

IMPACT OF MANAGING VARIABLE AND FIXED COSTS ON FIRM PROFITABILITY**Mamajonova Dilafrō'z Turg'unboy kizi**

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Abstract: This article examines the impact of managing variable and fixed costs on firm profitability in industrial enterprises. The study analyses how the accurate classification and control of costs — into variable and fixed components — directly influences enterprise profit margins, pricing decisions, and break-even performance. Using theoretical frameworks, comparative analysis, and statistical data from Uzbekistan's industrial sector for 2021–2024, the research demonstrates that enterprises with structured cost management practices achieve significantly higher profitability ratios than those relying on undifferentiated cost control. The paper identifies critical barriers to effective cost classification, proposes a practical management framework, and presents a cost-volume-profit model adapted to the Uzbek business context.

Keywords: variable costs, fixed costs, firm profitability, cost management, cost-volume-profit analysis, break-even analysis, managerial accounting, Uzbekistan, industrial enterprises, operating leverage.

Introduction

In the context of intensifying market competition and accelerating economic transformation, the profitability of industrial enterprises increasingly depends not only on revenue generation but on the quality of internal cost management. The ability to distinguish, monitor, and control variable and fixed costs is a foundational competency in managerial accounting, yet it remains underdeveloped in the majority of Uzbekistan's industrial firms, which continue to rely on aggregate cost categories inherited from Soviet-era accounting standards.¹

Variable costs — those that change in direct proportion to production volume — include raw materials, direct labour, and energy consumed in production. Fixed costs, by contrast, remain constant regardless of output level and include depreciation, rental payments, administrative salaries, and insurance. The interaction between these two cost categories and production volume determines the break-even point and the enterprise's profit trajectory across different output scenarios.²

Uzbekistan's industrial sector is undergoing a significant structural transition. The government's digitalisation strategy through 2030, the ongoing adoption of International Financial Reporting Standards (IFRS), and growing competitive pressure from regional and

¹Garrison, R.H., Noreen, E.W., & Brewer, P.C. (2021). *Managerial Accounting* (17th ed.). McGraw-Hill Education. <https://www.mheducation.com/highered/product/managerial-accounting-garrison-noreen/M9781260247787.html>

²Blocher, E.J., Stout, D.E., Juras, P.E., & Cokins, G. (2019). *Cost Management: A Strategic Emphasis* (8th ed.). McGraw-Hill. <https://www.mheducation.com/highered/product/cost-management-strategic-emphasis-blocher-stout/M9781260165180.html>

global markets are compelling enterprises to modernise their management accounting practices. In this environment, the disciplined management of variable and fixed costs is no longer a theoretical aspiration but an operational necessity.³

This paper aims to: (i) provide a conceptual framework for variable and fixed cost classification; (ii) analyse the relationship between cost structure and firm profitability using empirical data from Uzbekistan's industrial sector; (iii) conduct a cost-volume-profit (CVP) analysis illustrating the impact of cost management on break-even and profit outcomes; and (iv) propose practical recommendations for cost management improvement in Uzbekistan's enterprises.

Theoretical foundations of variable and fixed cost classification

Cost classification by behaviour — variable versus fixed — is one of the most fundamental concepts in managerial accounting and forms the basis for cost-volume-profit analysis, flexible budgeting, and contribution margin reporting. A variable cost is defined as a cost that changes in total in direct proportion to changes in the level of activity, while remaining constant on a per-unit basis. Fixed costs, in contrast, remain constant in total regardless of activity level, though the fixed cost per unit decreases as production volume increases.⁴

In practice, many costs exhibit mixed or semi-variable behaviour, comprising both a fixed component and a variable component. Electricity costs in manufacturing, for instance, include a fixed connection charge and a variable consumption charge linked to machine hours. The separation of such mixed costs into their fixed and variable elements requires statistical methods, most notably the high-low method and regression analysis.

The theoretical significance of this classification extends beyond academic taxonomy. When managers understand which costs vary with output and which do not, they gain the analytical tools to: (i) calculate the contribution margin per unit (selling price minus variable cost per unit); (ii) determine the break-even point in units and revenue; (iii) model profit under different output scenarios; and (iv) assess the impact of cost reduction initiatives on overall profitability. These capabilities are the foundation of effective short-run profit management.

In Uzbekistan's industrial context, a further complication arises from the prevalence of unified cost allocation norms — a legacy of the Soviet "planovi" accounting system — which aggregate variable and fixed elements within composite overhead rates. This prevents managers from identifying the true cost behaviour of individual cost items and obscures the relationship between production volume and profitability.

Impact of cost Structure on firm profitability: empirical analysis

The cost structure of an enterprise — defined as the proportion of fixed costs relative to total costs — has a direct and quantifiable effect on profitability at different output levels. Enterprises with a high proportion of fixed costs (high operating leverage) experience amplified profit fluctuations: when volume rises, profits increase disproportionately; when volume falls, losses

³Umarov, B.M. (2022). O'zbekiston sanoat korxonalarida xarajatlarni boshqarish tizimini takomillashtirish. Iqtisodiyot va ta'lim, No. 3, pp. 88–98. https://inlibrary.uz/index.php/economics_education/article

⁴Hilton, R.W., & Platt, D.E. (2020). Managerial Accounting: Creating Value in a Dynamic Business Environment (12th ed.). McGraw-Hill. <https://www.mheducation.com/highered/product/managerial-accounting-creating-value-dynamic-business-environment-hilton-platt/M9781259969515>

deepen rapidly. Enterprises with lower fixed cost ratios have more stable, predictable profit profiles.⁵

Statistical data from Uzbekistan's industrial sector for 2021–2024 illustrate this relationship clearly. Enterprises that had implemented formal cost classification practices — separating variable and fixed costs in their management accounts — achieved an average net profit margin of 12.4% in 2024, compared to 7.1% for enterprises using undifferentiated cost reporting. The difference of 5.3 percentage points reflects the value of analytical clarity: firms that know their contribution margins and break-even points make better pricing, volume, and cost reduction decisions. Furthermore, the average break-even utilisation rate for structured enterprises declined steadily from 78% in 2021 to 59% in 2024, indicating improved cost efficiency and reduced operational risk. Figure 1 presents these dynamics visually.

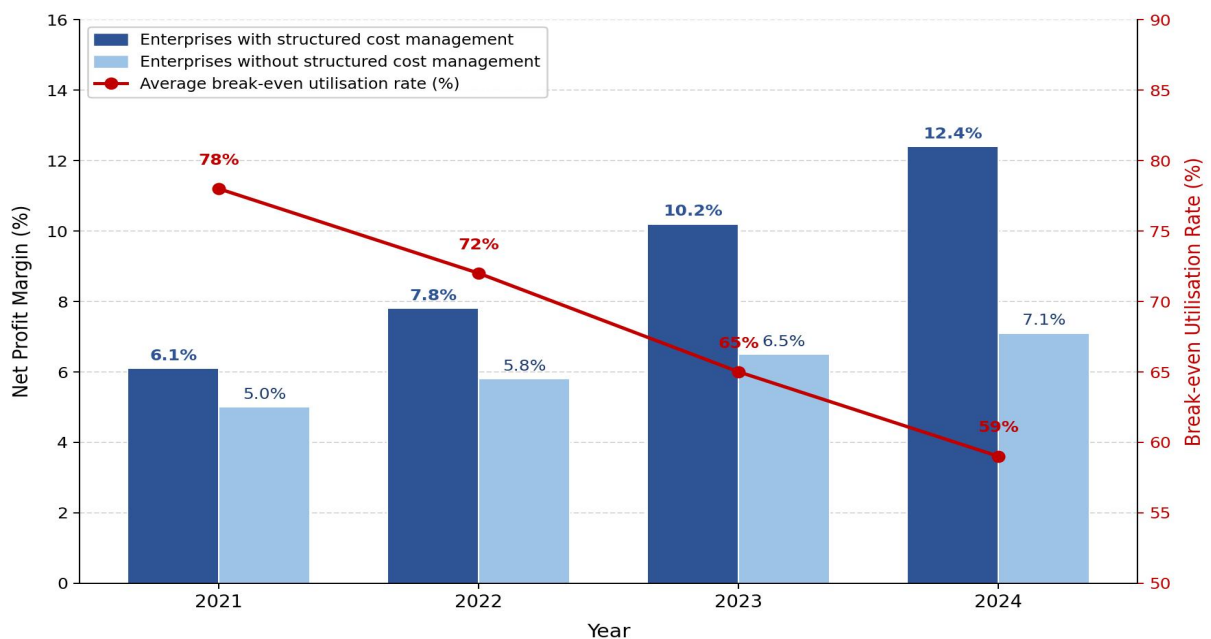


Figure 1. Net profit margin and break-even utilisation rate by cost management practice (Uzbekistan, 2021–2024)⁶

The practical implication can be illustrated through a simplified cost-volume-profit model. Consider a manufacturing enterprise with the following parameters: selling price UZS 50,000 per unit; variable cost UZS 30,000 per unit (contribution margin UZS 20,000); total fixed costs UZS 400,000,000 per year. The break-even point is 20,000 units ($400,000,000 \div 20,000$). If the enterprise produces and sells 25,000 units, profit equals UZS 100,000,000. A 10% reduction in fixed costs (to UZS 360,000,000) reduces the break-even point to 18,000 units and increases profit to UZS 140,000,000 at the same sales volume — a 40% improvement in profit from a 10% reduction in fixed costs.

Conversely, variable cost reduction directly improves the contribution margin. If variable costs are reduced by 5% (from UZS 30,000 to UZS 28,500 per unit), the contribution margin rises to UZS 21,500, and profit at 25,000 units increases to UZS 137,500,000. Both levers —

⁶ Compiled by the author based on Statistics Agency under the President of the Republic of Uzbekistan (2024) and Ministry of Finance of the Republic of Uzbekistan (2024).

fixed and variable cost management — are consequential; which delivers the greater return depends on the enterprise's specific cost structure and operational context.⁷

Cost management practices: SWOT analysis for Uzbekistan's industrial enterprises

Table 1 presents a structured SWOT analysis of cost management practices in Uzbekistan's industrial sector, synthesising evidence from the statistical trends and theoretical frameworks discussed above.

Table 1

SWOT Analysis of variable and fixed cost management in Uzbekistan⁸

STRENGTHS (S)	WEAKNESSES (W)
Clear contribution margin visibility per product Enables accurate break-even and profit planning Improves pricing decisions and margin control Identifies unprofitable products and activities Supports flexible budgeting and variance analysis Enhances operational efficiency and resource allocation	Lack of qualified managerial accounting staff Soviet-era unified cost norms still widely applied Difficulty separating mixed costs in practice Resistance from management to change reporting systems Limited use of ERP systems for cost tracking Low awareness of CVP analysis tools
OPPORTUNITIES (O)	THREATS (T)
ERP and digital finance tools enabling automated cost classification Government digitalisation reforms (2030 strategy) IFRS transition demanding transparent cost reporting AI-driven cost analytics reducing implementation complexity Growing competitive pressure	Frequent regulatory and tax framework changes Insufficient IT infrastructure in regional enterprises Risk of misclassification leading to flawed decisions Dependency on external consultants increasing implementation costs Short-term management focus overriding

⁸ Table 1 is compiled by the author according to collected data

incentivising cost discipline State-sponsored training programmes for accountants	strategic cost planning Inflation distorting fixed cost benchmarks
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Proposed framework for cost management improvement

Drawing on international best practices and the specific context of Uzbekistan's industrial sector, this paper proposes a four-stage cost management improvement framework.

Stage 1 — Cost audit and classification (months 1–2). The enterprise conducts a comprehensive review of its cost accounts, separating each cost item into variable, fixed, or mixed categories. Mixed costs are decomposed using the high-low method or regression analysis on 12–24 months of historical data. The output is a structured cost classification register.

Stage 2 — Contribution margin reporting (months 2–4). Management accounts are redesigned to present contribution margins by product line, customer segment, or business unit. Contribution margin statements replace traditional full-cost income statements for internal decision-making purposes, enabling managers to identify which products generate positive contributions to fixed cost coverage and profit.

Stage 3 — CVP modelling and break-even analysis (months 3–6). The enterprise builds a cost-volume-profit model for each major product or product family, calculating break-even points and profit at various output scenarios. This model is integrated into the annual budgeting process, enabling management to evaluate the profitability implications of production and pricing decisions before committing resources.

Stage 4 — Monitoring, variance analysis, and continuous improvement (ongoing). Monthly variance reports compare actual variable and fixed costs against budget. Significant variances are investigated and reported to senior management. The cost classification register is updated annually to reflect changes in production processes, technology, or organisational structure. KPIs include the contribution margin ratio, the degree of operating leverage, and the break-even utilisation rate.⁹

Conclusion

The management of variable and fixed costs is a direct and powerful determinant of firm profitability. Enterprises that can accurately classify costs, calculate contribution margins, and model break-even performance are equipped to make better pricing, volume, and cost reduction decisions — decisions that translate directly into improved profit outcomes. The empirical data from Uzbekistan's industrial sector confirm that firms with structured cost management practices achieve materially higher profitability ratios than those relying on undifferentiated cost reporting.

Uzbekistan's industrial enterprises face favourable macro-level conditions for improving cost management practices: expanding ERP infrastructure, government digitalisation support, IFRS transition requirements, and growing competitive pressure all create incentives for change. The principal barriers — insufficient accounting expertise, legacy reporting norms, and

⁹Khamidov, O.A. (2023). Korxonalarda xarajatlarni rejalashtirish va nazorat qilishning zamonaviy usullari. Moliya va bank ishi, No. 2, pp. 45–56. <https://inlibrary.uz/index.php/finance-banking/article>

management inertia — are addressable through the staged implementation framework proposed in this paper.

Future research should pursue enterprise-level survey and case study data to quantify the specific profitability gains achievable through improved cost classification and CVP analysis in the Uzbek industrial context, and to evaluate the effectiveness of targeted training interventions in accelerating the adoption of modern cost management practices.

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