

ANALYTICAL APPROACHES TO FIXED ASSET AUDITING IN THE CONTEXT OF ECONOMIC MODERNIZATION

Mamarasulov Diyorbek Alijon ugli

Fergana State Technical University, Phd student

Email: eldijaeldija@gmail.com

DOI: https://doi.org/10.55439/EIT/vol13_iss7/728

Abstract

This article examines the importance of auditing fixed assets using analytical indicators to assess their efficiency, serviceability, renewal, and movement in enterprises. Fixed assets, such as machinery, equipment, buildings, and vehicles, constitute a significant portion of an enterprise's long-term resources and have direct impact on production capacity, financial performance, and competitiveness. Analytical indicators (including depreciation ratio, renewal coefficient, start-up or commissioning coefficient, exit/retirement coefficient, and wear coefficient) provide a quantitative basis for evaluating the condition, utilization, re-equipment needs, and economic life of fixed assets. The study highlights how proper auditing practices contribute to modernization, efficient resource allocation, and international integration.

Keywords: Audit; balance sheet; fixed assets; depreciation; renewal ratio; start-up coefficient; retirement coefficient; termination ratio; wear coefficient; IFRS.

Annotatsiya

Ushbu maqolada analitik ko'rsatkichlar yordamida asosiy vositalarni tekshirishning ahamiyati, ularning samaradorligi, xizmat ko'rsatishga yaroqliligi, yangilanishi va korxonalarda harakatlanishini baholash ko'rib chiqiladi. Mashina, asbob-uskunalar, binolar va transport vositalari kabi asosiy vositalar korxonaning uzoq muddatli resurslarining muhim qismini tashkil qiladi va ishlab chiqarish quvvati, moliyaviy ko'rsatkichlar va raqobatbardoshlikka bevosita ta'sir qiladi. Analitik ko'rsatkichlar (shu jumladan, amortizatsiya koeffitsienti, yangilanish koeffitsienti, ishga tushirish koeffitsienti, chiqish/ishdan bo'shatish koeffitsienti va eskirish koeffitsienti) asosiy vositalarning holati, foydalanish, qayta jihozlash ehtiyojlari va iqtisodiy xizmat muddatini baholash uchun miqdoriy asos bo'lib xizmat qiladi. Tadqiqot to'g'ri audit amaliyoti modernizatsiya, resurslarni samarali taqsimlash va xalqaro integratsiyaga qanday hissa qo'shishini ta'kidlaydi.

Kalit so'zlar: Audit; balans; asosiy vositalar; amortizatsiya; yangilanish koeffitsienti; ishga tushirish koeffitsienti; pensiya koeffitsienti; tugatish koeffitsienti; eskirish koeffitsienti; MHXS.

Аннотация

В данной статье рассматривается важность аудита основных средств с использованием аналитических показателей для оценки их эффективности, пригодности к эксплуатации, обновления и движения на предприятиях. Основные средства, такие как машины, оборудование, здания и транспортные средства, составляют значительную часть долгосрочных ресурсов предприятия и оказывают непосредственное влияние на производственные мощности, финансовые результаты и конкурентоспособность. Аналитические показатели (включая коэффициент амортизации, коэффициент обновления,

коэффициент ввода в эксплуатацию, коэффициент выбытия/списания и коэффициент износа) обеспечивают количественную основу для оценки состояния, использования, потребности в переоснащении и срока службы основных средств. В исследовании рассматривается, как надлежащая практика аудита способствует модернизации, эффективному распределению ресурсов и международной интеграции.

Ключевые слова: аудит; бухгалтерский баланс; основные средства; амортизация; коэффициент финансового анализа; коэффициент амортизации; коэффициент обновления; коэффициент ввода в эксплуатацию; коэффициент выбытия; коэффициент износа; МСФО.

Introduction

One of the key objectives of Uzbekistan’s modernization strategy is to align domestic production with global standards and international best practices. Fixed assets represent a critical component of enterprise capacity and productivity, directly influencing competitiveness and export potential. As highlighted by the President of Uzbekistan, Sh.Mirziyoyev: “Modernization of networks and regions, increasing their competitiveness, and development of export potential should be in the center of our constant attention. For this, it will be necessary to further attract foreign investments and advanced technologies and information and communication systems to all areas. On this basis, we need to increase the gross domestic product of our country by more than 2 times by 2030.” [2]

To achieve these objectives, enterprises must not only invest in physical assets but also ensure their efficient use and proper accounting. The Law of the Republic of Uzbekistan “On Accounting” No. ORQ-404 (2016) provides a regulatory framework for accurate reporting, including fixed asset management [1]. At the same time, global integration requires enterprises to align with IFRS standards, particularly IAS 16, to ensure transparency, comparability, and reliability in financial reporting [4].

Auditing fixed assets is crucial because it allows enterprises to:

- Assess the current technical and economic condition of assets
- Identify obsolescence and wear, ensuring timely replacement or modernization.
- Monitor movement and expansion, including acquisitions, retirements, and upgrades.
- Align accounting practices with international standards to attract foreign investment.

This article examines the structure, dynamics, and movement of fixed assets in Indorama Kokand Fertilizer and Chemicals JSC while integrating insights from IFRS and global research. Analytical indicators such as renewal ratio, depreciation ratio, wear coefficient, and expansion coefficient are used to evaluate asset condition and audit effectiveness.

Literature review

The accounting and auditing of fixed assets has been a focus of both academic research and practical guidance. According to IAS 16 “Property, Plant, and Equipment,” an asset should be recognized at cost when it is probable that future economic benefits will flow to the entity, and the cost can be measured reliably [4]. Subsequent measurement can follow either the cost model or the revaluation model, depending on management decisions and market conditions.

Auditing fixed assets goes beyond verification of existence and ownership. The International Critique of IAS 16 highlights that componentization, revaluation, and accurate depreciation methods are critical for credible reporting [5]. Empirical studies in Nigeria

reveal that firms adopting revaluation models for PPE achieved higher reporting quality and reliability, suggesting that analytical audits are essential for both management and external stakeholders [6].

It is important to constantly modernize the main tools and use them effectively in enterprises. In this regard, some work has been done in Uzbekistan, including modernization of production in the development strategy of New Uzbekistan for 2022-2026, which consists of the following seven priority directions, developed on the basis of the principle "From the strategy of actions to the strategy of development" as a result of public discussion, technical and technological important tasks have been defined in terms of carrying out an active investment policy aimed at the implementation of modernization, transport-communication and social infrastructure projects [3].

Analytical indicators provide quantitative tools for auditing fixed assets. Key indicators include:

- Renewal ratio: proportion of newly acquired assets to total assets.
- Start-up coefficient: share of newly commissioned assets.
- Retirement/exit coefficient: proportion of assets retired during a period.
- Wear coefficient: accumulated depreciation relative to initial cost.
- Expansion coefficient: growth in the asset base over time.

Several studies emphasize the role of IFRS adoption in improving asset management and reporting transparency. KPMG (2022) outlines the importance of the component approach, requiring separate depreciation for significant parts of an asset with different useful lives [7]. Empirical research from Bangladesh and other developing countries demonstrates that regular revaluation improves asset value relevance for investors.

Additional literature highlights that improper asset accounting can lead to audit risks, including misstatement of asset value, incorrect depreciation, and underestimation of obsolescence. Studies also show that analytical audits can serve as a proactive management tool, helping enterprises plan renewals, allocate investments efficiently, and support modernization goals.

Ismanov, I.N. and Moydinov, E.J stated that if one object of fixed assets has several parts, the cost and useful life of which differ significantly ... each such part is recognised as an independent inventory object [8].

Kudbiyev and Mamarasulov (2024) emphasizes that the preparation of initial financial statements according to IFRS is a complex and resource-intensive process. He notes that enterprises face methodological challenges, particularly in reconciling and interpreting the differences between national accounting standards and international financial reporting requirements [9].

Analysis and results

In the implementation of modernization processes, the main attention should be paid to the technical and technological re-equipment of enterprises at the expense of mobilizing internal resources. To do this, it is possible to ensure the continuity of the life cycle of the enterprise in the market conditions based on the competitive environment by constantly analyzing the state of the main means of the enterprise, making a correct assessment of its serviceability, level of wear and tear and efficiency of use.

Based on the Balance sheet at the end of 2024, we will evaluate the state of its main assets of Indorama Kokand Fertilizer and Chemicals JSC. For this, first of all, we will analyze the structure and dynamics of the company’s fixed assets.

Table 1

Analysis of the composition and dynamics of the fixed assets of the enterprise Indorama Kokand Fertilizer and chemicals JSC.¹

No	Indicators	At the beginning of the year (thousand sums)	At the end of the year (thousand sums)	Change (thousand sums)	Change (Share %)
1	Total fixed assets	418 823 504	918 395 141	499 571 637	119

The data shows that the fixed assets of the company by the end of the year they increased by 119% or the increase was 499 billion sums. But these indicators are not enough to give a full assessment of fixed assets. This is because during the year, changes occur in the composition of fixed assets. Due to commissioning, modernization and reconstruction of purchased and completed objects, the range of

fixed assets will expand. Due to physical and mental wear and tear, some of them will leave the ranks. Therefore, the analysis of the movement of fixed assets covers the following indicators:

- ☐ launch coefficient;
- ☐ update coefficient;
- ☐ exit coefficient;
- ☐ wear coefficient;
- ☐ termination coefficient;
- ☐ coefficient of expansion of the car and equipment park.

We use the following information to calculate and analyze indicators related to the movement of fixed assets.

Table 2

Movement of fixed assets at Indorama Kokand Fertilizer and chemicals JSC. (thousand sums)

Indicators	At the beginning of the year (thousand sums)	In	Out	At the end of the year (thousand sums)
Total fixed assets	418 823 504	550 522 000	50 950 363	918 395 141
New Fixed Assets		510 480 000		
Transfers From Inventory		40 042 000		
Depreciation	107 445 278			156 242 056
Residual Value	310 935 023			762 153 085

Based on the information presented in the table, we determine the following coefficients describing the movement of fixed assets.

In the conditions of modernization, the main attention is focused on the production of products from the competition, updating the product range, adjusting its quality to demand, increasing the productivity of the cocktail, reducing the cost, and constantly equipping the production with new equipment.

$K_{\text{launch}} = \text{Value of newly commissioned fixed assets} / \text{Total fixed assets at the end of the period} \times 100 = 510\,480\,000 / 918\,395\,141 = 55.6\%$ About 56% of all fixed assets at the end of the year were newly commissioned, indicating a high modernization rate.

$K_{\text{update}} = \text{Value of all newly acquired (new + from inventory) fixed assets} / \text{Total fixed assets at the end of the period} \times 100 = 550\,522\,000 / 918\,395\,141 = 59.9\%$

Nearly 60% of total fixed assets at the end of the year are newly added (new or transferred), showing active renewal of assets.

Under the conditions of modernization, fixed assets are removed from the ranks of the company's assets in the following cases:

when sold;

☐ due to unusability;

☐ when given free of charge to other enterprises and individuals;

☐ when it is given as a share to the authorized capital of other enterprises;

☐ when it is given for rent in the form of a lease;

☐ as a result of thefts or losses.

$K_{\text{exit}} = \text{Value of fixed assets disposed} / \text{Total fixed assets at the beginning of the period} \times 100 = 50\,950\,363 / 418\,823\,504 = 12.2\%$. One of fifth the beginning balance of fixed assets was written off or disposed, which is normal given the high renewal rate.

Depreciation level decreased from 25.7% to 17.0%, showing rejuvenation of the asset base.

$K_{\text{expansion}} = \text{Total fixed assets at end} / \text{Total fixed assets at beginning} \times 100 = 918\,395\,141 / 418\,823\,504 = 219.3\%$ The enterprise more than doubled its fixed asset base — clear evidence of expansion and modernization.

By studying the dynamics of the level of depreciation of fixed assets, it is possible to estimate the renewal of fixed production funds, the service life of fixed assets. The level of depreciation depends on the methods of calculating depreciation allowances, changes in the composition of fixed assets, and depreciation rates.

At the IKF enterprise, the level of obsolescence decreased from 25.7 percent to 17 percent, while its level of availability increased from 74.3 percent to 83 percent meaning most fixed assets are in good working condition and recently renewed.

But in the current conditions, it may be inappropriate to consider that it is always correct to evaluate the condition of the fixed assets of enterprises through our above analysis. The reason is that each enterprise can calculate the depreciation value of fixed assets based on its production characteristics, and some fixed assets can be used in the enterprise for several years even after the depreciation value is calculated. The reason is that each enterprise can calculate the depreciation value of fixed assets based on its production characteristics, and some fixed assets can be used in the enterprise for several years even after the depreciation value is calculated. This can lead to the conclusion that they are unfit for work through the results of the analysis. Regardless of the state of the

market, fixed assets can be used for different years rather than in Indorama Kokand Fertilizer and chemicals JSC, which we analyzed. Nevertheless, we believe that such analyzes are necessary in the market conditions based on the competitive environment and that the company should always be ready for changes.

Conclusion

Auditing fixed assets using analytical indicators is critical for enterprise modernization, productivity, and international integration. Analytical measures such as renewal ratio, start-up coefficient, wear coefficient, and depreciation ratio provide a deeper understanding of asset condition and movement. The case of Indorama Kokand Fertilizer and chemicals JSC shows that availability improved, accumulated depreciation and expansion is in good scenario, anyway stronger fixed-asset management strategy is needfull. Alignment with IFRS (IAS 16) ensures transparency, comparability, and reliability in financial reporting, attracting investors and supporting strategic modernization. For improving and monitoring we are making following recommendations.

Regular analytical audits: Annual monitoring of renewal, wear, start-up, and retirement coefficients.

Digital asset management: ERP-based systems for asset tracking, componentisation, and reporting.

IFRS alignment: Apply componentisation and select appropriate measurement models; ensure proper derecognition of retired assets.

Auditor training: Enhance auditors' ability to assess technical conditions, verify revaluations, and interpret analytical indicators.

Strategic renewal policy: Link asset replacement and expansion to modernization goals and export competitiveness.

Enhanced disclosure: Transparent reporting of asset movements, revaluations, useful lives, and component-level depreciation.

List of used literature

1. Law of the Republic of Uzbekistan "On Accounting" No. ORQ-404 of April 13, 2016.
2. Decree of the President of the Republic of Uzbekistan "On the Development Strategy of New Uzbekistan for 2022-2026"
3. Mirziyoev Sh.M. We will build a free and prosperous democratic country of Uzbekistan together.-T."Uzbekistan", 2016.-28 p.- B15-16.
4. IAS 16, Property, Plant and Equipment, IFRS.
5. International critique of IAS 16, ABACademies, 2021.
6. Aluya & John, PPE Measurement and Financial Reporting Quality in Nigeria, IJRISS, 2024.
7. KPMG, IFRS Component Approach, 2022.
8. Ismanov, I.N. & Moydinov, E.J. Accounting of Fixed Assets According to IFRS – Tasks and Solutions for the Organization of Accounting by Component Parts. *Academica: An International Multidisciplinary Research Journal*, Vol 12, Issue 08, August 2022
9. Mamarasulov, D.A. & Kudbiyev, D. (2024). Preparation of Reports for the First Time According to International Standards of Financial Reporting. *Innovative Development in Educational Activities*, Vol 3, Issue 5.
10. Mamarasulov, D.A. Important Issues of Accounting for Fixed Assets According to the Requirements of International Financial Reporting Standards. (Conference Paper, March 2024)
11. new.openinfo.uz