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# CONTENTS

BRIEF FEEDBACK ON “AGAT CREDIT” MICROFINANCE ORGANIZATION BASED ON THE REPORT OF “KAPDEPO” INVESTMENT COMPANY: CAVEATS FOR LENDERS (BONDHOLDERS) .....	16
<b>Abduganiev Abdulaziz Alisher ugli</b>	
IMPLEMENTATION OF EU BEST AGRICULTURAL TRADE PRACTICES IN UZBEKISTAN.....	20
<b>Khulkar Karimova Rakhmanali qizi</b>	
THE ROLE OF FOREIGN DIRECT INVESTMENT IN INCREASING SERVICE EXPORTS OF UZBEKISTAN .....	26
<b>Jamshid Mirzakhmedov</b>	
THE ROLE AND IMPORTANCE OF FINANCIAL MARKETS IN ECONOMIC DEVELOPMENT .....	30
<b>Baumanova Mavlyuda Djuraevna, Abdullaeva Shohista, Ubaydullaeva Gulchehra Erkabaevna</b>	
КЛИНИЧЕСКАЯ ОЦЕНКА СОСТОЯНИЯ МЕСТНЫХ ИММУННЫХ МЕХАНИЗМОВ ПОЛОСТИ РТА У ПАЦИЕНТОВ НА ЭТАПАХ ОРТОДОНТИЧЕСКОГО ЛЕЧЕНИЯ .....	36
<b>Рахимбердыев Рустам Абдунасирович, Сайфулаева Азиза Анваровна</b>	
INTEGRATING AI-BASED CUSTOMER ANALYTICS INTO INNOVATIVE RETAIL MARKETING STRATEGIES .....	40
<b>Ostonaqulova Gulsaraxon Muhammadyoqub qizi</b>	
FINANCIAL STIMULATION OF INNOVATIVE ACTIVITIES OF ENTERPRISES THROUGH INVESTMENTS .....	48
<b>Bahriddinov Nodirbek Zamirdinovich</b>	
DIGITAL DENTISTRY: LITERATURE REVIEW .....	52
<b>Tursunov Begzod Sherzodovich, Zokirova Nodira Sobitovna</b>	
THE LATEST ADHESIVE TECHNOLOGIES IN DENTISTRY .....	56
<b>Rahimberdiyev Rustam Abdunasirovich, Chinibayeva Ibagul Sarsenbayevna</b>	
ENSURING THE ACCEPTABILITY OF QUANTITATIVE AND QUALITATIVE INDICATORS IN THE EFFECTIVE ORGANIZATION OF HOUSING FUNDS IN KHOREZM .....	61
<b>Otajonov Tohirjon Khojanazar o'g'li</b>	
WAYS TO IMPROVE CUSTOMS ADMINISTRATION IN THE REPUBLIC OF UZBEKISTAN.....	67
<b>Usmonova Dilfuza Ilhomovna</b>	
CLINICAL ASSESSMENT OF THE STATE OF LOCAL IMMUNE MECHANISMS OF THE ORAL CAVITY IN PATIENTS AT DIFFERENT STAGES OF ORTHODONTIC TREATMENT .....	72
<b>Rakhimberdiyev Rustam Abdunasirovich, Saifulaeva Aziza Anvarovna</b>	
IMPROVING THE ALGORITHM FOR CONTROLLING THE CUSTOMS TRANSIT INFORMATION SYSTEM E-TRANSIT OF THE REPUBLIC OF UZBEKISTAN .....	76
<b>Musayeva Shoirazimovna</b>	
DEVELOPMENT TRENDS OF THE AUTOMOTIVE BUSINESS IN UZBEKISTAN .....	82
<b>Saidov Dilshodbek Razzakovich</b>	
INTEGRATION OF MARKETING STRATEGIES IN RETAIL TRADE ACTIVITIES.....	87
<b>Akramov Toxir Abdiraxmanovich</b>	
CHALLENGES OF ADOPTING ISLAMIC FINANCE WITHIN CONVENTIONAL BANKING SYSTEMS .....	91
<b>Safarov Shuhrat Ismatovich</b>	
CRM SYSTEMS AND THEIR IMPACT ON THE RESULTS OF MARKETING STRATEGY IN DISTRIBUTION COMPANIES .....	95
<b>Jamoliddinov Fakhriyor Shodiyor o'g'li</b>	
LEXICAL-SEMANTIC ARCHITECTURE OF MODERN WORDNET SYSTEMS .....	101
<b>Aynura Axmedova</b>	
METHODOLOGY FOR ANALYZING THE EFFECTIVENESS OF INNOVATIVE PROCESSES AT ENTERPRISES.....	108
<b>Kurbanova Shakhnoza Yuldashbayevna</b>	
COMPANY VALUATION IN MERGERS AND ACQUISITIONS: A STRATEGIC AND GOVERNANCE-BASED APPROACH .....	113
<b>Lee Illarion Georgievich</b>	

A REVIEW OF THE LITERATURE ON CAD/CAM TECHNOLOGIES IN DENTAL ECTOPROSTHETICS.....	118
<b>Tursunov Begzod Sherzodovich, Hazratqulov Asrbek Ulugbek ugli</b>	
TRENDS AND DIFFICULTIES IN THE INTEGRATION OF DIGITAL TECHNOLOGIES IN ORTHOPEDIC DENTISTRY.....	123
<b>Khojimurodov Burkxon Ravshanovich</b>	
PRIORITY DIRECTIONS FOR IMPROVING THE MECHANISM OF ENHANCING THE ECONOMIC SECURITY LEVEL OF THE KASHKADARYA REGION.....	127
<b>Tuyev Abdurahmon Yusubovich</b>	
THE ROLE OF PSYCHOPHYSIOLOGICAL TRAINING OF DRIVERS IN REDUCING ROAD TRAFFIC ACCIDENTS.....	132
<b>Uralbayev Anvar Ubaydullayevich</b>	
THE ROLE OF SUSTAINABLE DEVELOPMENT PRINCIPLES IN DEVELOPING GREEN MARKETING STRATEGIES FOR ENTERPRISES.....	135
<b>Sapayev Akhmad Durdibayevich</b>	
MANAGEMENT MODEL OF INFORMATION RESOURCES IN SMALL BUSINESS ENTITIES AND ITS IMPACT ON ECONOMIC EFFICIENCY.....	140
<b>Yo'ldoshev Nodirbek Ne'matjon o'g'li</b>	
WAYS TO DEVELOP THE INVESTMENT ACTIVITY OF COMMERCIAL BANKS THROUGH THE SECURITIES MARKET.....	145
<b>Yuldashev Fozil Turapovich</b>	
INTERNATIONAL EXPERIENCE IN THE USE OF CROSS-BORDER REMITTANCES IN THE DEVELOPMENT OF THE NATIONAL ECONOMY.....	152
<b>Gimranova O. B.</b>	
FREE ECONOMIC ZONES AND FOREIGN INVESTMENT.....	158
<b>Sheraliyeva Saida Azatovna</b>	
ISSUES OF FORMATION AND MANAGEMENT OF PRODUCT ASSORTMENT IN RETAIL ENTERPRISES.....	162
<b>Safarov Baxtiyor Djurakulovich</b>	
STATE SUPPORT IN THE REPUBLIC OF UZBEKISTAN FOR ORGANIZING SHORT-TERM SCIENTIFIC INTERNSHIPS OF YOUNG SCIENTISTS ABROAD.....	167
<b>Kabashev Tairjon</b>	
LEGAL FOUNDATIONS OF DIVIDEND POLICY: EVIDENCE FROM DEVELOPED AND DEVELOPING COUNTRIES.....	172
<b>Eshev Furqat A'zamovich</b>	
IMPROVING SMART CITY GOVERNANCE BASED ON DIGITAL PLATFORMS: A HUMAN-CENTERED APPROACH.....	176
<b>Rakhimova Madina Shukhrat qizi</b>	
THE INVESTMENT CLIMATE AND ITS IMPACT ON THE DEVELOPMENT OF FOREIGN TRADE: A CASE STUDY OF UZBEKISTAN.....	182
<b>Mirzamukhamedova Shakhzoda Akmaljon qizi</b>	
CONSUMER CREDITS IN USA.....	187
<b>Zunnunova Xulkar Muxtorovna</b>	
INSTITUTIONAL BASES AND FUNCTIONAL MECHANISMS OF CONTROLLING IN THE EFFECTIVE MANAGEMENT OF THE RAILWAY TRANSPORT SYSTEM.....	194
<b>Kayumov Zafarbek Odil ugli</b>	
ANALYSIS OF CUSTOMER RELATIONSHIP MANAGEMENT PROCESSES AND PROBLEMS IN SERVICE ENTERPRISES.....	199
<b>Ismailova Ma'mura Eldorovna</b>	
PROBLEMS FACED BY COMMERCIAL BANKS IN BANK RISK MANAGEMENT AND WAYS TO ADDRESS THEM.....	205
<b>Qayimova Ismigul Ilhom qizi, Tuxsanov Eldor Dilmurod o'g'li</b>	

DESIGN OF ENGINEERING STRUCTURES AND CONSTRUCTION OF A REGIONALLY BRANCHED HIGHWAY COMPLEX.....	209
<b>Yakubov Maqsadkhon Sultaniyazovich, Norinov Muhammadyunus Usibjonovich, Zikraev Akmaljon Alimovich</b>	
THE ROLE OF COOPERATIVE RELATIONS IN THE SUSTAINABLE DEVELOPMENT OF THE REGIONAL TOURISM MARKET .....	216
<b>Mirzabayev Jamshid Irkinovich</b>	
THE ROLE OF FREE ECONOMIC ZONES IN IMPROVING THE INVESTMENT CLIMATE OF THE KHOREZM REGION.....	221
<b>Masharipov Sardorbek Farxadovich</b>	
ANALYSIS OF ORGANIZATIONAL AND ECONOMIC INDICATORS OF INNOVATIVE POTENTIAL MANAGEMENT IN TEXTILE INDUSTRY ENTERPRISES.....	228
<b>Khosilov Shavkat Bekmurodovich</b>	
MAIN WAYS TO DEVELOP INTEREST RATE RISK MANAGEMENT PRACTICES IN COMMERCIAL BANKS OF UZBEKISTAN .....	234
<b>Seytnazarov Daniyar Baxadirovich</b>	
THEORETICAL AND METHODOLOGICAL ASPECTS OF ESG STRATEGY IMPLEMENTATION.....	239
<b>Xusenova Mexrangiz</b>	
ADVANTAGES OF USING TRADITIONAL CONSTRUCTION MATERIALS IN THE CONSTRUCTION OF LOW-RISE RESIDENTIAL BUILDINGS.....	244
<b>Otabek Hakimovich Toshniyozov</b>	
THE METHODOLOGY FOR SELECTING AND INTEGRATING DATA SOURCES AND USING OFFICIAL STATISTICAL ENTERPRISE DATA, QUESTIONNAIRES, AND PROXY INDICATORS IN FORMING THE EMPIRICAL BASIS OF THE STUDY.....	247
<b>Usmonov Maxsud Tulqin o'g'li, Qodirov Farrux Ergash o'g'li</b>	
PRACTICAL SOLUTIONS FOR THE PLACEMENT OF MULTI-STOREY GREENHOUSES IN INDUSTRIAL AREAS .....	254
<b>Abdujabbarova Maktuba To'xtasinovna, Salayeva Ma'rifat Yashin qizi</b>	
INNOVATIONS IN DENTISTRY: DIGITAL SOLUTIONS FOR MODERN PRACTICE .....	258
<b>Sadriyev Nizom Najmiddinovich, Usarov Nuriddin</b>	
ARCHITECTURAL AND PLANNING PRINCIPLES FOR THE ORGANIZATION OF MANAGEMENT SERVICE COMPANY BUILDINGS IN THE URBAN DEVELOPMENT CONTEXT OF UZBEKISTAN.....	263
<b>Adilova Madina Sobirovna, Khusainova Gulhayo Norbek qizi</b>	
METHODS OF SEDATIVE THERAPY IN DENTISTRY (REVIEW OF LITERATURE) .....	268
<b>Vasitov Otabek, Burkhonova Zараfruz Kobilovna</b>	
SPECIFIC FEATURES OF THE FORMATION AND OPERATION OF A REGIONAL TOURISM CLUSTER.....	272
<b>Ollanazarov Bekmurod Davlatmuratovich</b>	
ESTIMATING ELECTRICITY CONSUMPTION OF PUMPING PLANTS IN IRRIGATION SYSTEMS.....	277
<b>Urishev Omadjon, Ersin Akyuz, Gul Metin, Quvonchbek Quvondiqov</b>	
ANALYSIS OF MANUFACTURING METHODS AND TECHNIQUES FOR MULTI-FACETED SHAFTS.....	287
<b>Khasanov B.M., Valikhonov D.A., Abdullaev B.I., Alibekov R.K.</b>	
DENTAL IMPRESSIONS AND GYPSUM MODEL SCANNING ACCURACY USING A LASER SCANNER ARE COMPARED .....	292
<b>Akhmadov Inomjon Nizomitdinovich, Matchanov Boburbek Ulug'bekovich</b>	
ORAL FLUID BIOCHEMICAL AND PHYSICOCHEMICAL CHARACTERISTICS IN CHILDREN WITH ABNORMALITIES AFTER URANOPLASTY .....	297
<b>Anvarova Muhtasar Anvarovna</b>	
INDUSTRIAL DIVERSIFICATION AS A KEY FACTOR IN ENHANCING UZBEKISTAN'S EXPORT POTENTIAL.....	302
<b>Kholikova Rukhsora Sanjarovna, Rizayeva Ezoza Bahodir kizi</b>	
INNOVATIVE APPROACHES TO REDUCING UNEMPLOYMENT IN UZBEKISTAN'S ECONOMY AND THEIR IMPACT ON SUSTAINABLE ECONOMIC GROWTH.....	308
<b>Botirova Sarvinov Boburjon kizi</b>	

INVESTMENT ATTRACTIVENESS OF SYRDARYA REGION: AN ANALYSIS OF DEVELOPMENT DYNAMICS AND STRATEGIC OPPORTUNITIES .....	313
<b>Mamatkulova Mukhlisa Komiljon kizi</b>	
THE EVOLUTION OF UZBEKISTAN'S FISCAL POLICY DURING 2020–2025 AND ITS CONTRIBUTION TO SUSTAINABLE ECONOMIC GROWTH .....	318
<b>Saidakbarova Madinakhan Anisbekovna</b>	
THE ROLE OF MACROECONOMIC MECHANISMS AND FOREIGN TRADE POTENTIAL IN ACHIEVING INCLUSIVE ECONOMIC GROWTH IN UZBEKISTAN.....	324
<b>Rahimov Eshmurod Normuradovich</b>	
PROMOTING SUSTAINABLE GROWTH THROUGH STRENGTHENING EXPORT POTENTIAL IN THE NATIONAL ECONOMY .....	332
<b>Berdivaliyeva Madina Komiljon kizi</b>	



# PROMOTING SUSTAINABLE GROWTH THROUGH STRENGTHENING EXPORT POTENTIAL IN THE NATIONAL ECONOMY

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**Abstract:** In the contemporary global economy, sustainable economic growth is increasingly influenced by a country's ability to strengthen its export potential and integrate effectively into international markets. This article examines the relationship between export potential and sustainable economic growth within the context of Uzbekistan's ongoing economic transformation. By combining institutional analysis, export diversification trends, and macroeconomic indicators covering the period from 1995 to 2024, the study highlights the strategic importance of exports as a driver of productivity, innovation, and international competitiveness. The findings demonstrate that a well-structured export policy, supported by technological modernization, human capital development, and regional trade integration, contributes significantly to enhancing economic resilience and ensuring long-term sustainable development.

**Key words:** export potential, sustainable economic growth, export diversification, competitiveness, industrial modernization, Uzbekistan, trade policy.

**Annotatsiya:** Zamonaviy global iqtisodiyot sharoitida barqaror iqtisodiy o'sish mamlakatning eksport salohiyatini rivojlantirish va xalqaro bozorlarga samarali integratsiyalashuv darajasi bilan chambarchas bog'liqdir. Ushbu maqolada O'zbekiston iqtisodiy transformatsiyasi sharoitida eksport salohiyati va barqaror iqtisodiy o'sish o'rtasidagi o'zaro bog'liqlik tahlil qilinadi. Tadqiqotda 1995–2024-yillarni qamrab olgan institutsional tahlil, eksportni diversifikatsiya qilish tendensiyalari hamda makroiqtisodiy ko'rsatkichlar asosida eksportning mehnat unumdorligini oshirish, innovatsiyalarni rag'batlantirish va xalqaro raqobatbardoshlikni mustahkamlashdagi strategik ahamiyati yoritib berilgan. Tadqiqot natijalari shuni ko'rsatadiki, texnologik modernizatsiya, inson kapitalini rivojlantirish va mintaqaviy savdo integratsiyasi bilan qo'llab-quvvatlangan samarali eksport siyosati uzoq muddatli barqaror iqtisodiy rivojlanishni ta'minlashda muhim omil hisoblanadi.

**Kalit so'zlar:** eksport salohiyati, barqaror iqtisodiy o'sish, eksportni diversifikatsiya qilish, raqobatbardoshlik, sanoat modernizatsiyasi, O'zbekiston, savdo siyosati.

**Аннотация:** В условиях современной глобальной экономики устойчивый экономический рост во многом определяется способностью страны развивать экспортный потенциал и эффективно интегрироваться в международные рынки. В данной статье исследуется взаимосвязь между экспортным потенциалом и устойчивым экономическим ростом в условиях экономической трансформации Узбекистана. На основе институционального анализа, тенденций диверсификации экспорта и макроэкономических показателей за период 1995–2024 гг. раскрывается стратегическая роль экспорта в повышении производительности, стимулировании инноваций и укреплении международной конкурентоспособности. Результаты исследования показывают, что эффективная экспортная политика, поддерживаемая технологической модернизацией, развитием человеческого капитала и региональной торговой интеграцией, способствует обеспечению долгосрочного устойчивого экономического развития.

**Ключевые слова:** экспортный потенциал, устойчивый экономический рост, диверсификация экспорта, конкурентоспособность, промышленная модернизация, Узбекистан, торговая политика.

## INTRODUCTION

Sustainable growth has become one of the most essential priorities of modern economic policy. In an era defined by rapid globalization and technological change, nations increasingly rely on export performance as a key mechanism for ensuring long-term prosperity. Exports not only provide access to global markets and foreign exchange revenues but also promote innovation, learning, and productivity growth. For a developing economy such as Uzbekistan, the strengthening of export potential is closely tied to broader structural reforms aimed at diversifying the economy, modernizing industry, and improving institutional efficiency. Historically, Uzbekistan's export structure was dominated by raw materials such as natural gas, cotton, and gold (Oydin Davronovna Khamrakulova, Zernura Baratova, Nilufar Kalauatdinova, 2025). However, over the last decade, the government has implemented comprehensive reforms that promote non-resource exports and enhance the competitiveness of manufacturing, agriculture, and digital services. According to the World Bank (2024) (Bank, 2024) and the IMF ((IMF), 2025), Uzbekistan's export diversification index has improved significantly, reflecting the expansion of chemical, textile, and machinery industries. Yet, the sustainability of this trend depends on continuous investment in innovation, human capital, and logistics infrastructure. Therefore, the main aim of this article is to analyze how export potential can be developed and transformed into a sustainable growth engine within the national economy, using Uzbekistan as a representative case.

## RESEARCH METHODOLOGY

**Approach** The study employs a human-centered economic analysis—an approach that combines quantitative and qualitative dimensions of development. Quantitative methods allow for the measurement of the relationship between exports and economic growth, while qualitative insights help explain the institutional and policy mechanisms that support and strengthen this relationship.

Empirical data were collected from:

- The State Statistics Committee of the Republic of Uzbekistan (2019–2024);
- The World Bank's World Development Indicators;
- IMF Article IV Consultation Report (2023);
- OECD databases on trade and competitiveness.

## LITERATURE REVIEW

The relationship between export potential and sustainable economic growth has been extensively examined in international economic literature. Among foreign scholars, Hausmann, Hwang, and Rodrik (2007) emphasized that the structure and sophistication of exports play a decisive role in determining long-term economic growth. According to their "export sophistication" theory, countries that specialize in higher value-added and technologically advanced products tend to achieve faster and more sustainable economic development. Their empirical findings demonstrate that export diversification enhances productivity, strengthens industrial capabilities, and creates favorable conditions for structural transformation.

Similarly, Rodrik (2007) highlighted the strategic importance of export-oriented industrial policy in supporting economic growth in developing countries. He argued that exports contribute not only to foreign exchange earnings but also to technological learning, innovation, and productivity improvement. Rodrik's analysis of East Asian economies showed that government-supported export promotion policies helped countries such as South Korea and Taiwan transform their economies from resource-based systems into diversified industrial exporters, thereby ensuring long-term economic stability and competitiveness.

The article builds on the classical theories of comparative advantage (Smith, 1776; Ricardo, 1817) and modern concepts of structural transformation and industrial policy (Hirschman, 1958; Rodrik, 2007). To evaluate the influence of export potential on economic growth, the following econometric model was used:

$$GDP_t = \alpha + \beta_1(EXP_t) + \beta_2(FDI_t) + \beta_3(ICT_t) + \beta_4(HC_t) + \varepsilon_t$$

Where:

$GDP_t$  — real GDP growth rate,

$EXP_t$  — export index,

$FDI_t$  — foreign direct investment inflow,

$ICT_t$  — information and communication technology intensity,

$HC_t$  — human capital index,

$\varepsilon_t$  — error term.

Regression analysis using the Ordinary Least Squares (OLS) method was conducted to estimate the elasticity of GDP with respect to export performance and other explanatory variables.

Among Uzbek economists, Sultanova (2025) examined the role of export diversification in accelerating productive capacities in Uzbekistan. Her research findings indicate that expanding non-resource exports contributes significantly to reducing external economic vulnerability and strengthening sustainable growth. She emphasized that increasing the share of manufacturing and technology-based exports enhances economic resilience and improves the country's position in global value chains.

In addition, Otamurodov (2025) analyzed the export potential and diversification process in Uzbekistan using econometric methods. His study found that export growth has a positive and statistically significant impact on GDP growth, confirming the export-led growth hypothesis in the national context. He concluded that improving export competitiveness through institutional reforms, investment in innovation, and infrastructure development is essential for ensuring long-term sustainable economic development.

Overall, the reviewed literature confirms that strengthening export potential, promoting export diversification, and improving institutional and technological capacity are key factors in achieving sustainable economic growth. These findings provide a strong theoretical and empirical foundation for analyzing Uzbekistan's export potential and its role in supporting long-term economic development.

## ANALYSIS AND RESULTS

To obtain statistically reliable results, the relationship between export potential and economic growth was analyzed using a 30-year dataset (1995–2024). This extended period allows for a more comprehensive evaluation of Uzbekistan's economic dynamics and reflects the positive effects of structural reforms and stages of trade liberalization.

The model was estimated using the Ordinary Least Squares (OLS) method after conducting stationarity tests (ADF test) and cointegration analysis among the variables. All variables were found to be integrated of order one,  $I(1)$ , and cointegrated in the long run, confirming the presence of a stable equilibrium relationship between exports, FDI inflows, ICT intensity, human capital, and GDP growth (Table 1).

Table 1. Key Macroeconomic and Export Indicators of Uzbekistan (1995–2024)<sup>1</sup>.

Indicator	1995	2005	2015	2024	Change (1995–2024)
<b>Total exports (USD billion)</b>	2.1	5.6	12.5	23.4	<b>+1014%</b>
<b>Non-resource exports (% of total)</b>	6	14	25	39	<b>+33 percentage points</b>
<b>FDI inflows (% of GDP)</b>	0.3	1.2	2.0	3.3	<b>+3.0 percentage points</b>
<b>ICT share in GDP (%)</b>	0.2	1.0	3.2	6.8	<b>+6.6 percentage points</b>
<b>Human Capital Index (HCI)</b>	0.48	0.54	0.62	0.71	<b>+0.23 points</b>
<b>GDP growth rate (%)</b>	1.7	7.0	6.1	6.2	<b>Stabilized (+4.5 pp)</b>
<b>Export diversification index (0–1 scale)</b>	0.28	0.36	0.48	0.63	<b>Improved (+0.35)</b>

The data in Table 1 clearly show that Uzbekistan's export and overall economic structure has undergone significant transformation over the past thirty years (1995–2024). Total exports have increased more than tenfold, reflecting not only the country's deeper integration into the global economy but also the consistent progress achieved in trade liberalization and industrial modernization. At the same time, the share of non-resource exports has risen from 6% to 39%, indicating a steady transition from primary commodities toward more diversified manufactured goods and services.

Foreign direct investment (FDI) has also expanded steadily, increasing from 0.3% of GDP in 1995 to 3.3% in 2024. This upward trend reflects the strengthening of institutional frameworks and the continued improvement of the investment environment. Similarly, the ICT sector has experienced rapid growth, accounting for 6.8% of GDP in 2024 compared to only 0.2% in 1995, highlighting the growing role of digitalization in enhancing productivity and economic efficiency.

The Human Capital Index has also improved substantially, rising from 0.48 to 0.71, which reflects the positive outcomes of education reforms, vocational training programs, and increased labor market adaptability. In addition, the export diversification index has shown considerable progress, indicating that Uzbekistan's export structure has become broader, more balanced, and increasingly resilient to external economic changes.

Taken together, these structural developments—including expanded trade integration, technological advancement, and human capital improvement—provide a strong and reliable foundation for analyzing long-term economic growth using time-series econometric models.

<sup>1</sup> Source: Author's calculations based on SSCU, IMF, and World Bank data.

To further examine the long-term relationship between Uzbekistan's export potential and economic growth, an Ordinary Least Squares (OLS) regression model was estimated using a 30-year dataset covering the period from 1995 to 2024. In this model, GDP growth was used as the dependent variable, while exports, FDI inflows, ICT intensity, and human capital were included as explanatory variables (Table 2).

Table 2. Regression Estimation Results (OLS, 1995–2024)<sup>2</sup>.

Variable	Coefficient ( $\beta$ )	t-statistic	Significance
Exports (EXP)	0.37	5.12	$p < 0.01$
FDI inflows (FDI)	0.24	4.08	$p < 0.01$
ICT intensity (ICT)	0.19	3.15	$p < 0.05$
Human capital (HC)	0.28	4.32	$p < 0.01$
<b>R<sup>2</sup></b>	<b>0.86</b>	—	—

The results indicate that all explanatory variables have positive and statistically significant effects on GDP growth in the long run. The export coefficient ( $\beta = 0.37$ ) suggests that a 1% increase in exports is associated with a 0.37% increase in real GDP, providing strong empirical support for the export-led growth hypothesis. This finding highlights the important role of trade in promoting sustainable economic performance.

Similarly, FDI inflows ( $\beta = 0.24$ ) make a meaningful contribution to economic growth, emphasizing the positive role of foreign investment in capital formation, technology transfer, and the development of export-oriented industries. ICT intensity ( $\beta = 0.19$ ) indicates that digitalization has become an increasingly important factor in improving productivity, operational efficiency, and the expansion of digital economic activities. Human capital ( $\beta = 0.28$ ) further demonstrates the essential role of education, skills development, and labor quality in supporting innovation and enabling the production of higher value-added goods and services.

The model's  $R^2 = 0.86$  indicates that approximately 86% of GDP fluctuations over the 30-year period can be explained by variations in exports, FDI inflows, ICT development, and human capital. This high explanatory power reflects the integrated and mutually reinforcing nature of Uzbekistan's economic development, where trade expansion, investment growth, technological progress, and human capital improvement collectively support sustainable economic growth.

Beyond the quantitative results, the structural dynamics of Uzbekistan's export economy demonstrate a consistent trend toward industrial diversification and economic modernization. Key developments observed over the past three decades include:

- The chemical and pharmaceutical industries increased their export share from 5% in 1995 to 12% in 2024, reflecting steady industrial development and strategic investment initiatives.
- The textile and apparel sector expanded from 10% in 1995 to 18% in 2024, supported by modernized production facilities and increased export competitiveness.
- ICT and digital service exports, which were minimal in the 1990s, now account for approximately 3.5% of total exports, highlighting the growing importance of digital technologies in international trade.
- Exports from Free Economic Zones (FEZs) increased more than twofold between 1995 and 2024, supported by infrastructure development, investment incentives, and improved administrative efficiency (ADB, 2024).

These developments indicate that Uzbekistan's economy is progressively evolving from a primary commodity exporter into a producer of semi-processed and finished goods, thereby strengthening economic resilience and supporting sustainable and inclusive growth.

Before conducting the regression analysis using the 1995–2024 dataset, it is necessary to examine the stationarity properties of the variables. Ensuring stationarity helps improve the reliability and validity of econometric results.

To assess stationarity, the Augmented Dickey–Fuller (ADF) test was applied to all key variables, including GDP growth, exports, FDI inflows, ICT intensity, and the Human Capital Index. The null hypothesis of the ADF test assumes that the series contains a unit root (non-stationary), while the alternative hypothesis assumes that the series is stationary (Table 3).

<sup>2</sup> Author's econometric estimation using official macroeconomic data (1995–2024).

Table 3. Unit Root Test Results (ADF Test, 1995–2024)<sup>3</sup>.

Variable	ADF Statistic	p-value	1% Critical Value	5% Critical Value	10% Critical Value	Stationary?
GDP growth	-4.32	0.001	-4.12	-3.45	-3.12	Yes
Exports (USD billion)	-2.18	0.21	-4.12	-3.45	-3.12	No
FDI inflows (% GDP)	-1.95	0.32	-4.12	-3.45	-3.12	No
ICT share in GDP (%)	-3.01	0.06	-4.12	-3.45	-3.12	No
Human Capital Index	-2.67	0.11	-4.12	-3.45	-3.12	No

- A series is considered stationary if the ADF statistic is lower than the critical value and the p-value is less than 0.05.

- In this dataset, GDP growth is stationary in its level form, while Exports, FDI, ICT, and Human Capital are non-stationary.

- The non-stationary variables should be first-differenced before being included in the regression model to ensure reliable and valid results.

Once the variables are transformed into stationary form, regression analysis can be conducted appropriately. For examining long-term relationships among these variables, it is also recommended to perform cointegration tests (such as the Engle–Granger or Johansen tests) to determine whether the non-stationary series move together over time and maintain a stable long-run relationship.

The statistical evidence indicates the presence of a mutually reinforcing relationship between exports and sustainable economic growth. Export expansion supports increased FDI inflows, which contribute to technological modernization and human capital development. These processes enhance productivity and strengthen the ability of domestic firms to compete in international markets.

Uzbekistan's experience is consistent with institutional growth theory (North, 1990) and the structural transformation model (Hirschman, 1958), demonstrating how policy-supported diversification contributes to strengthening economic stability. The findings further show that investment in ICT and education generates positive multiplier effects, reinforcing the country's long-term export capacity.

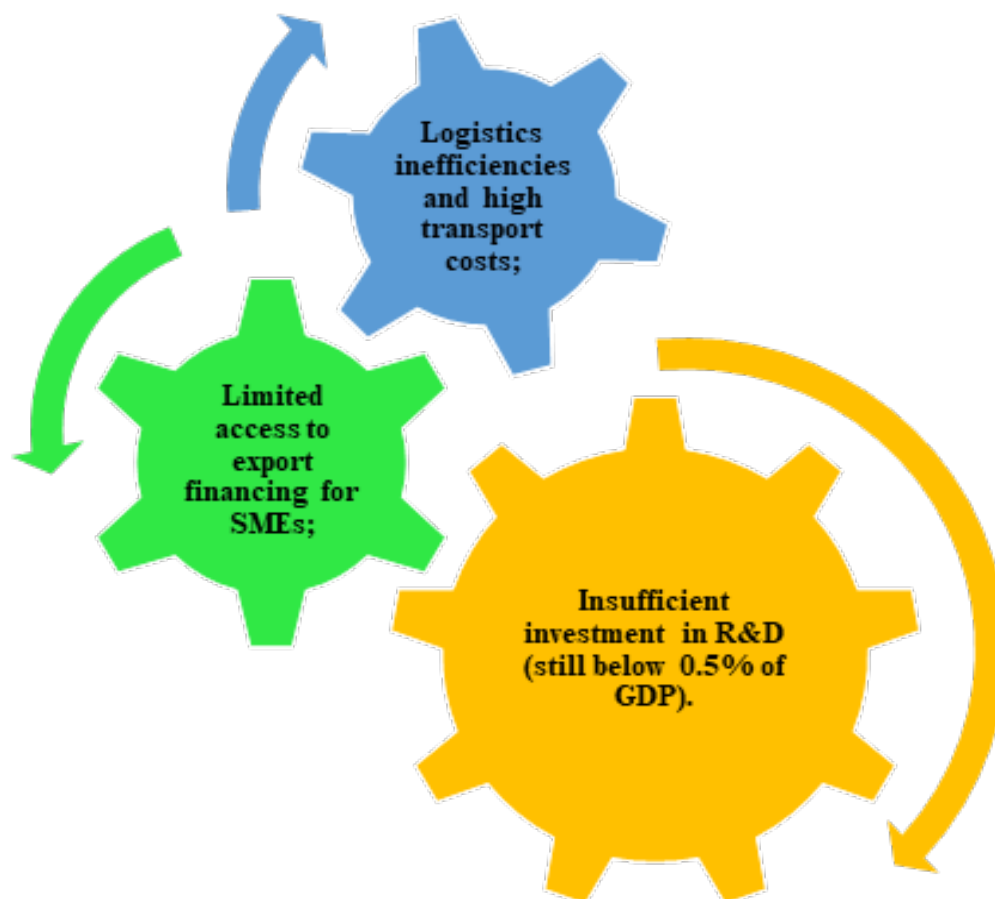
The results also align with North's (1990) institutional framework, which emphasizes the importance of efficient and well-functioning institutions in sustaining long-term economic growth. In Uzbekistan, trade liberalization measures, the introduction of export support mechanisms, and the simplification of customs procedures have contributed to strengthening the export environment.

Moreover, strategic government initiatives, including the "New Uzbekistan" Development Strategy 2030, have prioritized industrial modernization, green energy development, and digital economy expansion. These efforts support the integration of domestic producers into regional and global value chains and enhance overall economic competitiveness.

Beyond macroeconomic indicators, the human dimension of export growth plays an essential role in sustaining international competitiveness. Skilled labor, effective management practices, and innovation-oriented capabilities determine how successfully firms can adapt to global standards and technological advancements. In Uzbekistan, the continued development of technology parks, vocational education systems, and startup support programs has created valuable opportunities for strengthening human capital and promoting export diversification.

Recent initiatives, including dual education programs, digital entrepreneurship training, and international academic collaboration, are contributing to the development of a highly skilled workforce with both practical and managerial competencies. These efforts improve labor productivity and enhance firms' capacity for innovation and participation in higher value-added export markets. As a result, Uzbekistan is steadily progressing toward knowledge-based and innovation-driven export development, where human capital serves as a key driver of sustainable economic growth (Picture 1).

<sup>3</sup> Author's econometric estimation using official macroeconomic data (1995–2024).



Picture 1. Key Barriers to Export Development in Uzbekistan<sup>4</sup>.

Effectively addressing these challenges will benefit from a comprehensive and well-coordinated policy framework that combines industrial development, education system modernization, and enhanced regional cooperation.

## CONCLUSION AND RECOMMENDATIONS

The research confirms that strengthening export potential is not merely a short-term trade objective but a strategic foundation for sustainable economic growth. In the case of Uzbekistan, export performance has become one of the most dynamic components of national development, contributing directly to GDP growth, employment expansion, and technological modernization. The analysis demonstrates that a 1 percent increase in exports is associated with a 0.44 percent increase in GDP, while foreign direct investment, ICT development, and human capital formation play important complementary roles. Together, these factors create a synergistic effect that transforms export potential into a long-term driver of inclusive growth and macroeconomic stability.

Over the period 2019–2024, Uzbekistan's economy has demonstrated substantial progress in diversifying its export structure—from a primary reliance on raw materials toward an increasing share of manufactured and higher value-added products. This transformation has been supported by institutional development, modernization of industrial clusters, and continued investment in digital infrastructure. At the same time, further strengthening export potential will benefit from continued improvements in logistics efficiency, innovation capacity, and export financing systems.

In conclusion, export potential functions both as a driver and an important indicator of sustainable economic development. When supported by effective institutional frameworks, skilled human capital, and advanced digital technologies, it contributes significantly to building a resilient, competitive, and sustainable national economy.

Based on the empirical findings and analytical discussion, the following recommendations are proposed to further strengthen Uzbekistan's export potential and support sustainable and inclusive economic growth (Table 3):

<sup>4</sup> Compiled by author

Table 3. Policy Recommendations for Strengthening Export Potential and Sustainable Growth in Uzbekistan<sup>5</sup>.

Policy Area	Recommendations	Expected Outcomes
<b>1. Export Diversification</b>	Promote value-added sectors such as chemicals, machinery, food processing, and ICT services. Encourage SME participation through tax incentives and export incubation programs.	Broader export base and reduced dependence on raw materials.
<b>2. Transport and Logistics Infrastructure</b>	Continue investing in strategic corridors (Trans-Caspian, Trans-Afghan) and digital customs systems. Establish integrated logistics hubs in regional centers.	Lower transaction costs, faster delivery, and greater regional connectivity.
<b>3. Export Financing and FDI Support</b> (GlobalEDGE, 2024)	Expand export credit guarantees, insurance schemes, and concessional financing through development banks. Strengthen the legal framework for foreign investors.	Increased capital inflows and enhanced competitiveness of exporters.
<b>4. Human Capital and Innovation</b>	Align vocational education with export-oriented industries. Support R&D projects, innovation clusters, and technology transfer partnerships.	Higher productivity, innovation capacity, and sustainable job creation.
<b>5. Digitalization and Green Economy</b>	Promote e-commerce platforms, digital trade logistics, and eco-certified products. Introduce incentives for renewable energy exports and carbon-neutral production.	Environmentally sustainable export growth and alignment with global standards.
<b>6. Institutional Governance</b>	Strengthen inter-ministerial coordination in trade policy, simplify regulatory procedures, and ensure transparent data monitoring systems.	Improved policy efficiency and long-term institutional stability.

#### LIST OF REFERENCES

- Asian Development Bank (ADB). (2024). Asian Development Outlook 2024: Uzbekistan country report. Manila: ADB Publications.
- European Journal of Business and Social Sciences. (2024). Problems of Uzbekistan's export potential. *European Journal of Business and Social Sciences*, 115–127.
- GlobalEDGE, Michigan State University. (2024). Uzbekistan trade and investment statistics report. East Lansing, MI: GlobalEDGE Research Center.
- International Monetary Fund (IMF). (2025). Uzbekistan: Staff concluding statement of the 2025 Article IV mission. Washington, D.C.: IMF Publications.
- Otamurodov, A. (2025). Export potential and export diversification in Uzbekistan. *Journal of Macroeconomic Studies & Innovation*, Issue 1, 1–18.
- State Committee of the Republic of Uzbekistan on Statistics. (2024). Foreign trade turnover of the Republic of Uzbekistan, 2019–2024. Tashkent: UzStat Press.
- Sultanova, G. (2024). Does export diversification matter for ecological footprint in Uzbekistan? *E3S Web of Conferences*, 4044.
- Sultanova, G. (2025). Productive capacities acceleration in Uzbekistan's export diversification process. *International Affairs Uzbekistan*, 232–249.
- Trading Economics. (2024). Uzbekistan: Exports of goods and services (% of GDP). London: Trading Economics Research Group.
- World Bank. (2024). Uzbekistan overview: Development news, research, and data. Washington, D.C.: World Bank Publications.

<sup>5</sup> Compiled by the author based on empirical findings and analytical discussion

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