labor costs is carried out by multiplying the number of wages received per day by the wages set for 1 month.

Cost Calculation *Overhead Variable Factory*

UMKM Tempe Ms. Novi divides factory overhead costs into 2 categories, namely fixed factory overhead costs and variable factory overhead costs. Variable factory overhead costs include electricity, water and telephone costs. while fixed overhead costs include firewood, kerosene, boiling boilers and marketing baskets.

1. Calculation of COGS according to theory

The full costing method is an approach that includes all production cost components in the calculation of the cost of production, which includes raw material costs, direct labor costs and factory overhead costs, both fixed and variable.

1. Raw Material Costs	IDR 13,020,000
2. Direct Labor Costs	IDR 3,000,000
3. Fixed Factory Overhead Costs	IDR 410,000
4. Variable Overhead Costs	<u>IDR 664,000+</u>
Total Cost of Production	IDR 17,094,000

The number of tempeh produced in 1 month reaches 2,000 pieces with the selling price according to the full costing method being IDR. 8,547 which is rounded up to IDR. 8,600. The difference in selling price between the full costing method and the company method is IDR. 2090. COGS according to the full costing method was recorded at IDR. 17,094,000 while according to the **COGS** company method it is IDR. 13,020,000. The description can be seen in the table 2 below.

Table 2 Calculation of the Cost of Goods Production using the Company Method of Raw Material Costs for 1 Month

One Month's			
Information	Needs	Unit price	Amount (IDR)
Soybeans	900 kg	IDR 14.200	IDR 12.780.000
Yeast 500 grams	5 bks	IDR 12.000	IDR 60.000
Plastic 1/2 kg	20 pac	IDR 9.000	IDR 180.000
Amount			IDR 13.020.000
Total Tempeh			
Production			IDR 2.000
Total Cost Per Tempeh			IDR 6.510

Based on the table above, the COGS calculation according to the company shows an amount of IDR 13,020,000. This result was obtained by adding up all the raw material costs for tempeh, the amount of production for 1 month, and the selling price per tempeh seed according to the company. The description can be seen in the table 3 below

Table 3 Direct Labor Costs				
Salary per				
Information	Labor	Day	Monthly Salary	Amount
Packaging	2	IDR 50.000	IDR 1.500.000	IDR 3.000.000
Total Direct Labor Costs				IDR 3.000.000

Calculation of direct labor costs shows that the total salary received is IDR. 1,500,000. This figure is obtained by multiplying the daily salary of IDR50,000 by the number of working days in one month ($\text{IDR}50,000 \times 30 = \text{IDR}1,500,000$), then multiplying the result by the number of employees. The description can be seen in the table 4 below

Table 4 Variable Overhead Cost

Information	Total Cost
Electricity cost	IDR 400.000
Telephone Charges	IDR 64.000
Water Costs	IDR 200.0000
Total Factory Overhead Costs	IDR 664.000

Cost calculation *overhead* factory costs, for example electricity costs, telephone costs, and water costs. The results are found by adding up all the costs *overhead* factory.

Table 5 Fixed *Overhead* Cost

Information	Quantity	Price	Amount
Firewood	5 pikul	IDR 10.000	IDR 50.000
kerosene	4 liter	IDR 15.000	IDR 60.000
boiling pot	2	IDR 100.000	IDR 200.000
marketing basket	1	IDR 100.000	IDR 100.000
total fixed overhead costs			IDR 410.000

Cost calculation *overhead* fixed factory by adding up all costs *overhead* factory.

Table 6 Calculation Using Method Full Costing

Information	Total Price
Raw material costs	IDR 13.020.000
direct labor costs	IDR 3.000.000
variable factory overhead costs	IDR 664.000
fixed factory overhead costs	IDR 410.000
Amount	IDR 17.094.000
amount of tempeh production	IDR 2.000
Total cost per tempeh	IDR 8.547

Based on the table above, the calculation using the full costing method takes into account all costs, including the costs of raw materials, direct labor, as well as variable and fixed overhead. The calculation results are obtained by adding up all the costs.

Based on Tables 1–6, the total production cost using the full costing method amounted to IDR 17,094,000, while the company's method resulted in IDR 13,020,000. Thus, there is a difference of IDR 4,074,000, or approximately 24% higher when using the full costing method.

This difference directly affects the selling price per unit, where the company's price is IDR 6,510, while the full costing price reaches IDR 8,547 (rounded to IDR 8,600). The underpricing of IDR 2,090 per unit illustrates that the company's current pricing approach does not fully recover its production costs.

Selling Price Simulation: 10%, 20%, 30%, and 40% Adjustments

To enhance the analysis of pricing accuracy, this study simulates four selling price adjustment scenarios (10%, 20%, 30%, and 40%) based on the company's current selling price of IDR 6,510. Selling price simulations are widely recommended in managerial accounting literature because they help MSMEs assess the relationship between cost recovery, profitability, and liquidity stability under different pricing strategies (Garrison et al., 2021). These simulations are also consistent with evidence showing that firms frequently adopt round-number profit margins such as 20%, 30%, and 40% as pricing anchors (Cedergren et al., 2024), while industry studies document average markups ranging between 30–45% (Bertelsmann Foundation Report, 2020).

Selling Price Simulation – 10% Increase

- New selling price: $6,510 \times 1.10 = \text{IDR } 7,161$
- Gap vs. full costing price (IDR 8,600): -IDR 1,439/unit
- Monthly loss (2,000 units): IDR 2,878,000

Interpretation:

A 10% increase reduces underpricing but still fails to cover full production costs. In Cost–Volume–Profit (CVP) Theory, pricing must exceed total cost to contribute to profit and maintain liquidity (Horngren, Datar & Rajan, 2020). Thus, financial pressure persists under this scenario.

Selling Price Simulation – 20% Increase

- New selling price: $6,510 \times 1.20 = \text{IDR } 7,812$
- Gap vs. full costing price: – IDR 788/unit
- Monthly loss: IDR 1,576,000

Interpretation:

A 20% increase moves closer to the full-costing benchmark but still does not achieve complete cost recovery. According to Pricing-to-Cost Alignment Theory (Nagle, Hogan & Zale, 2016), misalignment between price and true cost structure leads to margin compression and long-term financial vulnerability.

Selling Price Simulation – 30% Increase

- New selling price: $6,510 \times 1.30 = \text{IDR } 8,463$
- Gap vs. full costing price: $-\text{IDR } 137/\text{unit}$
- Monthly loss: $\text{IDR } 274,000$

Interpretation:

A 30% increase almost achieves full cost recovery, leaving only a marginal shortfall. While close to break-even, profitability remains insufficient. CVP theory indicates that even small underpricing can accumulate into significant cash-flow instability over time (Horngren et al., 2020).

Selling Price Simulation – 40% Increase

- New selling price: $6,510 \times 1.40 = \text{IDR } 9,114$
- Gap vs. full costing price: $+\text{IDR } 514/\text{unit}$
- Monthly profit gain: $\text{IDR } 1,028,000$

Interpretation:

A 40% increase fully covers the full-costing COGS and yields additional profit, making it the most financially viable scenario. Industry evidence supports markups of 30–45% for maintaining long-term operational resilience (De Loecker & Eeckhout, 2020).

Table 7 Selling Price Simulations (10%, 20%, 30%, 40%)

Scenario	New Selling Price	Gap vs. Full Costing Price	Full Monthly (2,000 units)	Effect Outcome
Company Method	IDR 6,510	$-\text{IDR } 2,090$	$-\text{IDR } 4,180,000$	Very high financial risk
+10%	IDR 7,161	$-\text{IDR } 1,439$	$-\text{IDR } 2,878,000$	Risk still high
+20%	IDR 7,812	$-\text{IDR } 788$	$-\text{IDR } 1,576,000$	Improved but still under cost
+30%	IDR 8,463	$-\text{IDR } 137$	$-\text{IDR } 274,000$	Nearly break-even
+40%	IDR 9,114	$+\text{IDR } 514$	$+\text{IDR } 1,028,000$	Optimal, fully profitable

Discussion

From a financial performance perspective, the difference of IDR 4,074,000 between the company's cost-calculation method and the full costing approach represents approximately 24% of total production cost. This underestimation reduces the MSME's expected gross profit margin from 30% to around 22%, thereby weakening monthly cash-flow stability. With a monthly production volume of 2,000 units, the resulting underpricing generates a potential revenue loss of IDR 4,180,000. As emphasized by Brigham and Ehrhardt (2022), such discrepancies distort short-term liquidity conditions, increase working-capital volatility, and elevate the probability of financial distress, particularly in small enterprises with limited financial buffers.

From a financial economics perspective, these findings have broader implications. Risk Management Theory (Froot, Scharfstein, & Stein, 1993) suggests that inaccurate cost estimation amplifies cash-flow volatility and heightens exposure to liquidity shocks. In this case, understated production costs reduce cash reserves and increase vulnerability to external pressures, such as rising soybean prices, utility cost fluctuations, and unstable demand cycles. Thus, financial risk in this MSME is driven not by market uncertainty alone but by internal cost mismeasurement.

The results also align with Capital Efficiency Theory (Modigliani & Miller, 1958), which emphasizes that precise cost determination is essential for efficient capital allocation. By applying the full costing method, all cost components—raw materials, direct labor, and overhead—are fully recovered through the selling price. This enhances working-capital turnover and reduces reliance on personal funds or short-term borrowing. Conversely, incomplete cost recognition suppresses retained earnings and limits the MSME's capacity to reinvest in production capacity or equipment improvements.

Furthermore, the findings are consistent with Financial Distress Theory (Altman, 1968). Persistent underpricing and margin erosion weaken liquidity buffers and, over time, increase insolvency risk. In the case of UMKM Tempe Mbak Novi, continued cost underestimation would gradually erode profitability and financial resilience, threatening long-term sustainability. The application of full costing therefore functions as a preventive financial management mechanism by ensuring that pricing decisions reflect actual economic costs.

Empirical evidence from this study reinforces previous research. Dariana (2020) demonstrated that MSMEs implementing full costing achieve more accurate pricing and improved profitability, although the study did not analyze financial risk implications. Similarly, Novietta et al. (2022) and Badriah and Nurwanda (2019) emphasized pricing accuracy but did not quantify its impact on liquidity and risk exposure. The present study extends these findings

by empirically demonstrating that incomplete cost allocation leads to measurable financial losses, margin compression, and heightened financial risk.

The selling-price simulations further confirm this conclusion. Price increases of 10%–30% remain insufficient to achieve full cost recovery, indicating continued structural losses. Only a 40% adjustment fully offsets full-costing COGS and generates a positive contribution margin. This result highlights the narrow safety margin faced by micro enterprises and explains why even small unit-level underpricing can rapidly accumulate into significant monthly cash-flow deficits.

From a managerial perspective, the findings yield important implications. First, MSME owners should adopt the full costing method to ensure comprehensive cost recovery, including indirect and overhead components. Second, periodic monitoring of cost structures and proactive price adjustment are essential, particularly during periods of input-price volatility. Third, integrating cost accounting practices into broader financial planning strengthens cash-flow management and supports sustainable business growth.

Overall, this study addresses the research gap identified in the introduction by demonstrating that incomplete cost calculation affects not only pricing accuracy but also liquidity stability, profitability sustainability, and financial distress risk. By integrating full costing analysis with Risk Management Theory, Capital Efficiency Theory, and Financial Distress Theory, this research contributes a novel perspective that positions full costing as a financial risk mitigation instrument rather than merely an accounting technique. This integrated framework provides a more comprehensive understanding of financial sustainability in MSMEs.

Conclusion

This study concludes that the full costing method provides a more comprehensive and accurate calculation of production costs for UMKM Tempe Mbak Novi. The company's current method understates production costs by 24%, resulting in a selling price that does not cover actual production expenses. The underpricing gap of IDR 2,090 per unit leads to a monthly financial loss of IDR 4,180,000, indicating significant liquidity and profitability risks.

By applying full costing, the MSME is able to identify its true cost structure and adjust selling prices to prevent margin erosion and cash-flow instability. The selling-price simulations demonstrate that only the 40% price adjustment fully recovers production costs and generates

positive profit contribution. These findings align with Risk Management Theory, Capital Efficiency Theory, and Financial Distress Theory, confirming that accurate cost information is essential for maintaining financial resilience.

This research contributes to the literature by linking costing practices with specific financial risk indicators at the MSME level. Practically, MSMEs should adopt structured cost-recording systems, regularly update overhead costs, and evaluate selling prices using full-costing benchmarks. Future research is recommended to expand the sample beyond a single case and incorporate additional financial indicators such as liquidity ratios and distress-prediction models.

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