

ECONOSCITECH INTEGRATION

ISSUE
5

INTERNATIONAL SCIENTIFIC
ELECTRONIC JOURNAL



TASHKENT STATE
UNIVERSITY OF ECONOMICS



American University
of Technology

Powered by Arizona State University®

ISSN: 3060-5075



Acceptance of articles

PUBLISHED EVERY MONTHLY



ARTICLE CONTRIBUTORS

**PROFESSORS-TEACHERS, SPECIALISTS
AND SCIENTIFIC RESEARCHERS.**



Google
Scholar

Academic
Resource
Index
ResearchBib

BASE

OpenAIRE

doi
Digital
Object
Identifier

OPEN ACCESS

CONTACT:



+998 94 3540880



<https://econoscitech-integration-journal.uz>



2026

**EDITOR-IN-CHIEF:**

Zufarova Nozima Gulamiddinovna
DSc., Dean of Tourism Faculty, TSUE

DEPUTY EDITOR-IN-CHIEF:

Makhmudov Nosir Makhmudovich
DSc., Prof., Academician

DEPUTY EDITOR-IN-CHIEF:

Suyunov Dilmurod Xolmurodovich
Doctor of Economics (DSc), Professor,

DEPUTY EDITOR-IN-CHIEF:

Allayarov Shamsiddin Amanullayevich
doctor of economics (DSC), professor

RESPONSIBLE SECRETARY:

Otaboyev Axmed Maxsudbek o'g'li
TSUE independent researcher

THE SCIENTIFIC-POPULAR
ELECTRONIC JOURNAL
"ECONOSCITECH-INTEGRATION"
HAS BEEN REGISTERED UNDER
THE NUMBER C-5669651 BY THE
AGENCY FOR INFORMATION AND
MASS COMMUNICATIONS (AOKA)
OF THE REPUBLIC OF UZBEKISTAN,
EFFECTIVE FROM OCTOBER 9, 2024.

In accordance with Resolution No. 384/6 dated April 10, 2026, issued by the Presidium of the Supreme Attestation Commission under the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan, this journal is included in the list of recommended international scientific publications for publishing the primary research findings of doctoral dissertations in the field of Economic Sciences.

Partners: Tashkent State University of Economics / American University of Technology in Tashkent (AUT)

Electronic publication, Issue 5. 374 pages.
Approved for publication on May, 2026.

Editorial Board Members:

Sharipov Kongratbay Avezimbetovich,
Doctor of Technical Sciences (DSc), Professor



Teshabayev To'liqin Zakirovich,
Doctor of Economic Sciences (DSc), Professor



Said Irandoust,
Doctor of Chemical Engineering Sciences,
Professor



Abdurakhmanova Gulnora Kalandarovna,
Doctor of Economic Sciences (DSc), Professor



Khudoykulov Sadirdin Karimovich,
Doctor of Economics, (DSc), Professor



Tokunaga Masahiro,
professor, PhD of Economics of the Faculty of
Business and Commerce



Debasis Das,
professor Department of Computer Science



Nitin Goje,
professor and Program Lead - Computer Science



Nargizakhon Shamshieva
Doctor of Economic Sciences, Professor



Rakhmonov Norim Razzakovich,
Doctor of Economic Sciences (DSc), Professor

Bayxonov Bahodirjon Tursunbayevich
Doctor of Science (DSc), Professor



Shomurodov Ravshan Tursunkulovich,
PhD, Associate Professor



Boymuratov Abduraxmat Djumayevich
Doctor of Philosophy (PhD) in Economics



Sharopova Nafosat Radjabovna
DSc, Associate Professor



Sultanova Kamila Mukhtorali Kizi
Master of Science

CONTENTS

FOREIGN EXPERIENCE IN THE EFFECTIVE ORGANIZATION OF FREE ECONOMIC ZONES	51
Mamadiyev Elyor	
IMPROVING ORGANIZATIONAL AND ECONOMIC MECHANISMS FOR THE ESTABLISHMENT AND DEVELOPMENT OF FAMILY GUEST HOUSES	55
Boynazarov Ulugbek Egamberdievich	
IMPROVING METHODS OF ORGANIZING AND DEVELOPING DOMESTIC TOURISM MARKETS IN UZBEKISTAN	61
Daminov Mirvokhid Isroilovich	
THE IMPACT AND SIGNIFICANCE OF INFRASTRUCTURE IN THE DEVELOPMENT OF THE TOURISM SECTOR.....	67
Dilsora Ibodovna Ibodova	
IMPACT OF STUDENTS AGED OVER 40 ON ECONOMIC ACTIVITY AND BUDGETING BASED ON THE COMPETENCY ECOSYSTEM	74
Nigora Ikrom qizi Primova	
ОЦЕНКА ЭФФЕКТИВНОСТИ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ ХОРЕЗМСКОЙ ОБЛАСТИ: ЭКОНОМЕТРИЧЕСКОЕ МОДЕЛИРОВАНИЕ И СЦЕНАРНОЕ ПРОГНОЗИРОВАНИЕ НА 2026–2030 ГОДЫ	80
Юсупов Шерзодбек Бахтиёр угли	
IMPROVING THE METHODOLOGY FOR ASSESSING THE PROCUREMENT MANAGEMENT SYSTEM IN COMMERCIAL ENTERPRISES	87
Ergashev Jahongir Bakhodirovich	
MULTIVARIATE ECONOMETRIC ANALYSIS OF FACTORS AFFECTING HOUSEHOLD INCOME IN SURXONDARYO REGION	93
Abdunazarova Shahnoza Norquchqor qizi	
СРАВНИТЕЛЬНЫЙ АНАЛИЗ ГОСУДАРСТВЕННЫХ ЦИФРОВЫХ УСЛУГ АЗЕРБАЙДЖАНА И УЗБЕКИСТАНА	99
Юсифов Магамед Исмаил оглу, Гасанли Расул Шахин оглу, Белалова Гузаль Анваровна	
SUSTAINABLE DEVELOPMENT OF THE MINING INDUSTRY IN THE CONTEXT OF THE GREEN ECONOMY.....	105
Xudayberdiyeva Kamila Sadillovna, Fozilova Zumrad Ahmadovna	
IMPROVING THE ECONOMIC EFFICIENCY OF CLOTHING MANUFACTURING ENTERPRISES IN UZBEKISTAN THROUGH DIGITAL TRANSFORMATION	111
Axmedova Gaziza Azim kizi	
КОМПЛЕКСНАЯ ОЦЕНКА ПОТЕНЦИАЛА РЕГИОНАЛЬНОГО АГРОПРОМЫШЛЕННОГО ИНТЕГРИРОВАНИЯ НА ОСНОВЕ МОДЕЛИ АНР-TOPSIS	115
Аликулов А.Б.	
APPLICATION OF CLUSTER METHODS IN THE DEVELOPMENT OF TOURISM INFRASTRUCTURE AND IMPROVEMENT OF ECONOMIC MECHANISMS IN SAMARKAND CITY	121
Tashov Mizrob Maxmudovich	
THE ROLE AND PROSPECTS OF THE GREEN ECONOMY IN THE SERVICE SECTOR.....	130
Musayeva Shoirazimovna, Usmonova Dilfuza Ilkhomovna	
FACTORS AFFECTING THE EFFICIENCY OF REGIONAL ENTERPRISES	135
Nigora Zokirjon qizi Toxirova	
CURRENT STATE OF ATTRACTING INVESTMENTS IN THE DEVELOPMENT OF TOURISM IN THE REGIONS OF UZBEKISTAN AND THE METHODOLOGY OF ECONOMIC EFFICIENCY INDICATORS	142
Temurbek Olimovich Mamayunusov	
PRESUPPOSITION SHIFTS IN CROSS-LINGUISTIC RENDERING OF ANECDOTAL NARRATIVES:	

A COMPARATIVE INQUIRY INTO TRIGGER RETENTION AND TRANSFORMATION	148
Umaraliyeva Dildora Taxirjanovna	
DIGITAL TECHNOLOGIES AND RURAL PUBLIC SERVICE QUALITY: AN EMPIRICAL ECONOMETRIC ANALYSIS	156
Bek Hunsia, Feruza Mansurovna Ollokulova	
COMPREHENSIVE ANALYSIS OF THE IMPACT OF WOMEN'S LABOR ACTIVITY ON THE EFFICIENCY OF THE ECONOMIC SYSTEM	164
Ahrorova Asila Abduaziz qizi	
IMPROVING TAX ADMINISTRATION IN THE ENTREPRENEURIAL ENVIRONMENT	170
Azizbek Khurramov	
FORMATION OF FINANCIAL RESULTS AT MOTOR TRANSPORT ENTERPRISES	180
Shanazarova Nilufar Baratovna	
ARIMA-BASED ANALYSIS OF SMALL BUSINESS ACTIVITY IN THE AGRICULTURAL SECTOR OF SURKHANDARYA REGION	185
Fayziyeva Aziza Azamat qizi	
ASSESSMENT OF AGRARIAN SECTOR EFFICIENCY THROUGH THE SFA MODEL	192
Utanov Bunyod Kuvandikovich	
АКТУАЛЬНЫЕ ВОПРОСЫ УПРАВЛЕНИЯ ГОСУДАРСТВЕННЫМ ВНЕШНИМ ДОЛГОМ	196
Шомуродов Равшан Турсункулович, Жуманазаров Шахобиддин Дилмурод угли	
MODERN METHODOLOGICAL APPROACHES TO MANAGING EDUCATIONAL SERVICES MARKETING IN HIGHER EDUCATION INSTITUTIONS	201
Shamshieva Nargizakhon Nosirkhuja kizi	
FINANCIAL MANAGEMENT OF FOREIGN AND DOMESTIC COTTON GINNING ENTERPRISES: COMPARATIVE ANALYSIS, DIAGNOSTICS, AND IMPROVEMENT DIRECTIONS	208
Orif Jumayevich Murodov	
ANALYSIS OF THE INSTITUTIONAL FOUNDATIONS OF STATE INTERVENTION IN THE PRODUCT QUALITY MANAGEMENT PROCESS IN UZBEKISTAN	219
Atakulov Askad Raimkulovich	
ИНТЕГРИРОВАННАЯ МОДЕЛЬ ФОРМАЛИЗАЦИИ НЕФОРМАЛЬНОЙ ЗАНЯТОСТИ И РАСШИРЕНИЯ СОЦИАЛЬНОЙ ЗАЩИТЫ В АГРАРНЫХ РЕГИОНАХ (НА ПРИМЕРЕ КАШКАДАРЬИНСКОЙ ОБЛАСТИ)	224
Бобоназарова Юлдуз Ботировна	
THE ECONOMIC ESSENCE OF RESOURCE USE EFFICIENCY AND ITS ROLE IN INDUSTRIAL ECONOMICS	229
Baymanova Mavlyuda Djurayevna, Aipova Iroda Ikramovna	
THE ROLE OF ARTIFICIAL INTELLIGENCE IN ECONOMIC DEVELOPMENT: EVIDENCE FROM DEVELOPING COUNTRIES	234
Ismatova Diyora Sirojiddin qizi, Ubaydullayeva Gulchexra Erkabayevna	
ЭКОЛОГИЧЕСКАЯ УСТОЙЧИВОСТЬ И РЕСУРСНАЯ АДАПТИВНОСТЬ ОТРАСЛИ МАШИНОСТРОЕНИЯ В РОССИИ, КИТАЕ, ИНДИИ	239
Викторова Наталья Геннадьевна, Абрамчикова Наталья Викторовна, Ван Байянь	
ENSURING ORGANIZATIONAL AND ECONOMIC MECHANISMS FOR HOUSING STOCK MANAGEMENT	249
Aminova Naima Umar qizi	
STRATEGIC MANAGEMENT FOR ECONOMIC GROWTH: PRACTICAL APPROACHES AND IMPROVEMENTS	253
Baymuradov Shokhruxh Makhmudovich, Dilmurodov Komiljon Ahmad o'g'li	
IMPROVING THE EFFICIENCY OF SMALL ENTERPRISES IN THE SERVICE SECTOR (A CASE STUDY OF TASHKENT REGION)	259

Ashirov Alisher

IMPROVING THE ORGANIZATIONAL AND ECONOMIC MECHANISMS FOR THE TRANSFORMATION OF SERVICE ENTERPRISES IN UZBEKISTAN	264
--	-----

Kurbanova Rahima Jamshedovna

INNOVATIVE IDEAS OF YOUNG ENTREPRENEURS AND INFRASTRUCTURE FACTORS IN THE DEVELOPMENT OF SMALL INNOVATIVE BUSINESSES	270
--	-----

Ergashev Oybek Khaydaralievich

MARKETING CHARACTERISTICS OF POSITIONING ORGANIC DRIED FRUIT PRODUCTS IN INTERNATIONAL MARKETS	274
--	-----

Khidirov Shokhrukh

TYPOLOGIZATION OF THE ECONOMIC POTENTIAL AND DEVELOPMENT CHARACTERISTICS OF THE DISTRICTS OF SURKHANDARYA REGION BASED ON STATISTICAL AND NEURAL NETWORK APPROACHES.....	280
--	-----

Normurodov Asliddin Alijon ugli

THE ROLE OF FOREIGN EXPERIENCE IN ANALYSING THE THEORETICAL FOUNDATIONS OF THE AUDIT OF FINANCIAL LIABILITIES	291
---	-----

Palvanov Xusniddin Bekimmatovich

DIGITAL SKILLS AND LABOUR PRODUCTIVITY: A SCENARIO ANALYSIS BASED ON AN INTEGRATED STATISTICAL MODEL	297
--	-----

Madraimov Xabibulla Madaminovich

АКТУАЛЬНЫЕ ВОПРОСЫ ФОРМИРОВАНИЯ СТРУКТУРЫ АКТИВОВ И ПАССИВОВ ГОСУДАРСТВЕННЫХ БАНКОВ УЗБЕКИСТАНА	303
---	-----

Т.И. Бобакулов

АКТУАЛЬНЫЕ ВОПРОСЫ ФИНАНСИРОВАНИЯ ВНЕШНЕТОРГОВУЮ ДЕЯТЕЛЬНОСТЬ КОМПАНИЙ С ДОКУМЕНТАРНЫМИ АККРЕДИТИВАМИ	308
---	-----

М.Т. Ибодуллаева

ФОРМИРОВАНИЕ ИНТЕГРИРОВАННОГО МЕХАНИЗМА УПРАВЛЕНИЯ ОСНОВНЫМИ СРЕДСТВАМИ В УСЛОВИЯХ ИННОВАЦИОННОЙ ЭКОНОМИКИ	312
--	-----

Мусаева Жамила Кароматовна

ПРОБЛЕМНЫЕ ВОПРОСЫ ОБЕСПЕЧЕНИЯ КОНКУРЕНТОСПОСОБНОСТИ КОММЕРЧЕСКИХ БАНКОВ УЗБЕКИСТАНА	320
--	-----

Ш.Т. Ибодуллаев

THE IMPORTANCE OF STATE SUPPORT AND INVESTMENT POLICY IN ENSURING THE FINANCIAL STABILITY OF MASS MEDIA ENTERPRISES.....	325
--	-----

Sharipova Shahlo Istamovna

CURRENT STATUS AND DEVELOPMENT TRENDS OF MOTOR TRANSPORT SERVICES	329
---	-----

Rakhimov Azamat Hamrakulovich

ПРИМЕНЕНИЕ ЭКСТРЕМАЛЬНЫХ МОДЕЛЕЙ В ОЦЕНКЕ ЭКОНОМИЧЕСКОГО ПОТЕНЦИАЛА ПРЕДПРИЯТИЯ.....	333
--	-----

Мусаева Шоира Азимовна

MULTI-FACTOR ECONOMETRIC MODELS OF WATER RESOURCE USE IN ENSURING REGIONAL ECONOMIC STABILITY	341
---	-----

Xaitbaev Jasurbek Otaxanovich

СОВЕРШЕНСТВОВАНИЕ ПРАКТИКИ ИСПОЛЬЗОВАНИЯ ИНСТРУМЕНТОВ ЭЛЕКТРОННОГО ДОКУМЕНТООБОРОТА В КОММЕРЧЕСКИХ БАНКАХ.....	345
--	-----

Шомуродов Равшан Турсункулович

THE WAYS OF IMPROVING COMPETITIVENESS IN COMPANIES OF THE CONSTRUCTION INDUSTRY	350
---	-----

Buriev Khakim Toshimovich, Usmanov Ilxom Achilovich, Tolibov Abduazim Zoxid ugli

MACROECONOMIC MODELS AND PROSPECTS OF TRANSITION TO A GREEN ECONOMY IN UZBEKISTAN	357
---	-----

Sharipboyev Hasanboy Marks ugli, Sharipov Kuvondik Baxtiyorovich

THE IMPACT OF HRM PRACTICES ON ACADEMIC STAFF WORK EFFICIENCY IN HIGHER EDUCATION INSTITUTIONS.....	366
---	-----

Sultonboyeva Munira Bahodirovna, Sultanova Kamila Muktorali Kizi

THE ECONOMIC ROLE OF RENEWABLE ENERGY SOURCES IN THE DEVELOPMENT OF THE GREEN ECONOMY IN UZBEKISTAN	374
Inatullayeva Intizor Jamshid qizi	
ОЦЕНКА ФИЗИОЛОГИЧЕСКИХ ПОКАЗАТЕЛЕЙ КРУПНОГО РОГАТОГО СКОТА, ЗАВЕЗЁННОГО В РЕСПУБЛИКУ КАРАКАЛПАКСТАН ИЗ-ЗА РУБЕЖА, С ИСПОЛЬЗОВАНИЕМ ЦИФРОВЫХ ТЕХНОЛОГИЙ	378
Аскарова Нилуфар Бахтияровна	
COOPERATIVE MECHANISMS FOR REGIONAL DEVELOPMENT: A FRAMEWORK ANALYSIS OF CULTURAL TOURISM ENTERPRISE PARTNERSHIPS.....	382
Shohruzbek Ruziyev	
IMPROVING THE ECONOMIC EFFICIENCY OF RESOURCE UTILIZATION IN METALLURGICAL ENTERPRISES: INTERNATIONAL EXPERIENCE AND MODERN DEVELOPMENT TRENDS	393
Matkuliev Akbar Karimovich	
TAX INCENTIVES GRANTED TO ENTERPRISES LOCATED IN SPECIAL ECONOMIC ZONES	397
Torayeva Nafisa Odiljonovna	
REQUIREMENTS FOR TRANSITIONING TO ELECTRONIC BUSINESS AND CONDITIONS FOR DIGITALIZATION.....	402
Ismoilov Diyorbek Ismoiljon ugli	
DEVELOPMENT OF ALTERNATIVE ENERGY AS AN IMPORTANT FACTOR IN ENSURING A SUSTAINABLE ECONOMY AND ENERGY SECURITY	407
Ergash Bobobekov	
ANALYSIS OF WAGE DYNAMICS IN THE EXAMPLE OF SURKHANDARYA REGION BASED ON PANEL DATA.....	412
Abdunazarova Shahnoza Norquchqor kizi	
THE ROLE OF MARKETING STRATEGIES IN IMPROVING THE MARKET COMPETITIVENESS OF CARPET INDUSTRY ENTERPRISES	420
Arzieva Sevinch Shomurot kizi	
CONSUMER PROPERTIES OF FOOD PRODUCTS IN UZBEKISTAN: TRADITIONS, TRANSFORMATION AND NEW QUALITY STANDARDS.....	425
Gayrat Pardaev	
DIRECTIONS FOR STIMULATING ECONOMIC GROWTH THROUGH THE IMPROVEMENT OF THE TAX SYSTEM.....	431
Yakhshimuratova Khasiyat Khudaybergenovna	
THE ROLE OF E-COMMERCE IN THE ECONOMY OF UZBEKISTAN AND ITS DEVELOPMENT PROSPECTS	435
Kambaraliyeva Intizor Suxrobovna	
Aliyarov Olim Abdug'aparovich	
ISSUES OF IMPROVING PRE-TRIAL TAX DISPUTE RESOLUTION MECHANISMS BASED ON INTERNATIONAL EXPERIENCE	439
Solihova Xumora Xasan kizi	
INCREASING THE ATTRACTIVENESS OF DIVIDEND POLICY IN UZBEKISTAN COMPANIES.....	446
Akmal Komiljonovich Shermukhamedov	
COMMUNITY-BASED HERITAGE TOURISM MODELS AS A TOOL FOR ENHANCING HANDICRAFT DEVELOPMENT IN UZBEKISTAN	451
Olimjonova Farog'at Dilmurod qizi	
Amiriddinova Muslima Zayniddin qizi	
ИНСТИТУЦИОНАЛЬНЫЕ МЕХАНИЗМЫ СОЦИАЛЬНОЙ ЗАЩИТЫ НАСЕЛЕНИЯ В УСЛОВИЯХ ПЕРЕХОДНОЙ ЭКОНОМИКИ: ОПЫТ РЕСПУБЛИКИ УЗБЕКИСТАН	458
Шоахмедов Шохрух Шорахимович	

OF EFFECTIVE USE OF AGRICULTURAL LAND	464
Umarov Muzaffar Yusupbayevich	
ECONOMIC CONTENT OF INTANGIBLE ASSETS IN THE FIELD OF INFORMATION AND COMMUNICATION TECHNOLOGIES AND SPECIFIC CHARACTERISTICS OF THEIR RECOGNITION	469
Ishankulov Izzatilla Nurillaevich	
DETERMINANTS OF NON-PERFORMING LOANS IN SERVICE SECTOR LENDING AND CREDIT RISK MITIGATION MECHANISMS	473
Nurmukhammedov Abdijabbar Yunusovich	
ESG INTEGRATION PRACTICES INTO CORPORATE CULTURE SYSTEM IN THE JOINTSTOCK SECTOR OF UZBEKISTAN: A CASE STUDY OF “DORI-DARMON” JSC	479
Sadikova Muslima Alisher kizi	
DEVELOPMENT OF THE METAL MARKET IN THE TASHKENT REGION AND WAYS TO IMPROVE IT	485
Musayeva Shoira Azimovna	
SMALL BUSINESS AS A CATALYST FOR REGIONAL ECONOMIC DEVELOPMENT: AN EMPIRICAL ANALYSIS WITH EVIDENCE FROM UZBEKISTAN	491
Jo‘rayev Ilhomjon Kamolidinovich	
ISSUES OF DEVELOPING DEPOSIT OPERATIONS IN COMMERCIAL BANKS	497
Rahimov Akmal Matyaqubovich	
IMPROVING TEXTILE LOGISTICS AND SUPPLY CHAIN MANAGEMENT IN UZBEKISTAN	503
Isroilov Madaminjon Mukhsinovich	
FEATURES OF SUMMARIZING AND EVALUATING THE RESULTS OF FINANCIAL STATEMENT AUDITING IN UZBEKISTAN PRACTICE	509
Isroil Ismoilovich Meliev	
ГОСУДАРСТВЕННОЕ УПРАВЛЕНИЕ ФИНАНСАМИ И СОЦИАЛЬНОЕ РАВЕНСТВО В УЗБЕКИСТАНЕ: ИНТЕГРАЦИЯ МЕТОДОЛОГИИ РЕФА С ДИСТРИБУТИВНЫМ АНАЛИЗОМ НА ОСНОВЕ ПОДХОДА SEQ	516
Зокиржонов Мухаммадсодик Равшанбек угли	
FACTORS AFFECTING DAIRY PRODUCTION EFFICIENCY: CORRELATION AND REGRESSION ANALYSIS	530
Ergashev M.Y.	
Tairova Z.M.	
METHODOLOGICAL FOUNDATIONS OF COST ACCOUNTING AND ANALYSIS IN AQUACULTURE CLUSTERS: IFRS INTEGRATION, ECONOMETRIC MODELING, AND ESG PERSPECTIVES	537
Shodiev Aslam Rahmatilloevich	
APPLICATION OF ARTIFICIAL NEURAL NETWORKS FOR PREDICTING CUSTOMER LOYALTY IN COMMERCIAL BANKS	544
Jumaniyozova Mukaddas	
SUSTAINABLE REGIONAL SPECIALIZATION UNDER WATER SCARCITY: GLOBAL EXPERIENCE AND PROSPECTS FOR UZBEKISTAN	550
Sodiqova Nigora Turayevna	
CURRENT STATE AND STRUCTURAL ANALYSIS OF EXPORT ACTIVITIES OF BUSINESS ENTITIES IN THE BUKHARA REGION	555
Djurayeva Munira Sadiilloyevna	
EVALUATION OF THE EFFICIENCY OF STRATEGIC MANAGEMENT OF EDUCATIONAL SERVICES EXPORTS IN THE BUKHARA REGION	560
Alimova Shamsiya Abidovna	

ADVANCING AN INTEGRATED STATISTICAL ASSESSMENT METHODOLOGY FOR COMMERCIAL BANKS' DIGITAL ACTIVITIES AND CREDIT PORTFOLIO QUALITY	565
Rakhmataliev Muzaffar Eshdavlatovich	
EFFECTIVENESS OF USING BIOLOGICAL METHODS IN PLANT PROTECTION: STATISTICAL ANALYSIS OF DISTRIBUTION STRATEGY AND PRACTICAL IMPLEMENTATION DENSITY	570
Suyundikova Dilafruz Mamarajabovna	
МЕТОДОЛОГИЯ ФОРМИРОВАНИЯ «КАРТЫ ПРОЗРАЧНОСТИ ПО МСФО» НА ОСНОВЕ КЛАСТЕРИЗАЦИИ АКЦИОНЕРНЫХ ОБЩЕСТВ ПО УРОВНЮ КАЧЕСТВА.....	577
Лутфуллаев Сардорбек Уткур угли	
INDICATOR-BASED IMPROVED METHODOLOGY FOR DETERMINING INTERNAL AUDIT SIGNIFICANCE LIMITS IN THE PUBLIC SECTOR.....	586
Ismatillayev Baypolat Khushvaqtovich	
METHODOLOGY FOR IDENTIFYING CASHGENERATING UNITS AND ADJUSTING THE DISCOUNT RATE TO NATIONAL CAPITAL MARKET CONDITIONS IN THE IMPAIRMENT ASSESSMENT OF LONG-TERM ASSETS	593
Fayzullayev Begzod Bakhtiyor o'g'li	

METHODOLOGY FOR IDENTIFYING CASH-GENERATING UNITS AND ADJUSTING THE DISCOUNT RATE TO NATIONAL CAPITAL MARKET CONDITIONS IN THE IMPAIRMENT ASSESSMENT OF LONG-TERM ASSETS

Fayzullayev Begzod Bakhtiyor o'g'li
Researcher, Tashkent State University of Economics

Abstract. The article examines two key elements of impairment assessment for non-current assets in joint-stock companies: the identification of cash-generating units and the determination of the discount rate applied in calculating the recoverable amount. The article proposes an approach to identifying cash-generating units based on the criteria of functional and technological interdependence of assets and their ability to generate independent cash flows. The limitations of directly applying internationally accepted methods for determining the discount rate in the national capital market are analyzed, and an adapted methodology is developed by supplementing the weighted average cost of capital (WACC) with country risk and industry risk premiums. Using the example of the telecommunications, postal, IT, and insurance industries, the procedure for identifying units and differentiating the discount rate is presented. It is substantiated that the application of the proposed methodology increases the validity of impairment test results.

Keywords: non-current assets, impairment, cash-generating unit, recoverable amount, value in use, discount rate, WACC, country risk, industry risk, IAS 36.

Аннотация. В статье исследуются два ключевых элемента оценки обесценения долгосрочных активов акционерных обществ: идентификация единиц, генерирующих денежные потоки, и определение ставки дисконтирования, используемой при расчёте возмещаемой стоимости. Предложен подход к идентификации единиц, генерирующих денежные потоки, основанный на критериях функциональной и технологической взаимозависимости активов, а также их способности генерировать самостоятельные денежные потоки. Проанализированы ограничения прямого применения общепринятых международных методов определения ставки дисконтирования в условиях национального рынка капитала, и разработана адаптированная методология, основанная на дополнении средневзвешенной стоимости капитала (WACC) премиями за страновой и отраслевой риски. На примере телекоммуникационной, почтовой, ИТ- и страховой отраслей раскрыта процедура идентификации единиц, генерирующих денежные потоки, и дифференциации ставки дисконтирования. Обосновано, что применение предложенной методологии повышает достоверность результатов тестирования долгосрочных активов на обесценение.

Ключевые слова: долгосрочные активы, обесценение активов, единица, генерирующая денежные потоки, возмещаемая стоимость, ценность использования, ставка дисконтирования, WACC, страновой риск, отраслевой риск, МСФО (IAS) 36.

INTRODUCTION

In the context of the gradual transition to International Financial Reporting Standards, joint-stock companies face the task of reliably assessing the impairment of long-term assets. According to the requirements of IAS 36 "Impairment of Assets", the recoverable amount of an asset for which indicators of impairment have been identified should be determined. If the recoverable amount is lower than the carrying amount, the difference is recognized as an impairment loss. The recoverable amount is determined as the higher of two values: fair value less costs of disposal and value in use.

Two methodological issues are of particular importance in the practice of calculating the recoverable amount. First, most long-term assets do not generate independent cash flows in isolation; therefore, the assessment is carried out at the level of a cash-generating unit (CGU). The way in which the boundaries of a CGU are defined

directly affects the test result. If the units are defined too broadly, the impairment of inefficient assets may be offset by profitable assets; if they are defined too narrowly, the calculations become unnecessarily complicated.

Second, value in use is determined by discounting future cash flows, and even a one-percentage-point change in the discount rate may significantly affect the assessment result. However, the direct application of discount rate determination methods developed for advanced capital markets to national market conditions faces significant limitations.

LITERATURE REVIEW

The issues of asset valuation based on the income approach and the determination of the discount rate have been extensively developed in foreign scientific literature. Koller, Goedhart, and Wessels comprehensively examine the fundamental principles of company and asset valuation using the discounted cash flow model, including the procedure for calculating the weighted average cost of capital (WACC) (Koller, Goedhart, and Wessels, 2020).

Damodaran, while studying the specifics of valuation in emerging markets, developed a methodology for determining the country risk premium based on sovereign credit ratings and government bond yield spreads, as well as for incorporating this premium into the discount rate (Damodaran, 2012).

Pratt and Grabowski summarize the practice of applying risk premiums depending on industry and company size when calculating the cost of capital (Pratt and Grabowski, 2014).

Hitchner provides a detailed description of the build-up method for forming the discount rate in valuation practice, which involves the sequential addition of risk premiums to the base rate (Hitchner, 2017).

RESEARCH METHODOLOGY

The research employed a combination of scientific methods, including scientific abstraction, analysis and synthesis, comparison, grouping, a systematic approach, and scenario-based calculations. These methods were applied to examine the theoretical foundations of asset impairment assessment, develop the proposed methodology, and evaluate its applicability under national capital market conditions.

ANALYSIS AND RESULTS

According to IAS 36, a cash-generating unit is the smallest identifiable group of assets that generates cash inflows largely independent of the cash inflows from other assets or groups of assets. The standard allows for a broad degree of professional judgment in determining such units. However, this flexibility may create a risk that, in practice, cash-generating units are defined in a “convenient” manner, whereby the impairment test result may be influenced by a predetermined objective.

To reduce this risk, the study proposes a two-criteria approach to identifying cash-generating units, as presented in Table 1.

Table 1
Proposed criteria for the separation of cash-generating units¹

Criterion	Content	Practical signs
Functional-technological interdependence	Assets that participate together in a single technological process or service cycle and cannot be used for their intended purpose without each other are included in a single unit.	Assets are tied to a single technological scheme; they rely on a common infrastructure; the removal of a single asset stops the entire process
Ability to generate independent cash flows	The unit must be able to generate cash inflows from external buyers, practically independently of other asset groups.	The existence of an active market for the unit's product (service); separate accounting of revenues in the unit; independence of pricing

The combined application of the two criteria produces an important methodological result. If only the criterion of technological interdependence is applied, cash-generating units may become excessively large, since in large infrastructure companies almost all assets are interconnected to some extent. If only the criterion of independent cash flows is applied, any asset or facility whose income is calculated separately may be treated as a separate unit, even if it is technologically inseparable.

¹ Author's development

When these criteria are applied sequentially, the boundary of a cash-generating unit is determined more objectively. First, groups of technologically integrated assets are identified; then, the smallest group capable of generating independent cash flows is selected as the cash-generating unit.

The application of the proposed criteria under industry-specific conditions was examined using the example of four analyzed joint-stock companies, as presented in Table 2.

Table 2

Recommendations for the separation of cash-generating units in the analyzed joint-stock companies²

Community (network)	Recommended unit structure	Justification
JSC «Uzbektelecom» (telecommunications)	Units across technological generations (old and new generation networks) and large regional branches	Each generation network is a holistic technological complex, generating an independent revenue stream from subscribers; revenues from regional networks are accounted for separately.
JSC «Uzbekistan Post» (postal services)	Units within the logistics and sorting complex and large regional branches	Sorting centers and transport fleet form a single technological chain; branches generate direct revenues from customers
“UNICON.UZ” JSC (information technologies)	Units across product and service lines (software, data center services, project development)	Each direction has its own order portfolio and revenue stream; the technological base is specialized by direction
JSC «ALSKOM INSURANCE COMPANY» (insurance)	Units in insurance business segments and investment real estate properties	Investment property generates independent rental income and may be measured separately within the meaning of IFRS 36.

The analysis showed that the optimal structure of cash-generating units directly depends on the technological architecture of the industry and the revenue generation model. In telecommunications, it is advisable to form units by technological generations and territorial networks; in postal services, by logistics and branch networks; in information technologies, by product lines; and in insurance, by business segments and investment assets.

Once the structure of cash-generating units has been determined, the central stage of the impairment test is performed: determining value in use. Value in use is calculated as the present value of future cash flows expected from the cash-generating unit, and the result is highly sensitive to the discount rate. According to IAS 36, the discount rate should be a pre-tax rate that reflects the time value of money and the risks specific to the asset. In international practice, the weighted average cost of capital (WACC) is often used as such a rate, while its equity component is commonly estimated using the CAPM model.

The cash flow forecast is also an important assumption in determining value in use. According to the requirements of IAS 36, the forecast should be based on the latest budgets approved by management; the forecast period should generally not exceed five years; and for the subsequent period, a constant or declining growth rate should be applied. In this case, cash flows should be formed based on the asset's current condition: the effects of future restructuring or capital investments that improve the asset's performance should not be included in the forecast. Forecast assumptions and the discount rate must be consistent with each other. In particular, the inflation factor should either be included in both indicators under the nominal approach or excluded from both under the real approach. In practice, inconsistency in this regard—discounting nominal cash flows at a real rate, or vice versa—is one of the most common methodological errors.

However, the application of CAPM and WACC in their classical form under national capital market conditions faces a number of objective limitations. First, due to the low liquidity of the stock market and the limited free float of shares, it is difficult to calculate a statistically reliable beta coefficient based on market dynamics of share prices. Second, a generally accepted indicator of the long-term risk-free rate has not yet been fully formed: the government securities market is still developing, and there is no stable yield curve for long-term issues. Third, historical data are insufficient to estimate the market risk premium based on national market information. Under these conditions, the most practical way to determine the rate is an adapted methodology based on the build-up principle.

Within the framework of the study, it is proposed to calculate the discount rate using the following formula: $d = WACC + R_m + R_t$, where WACC is the company's weighted average cost of capital; the cost of debt capital is estimated based on current loan agreements and bond yields, while the cost of equity is estimated using alternative methods. R_m represents the country risk premium, and R_t represents the industry risk premium (Table 3).

² Author's development

Table 3
Procedure for determining the components of the adjusted discount rate³

Component	Economic content	Identification procedure and information sources
WACC	Average cost of raising public capital	Cost of debt capital — current loan agreements and corporate bond yields; cost of equity — construction method (base rate + risk premiums); capital structure — based on balance sheet or target structure
R _m — country risk premium	Additional risk associated with investing in the national economy	Sovereign credit ratings; spread of government Eurobond yields over underlying market yields; country risk assessments by international organizations
R _t — network risk reward	Additional risk associated with technological and market volatility of a particular industry activity	The pace of technological innovation of the industry; demand variability; level of regulation; industry beta coefficients in international practice (comparative analysis)

When determining the country risk premium, it is advisable to rely on the approach developed by Damodaran. Under this approach, the default spread is determined based on the sovereign credit rating and adjusted by the relative volatility coefficient of the capital market (Damodaran, 2012).

The industry risk premium is differentiated based on two factors: the rate of technological innovation, where faster technological change increases the risk of asset obsolescence, and demand volatility, which reflects the stability of revenue dynamics. Among the analyzed industries, information technology and telecommunications were identified as the most sensitive to technological innovation, while postal services and insurance were classified as relatively stable sectors. Accordingly, the industry premium should be set higher for technologically volatile industries and lower for stable industries, with its specific amount justified in the accounting policy of each company.

To illustrate the practical application of the proposed methodology, a conditional example is presented. Suppose that the company's WACC is 16.0%, determined based on the cost of debt and equity; the country risk premium is 2.0 percentage points, based on the sovereign rating; and the industry premium is 2.5 percentage points, reflecting the high technological volatility of the industry. In this case, the adjusted discount rate is $d = 16.0 + 2.0 + 2.5 = 20.5\%$. If the cash flows of this unit over the five-year forecast period are discounted only at the base WACC, value in use will be significantly higher, and an impairment loss may not be recognized. When the adjusted rate is applied, national market and industry risks are more fully reflected, making the valuation result more conservative and reasonable. Thus, rate adjustment reduces the risk of delayed recognition of impairment.

It should be noted that the components of the adjusted rate and the procedure for determining them should be fixed in the company's accounting policy and disclosed in the notes to the financial statements. This ensures consistency of assessment from period to period and provides the auditor with clear criteria for verifying the reasonableness of the discount rate. Since the discount rate is one of the most sensitive assumptions in the impairment test, presenting sensitivity analysis for changes in the rate in the notes has particular informational value for users of financial statements.

Another important methodological aspect should be considered when applying the methodology. According to IAS 36, a pre-tax discount rate should be used when calculating value in use. However, WACC is usually calculated on an after-tax basis. Therefore, after determining the adjusted rate, it should be converted into a pre-tax equivalent. In practice, this may be done either through an iterative method, by reconciling the result obtained using after-tax cash flows and rates with pre-tax indicators, or through a simplified adjustment by increasing the rate with regard to the corporate income tax rate. Regardless of the method chosen, it should be documented in the accounting policy and applied consistently from period to period.

To quantify the impact of the discount rate on the valuation result, a conditional sensitivity calculation was performed, as presented in Table 4.

³ Author's development

Table 4

The effect of the discount rate on value in use and impairment loss (conventional example)⁴

Indicator	Base WACC (16.0%)	Adjusted rate (20.5%)	Stress scenario (23.0%)
Annual net cash flow, billion soums	10.0	10.0	10.0
Annuity discount rate (5 years)	3,274	2,958	2,803
Usage cost, billion soums	32.74	29.58	28.03
Book value of the unit, billion soums	31.00	31.00	31.00
Impairment loss, billion soums	not recognized	1.42	2.97

It is assumed that the carrying amount of the cash-generating unit is UZS 31.0 billion, while the expected annual net cash flow over the five-year forecast period is UZS 10.0 billion. The results differ significantly when value in use is calculated using the base WACC of 16.0%, the adjusted rate of 20.5%, and the stress scenario rate of 23.0%.

The calculation results show that, when the base WACC is used, value in use exceeds the carrying amount, and no impairment loss is recognized. However, when the adjusted discount rate reflecting country and industry risks is applied, an impairment loss of UZS 1.42 billion is identified. Thus, failure to adjust the discount rate may lead to a systematic understatement of impairment in the national context. Therefore, the validity of the discount rate components should be carefully assessed during the audit.

Another important aspect of the proposed approach is the consistency between the identification of cash-generating units and the differentiation of the discount rate. Each cash-generating unit may have its own risk profile. For example, the legacy network of a telecommunications operator is more exposed to technological obsolescence risk than a next-generation network. In such cases, the industry risk premium may be further differentiated across cash-generating units, and a higher discount rate may be applied to units with higher risk. This makes the impairment test more closely aligned with the real economic conditions of each unit.

CONCLUSION AND RECOMMENDATIONS

Based on the research results, the following conclusions and recommendations were formulated.

The identification of cash-generating units is a fundamental stage in determining the outcome of an impairment test. It should be based on clearly defined criteria rather than solely on management discretion. The two proposed criteria — the functional and technological interdependence of assets and their ability to generate independent cash flows — help prevent unjustified enlargement or fragmentation of cash-generating units when applied sequentially and ensure the objectivity of test results.

The optimal structure of cash-generating units depends on industry-specific characteristics. In telecommunications, it is advisable to form units by technological generations and regional networks; in postal services, by logistics complexes and branches; in information technology, by product lines; and in insurance, by business segments and investment assets. The structure of cash-generating units should be fixed in the accounting policy and should not be revised without sufficient justification.

The direct application of international methods for determining the discount rate under national capital market conditions is limited by low stock market liquidity, insufficient market data for calculating beta coefficients, and the incomplete formation of long-term risk-free rate benchmarks. Under these conditions, an adapted methodology based on the build-up principle in the form $d = WACC + R_m + R_t$ is the most practical solution.

It is recommended to determine the country risk premium based on sovereign credit ratings and government bond yield spreads, while the industry risk premium should be determined by considering factors such as the pace of technological innovation and demand volatility. The components of the discount rate and the procedure for determining them should be specified in the accounting policy, and sensitivity analysis of changes in the rate should be disclosed in the notes to the financial statements.

The implementation of the proposed methodology will increase the validity of impairment test results, ensure consistency of assessments across reporting periods and comparability between companies, and create clear criteria for audit verification. Ultimately, this will contribute to improving the reliability of financial statements for investors and supporting the development of the national capital market.

⁴ Author's development

REFERENCES

1. IFRS Foundation. (2023). *International Accounting Standard 36: Impairment of Assets*. London: IFRS Foundation.
2. IFRS Foundation. (2023). *International Financial Reporting Standard 13: Fair Value Measurement*. London: IFRS Foundation.
3. Damodaran, A. (2012). *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* (3rd ed.). Hoboken: John Wiley & Sons.
4. Hitchner, J.R. (2017). *Financial Valuation: Applications and Models* (4th ed.). Hoboken: John Wiley & Sons.
5. Koller, T., Goedhart, M., & Wessels, D. (2020). *Valuation: Measuring and Managing the Value of Companies* (7th ed.). Hoboken: John Wiley & Sons.
6. Pratt, S.P., & Grabowski, R.J. (2014). *Cost of Capital: Applications and Examples* (5th ed.). Hoboken: John Wiley & Sons.

Proofreader: Xondamir Ismoilov
Layout and Designer: Oloviddin Sobir ugli

2026. № 5

© When materials are reproduced, the ECONOSCITECH-INTEGRATION journal must be cited as the source. Authors are responsible for the accuracy of the information in materials and advertisements published in the journal. Editorial opinions may not always align with those of the authors. Submitted materials will not be returned to the editorial office.

To publish articles in this journal, you may submit articles, advertisements, stories, and other creative materials through the following links. Materials and advertisements are published on a paid basis.

You may subscribe to the journal at any time using the following details. Once subscribed, please send a screenshot or photo of your payment confirmation to our Telegram page @iqtisodiyot_77. Based on this, we will send the latest issue of the journal to your address each month.

Our address: Tashkent city, Yunusobod district, 19th block, House 17.

