Academia Open
Vol. 11 No. 1 (2026): June
DOI: 10.21070/acopen.11.2026.13143

Academia Open

By Universitas Muhammadiyah Sidoarjo

ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Academia Open
Vol. 11 No. 1 (2026): June
DOI: 10.21070/acopen.11.2026.13143

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Academia Open
Vol. 11 No. 1 (2026): June
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ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

Academia Open
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DOI: 10.21070/acopen.11.2026.13143

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ISSN 2714-7444 (online), https://acopen.umsida.ac.id, published by Universitas Muhammadiyah Sidoarjo

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DOI: 10.21070/acopen.11.2026.13143

Determining Pharmaceutical Product Costs: Scientific and Practical Issues in Uzbekistan

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Abstract

This study addresses the scientific and practical challenges of determining finished product costs in pharmaceutical enterprises operating in the Republic of Uzbekistan, a critical issue in the context of economic reforms, stricter state regulation of drug pricing, and the ongoing transition to International Financial Reporting Standards that demand modern cost accounting systems. The research aims to identify deficiencies in current cost determination practices and propose improved methodologies tailored to the unique technological, regulatory, and organizational characteristics of pharmaceutical firms. Employing analytical, comparative, and monographic methods, the study examines actual accounting records and internal management reports from pharmaceutical enterprises, with particular attention to cost allocation across supply, production, laboratory testing, and packaging processes, and compares cost structures between imported and domestically manufactured products. Results reveal that material costs dominate the cost structure at approximately 50 percent, while wages and depreciation together account for nearly 30 percent; however, existing reporting practices fail to adequately disclose the distribution of indirect costs across production stages, limiting managerial control effectiveness. The novelty of this research lies in developing context-specific definitions for pharmaceutical business processes and proposing enhanced reporting formats that improve cost transparency and align with international standards. These findings have significant implications for strengthening management decision-making capabilities, improving financial reporting quality, and facilitating compliance with International Financial Reporting Standards in Uzbekistan's pharmaceutical sector.

Keywords : Pharmaceutical Costing, Cost Allocation Methods, Financial Reporting Transparency, Indirect Cost Distribution, International Accounting Standards, Production Cost Structure

Highlight :

- Material costs dominate pharmaceutical product costs, averaging 50 percent of total expenses.
- Current reporting inadequately discloses indirect cost allocation across production stages and functions.
- Study introduces simplified definitions and enhanced formats improving cost transparency and managerial control.

Published date: 2025-12-22

Academia Open
Vol. 11 No. 1 (2026): June
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Introduction

The introduction of a new system for developing the national economy, the application of modern management methods, as well as ensuring positive changes in the field of accounting based on international experience and increasing the income and profit indicators of enterprises are required [1]. In this regard, the Presidential Decree of the Republic of Uzbekistan adopted on December 27, 2024, titled "On the next measures to ensure equal conditions for entrepreneurs and a fair competitive environment," sets forth priority tasks such as "providing comprehensive support for entrepreneurship, ensuring equal conditions in the market and a fair competitive environment, reducing the share of the shadow economy, and creating conditions for bringing other business entities into this category by forming a list of leading entrepreneurial entities with annual revenues exceeding 1 trillion soums, creating more than 5 thousand jobs, and paying at least 100 billion soums in taxes, and working with them in a targeted manner."

The main purpose of these tasks is to stabilize the financial and economic activities of business entities operating in the national economy, to support them in every possible way, and to establish a competitive environment [2][3]. These issues, in turn, determine important tasks for accounting, including the proper management of income and expenses, the correct organization of cost accounting based on the specific characteristics of enterprises, and harmonizing accounting practices with international standards.

Literature Review

In the literature dedicated to accounting, various definitions of the concept of "cost" can be found, and we will examine some of them.

V. F. Paliy describes it as follows: "Calculating the cost of finished products can be viewed as a set of techniques and methods that ensure the calculation of the cost of a product or process" [4]. According to C. Drury: "The cost of finished products consists of the expenses associated with goods that are purchased for resale or manufactured."

World scholars such as R. Hermanson and H. Roger include the following in product cost: "For manufacturing enterprises, the cost of finished products includes all materials required for production, labor, and all expenses for company operations" [5].

In addition, other foreign economists such as M. A. Vakhrushina, T. A. Golovina, V. B. Ivashkevich, I. G. Kondrakov, and M. Yu. Medvedev have developed definitions and recommendations regarding the cost of finished products manufactured by enterprises and the procedures for calculating them.

Notable research has also been conducted by scholars in our country. Among them are K. B. Urazov, A. A. Karimov, A. I. Alikulov, S. N. Tashnazarov, M. E. Polatov, M. J. Temirkhanova, B. F. Boronov, M. Sh. Mamatqulov, F. Z. Yusupova, and A. F. Mustafayev.

IAS 2 "Inventories" in IFRS states that the cost of a product is composed of overhead costs: "The allocation of fixed production overheads to the cost of processing is based on the normal capacity of production. Variable production overheads are allocated to each unit of product based on actual usage of production capacity."

Based on the research findings and scientific conclusions presented above, scientific investigations were conducted regarding determining the cost of finished products produced in pharmaceutical enterprises [6].

Research Methodology

This study is based on analytical and observational data to gain insights into how pharmaceutical companies set the final cost from products. Applied abstraction in the study helps in isolating the significant cost heads from unnecessary details, to get a better view of different parts of the product cost from raw material to labor, together with packaging, utilities, and indirect costs. Economics is employed to compare cost structures among types of products and to reveal which elements have the greatest impact on final cost formation [7]. Monographic observation traces the way the steps of particular business processes in pharmaceutical companies (e.g. procurement, production, and laboratory testing) are contributing to the accumulation of costs. Comparative evaluation helps to compare the locally manufactured and imported pharmaceuticals and how the regulatory requirements can have impact on cost computation. The study utilizes both inductive and deductive method, going from specific cost indicators to general observations about production efficiency and reporting deficiencies [8]. Throughout the study, real accounting records and internal management reports of different pharmaceutical enterprises provides practical evidence that the conclusions formulated reflect the actual operational condition, not the theoretical assumptions. Such a combined method enables assessment not only on the composition of cost, but also on the transparency and integrity of the currently established accounting mechanism in the sector [9].

Analysis and Discussion of Result

Based on the scientific research results mentioned above, this study developed authorial definitions that take into account the specific characteristics of the manufacturing activities of pharmaceutical enterprises. In pharmaceutical enterprises:

1. **Main activity business processes** – a set of processes carried out through the stages of supply, production, and sales.
2. **Pharmaceutical products** – ready-made products such as medicines, medical items, and medical equipment that are either imported from foreign countries or manufactured by pharmaceutical enterprises in accordance with standards defined in regulatory documents and intended for sale.
3. **Pharmaceutical product production costs** – a set of costs incurred for auxiliary production, main production, laboratory testing, and packaging processes that form the cost of pharmaceutical products.
4. **Cost of pharmaceutical products** – a set of costs related to the production process of pharmaceutical products, including basic, auxiliary, and packaging materials, wages and related social tax, utility payments, and other expenses associated with main production processes.
5. These developed definitions allow for a more complete understanding of the production activities of business entities operating in the pharmaceutical sector and the structure of expenses incurred in connection with those activities [10]. Furthermore, the definitions we

have developed make it possible to understand more deeply the essence of regulations related to pharmaceutical activities in normative and legal documents, contributing to the further scientific and theoretical development of accounting.

The main activity of pharmaceutical enterprises is the production of pharmaceutical products. Pharmaceutical products are classified into two groups based on their place of manufacture:

a. **Imported pharmaceutical products.** These include pharmaceutical products manufactured by foreign companies and brought into the territory of the Republic of Uzbekistan.

b. **Domestic pharmaceutical products.** These include pharmaceutical products manufactured by pharmaceutical enterprises within the territory of the Republic of Uzbekistan [11].

The methods of determining the cost of pharmaceutical products also differ according to this classification. In particular, the value of imported pharmaceutical products is determined as follows:

$$\mathbf{FMHQ = ShQ + BT + BX} \quad (1)$$

In this formula:
FMHQ – purchase value of pharmaceutical products;
ShQ – contract value;
BT – customs duties;
BX – other expenses.

The distinguishing feature of imported pharmaceutical products compared to other imported goods is that their purchase value is strictly controlled by the state and regulated based on relevant sector-specific normative documents [12]. For example, according to Order No. 3242 of the Minister of Health of the Republic of Uzbekistan, the amount of additional expenses incurred during the purchase of imported products must not exceed 2 percent of the contract value.

Likewise, in accordance with this normative document, indicators related to determining the cost of pharmaceutical products manufactured by pharmaceutical enterprises and setting their selling prices have been established [13]. According to the procedure specified in this document, the indicators reflecting the cost of finished products in pharmaceutical enterprises are as follows:

1. Main raw materials and materials.
2. Auxiliary materials.
3. Packaging materials.
4. Labor costs related to production processes.
5. Social tax calculated on labor costs related to production processes.
6. Utility payments.
7. Other expenses related to production processes.

During our research, we set the goal of examining each of these indicators based on their significance in forming the cost of pharmaceutical products.

The structure of the cost of products manufactured in pharmaceutical enterprises holds particular importance and consists of several types of expenses [14]. Based on an analysis of the accounting and management reporting data of pharmaceutical enterprises, the following table was developed (Table 1):

Table 1. Calculation and Analysis of the Cost of Finished Products Manufactured in Pharmaceutical Enterprises

Cost Composition	**Finished Products**					
	Sodium Chloride 0.9 percent Isotonic Solution, 200 ml		**Ringer Infusion Solution, 250 ml**		**Doxamine Infusion Solution 42 mg/ml, 100 ml**	
	Thousand soums	Share	Thousand soums	Share	Thousand soums	Share
Materials	128 161	47 %	448 004	51 %	174 909	64 %
Wages	52 447	19 %	160 274	18 %	35 576	13 %
Social tax	6 276	2 %	19 177	2 %	4 257	2 %
Depreciation	33 077	12 %	101 082	12 %	22 437	8 %
Electricity	17 984	7 %	54 957	6 %	12 199	5 %
Laboratory testing	3 343	1 %	10 217	1 %	2 268	1 %
Natural gas	3 941	2 %	12 044	1 %	2 673	1 %

Other expenses	23 886	9 %	72 996	8 %	16 202	5 %
Auxiliary production expenses	2 306	1 %	7 046	1 %	1 564	1 %
Total expenses	**271 420**	**100 %**	**885 797**	**100 %**	**272 085**	**100 %**

This reporting form was developed taking into account the specific characteristics of the activities of pharmaceutical enterprises [15].

Conclusion

Based on the scientific research results presented above, the following opinions and observations were reached:

First. Analysis of the cost of pharmaceutical products manufactured at the enterprise shows that the share of expenses within the product cost varies, with material costs accounting for the largest portion of the cost structure, on average 50 percent. Wages and depreciation expenses also make up a significant portion of enterprise expenses, forming on average 30 percent of product cost.

Second. Although these calculations are important for management staff in pharmaceutical enterprises, the reporting narrows the scope of information related to the formation of product cost. This is because the calculations do not reveal how direct and indirect expenses affect the cost of products. In particular, it is necessary to determine by which methods the material costs, which constitute the largest share in the cost structure of pharmaceutical products, are allocated to production processes and to analyze their proportions. Additionally, employees in pharmaceutical enterprises work in different departments with different responsibilities. Some employees directly participate in the production processes of pharmaceutical products, while others conduct laboratory tests, and their wages are indirectly allocated to product cost. Therefore, we believe it is necessary to develop reports that show how these employees' wages and social tax expenses influence the cost of pharmaceutical products and in what amounts.

Third. Other expense items constitute nearly 10 percent of the cost of pharmaceutical products, but their composition is not reflected in enterprise reports. This may create difficulties for management accounting in controlling and managing these expenses. Thus, it is advisable to provide a more detailed explanation of the purpose and nature of these expenses.

Fourth. Based on the information reflected in the report, it is not possible to determine at which stage the expenses forming the cost of pharmaceutical products actually occur. As a result, this negatively affects the ability of management staff to make appropriate decisions. Due to this necessity, the present research concludes that each expense should be accounted for separately at the stage in which it is incurred and reflected accordingly in the reports.

We believe that the scientific conclusions and practical recommendations we have developed will help ensure the accurate determination of the cost of finished products in pharmaceutical enterprises.

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