PRODUCTIVE CAPACITIES ACCELERATION IN UZBEKISTAN'S EXPORT DIVERSIFICATION PROCESS

DOI: 10.63407/611033

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Abstract: *The article evaluates Uzbekistan's productive potential by analyzing key indicators comprising the UNCTAD Productive Capacities Index (PCI) categories. The analysis highlights existing problems and constraints that affect Uzbekistan's productive potential and the opportunities for export diversification. Based on the findings, specific recommendations are provided to address these issues and create favorable conditions for enhancing export diversification. To accelerate export diversification, a comprehensive approach involving coordinated measures across various areas of economic policy is necessary. Such an approach will enable the efficient use of available production resources and promote sustainable economic growth.*

Key words: *export diversification; productive capacities; human capital; private sector; institutes; Uzbekistan*

Introduction

Economic diversification, which involves changing the structure of domestic production and exports, is crucial for the economic development of low- and middle-income countries. It helps reduce the state's vulnerability to external shocks, ensuring more stable long-term economic growth. The need to accelerate economic diversification has become particularly urgent due to global crises such as the COVID-19 pandemic, current geopolitical challenges, and climate change.

Developing countries that rely heavily on a limited range of exports, especially raw materials and low-processed products, are particularly vulnerable to external economic shocks. The high volatility of export earnings in these countries often leads to unstable economic growth rates. Diversifying the

export portfolio can help mitigate these vulnerabilities, especially with fluctuations in global commodity prices.[1]

Economic diversification strategies typically involve a combination of horizontal and vertical policies.[2] Horizontal policies create favorable conditions for all sectors of the economy, including measures that ensure macroeconomic stability, fiscal sustainability, a favorable business climate, and improvements in human capital, institutions, and infrastructure. Vertical policies, conversely, encourage specific industries by providing subsidies, tax incentives, and loans as part of an industrial policy. Successful implementation of an economic diversification strategy requires ongoing collaboration between government agencies and the private sector. This allows for identifying barriers to entrepreneurial activity and developing policies to overcome them.

Currently, Uzbekistan's export portfolio is not well diversified, as indicated by a high export concentration index (0.311 in 2023) and export diversification index (0.739 in 2023) compared to averages for Central and South Asian countries (0.117 and 0.398, respectively), developing Asian countries (0.106 and 0.219), and middle-income countries (0.110 and 0.345).[3] Although there have been improvements in the export structure, with an increase in the share of processed goods and a decrease in raw materials, most exports are still intermediate goods with a low degree of processing, accounting for more than two-thirds of the total export

[1] Mania, Elodie, and Arsène Rieber. "Product Export Diversification and Sustainable Economic Growth in Developing Countries." *Structural Change and Economic Dynamics* 51 (August 20, 2019): 138–151. https://doi.org/10.1016/j.strueco.2019.08.006.
[2] "Departmental Papers Volume 2024 Issue 006: Economic Diversification in Developing Countries: Lessons from Country Experiences with Broad-Based and Industrial Policies (2024)." IMF eLibrary. Accessed December 27, 2024. https://www.elibrary.imf.org/view/journals/087/2024/006/087.2024.issue-006-en.xml?cid=nl-com-compd-nn07312024-economic_diversification.
[3] "UNCTADstat Data Centre," n.d. https://unctadstat.unctad.org/datacentre/dataviewer/US.ConcentDiversIndices.

volume. [4] In 2023, raw materials comprised 50% of Uzbekistan's goods exports, while products of low technological complexity accounted for 23%.[5]

A study by the International Monetary Fund (IMF), using the gravity model of trade, found that Uzbekistan has significant potential to boost exports of non-primary goods, complex goods, and services by reducing trade barriers (including import tariffs), enhancing governance, and investing in infrastructure, education, and skills development. IMF experts point out that poor governance, insufficient skills, weak infrastructure, and high tariffs compared to averages in emerging markets in Eastern Europe and East Asia are key factors contributing to the low level of non-primary goods and service exports per capita in Uzbekistan.[6]

Uzbekistan's production potential and comparative advantages shape its opportunities for enhancing export diversification. It is important to note that these comparative advantages are not static and can evolve. If the economy's production capabilities are improved, it can develop comparative advantages in producing more complex goods with higher added value. Such growth in production capabilities can be achieved by utilizing resources more efficiently and increasing the productivity of production factors through investments in human capital, technological advancements, and innovations.

This study evaluates Uzbekistan's productive capacities by analyzing the UNCTAD Productive Capacities Index (PCI) components. It identifies issues affecting production potential and export diversification and recommends addressing these

[4] Sultanova, G. "Trends in Development and Diversification of Exports of the Republic of Uzbekistan." *Economic Development and Analysis* 2, no. 10 (2024): 232-249.
[5] "World Integrated Trade Solution (WITS) | Data on Export, Import, Tariff, NTM," n.d. https://wits.worldbank.org/.
[6] IMF. "Republic of Uzbekistan: 2024 Article IV Consultation-Press Release; and Staff Report," July 11, 2024. https://www.imf.org/en/Publications/CR/Issues/2024/07/11/Republic-of-Uzbekistan-2024-Article-IV-Consultation-Press-Release-and-Staff-Report-551710.

challenges. The findings can guide efforts to enhance production potential, accelerate export diversification in Uzbekistan, and aid in developing a national export strategy and improving the national export support system.

Research method

The study utilized systematic, comparative, statistical, and graphical analysis methods. Correlation and regression analyses were conducted to evaluate the relationship between the export concentration and productivity capacity indexes.

Scope of research

This research aims to comprehensively understand how improving productive capacities can accelerate Uzbekistan's export diversification. By identifying key factors, challenges, and opportunities, the study will offer valuable insights for policymakers, businesses, and researchers interested in the country's economic development.

Core issue

This research identifies and analyzes the barriers and opportunities to enhance Uzbekistan's productive capacities to accelerate export diversification. Despite its growth potential, Uzbekistan faces challenges such as limited technological advancement, inadequate infrastructure, and insufficient human capital, which hinder its ability to diversify exports effectively. This research explores how improving these productive capacities can increase competitiveness, innovation, and a more resilient and varied export portfolio.

Assessment of Uzbekistan's productive capacities

According to the definition proposed by UNCTAD, productive capacities refer to the combination of resources, entrepreneurial capabilities, and production linkages that determine a country's ability to produce goods and services and

its potential for growth and development. Productive resources encompass factors of production such as human, natural, financial, and physical capital. Entrepreneurial capabilities are defined as the capabilities of enterprises and households to produce goods and services. Production linkages describe the interactions between different sectors of the economy and between domestic and foreign enterprises, facilitated through trade, investment, and technology.[7] The interplay among these three components shapes the economy's capacity to produce goods and services.

Increasing productive capacities is essential for enhancing economic diversification and structural transformation, vital for achieving sustainable economic growth and development. To evaluate countries' productive capacities, UNCTAD has created the Productive Capacities Index (PCI), which comprises eight categories: energy, human capital, information and communication technologies (ICTs), institutions, natural capital, private sector, structural change, and transport.[8] The scores of these categories range from 0 to 100, contributing to

[7] Организация Объединенных Наций. "ИНДЕКС ПРОИЗВОДСТВЕННОГО ПОТЕНЦИАЛА ЮНКТАД." *КОНФЕРЕНЦИЯ ОРГАНИЗАЦИИ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ТОРГОВЛЕ И РАЗВИТИЮ*, 2020. https://unctad.org/system/files/official-document/aldc2020d2_ru.pdf.

[8] "Energy" evaluates the availability, sustainability, and efficiency of various energy sources. Human capital encompasses the levels of education, professional skills, and health of the population, as well as the integration of research and development into society, indicated by the number of researchers and the funding allocated for scientific activities.
"Information and communication technologies" assess the availability and integration of communication systems among the population. "Institutions" gauge political stability and the effectiveness of public administration by examining the quality of regulations, the effectiveness of efforts to combat crime, corruption, and terrorism, and the protection of citizens' rights to freedom of speech and association.
"Natural capital" assesses the availability of natural and agricultural resources, including rental income from the extraction of these resources while accounting for the costs involved in their extraction. "Private sector" is characterized by the conditions for cross-border trade, including the time and cost associated with exporting and importing goods, support for entrepreneurship through domestic lending, the efficiency of contract enforcement, and the time required to start a business.
"Structural change" involves reallocating labor and other productive resources from low-productivity sectors to high-productivity economic activities. "Transport" evaluates how effectively a transportation system can move people or goods from one location to another.

an overall index score. UNCTAD's calculations indicate that the PCI and the export product concentration index have an inverse relationship. This means economies with higher production potential exhibit a more diversified export structure. Conversely, countries with a relatively high export product concentration index possess less developed production capabilities. Therefore, enhancing productive capacities is crucial in promoting export diversification and reducing the economy's vulnerability to adverse external shocks.[9]

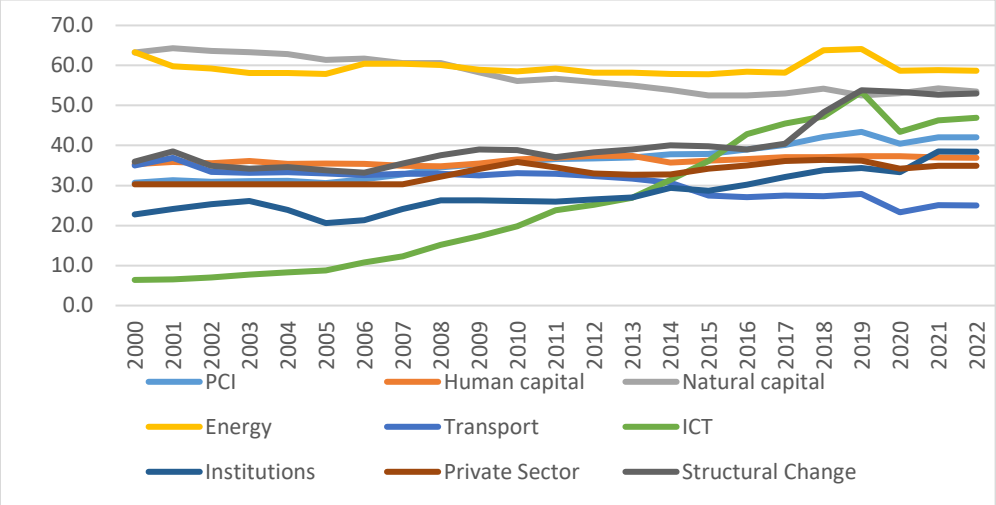

Figure 1. Dynamics of the UNCTAD's Productive Capacities Index for Uzbekistan in 2000-2022

Source: UNTADSTAT. URL: https://unctadstat.unctad.org/datacentre/dataviewer/US.PCI://unctadstat.unctad.org/datacentre/dataviewer/US.PCI

Correlation analysis of Uzbekistan's data from 2000 to 2022 revealed a moderate negative relationship between the export product concentration index and the PCI, quantified at -0.47. This negative relationship extended to various PCI categories: human capital (-0.17), ICT (-0.42), institutions (-0.47), private sector (-0.39), and structural change (-0.37). Conversely, the correlation between the export concentration

[9] UN Trade and Development (UNCTAD). "Productive Capacities Index," November 5, 2024. https://unctad.org/topic/least-developed-countries/productive-capacities-index.

index and specific PCI categories, such as natural capital (0.46), energy (0.36), and transport (0.51), was positive.

A simple one-factor OLS regression, which treated the export product concentration index as the dependent variable and the PCI as the explanatory variable, indicated that, all else being equal, an increase of 1 point in Uzbekistan's PCI is associated with a decrease of 0.003 points in the export concentration index (p-value = 0.022). This suggests that enhancing Uzbekistan's PCI could foster a deeper diversification of its export structure.

Figure 1 illustrates the dynamics of Uzbekistan's PCI and its components from 2000 to 2022. During this period, the PCI value rose from 30.7 to 42. The ICT component, which encompasses fixed-broadband and mobile subscriptions, Internet access, and server security, significantly contributed to productive capacities growth, increasing from 6.4 in 2000 to 46.9 in 2022.

Additionally, a notable increase occurred in the components related to structural changes (reflecting the complexity and diversity of exports, the intensity of fixed capital use, and the share of industry and services in the gross domestic product (GDP)), institutions (covering political stability, regulatory quality, combat effectiveness against crime, corruption, and terrorism, as well as the protection of citizens' rights to freedom of speech and association). These advances correlate with the gradual diversification of exports, the growing share of industry and services in GDP, and the implementation of institutional reforms.

Changes in crucial aspects of the PCI – such as "Human capital", which includes education, skills, health status, and research and development (R&D), as well as "Private sector" factors like the ease of international trade, access to business credit, the efficiency of contract enforcement, and the time needed to start a business – have shown little significance. This

suggests that more comprehensive reforms are necessary in these areas.

At the same time, the values of components such as "Natural capital" (availability of natural resources), "Energy" (availability, sustainability, and efficiency of energy sources), and "Transport" (density of the road and railway network, as well as air connectivity) have declined. This decline may be attributed to the production processes' increasing material and energy intensity and the limited transport links within Uzbekistan.

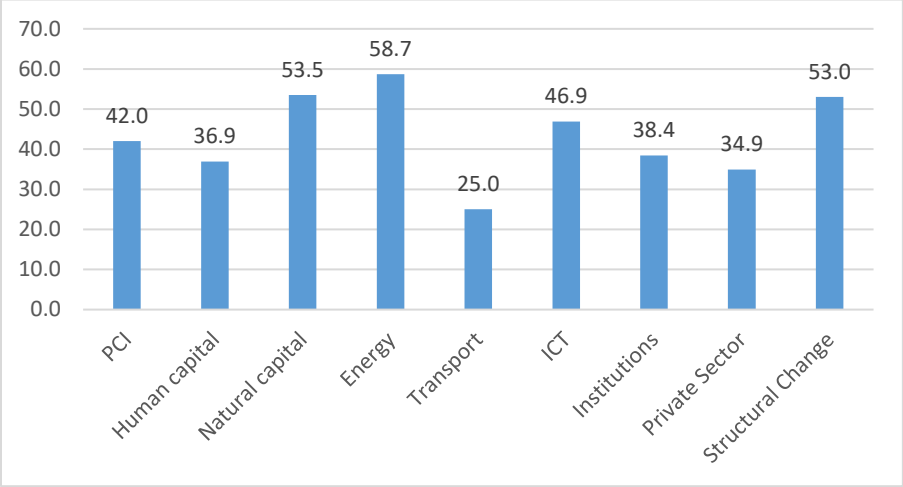

Figure 2. The Productive Capacities Index of Uzbekistan in 2022

Source: UNTADSTAT. URL: https://unctadstat.unctad.org/datacentre/dataviewer/US.PCI://unctadstat.unctad.org/datacentre/dataviewer/US.PCI

In 2022, Uzbekistan ranked 129th out of 194 countries in the UNCTAD Productive Capacities Index. An analysis of the PCI components for Uzbekistan in 2022 reveals relatively strong indicators for "Energy" (58.7), "Natural capital" (53.5), "Structural change" (53.0), and "ICT" (46.9). However, the scores for "Human capital" (36.9), "Institutions" (38.4), "Private sector" (34.9), and "Transport" (25.0) remain low (Figure 2).

To enhance Uzbekistan's productive capacities and accelerate economic diversification, it is crucial to focus on

initiatives that develop human capital, improve the quality of institutions, create a favorable business environment, and enhance transport infrastructure. It is important to recognize that accelerating economic diversification necessitates a comprehensive approach that includes interconnected measures across various areas of economic policy.

Human capital development as a key factor in Uzbekistan's export diversification

A key factor in Uzbekistan's export diversification is the accumulation of human capital. Human capital encompasses the knowledge, skills, and health that individuals develop throughout their lives, enabling them to become productive members of society.[10] Investing in human capital involves providing quality health care, ensuring access to quality education, offering professional skills training, and creating job opportunities.

The "Human capital" component of the PCI is calculated using various indicators, such as health expenditure as a percentage of GDP, R&D expenditure as a percentage of GDP, fertility rate, life expectancy, the number of researchers in R&D, and the expected years of schooling. In 2021, health expenditure in Uzbekistan stood at 7.74% of GDP, lower than the global average of 10.35%.[11] Between 2009 and 2022, R&D expenditures ranged from 0.1% to 0.2% of GDP, well below the worldwide average of 2.62%.[12] While fertility rate and life expectancy in Uzbekistan exceed global averages, the number of researchers remains low at 547 per million people, compared

[10] Банк, Всемирный. "Проект развития человеческого капитала: Часто задаваемые вопросы." *World Bank*, March 30, 2023. https://www.vsemirnyjbank.org/ru/publication/human-capital/brief/the-human-capital-project-frequently-asked-questions.
[11] World Bank Open Data. "World Bank Open Data," n.d. https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=UZ.
[12] "Research and development expenditure as a proportion of GDP - Sustainable Development Goals - United Nations Economic Commission for Europe," n.d. https://w3.unece.org/SDG/en/Indicator?id=123.

to the world average of 1,524.[13] The expected years of schooling were 12 years, near the global average of 12.5 years.[14]

The World Bank Human Capital Index for Uzbekistan is 62%, lower than Europe and Central Asia's average of 69% but above the 48% average for lower-middle-income countries. Despite this, Uzbekistan performs poorly in many components of the index, except in average harmonized test scores and the percentage of children under five not suffering from stunting.[15] The actual schooling time for children is just 9.1 years, indicating potential issues with educational quality.

The first PISA assessment revealed significant problems, with Uzbekistan ranking 72nd in mathematical literacy and 80th in reading and science literacy. Over 60% of students failed to reach the minimum proficiency level in these areas. The study revealed that 24% of children attend schools facing a shortage of teachers, while 28% are enrolled in institutions struggling to employ qualified educators.[16] Furthermore, a public survey conducted by the Institute for Macroeconomic and Regional Studies found that 70% of schools in Uzbekistan lack a sewer connection, 29.5% do not have a reliable water supply system, 35.8% are without canteens or buffets, 5% do not have libraries, and 21% lack gyms.[17]

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[13] World Bank Open Data. "World Bank Open Data," n.d. https://data.worldbank.org/indicator/SP.POP.SCIE.RD.P6?locations=UZ.

[14] World Bank Gender Data Portal. "Expected years of schooling | World Bank Gender Data Portal," n.d. https://genderdata.worldbank.org/en/indicator/se-sch-life?view=trend&geos=WLD_UZB.

[15] Human Capital Country Brief - Uzbekistan. Accessed December 27, 2024. https://thedocs.worldbank.org/en/doc/64e578cbeaa522631f08f0cafba8960e-0140062023/related/HCI-AM23-UZB.pdf.

[16] *PISA 2022 Results (Volume I)*. *Programme for International Student Assessment/Internationale Schulleistungsstudie*, 2023. https://doi.org/10.1787/53f23881-en.

[17] "O'zbekiston Maktablaridagi Infratuzilma va Ta'lim Sifatiga Ta'sir Etuvchi Omillar." Институт макроэкономических и региональных исследований, September 10, 2020. https://imrs.uz/publications/articles-and-abstracts/talim_sifati.

In Uzbekistan, enhancing the quality of primary and secondary education is a crucial aspect of human capital development. This improvement can be achieved by updating the curriculum, adopting teaching and evaluation methods that promote flexible cognitive skills, such as critical thinking, creativity, communication, and collaboration, developing high-quality teaching materials, and providing schools with necessary textbooks. Additionally, it is essential to increase teachers' salaries, create opportunities for their professional development, enhance the infrastructure of public schools, and expand their resources.

Higher education plays a pivotal role in training professionals for various sectors of the Uzbek economy. Recently, significant efforts have been made under the Concept of development of the higher education system of Uzbekistan until 2030. These initiatives aim to improve the quality of training for highly qualified specialists and advance human capital. As a result, higher education coverage has expanded significantly, reaching 41% in 2023, nearly equal to the global average of 42%. There has also been increased competition among higher education institutions (HEIs), greater autonomy in decision-making, and the development of international cooperation in higher education.

Nonetheless, several challenges persist in this area. These include concerns about the quality of education and the competitiveness of university faculty, a relatively low percentage of academic staff holding advanced degrees, and insufficient integration of universities with the business sector. Such challenges lead to low demand for educational services from international students and limited research outcomes from university faculty. For instance, Uzbekistan's standings in the Global Innovation Index (GII) 2023 reveal weaknesses, including a zero rating in the QS university ranking (71st out of

132 countries) and a low number of scientific and technical publications (117th out of 132 countries).[18]

While collaboration between universities and economic sectors in R&D is one of Uzbekistan's strengths (ranking 32nd out of 132 countries), funding for R&D from the private sector remains low. A significant issue in higher education is the lack of effective collaboration between universities and the economy, resulting in graduates whose knowledge and skills do not align with the current labor market demands.

Several key areas require attention to enhance the quality of higher education in Uzbekistan. These include activating the research activities of university teaching staff, strengthening collaboration between universities and economic sectors in R&D to commercialize scientific results, and involving potential employers in developing curricula and educational programs. This collaboration should reflect the skills and competencies needed in the workforce.

A significant factor in diversifying exports is the innovative activity of enterprises and organizations, which leads to new products, services, technologies, and management methods. Over the past decade, Uzbekistan has made notable progress in the Global Innovation Index (GII), ranking 82nd globally, 10th among lower-middle-income countries, and 4th among Central and South Asian economies in 2023. However, Uzbekistan's scores in Human capital and research (89th place globally) and Creative outputs (93rd place globally) remain relatively low. This is primarily due to the low gross R&D expenditures, which account for only 0.1% of GDP, a lack of GERD financed abroad (0% of GDP), and a low level of patenting for scientific and technical developments (12 applications per million people). Consequently, the share of high-tech exports in total trade was only 0.1%, while the share

[18] Global innovation index 2023. Accessed December 27, 2024. https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf.

of ICT services exports was 0.8%, and the share of creative exports in total trade was 0.4%.[19]

Given these challenges, it is crucial to develop innovation activities through increased financing for R&D, including venture capital investments, the development of innovative infrastructure, attracting foreign investment in R&D, creating technology clusters and parks, and ensuring robust protection of intellectual property rights. These measures are vital for enhancing export diversification and increasing the share of high-tech goods.

National governments often leverage clusters of firms and research centers to foster innovation. These clusters provide economic benefits that arise from the concentration of firms and research institutions. Within this ecosystem, companies can achieve higher innovation and create more jobs than those operating outside clusters. [20] Creating clusters that bring together manufacturers in the same industry is an effective strategy for diffusing technology among exporters. The sharing of ideas, knowledge, and technologies among entrepreneurs within clusters is a critical factor for achieving economies of scale and enhancing the competitiveness of exported goods. Additionally, state organizations can facilitate the adoption of foreign technologies, enabling the production of new types of goods and distributing them to entrepreneurs ready for production and export.

Creating a Favorable Environment for Private Sector Development in Uzbekistan

One effective way to enhance Uzbekistan's PCI is to improve the indicators related to the "Private Sector" component. This component is assessed based on several key

[19] Global innovation index 2023. Accessed December 27, 2024. https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023-en-main-report-global-innovation-index-2023-16th-edition.pdf.

[20] WTO Secretariat, Xiaozhun Yi, Robert Koopman, Marc Auboin, Ankai Xu, Marc Bacchetta, Cosimo Beverelli, et al. *WORLD TRADE REPORT 2020*, 2020. https://www.wto.org/english/res_e/booksp_e/wtr20_e/wtr20_e.pdf.

indicators, including the volume of domestic credit to the private sector as a percentage of GDP, the number of patent and trademark applications per capita, lending interest rate, and the Logistics Performance Index (LPI). Consequently, it encompasses aspects of business financing, the ease of cross-border trade, and research and development outcomes.

In 2023, the average nominal interest rate for short- and medium-term loans to the private sector in Uzbekistan was 22.2%, with a real interest rate of approximately 14%. This high rate can be attributed to elevated inflation levels and substantial concessional lending volumes, representing 29.1% of total lending. These factors contribute to escalating borrowing costs for the private sector. According to an IMF report, the level of financial intermediation in Uzbekistan remains low. To enhance it, recommendations include accelerating the privatization process of state-owned banks, reducing the volume of concessional lending, and reforming the operations of the remaining state-owned banks.[21]

To expand export financing in Uzbekistan, it is advisable to more actively utilize export factoring, a valuable tool for capital mobilization. As a trade finance mechanism, factoring allows exporters to receive immediate payments for shipped products, enabling them to reinvest those funds into raw materials or other operational needs. This process accelerates the turnover of financial resources and enhances the production of export goods.

For the broader adoption of export factoring in Uzbekistan, the following steps are essential:

– Aligning national legislation that regulates factoring operations with international standards and norms;

[21] IMF. "Republic of Uzbekistan: 2024 Article IV Consultation-Press Release; and Staff Report," July 11, 2024. https://www.imf.org/en/Publications/CR/Issues/2024/07/11/Republic-of-Uzbekistan-2024-Article-IV-Consultation-Press-Release-and-Staff-Report-551710.

- Providing professional development training for bank employees to effectively utilize modern, non-traditional trade finance tools, possibly with involvement from foreign experts in international factoring;
- Increasing awareness among entrepreneurs about factoring as a viable financing method for export operations through seminars, training, and specialized literature on trade finance;
- Expanding the provision of factoring services by commercial banks and specialized companies. [22] Establishing such companies could improve entrepreneurs' access to factoring services, although successful implementation requires appropriate legislative support and suitable organizational and economic conditions.[23]

Another vital avenue for developing export finance in Uzbekistan is adopting supply chain finance, a relatively new tool in trade finance. Supply chain finance consists of technological solutions and financial services that connect all participants in the supply chain – including buyers, suppliers, and economic organizations – to enhance transparency, reduce financing costs, improve resource availability, and shorten funding timelines. These solutions often involve financing based on accounts payable or reverse factoring.

For the successful implementation of supply chain finance in Uzbekistan, several conditions must be met:

- The development of legislative norms regulating reverse factoring and other supply chain financing tools.

- The introduction of modern information technologies facilitates the integration of interactions among buyers, banks, and suppliers.

[22] A factoring company is an organization that acquires the debtor's monetary obligations and then independently collects debts in favor of the creditor for a specific material reward. Factoring companies charge their clients interest for their services (1.5-3% of the factor invoice amount).

[23] Сиражиддинов, Н., и Султанова, Г. К. "Финансовый ракурс экспорта." *Журнал «Экономическое обозрение»* 5 (2018): 44-53.

- Raising public awareness regarding the potential of contemporary, non-traditional trade finance tools.[24]

The "Private sector" component of the PCI also includes the ease of cross-border trade, which was evaluated using the Logistics Performance Index (LPI) from the World Bank. The LPI is a weighted average of a country's scores across six critical dimensions.[25] Uzbekistan's scores in these dimensions are below the average for the Europe and Central Asia region. As of 2023, Uzbekistan ranked 88th out of 139 countries in the LPI, with a score of 2.6, reflecting the following indicators:

1) Efficiency of the clearance process by border control agencies, including customs – 2.6 (74th place);

2) Quality of trade and transport-related infrastructure – 2.4 (89th place);

3) Ease of arranging competitively priced shipments – 2.6 (91st place);

4) Competence and quality of logistics services – 2.6 (92nd place);

5) Ability to track and trace consignments – 2.8 (101st place);

6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time – 2.4 (105th place). [26]

[24] Сиражиддинов, Н., и Султанова, Г. К. "Механизм финансовой поддержки экспорта в Узбекистане." *Иқтисодиёт ва таълим*, специальный выпуск (2017): 67-73.

[25] 1) Efficiency of the clearance process (i.e., speed, simplicity and predictability of formalities) by border control agencies, including customs;
2) Quality of trade and transport related infrastructure (e.g., ports, railroads, roads, information technology);
3) Ease of arranging competitively priced shipments;
4) Competence and quality of logistics services (e.g., transport operators, customs brokers);
5) Ability to track and trace consignments;
6) Timeliness of shipments in reaching destination within the scheduled or expected delivery time.

[26] The International Bank for Reconstruction and Development/The World Bank. "Connecting to Compete 2023: Trade Logistics in the Global Economy - The Logistics Performance Index and Its Indicators." *Connecting to Compete 2023: Trade Logistics in an Uncertain Global Economy*. The International Bank for Reconstruction and Development/The World Bank, 2023.

Compared to estimates from 2018, Uzbekistan has seen a decline in dimensions such as the quality of trade and transport-related infrastructure (2.57), the ability to track and trace consignments (2.71), and the timeliness of shipments reaching their destination within the scheduled or expected delivery time (3.09). However, there has been a slight improvement in other areas.

The value of the "Transport" category of the PCI for Uzbekistan in 2023 is 25 out of 100, marking it as the lowest among all index components. This category is calculated based on various factors, including the volume of air freight traffic, the length of railway tracks and highways, the number of air passengers, and the registered departures of air carriers worldwide. Participants in foreign economic activities encounter high transport costs due to the expensive and low-quality transport and logistics services, challenges faced when crossing borders, and underdeveloped trade and financial infrastructures.[27]

One significant factor contributing to the low competitiveness of domestic logistics companies is their limited ability to expand their fleets, which is exacerbated by high customs duties on imported vehicles for cargo transportation. Customs duties on the import of trucks are composed of an ad valorem part that varies between 30% and 70%, depending on the vehicle's total weight.[28] These high import costs for trucks subsequently increase the cost of cargo transportation services. Consequently, domestic companies struggle to compete with larger foreign entities, hindering the development of the international transport services market in

https://lpi.worldbank.org/sites/default/files/2023-04/LPI_2023_report_with_layout.pdf.

[27] Юсупов, Ю. "Внешняя торговля стран Центральной Азии: тенденции, барьеры, перспективы. Часть первая." *Central Asian Policy Studies*, 2024: 22-23.

[28] ПП-3818-сон 29.06.2018. О мерах по дальнейшему упорядочению внешнеэкономической деятельности и совершенствованию системы таможенно-тарифного регулирования Республики Узбекистан. Accessed December 27, 2024. https://lex.uz/docs/3802366.

Uzbekistan. Reducing customs duties on importing vehicles for cargo transport could enhance the competitiveness of local logistics companies and bring down cargo transportation costs.

Therefore, a key area for diversifying export geography is enhancing transport infrastructure and alternative transport routes. This includes improving logistics services' quality and lowering costs by fostering competition in the cargo carrier market, actively implementing cargo tracking systems, and ensuring timely deliveries. Additionally, simplifying export-import processes, including customs procedures, through fully implementing a "single window" mechanism, electronic document management, and a risk management system is crucial. In this regard, Uzbekistan's implementation of the World Trade Organization (WTO) Trade Facilitation Agreement is significant. This agreement includes provisions to expedite the movement, release, and customs clearance of goods, including transit cargo. It establishes measures for practical cooperation between customs authorities and other relevant agencies to facilitate trade procedures and ensure compliance with customs regulations. [29] It is estimated that full implementation of this agreement could lead to an average reduction of 14.3% in trade costs for WTO member countries.[30]

Improving the Quality of Institutions to Accelerate Uzbekistan's Export Diversification and Reforms in Other Areas

Improving the institutional environment is a key focus for enhancing export diversification in Uzbekistan. The "Institutions" component of the PCI includes the Worldwide Governance Indicators, such as control of corruption, government effectiveness, political stability, absence of

[29] "WTO | Trade facilitation," n.d. https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm.
[30] World trade report 2015. Accessed December 27, 2024. https://www.wto.org/english/res_e/booksp_e/world_trade_report15_e.pdf.

violence/terrorism, regulatory quality, rule of law, and voice and accountability.

In recent years, Uzbekistan has undertaken significant reforms to improve public administration quality. As a result, the country's performance on the World Bank's Worldwide Governance Indicators has markedly improved. For instance, the regulatory quality rose from 3.79 in 2012 to 31.76 in 2022; control of corruption increased from 4.27 to 24.53; rule of law improved from 7.98 to 21.70; government effectiveness grew from 19.91 to 38.21; voice and accountability advanced from 1.88 to 12.56; and political stability increased from 29.86 to 39.62.[31] However, Uzbekistan's ratings for indicators such as the rule of law, control of corruption, and voice and accountability remain relatively low.

To further enhance the quality of institutions in Uzbekistan, it is essential to continue digitalizing public services, reduce bureaucracy, and strengthen anti-corruption measures. Additionally, it is vital to ensure the judicial system's independence, increase the transparency and accountability of government activities, and guarantee full protection of property rights. As Uzbekistan continues to develop its export-oriented economy and broaden the participation of economic entities in foreign trade, improving the institutional framework for exports becomes critically important.[32]

Overall, enhancing the "Private Sector" and "Institutions" components should contribute to creating a favorable business environment for the dynamic growth of the private sector in Uzbekistan. This will facilitate the adoption of innovations, technologies, and modern management practices, supporting the economy's structural transformation and export diversification. A critical aspect of this process is establishing a

[31] World Bank Group. "Interactive Data Access | Worldwide Governance Indicators." *World Bank*, October 16, 2024. https://www.worldbank.org/en/publication/worldwide-governance-indicators/interactive-data-access.

[32] Кадыров, А. М. "Развитие внешнеэкономических связей Республики Узбекистан в условиях интеграции в мировое хозяйство." *Iqtisodiyot va ta'lim* 25, no. 2 (2024): 416-424.

competitive atmosphere in various sectors of the economy, which encourages market participants to enhance production efficiency, improve product quality, implement innovations, and seek out new markets to maintain competitiveness.

The government should support the private sector by creating favorable operating conditions and incentivizing investors to boost export activities. However, these incentives should be temporary and contingent upon enterprise performance. Specifically, incentives and benefits should only be extended to those companies that demonstrate successful export activities based on objective criteria.

Increased competition in the domestic market is driven by reducing the monopoly of state-owned companies and liberalizing trade by lowering tariffs and non-tariff barriers. The gradual process of trade liberalization is being implemented as part of Uzbekistan's accession to the WTO. Another crucial aspect of trade liberalization includes Uzbekistan's establishment of bilateral free trade agreements with foreign countries. An open and transparent trade policy fosters innovation by enhancing access to foreign markets and increasing competition, prompting companies to invest more in R&D.[33]

Enhanced performance in the "ICT" category is vital for export diversification in relation to other components of the PCI. The significant negative impact of the ICT index on the export concentration index in developing countries evidences this. The widespread integration of ICT facilitates the accumulation of human capital, improves the quality of the institutional environment, and simplifies trade processes, which, in turn, accelerates export diversification.[34]

[33] World trade report 2020. Accessed December 27, 2024. https://www.wto.org/english/res_e/booksp_e/wtr20_e/wtr20_e.pdf.
[34] Sultanova, Gavkhar, and Hanan Naser. "The impact of information and communication technologies on export diversification: Evidence from developing countries." *Journal of International Trade & Economic Development*, October 23, 2024, 1–35. https://doi.org/10.1080/09638199.2024.2419406.

The advancement of the ICT sector entails broadening access to ICT and ensuring its practical application by enterprises and organizations across all sectors of the economy. In this regard, priority should be given to strategic investments in ICT infrastructure, digital literacy programs, and policies that promote digitalization to fully leverage ICT's potential for export diversification and sustainable economic growth.

Infrastructure investments should concentrate on developing high-speed internet and mobile communications, especially in remote areas, and establishing data centers and cloud services. The creation of IT hubs in various regions of Uzbekistan will help stimulate innovation in the ICT sector. These hubs are physical spaces that unite technology developers and entrepreneurs to support promising startups, serving as accelerators and incubators. Accelerators assist startups in attracting external funding for projects that are ready for market, while incubators provide essential support during the initial stages of designing and creating business models.[35] Organizing the activities of IT hubs at the regional level will foster the necessary ecosystem for startups, contributing to the overall development of the ICT sector in Uzbekistan.

The "Energy" category is crucial in enhancing indicators such as access to electricity, GDP per total energy supply, and energy consumption from renewable sources and increasing access to electricity aids in export diversification ultimately lowering the ecological footprint in Uzbekistan. [36] Export diversification should be complemented by initiatives that promote green technologies, energy-efficient production

[35] World trade report 2020. Accessed December 27, 2024. https://www.wto.org/english/res_e/booksp_e/wtr20_e/wtr20_e.pdf.

[36] Sultanova, Gavkhar, Rano Djuraeva, Azamat Ahmedov, and Suriya Turaeva. "Does Export Diversification Matter for Ecological Footprint in Uzbekistan? Empirical Evidence from ARDL Approach." *E3S Web of Conferences* 574 (January 1, 2024): 04004. https://doi.org/10.1051/e3sconf/202457404004.

methods, and sustainable agricultural practices. Such a policy will encourage the production and export of environmentally friendly products, positively impacting the environment.

Another significant area for promoting export diversification involves attracting domestic and foreign investment to develop export-oriented industries by enhancing the efficiency of free economic zones (FEZs). Currently, the contribution of FEZs to the total volume of industrial production, investment in fixed assets, and Uzbekistan's exports of goods and services is limited, highlighting specific challenges in the operation of these zones. According to recent calculations, the share of FEZ participants in the overall industrial production was less than 6%. In 2023, less than 2% of the total investment in fixed assets across the republic was allocated to FEZs. Furthermore, enterprises operating under the FEZ framework accounted for approximately 2.5% of the total export volume of goods and services from Uzbekistan in 2022. To increase the contribution of FEZs to total exports, it is necessary to improve their regulatory framework, enhance the infrastructure within these zones, and transfer their management to private operators motivated to improve their operational effectiveness.

Developing industrial cooperation among local enterprises and domestic and foreign companies is a key factor in increasing export potential. Industrial collaboration allows for more efficient use of resources by promoting specialization. Integrating Uzbek enterprises into regional and global value chains will facilitate export diversification. This integration creates opportunities for introducing modern technologies and establishing competitive, high-tech production of goods and services. Regional value chains can be formed by creating international economic cooperation zones and joint clusters in Central Asia's border areas. These could include free trade zones, cross-border economic cooperation zones, cross-border

free economic zones, and growth triangles.[37] Participation in global value chains will enhance the competitiveness of domestic enterprises in the international market, thereby increasing the volume of exports of intermediate goods, finished products, and services.

Executive summary

The assessment of Uzbekistan's productive capacities highlights the urgent need to develop human capital, improve institutional quality, and create a favorable business environment. Enhanced transport infrastructure is also needed to accelerate export diversification.

Enhancing the quality of primary and secondary education is a crucial element in developing human capital. This can be achieved by updating curricula, introducing methods that foster cognitive skills, and improving the working conditions for teachers and school infrastructure. To further improve higher education quality, it is vital to increase research activities, strengthen cooperation between universities and the private sector in R&D, and involve employers in curriculum development.

Additionally, fostering innovation activities—including financing R&D and establishing technology clusters—is essential for increasing the share of high-tech goods in exports. This requires attracting domestic and foreign investment, protecting intellectual property, and supporting knowledge diffusion among entrepreneurs.

A significant barrier to export activities is the lack of financing, stemming from the state's dominant role in the banking sector and underdeveloped capital markets. Small and medium-sized enterprises (SMEs) often face limited access to financing due to high loan costs and stringent collateral requirements. To address this, it is recommended that export

[37] Султанова, Г. К. "Развитие промышленной кооперации в странах Центральной Азии." *Инновации в экономике* 4 (2019): 10-28.

factoring be utilized and supply chain finance introduced to boost export volumes.

Logistical challenges also hinder exports by increasing costs and reducing the competitiveness of goods. To enhance export diversification, it is essential to develop transport infrastructure, create alternative routes, and establish transport and transit agreements. Improving the quality of logistics services, reducing costs, fostering competition in the cargo carrier market, implementing cargo tracking systems, and streamlining export-import procedures through a single-window mechanism are all vital steps.

Improving institutional quality is another important focus for export diversification. Further actions should aim to digitalize public services, reduce bureaucracy, enhance anti-corruption measures, and ensure judicial independence.

Structural changes in the Uzbek economy, which aim to reallocate resources from low-productivity sectors to those with high performance, are impeded by the dominance of state-owned companies that benefit from preferential financing and tax incentives. This creates an uneven playing field for public and private enterprises, limiting incentives for private investment in promising sectors. Strengthening competition policy through better legal frameworks for controlling market concentration can foster private sector development, promoting structural transformation and export diversification.

A key strategy for export diversification is attracting both domestic and foreign investment to develop export-oriented industries by improving the efficiency of FEZs. Enhancing the regulatory framework, developing infrastructure, and transferring the management of FEZs to private operators who are motivated to improve performance are essential steps. Integrating domestic enterprises into global value chains can be a significant foreign investment and knowledge transfer source. By incorporating Uzbek companies into global value chains and establishing international economic cooperation

zones and clusters in Central Asia's border areas, the region can further facilitate the formation of regional value chains.

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