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Comparative Analysis of Digital Development in Central Asian Countries

by Dmitry Erokhin

EXECUTIVE SUMMARY

This policy brief reviews the current level of digitalization and technological development in Central Asia and gives preliminary recommendations to support a deepened digital cooperation in the region. The under-representation of some Central Asian countries in international rankings on digitalization makes a cross-country comparison more complicated. It requires an improved quality of work by statistical agencies of the respective countries, providing transparent and open data and following common definitions for the digital economy. Likewise, the inclusion of an intra-regional component into the national digitalization strategies would help to better exploit the digital potential of Central Asia. In a practical way, such a component would imply the creation of cross-border science centers, technology parks, sharing best practices and experiences, and establishing cross-border digital regulatory sandboxes. Harmonization of digital standards by the Central Asian countries would contribute to the reduction of non-tariff barriers – being one of the major market distortions. Cooperation in digital customs would lower corruption risks at the borders, decrease trade costs and increase clearance speed.

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Introduction

There is significant potential to enhance the strategic partnership of countries in Central Asia. Cooperation is viable when it is mutually beneficial in increasing the competitiveness of national economies and when it improves the well-being of citizens. Digitalization has the potential not only to change the essence of economic and trade relations, but also to have many spillover effects on other areas.

A coordinated digital agenda can give further impetus to economic development in Central Asian countries. Their low level of technological development, weakly diversified economies,

relatively scarce investment in the digital sectors make individual country efforts insufficient and require the involvement of technology and expertise from developed countries. It is known that technological leapfrogging can help developing countries overcome several stages of development (Fong 2009) and accelerate convergence with developed countries (Meijers 2014). However, in order to develop coordinated actions, the Central Asian countries need to understand who stands where in the field of digitalization and technological and innovative development.

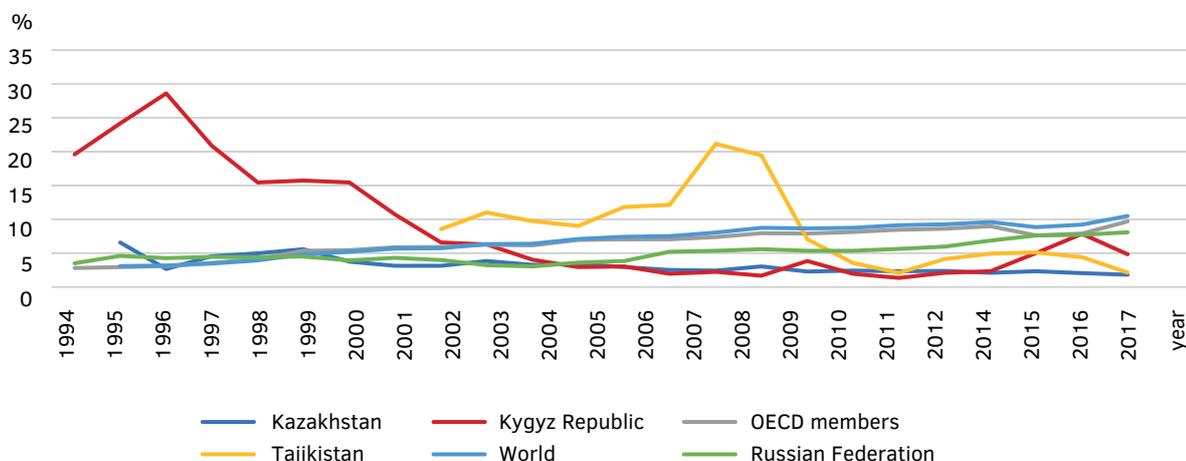
Digitalization Development in Central Asia

Digitalization does not and cannot have a single definition and measurement, so various internationally recognized indicators are considered for comparison of Central Asian countries.

ICT service exports by the World Bank include computer, communications and information

services exports. In Kazakhstan, Tajikistan and Kyrgyz Republic, the trend is towards a decrease in the share of ICT services exports in total services exports, contrary to the positive global trend, as well as in OECD countries and Russia. Data for Turkmenistan and Uzbekistan are not available.

ICT Service Exports (% of Service Exports, BoP)

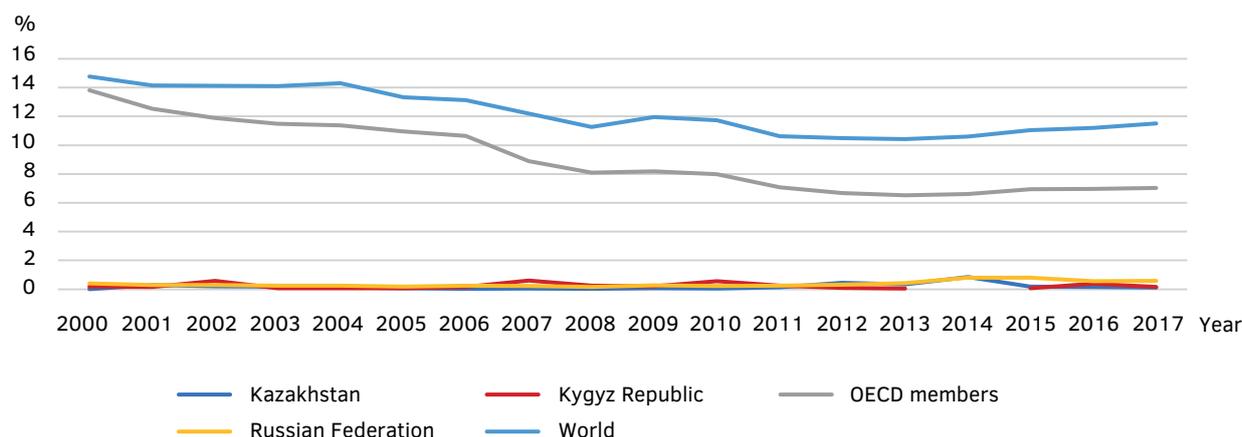


The above figure and all the following figures are constructed by the author based on the data from the organizations publishing the index, with links given in the bibliography.

ICT goods exports by the World Bank include computers and peripheral equipment, communication equipment, consumer electronic equipment, electronic components, and other information and (miscellaneous) technology goods exports. While the share of ICT goods

exports in total goods exports globally reaches 11% and in OECD countries 7%, in Central Asian countries (Kazakhstan and Kyrgyzstan) it does not exceed 0.15% and in Russia (for comparison) 0.6%. Data for Tajikistan, Turkmenistan and Uzbekistan are not available.

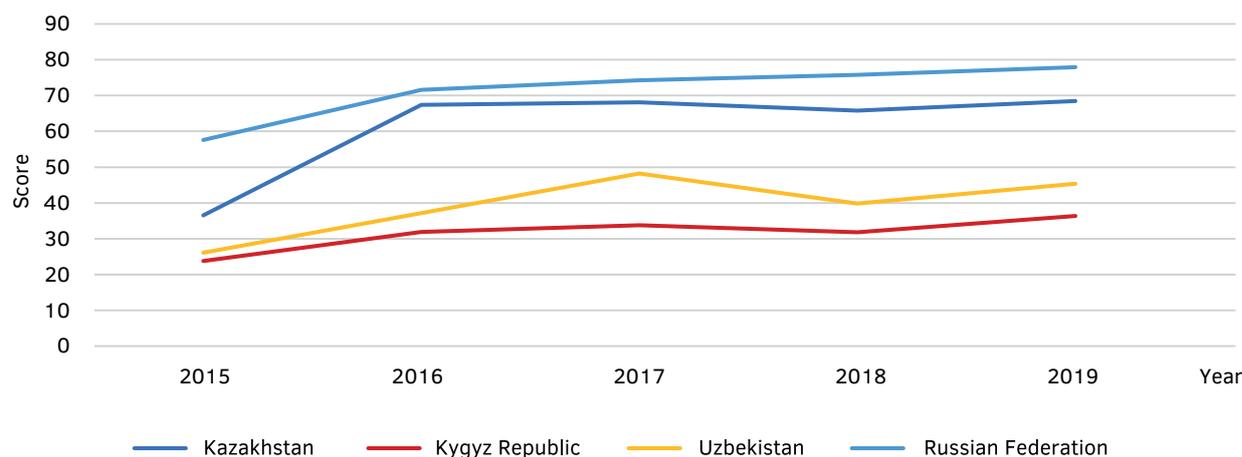
ICT Goods Exports (% of Total Goods Exports)



The United Nations Conference on Trade and Development **Business-to-Consumer E-commerce Index** measures an economy's preparedness to support online shopping. Data

for Turkmenistan are not available, for Tajikistan the values are only for 2019 (25.7). The rest of the Central Asian countries are growing, with the greatest success in Kazakhstan.

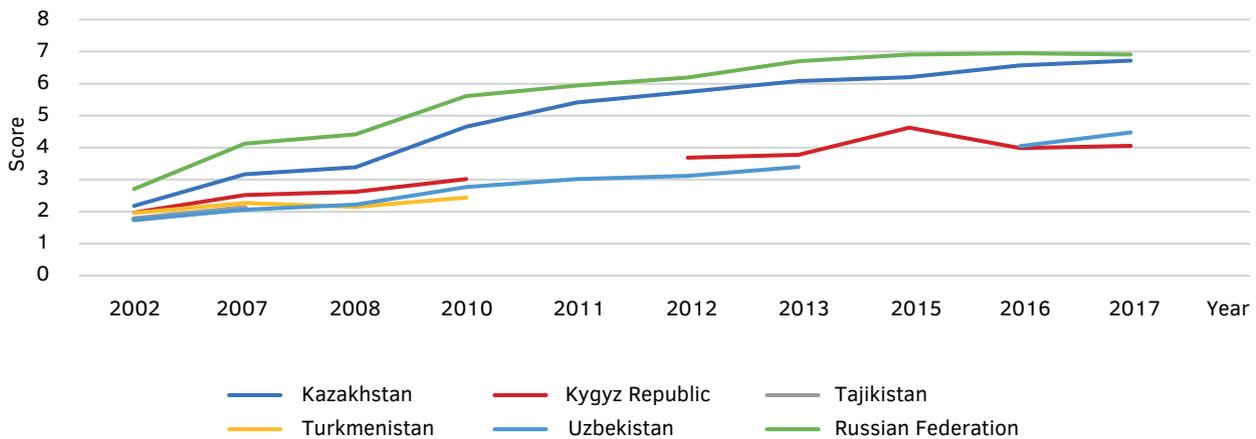
Business-to-Consumer E-commerce Index



The **ICT Development Index** by the United Nations International Telecommunication Union includes infrastructure and access indicators, intensity and usage indicators, as well as

capabilities and skills indicators. Data are limited for Tajikistan and Turkmenistan. Other Central Asian countries show an upward trend with Kazakhstan almost level with Russia.

ICT Development Index



The **Blockchain & Cryptocurrencies Regulation Index** by the Flying University is designed to answer the question of which countries of the world offer the most enabling conditions for the implementation of business projects associated with blockchain and cryptocurrencies. The given countries of the European Union and Belarus offer a rather enabling environment for blockchain, while Russia, China and Kazakhstan offer a neutral environment. Kazakhstan is the only Central Asian country that is presented

in the index. As for the other Central Asian countries, cryptocurrencies are banned in Kyrgyzstan. Tajikistan does not have any cryptocurrencies legal framework and warns its nationals of their risks. Turkmenistan does not provide any concrete information regarding the legal status of cryptocurrencies. Uzbekistan both has a legal framework and is involved in the deployment of cryptocurrencies and blockchain technologies, but its efforts are recent and may thus not be considered in the ranking.

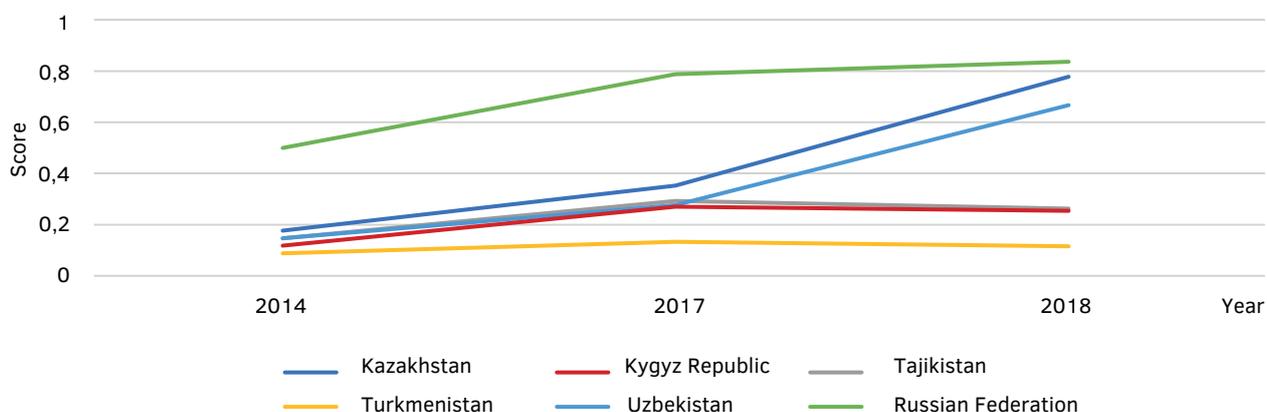
Blockchain & Cryptocurrencies Regulation Index



The International Telecommunication Union Global Cybersecurity Index measures the **commitment** of countries to cybersecurity at a global level. Kazakhstan and Uzbekistan are

demonstrating an increase in cybersecurity, catching up with Russia. The rest of Central Asia remains stable at fairly low levels.

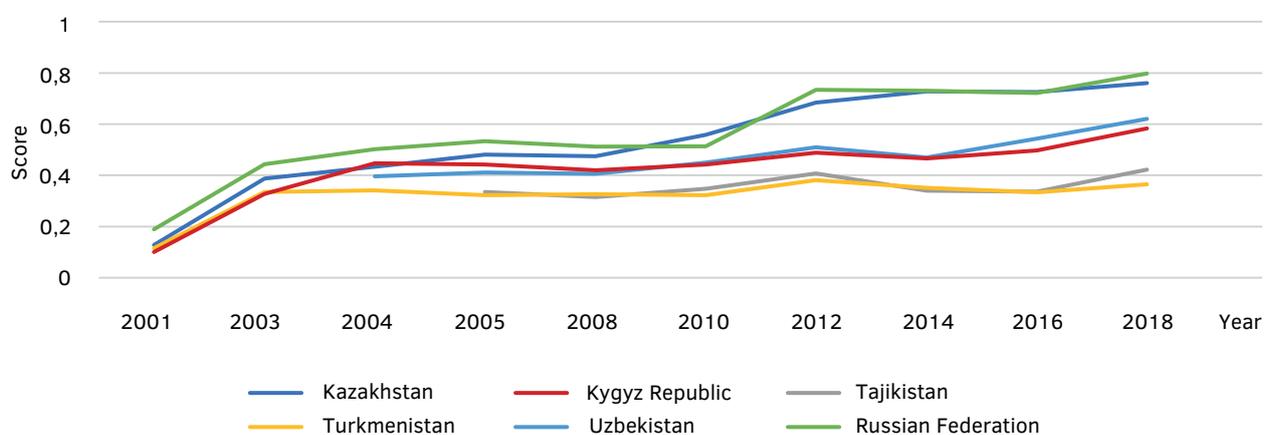
Global Cybersecurity Index



The UN **E-Government Development Index** assesses e-government development at the national level. Graphical representation of the index allows to distinguish three pairs of

countries with the same level of e-government development: Russia and Kazakhstan, Uzbekistan and Kyrgyzstan, Turkmenistan and Tajikistan.

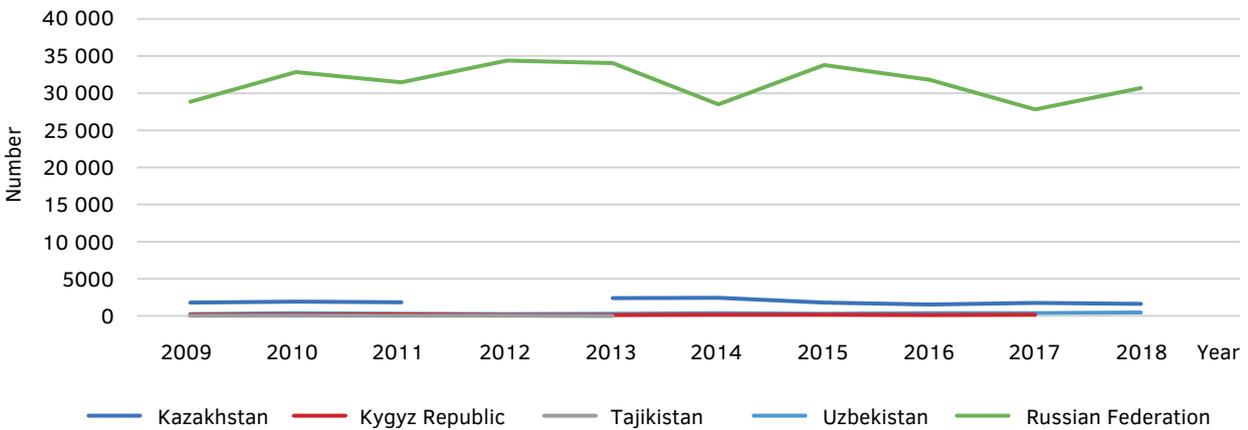
E-Government Development Index



Intellectual property statistics are an important tool in understanding trends in policy, business, and technology worldwide. **Patent filings** by the World Intellectual Property Organization are one of such indicators. No data on patent filings in

Turkmenistan are available. For other Central Asian countries, the number of patent filings is very low and does not show any tendency towards growth.

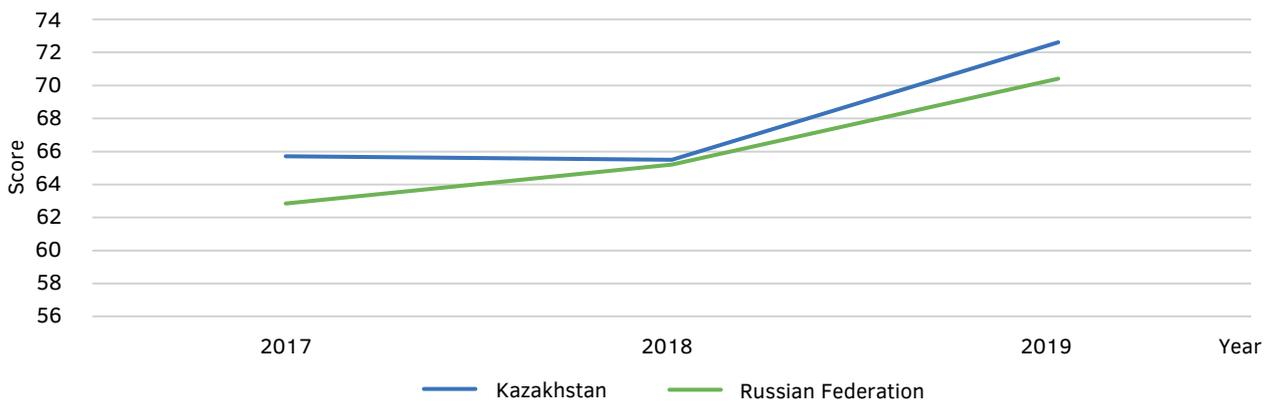
IP Filings (Resident + Abroad, Including Regional)



The International Institute for Management Development **World Digital Competitiveness Ranking** assesses the capabilities and readiness of economies to undertake the process of

digital transformation. The ranking includes only Kazakhstan, which takes higher positions compared with Russia.

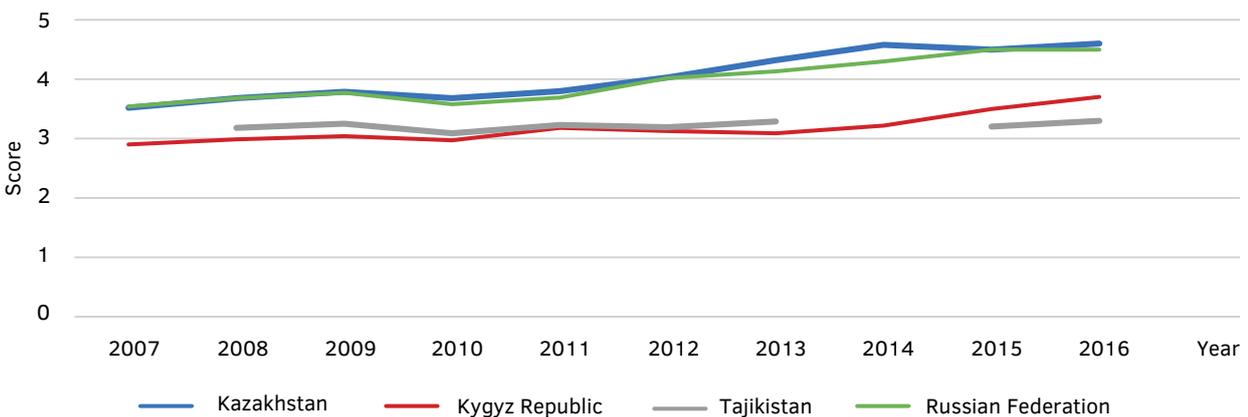
World Digital Competitiveness Ranking



The Global Information Technology Report series by the World Economic Forum measures the drivers of the ICT revolution globally, using the **Networked Readiness Index**. Kazakhstan is

overtaking Russia, and Kyrgyzstan and Tajikistan are at roughly the same level. Turkmenistan and Uzbekistan are not in the index.

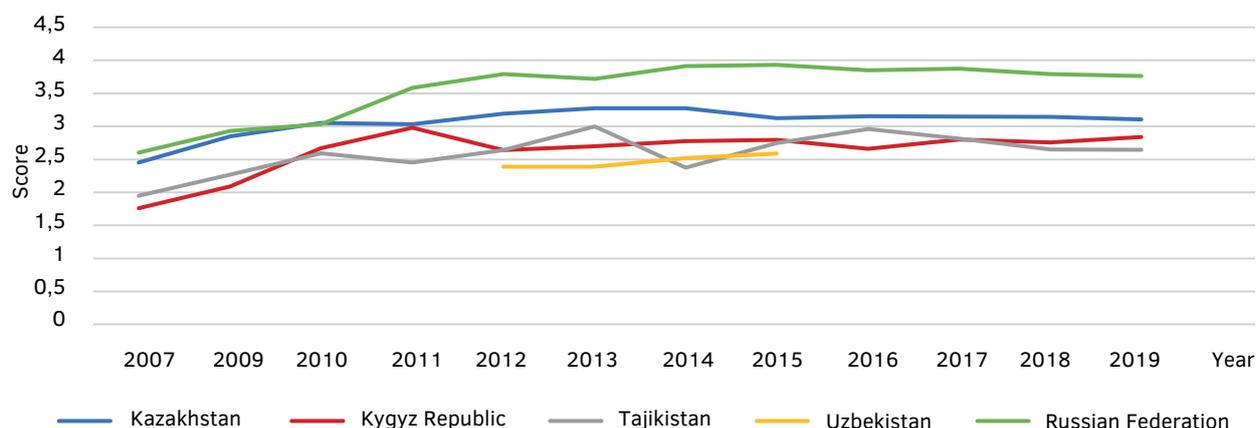
Networked Readiness Index



The **Global Innovation Index** by the World Intellectual Property Organization provides detailed metrics about the innovation performance of countries and economies around the world. Data for Turkmenistan are

not available and for Uzbekistan they are limited. At the beginning of the measurement period, countries show growth, then stabilize at different levels, while remaining at low index positions.

Global Innovation Index



Tariff and Non-Tariff Barriers

The European Centre for International Political Economy publishes the Digital Trade Restrictiveness Index (Ferracane et al., 2018). It considers China and Russia as the most digitally restricted countries. Central Asian countries are not presented in the Index but given the above analysis it is safe to assume that their policies would be stricter than those of Russia and China (see Erokhin, 2019 for a China-EAEU-EU comparative analysis).

In Russia, the barriers apply to cross-border movement of data, data localization and data retention, cross-border movement of ICT professionals, foreign investment, content access and e-commerce. China has restrictions in public procurement, foreign investment,

intellectual property rights, competition policy, intermediary liability, content access and standards, and e-commerce.

Further barriers relate to logistics. As is well known, transport and logistics are the bloodstream of e-commerce. Doing Business (n.d.) by the World Bank records the time and cost associated with the logistical process of exporting and importing goods. Doing Business measures the time and cost (excluding tariffs) associated with three sets of procedures – documentary compliance, border compliance and domestic transport – within the overall process of exporting or importing a shipment of goods.

Doing Business Trading Across Border Costs in Central Asia

Indicator/Country	Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan
Time to export: Documentary compliance (hours)	128	72	66	96
Time to import: Documentary compliance (hours)	6	84	126	150
Time to export: Border compliance (hours)	105	5	27	32
Time to import: Border compliance (hours)	2	69	107	111
Cost to export: Documentary compliance (US\$)	200	110	330	292
Cost to import: Documentary compliance (US\$)	0	200	260	242
Cost to export: Border compliance (US\$)	470	10	313	278
Cost to import: Border compliance (US\$)	0	499	223	278

Free trade and trade facilitation in the framework of the Eurasian Economic Union are the reason for some very low costs in Kazakhstan and Kyrgyzstan in the above table.

It is possible to evaluate trade costs on the base of the ESCAP-World Bank Trade Cost Database (UNESCAP 2018), which has data on ad-

valorem equivalent trade costs excl. tariff in %. The data suggests that trading manufacturing and agricultural goods involves, on average, additional costs measured as a share of the value of goods - as compared to when the two countries trade these goods within their borders.

Estimated Mutual Trade Costs in Central Asian Countries (2017 for Kazakhstan, Kyrgyzstan, Uzbekistan, 2016 for Tajikistan)

Country/Country	Kazakhstan	Kyrgyzstan	Tajikistan	Uzbekistan
Kazakhstan		76.73 %	104.54 %	57.42 %
Kyrgyzstan	76.73 %		129.63%	68.22 %
Tajikistan	104.54 %	129.63 %		No data

Corruption

The fight against corruption is one of the top priorities of the 2020 Albanian OSCE Chairmanship. For this reason, the First Preparatory Meeting of the 28th OSCE Economic and Environmental Forum was dedicated to “Promoting security, stability and economic growth in the OSCE area by preventing and combating corruption through innovation, increased transparency and digitalization”.

Corruption can be viewed as a hidden tariff (OECD 2017). It is found to have a negative impact on economic growth (Mo 2001), foreign direct investment (Habib & Zurawicki 2002), trade (De Jong & Bogmans 2011) and tax revenues (Imam & Jacobs 2014).

One area of trade and economic relations where digital technologies can be applied to fight corruption is customs. Harm from corruption at customs is estimated to be at least as high as 700 billion U.S. dollars (Michael & Moore 2009). The so-called “bribe tax” can exceed 10 percent of a company turnover (Michael 2012). Corruption leads to immense losses of tax revenues at customs. In Kazakhstan, there is a discrepancy of over 50 percent between Kazakhstani and foreign data on 40 commodity groups worth billions of U.S. dollars, which may also indicate large-scale corruption at customs (Transparency International 2018). The same situation is observed in Kyrgyzstan, where the difference between the customs authorities of

Kyrgyzstan and China alone in the last 18 years amounted to 53 billion U.S. dollars (Sputnik 2019). Such a huge difference is difficult to attribute to a methodological discrepancy and statistical error.

Apart from economic costs, border corruption facilitates other criminal activities such as trafficking of drugs, natural resources, weapons, stolen vehicles, alcohol and cigarettes, which has a serious implication for security (Chêne 2018).

Computerized customs is found to increase imports, employment, productivity and tax collection and to reduce corruption cases, smuggling, customs clearance time and unpredictability (Laajaj et al. 2019). Single windows and improved port automation can aid economies in combating corruption (Doing Business 2017). Integration of blockchain into the customs process could discourage corruption by digitizing supply chains, simplifying customs procedures and reducing the number of agents involved in each transaction; blockchain could also improve the effectiveness of measures against circumvention and transshipment (McDaniel & Norberg 2019). In detection and deterrence, customs agencies can also rely on artificial intelligence and predictive analytics (Santiso 2019).

Conclusion

The level of digitalization in Central Asian countries remains insufficient. Kazakhstan shows the best performance, with many indicators confidently approaching the level of Russia. Statistics are not available for all Central Asian countries. The data for Turkmenistan, Tajikistan and Uzbekistan are particularly limited, which does not allow a full assessment

of their level of digital development. Digital strategies of Central Asian countries lack an intra-regional component. Mutual trade costs in the form of non-tariff barriers in Central Asia remain high, demonstrating obstacles for free trade in the region. Additional costs are created by the corruption risks at the borders.

Recommendations

- In terms of digital strategies, an element of intra-regional cooperation in Central Asia should be included. Such cooperation may involve the establishment of joint science centres, technology parks and ecosystems of digital and technological leaders sharing best practices and experiences. It is also possible to create cross-border regulatory sandboxes to test new digital mechanisms before their universal application.
- It is recommended that the work of statistical offices be improved, and that data be made more transparent and open. It is also crucial to formulate and adhere to common definitions in the field of digitalization.
- It is important to seek harmonization of digital standards in order to increase the efficiency of cooperation in the Central Asian region and reduce non-tariff barriers between countries.
- It would be advisable to start cooperation in specific sectors: for example, e-commerce or electronic cross-border provision of public services (e.g. digitization and tracking of goods at customs). Customs digitalization can contribute to lower corruption risks at the border, decrease trade costs and increase clearance speed.

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