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Synopsis of Selected Papers

Digital Transformation in Central Asia: Challenges and Lessons

Farrukh Khakimov and Shavkat Alimbekov from the Development Strategy Center of Uzbekistan analyzed digital development priorities and challenges of five Central Asian countries: Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan.

They describe national digitalization programs which are titled as "Digital Strategy" in three out of five countries: "Digital Kazakhstan" 2018-2022, "Digital Kyrgyzstan" 2019-2023, and "Digital Uzbekistan – 2030," whereas Tajikistan and Turkmenistan prioritized their digital transformation programs in the framework of broader national development and/or digital economy programs.

Giving an example of Uzbekistan where the Internet access is uneven, the digital economy contributes just 1.8% to the GDP, 70% of 700 government information systems are not integrated with the e-government platform, and only 27 agencies provide services through the national public service delivery framework, the authors argue that COVID-19 quarantine and containment measures have accelerated the implementation of digital strategies in Uzbekistan and other Central Asian states.

They quote OECD which observed that Kazakhstan, Kyrgyzstan and Uzbekistan have increased digitalization measures in 2020. Kyrgyzstan moved more than 80 government services online through the Tunduk initiative, while Uzbekistan has accelerated the development of online one-stop shops and other e-services. The government of Uzbekistan has also opened a call center to help traders with their queries, and used the moment to expand digitalization in customs and trade procedures what helped keep trade flowing. In Kazakhstan, the Ministry of Health required the citizens under quarantine to use the SmartAstana tracking app, which allows officials to guarantee these individuals remained in isolation, whereas the Ministry of Interior relied on "Sergek" video surveillance technology to find violators of the quarantine regime in Almaty city.

The authors find common barriers to e-government development in Central Asia, such as the digital divide, insufficient ICT infrastructure, costly Internet access, lack of qualifications among civil servants, lack of digital literacy among citizens, and low level of public confidence in digital documents and services. As a result, there is poor demand for e-services. They also find that lack of a digital base of international treaties and shortcomings in the digitalization of the legislative framework impede business access to legislative acts and hamper creation of innovative management systems, and development of new and unique products.

Khakimov and Alimbekov argue that developing countries with limited fiscal space will need to prioritize resources and efforts to target highest impact areas. Investing in digital infrastructure, technologies, and services will not only help countries prepare for future shocks but also identify pathways to accelerate inclusive growth. Expanding access to affordable internet connectivity and ensuring secure data and computing infrastructure are core digital enablers to facilitate development of government e-platforms, digital financial services, digital skills, and new innovative business models across sectors.

E-commerce Taxation in Central Asia: Current State and Opportunities

Mr. Nikolai Milogolov, a principal academic researcher at the Institute of Applied Economic Research of the Russian Presidential Academy, explored the current state and opportunities for reforming e-commerce taxation in Central Asia. He performed a comparative analysis of the e-commerce infrastructure, tax administration development, and general economic development of four Central Asian economies: Kyrgyzstan, Kazakhstan, Uzbekistan, and Tajikistan.

The author identifies a large gap between Kazakhstan and other states. This gap could be observed at the levels of respective tax administration capacities, the size of digital service markets, and the development of the national e-commerce infrastructure.

He writes that Tajikistan has the least developed tax administration system, ranking at 139th globally with double the nominal tax burden on business than in three other countries. Kyrgyzstan is striving to streamline its tax system, which is still rather complex and burdensome for taxpayers.

In Uzbekistan, the definition of e-commerce is wider than it is in Kazakhstan, as e-commerce trade includes not only goods (as in Kazakhstan) but also services. Uzbekistan also has a lower threshold for the share of e-commerce income as part of total income at 80%, while the threshold in Kazakhstan is 90% for a business to be eligible for special tax conditions. As Uzbekistan's system was introduced two years after the Kazakhstan system, it might suggest that there is a Central Asia international tax competition for e-commerce businesses between the largest and the second largest economies.

As of 26 December 2020, there were 72 Uzbek small businesses who applied for e-commerce treatment as per the National Registry. The author suggests that this is quite modest, especially considering the context of the 2020 pandemic, which pushed small businesses towards adopting e-commerce.

He recommends investing in building up digital capacity for tax authorities especially as a pre-condition for collaborating with e-commerce platforms in tackling the shadow economy, and introduction of the digital service tax based on the harmonized regional model. Such a step would be optimal for finding a balance between the goals of mobilizing tax revenues for financing the post-COVID-19 recovery and creating simple and certain conditions for foreign digital platforms operating inside these economies. Attracting foreign platforms to local economies is critical for the digital transformation of SMEs, and it could partly compensate for their losses due to COVID-19 restrictions, the author argues.

Promoting Fintech to Meet Underserved Needs in Trade Finance in CAREC

Dr. Minsoo Lee of ADB analyzed financial inclusion in CAREC. His paper presents analysis of a cross-sectional dataset of firms in four periods and various factors driving trade finance rejections affecting largely the needs of smaller firms.

According to the World Trade Organization estimate, trade finance facilitates around 80-90% of international trade today. Worldwide, the unmet demand for trade finance amounted to $1.5 trillion in 2017 and is expected to rise to more than $2.4 trillion by 2025 (WEF and Bain & Company 2018). In 2018, 57% of trade finance applications from firms in CAREC - mostly from Kyrgyzstan and Pakistan - were rejected, almost half of which no longer seek alternative finance, altogether withdrawing from a potentially viable trade activity.

Trade finance requests from smaller firms are often rejected due to high perceived costs and risks associated with their insufficient collateral or guarantees, lack of relationship with financial institutions, and insufficient credit or performance history. For lenders, smaller ticket transactions involve high transaction and information costs of having to stringently comply with international regulations and standards, such as anti-money laundering and know your client (KYC). Country-specific factors such as the lack of correspondent banking relations exacerbated by large global bank withdrawal of emerging countries due to the perceived risk of doing business also influence success of trade finance applications.

More specifically, Tajikistan exhibits the largest decline and had lost more than half of the correspondent bank relations from 2011 to 2019. It is followed by Afghanistan, Azerbaijan, and Kazakhstan, with more than 30% of decline in such relations. Georgia seems to have endured the global trend, allowing its correspondent relations to grow by almost 20% during the same period.

The gap is further complicated by the absence of national export credit agencies in many CAREC countries, such as Afghanistan, Azerbaijan, Georgia, Kyrgyzstan, Mongolia, Tajikistan, and Turkmenistan.

The trade finance gap, hindering some businesses to trade and access markets, poses repercussions toward investment flows and financial inclusion that could affect future economic growth and development. Finding solutions to bridge the gap would foster business dynamism, enforcing the ability of even smaller firms to benefit from the reallocation of production and investment within the global supply chains.

Dr. Lee discusses potential solutions to trade financing gap through the use of financial technologies. He argues that digital technologies in financial services make risk management more effective, facilitate transactions across larger distances and at a faster speed, allow transactions without having to rely on personal relations, and increase transparency. Using distributed ledger technology, supply chains can be more cost effective and efficient by replacing complex and paper-based procedures. Use of blockchain technology can enhance the flow of information and overcome compliance challenges.

Within CAREC, the People's Republic of China (PRC) has proved to be in advanced phases of financial development in both traditional and tech-heavy sectors. The alternative finance market volume in the PRC totaled $215.4 billion, more than half of the global alternative finance industry facilitating $304.5 billion in transaction volume. Georgia's alternative finance industry facilitated around $193 million in transaction volume in 2018, followed by Kazakhstan ($87 million) and Mongolia ($38 million). The rest of the member economies have less than $10 million in transaction volume, with the lowest recorded in Afghanistan ($184,479) and Azerbaijan ($2,222).

The author recommends CAREC members to focus on building their fintech foundation; bolstering the ICT and digital infrastructures; ensuring regulatory quality (e.g., cybersecurity and other technical vulnerabilities, data governance, and privacy protection), and enhancing required capabilities to advance inclusive trade and finance. He also recommends CAREC to benefit from the ADB-supported guarantees and loans through its Trade and Supply Chain Finance Program (TSCFP) to support international trade.

Adaptability towards Work from Home Arrangements in Pakistan

Dr. Umer Khalid and Dr. Lubna Shahnaz from the Policy Research Innovation Development and Education Institution have analyzed evidence from Pakistan on adaptability towards work from home arrangements.

Their study presents estimates of proportion of non-agricultural workforce that can potentially work from home in Pakistan, using nationally representative data from Pakistan Social and Living Standards Measurement Survey 2018-19. Measuring feasibility of work from home on the basis of a worker's ability to use computers and involvement in home-based work, study results indicate that around 15% of the non-agricultural workforce in Pakistan could work from home, including 9% who can use computers and 5.3% that are engaged in home-based work.

The total employed labor force of Pakistan aged 10 years and above stood at 61.71 million in 2017-18. The majority of the employed workforce in the country is male at 78% (48.17 million), while only 22% (13.54 million) females. A large share of this employed workforce is engaged in the agricultural sector at 38.6%, while 61.4% (37.9 million) are employed in the non-agricultural sector. Of the country's 37.9 million non-agricultural workers, the significant majority at 72% is employed in the informal economy, while only 28% are engaged in the formal sector and enjoy some form of employer provided social protection support.

The largest size of non-agricultural employment is in the manufacturing sector at 9.91 million, followed closely by wholesale and retail trade (9.21 million) and community, social & personal services (9.11 million); while the construction and transport, storage & communications sectors provide employment to 4.7 million and 3.82 million workers, respectively.

The analysis further shows that usage of ICT devices is significantly higher for individuals living in households in the top two expenditure quintiles. Findings from multivariate analysis show that the probability of working remotely from home is higher for youth and the middle aged, individuals living in urban areas and in smaller nuclear family structures. Education is a strong predictor of the ability to work from home remotely – individuals with higher education have higher probability of working from home. Workers engaged in white collar occupations are more likely to work from home compared to those in the lower skilled occupations.

The paper concludes that investment in development of ICT infrastructure for improving productivity of the country's workforce is an important area of policy action.

Exploring Prospects of the PRC – Pakistan Energy Cooperation

Lv Zhiping and Li Jinhang of Xinjiang University of Finance and Economics looked into Pakistan's economic recovery post-COVID-19 and explored prospects of the PRC-Pakistan energy cooperation.

The authors provide that the economic growth is driven by "troika:" investment, export, and consumption. Then look into Pakistan's low savings rate which restrict domestic consumption, security situation which affects the foreign investor confidence, Pakistan's foreign exchange reserve of less than $20 billion, average annual FDI of $2 billion, export of textile industry which accounts for 40% of the country's' industrial output value, China-Pakistan Economic Corridor (CPEC) investment which provided more than 30% of foreign investment in Pakistan in most years since 2015, external debt burden, energy situation, corporate tax practice, and development options given the context.

According to the authors, Pakistan has long been short of energy and its energy consumption structure is severely unbalanced to meet the needs of the country's more than 9.6 million consumers. Pakistan imports expensive oil and gas mainly for coal-fired power generation, putting a huge burden on the government's finances and contributing to the worsening fiscal deficit. The total installed capacity of all types of power stations in Pakistan is 33,500 megawatts, of which 61% comes from thermal power, 29% from hydropower, 6% from renewable energy and 4% from the nuclear power.

Pakistan's power grid is assessed to have a loss of 20% in transmission and distribution links, and there are arrears of payments for energy use. Given that 74% of the PRC's energy cooperation projects are energy power generation projects, the issue of arrears between the power generation enterprises and energy providers might affect negatively capital investment in future projects, the authors write.

Although Pakistan has abundant opportunities in clean energy, it is generally underdeveloped. Wind and solar power development have just started, and investment requirements are sizable, while the

service life is only about 25 years. The authors argue that Pakistan is severely affected by climate change and its impact is likely to worsen through continued use of fossil fuels. Effective deployment of renewable energy could increase the country's electrification rate, boost economic development, decarbonize the power system and help Pakistan meet its obligations under the Paris Agreement. The paper mentions that, under CPEC, eight energy projects have been completed and now provide more than 3,640 MW of energy to Pakistan's national grid. In addition, there are several renewable projects under construction with a total capacity of 5,094 MW.

Factors that influence investment include Pakistan's heavy external debt burden at 104.3% of GDP in 2020 (if Pakistan's corporate debt is added), and heavy taxation of enterprises with cumbersome paperwork which, in the assessment of OECD, takes on average 594 working hours and 47 payments, while OECD countries only need 175 working hours and 12 payments.

The authors argue that CPEC can upgrade Pakistan's economic infrastructure, improve its transportation and logistics conditions, and make Pakistan a geographic entry port and trade area for the Chinese energy. Taking this as an opportunity, the PRC can transfer part of its petroleum refining industry to Pakistan and combine it with Pakistan's textile industry to promote development of Pakistan's industrial economy. For this, it is suggested to improve the energy production system, establish energy cooperation in digital financial services, explore the energy financial system with capital market participation and promote the driving effect of the energy industry on the economy.

COVID-19 Impact on Azerbaijan's Oil Industry: Policy Lessons

Dr. Ulviyye Sanili Aydin from Manisa Celal Bayar University of Turkey analyzes COVID-19 impact on Azerbaijan's oil and gas sector and the country's adaptation to the new normal.

She provides that more than 90% of Azerbaijan's export is comprised of oil and natural gas (Azerbaijan being among the 24 largest oil producers with 0.8% of approx. 95 million barrels of oil per day being produced by Azerbaijan in 2019). Thus, any fluctuation in oil price and supply has a direct effect on the country's economy. Dr. Aydin suggests that, in near future, COVID- 19 will continue affecting the oil and gas industry of Azerbaijan negatively. However, in the long run, the new normal will push restructuring and transformation of the economy encouraging the state to diversify, and open up for more renewable energy sources taking advantage of the revenues of the State Oil Fund.

She sees opportunities in preparing the workforce for the digital era, increasing the share of renewables in the economy, opening up the economy for the private sector, and revitalizing the agriculture which produced sizable volumes of silk, wool, raw cotton, grapes, tea, and fruits in the past.

COVID-19 and Debt Sustainability in CAREC

Dr. Naseem Faraz from Pakistan Institute of Development Economics provided a historical overview of debt accumulation in CAREC, analyzed impact of COVID-19 on debt, and looked into scenarios for debt sustainability.

Dr. Faraz narrates that several CAREC countries were in significant debt waves during 1990-2001 mainly driven by the Washington consensuses to help Central and East Asian countries liberalize their economies during 1990s. The second debt wave was experienced during the global financial crisis that disrupted bank financing during 2007-9. This crisis pushed Pakistan, Georgia, Kazakhstan and Mongolia into recession, eventually causing either zero or negative GDP growth.

She further argues that while external shocks typically triggered financial crisis, the impact on individual economies was heavily influenced by domestic policy frameworks and choices.

From the perspective of a macroeconomic theory, a government debt to fund expenditures should have a positive impact on the economic growth if money is spent on productive sectors. The author then analyzes several parameters in CAREC, namely: debt service on external debt, interest payment on external debt, debt service to GDP and debt service to percent of GDP, debt service percent of exports, debt service percent of reserves, reasons for debt, current account balance, exchange rates, grants, foreign direct investment (inflow), etc.

To select few of his examples, the author writes that Pakistan has accumulated more than $10 billion new debt during the pandemic. Pakistan's debt-GDP ratio was highest in CAREC at 86% in 2019. It further increased to 88% in 2020. He provides a scenario where Pakistan can achieve fiscal responsibility and debt limit of 60% by 2030 at a 10% GDP growth.

The government debt in Kyrgyzstan was roughly 68% of GDP in recent past. It was 54% in 2019 and increased to 68% of GDP in 2020. In his assessment, the debt to GDP ratio will decrease from 68% to sustainable 60% by 2030 if the government maintains the primary balance close to zero, real interest rate does not cross the historical value, and a 12% GDP growth is achieved.

Dr. Faraz makes suggestions to create an investment-friendly environment in CAREC.

COVID-19 Impact on Sustainable Development of Cities: Case of Kabul

Ms. Madina Junussova from University of Central Asia and Ms. Saniya Soltybayeva from the Economic Research Institute under the Ministry of National Economy of Kazakhstan assessed the impact of COVID-19 on sustainable urban development of informal settlements in Kabul from the angle of (i) urban hygiene and access to water and sanitation and (ii) access to housing, land, and property rights. The findings show that success of any development intervention in informal settlements depends on the level of local community buy-in and participation.

The authors adopt a theoretical framework putting together three Sustainable Development Goals (SDG) -SDG 11 sustainable cities and communities, SDG 3 good health and well-being, SDG 6 clean water and sanitation - for this study. They argue against the top-down approaches, forced resettlement, and structure demolition, instead they advocate for adoption of a bottom-up and socially-just approaches.

Approximately 70% of Kabul residents live in informal settlements (UN-Habitat identified 54 informal settlements in 2020). These residents comprise the urban poor, rural migrants, returned refugees, and people displaced by conflicts or disasters. The residents purchase land by entering Urfe agreements (customary deeds) without realizing they entered informal deals.

In 2018, the average annual household income in the Central/Kabul region was estimated at $2,400, whereas the price of formal housing was from $30,000 to $500,000 depending on the size and location. Thus, the cost of housing exceeds the average annual household income more than 12 times, whereas OECD estimates that "affordable" housing should not exceed 3.5 times the mortgage applicant's annual income.

During the pandemic, social distancing or self-isolation became a luxury for the urban poor living in densely populated informal settlements. Additionally, current practices of wastewater disposal pose significant biohazard risks and foster the spread of COVID-19 in informal settlements, and

implementation of handwashing became impractical due to absence of adequate access to clean water and sanitation.

The groundwater is the main source of water supply in Kabul on which about 70% of the urban population relies. The estimated groundwater availability in Kabul is approximately 44 million m3/year that is enough to supply only 2 million inhabitants at the modest per capita consumption of 50 liter/day. In Kabul, with over 6 million people, more than 80% of urban residents struggle with access to potable water. The continuous private extraction of groundwater by a growing number of residents leads to decreased groundwater level due to a negative balance between natural recharge and unregulated extraction.

In 2011, the Kabul City Master Plan was proposed which included recommendations for upgrading informal settlements, but proposed changes did not consider local resources and capacities.

The authors conclude that COVID-19 pandemic became a trigger to reassess the role of informal settlements in sustainable urban development. These settlements represent urban spaces with significant public health risks requiring special attention from the government regarding urban hygiene. The situation with informal settlements cannot continue to be overlooked if Central Asian governments want to protect their citizens.

Network Analysis of CAREC Tourism Stocks during COVID-19

Mr. Faheem Aslam from Comsats University Pakistan analyzed dynamic changes of the financial networks of tourism stocks concerning COVID-19 by using the data ranging from 01-July-2019 to 10-November-2020. He applied a comprehensive network theory to analyze the dynamics of 55 tourism stocks registered in the PRC (other CAREC members did not have any tourism related stocks listed).

The author estimates change regarding the network of these tourism stocks by dividing them into five different categories (hotel & catering, travel agencies, transportation, airlines, and cruise lines). He then analyses the network changes with the evolution of COVID-19. His study constructs and quantifies the variations in the network structures by dividing the timeline into three sub-periods: S1 (01-July-2019 to 31-December-2019) pre-pandemic times, S2 (01-January-2020 to 07-April-2020) peak times of the pandemic, and S3 (08-April-2020 to 10-November-2020) the time when the pandemic came under control.

He finds significant correlation change during periods S1 and S2 with an increased association during the peak spread, specifically in the stocks of hotel and catering companies along with an increase in the correlation pairs of travel agencies. Network analysis reveals that before the outbreak of COVID-19, the tourism industry was least connected, but the interconnection among the tourism stocks became strong at the peak phase of COVID-19 and decreased after the peak phase. Among the stocks, the transportation sector played a vital role during these three timeframes according to a degree, betweenness and closeness centralities.

Before the outbreak of the COVID-19 pandemic, the author finds seven different communities having the largest community of hotel, catering, transportation, and travel agencies with transportation stocks in the center. During the peak time, transportation and cruise liner stocks act as a bridge between the stocks of other tourism categories. Finally, after the peak time, findings show a decreased level of connectivity as compared with the peak phase.

The author suggests that these findings can help regulatory authorities and practitioners globally in designing effective strategies with consideration of varying stock market dynamics. Specifically, the

stock market regulators in the tourism industry must incorporate coordinated and combined policies so that abnormal fluctuations in the tourism stock returns can be removed. Apart from this, these statistical results provide insight for both the domestic and foreign investors to construct optimal portfolios and adopt risk mitigating strategies. The findings also suggest that chances of portfolio diversification decrease during pandemic whereas the probability of higher diversification was present before COVID-19. On the other side, investment managers can utilize the information regarding the tourism stocks of several categories in establishing pair trading strategies via observing the co-movement of the selected categories. Furthermore, the applied topological network would help portfolio managers in designing the diversified categorical portfolios.

How Kazakhstan Sees Opportunities in ASEAN post-COVID-19

Dr. Alessandro Arduino from the National University of Singapore looked into Kazakhstan's perception of the ASEAN and its implication on cooperation alignment in the region. He argues that it is essential to understand how Southeast Asia is perceived locally, both by the ruling elites as well as the local population to understand how Central Asia could develop and coalesce as a region in terms of trade, infrastructure, and investment beacon for ASEAN.

In his assessment, ASEAN's economic cooperation and logistics network integration with Eurasia via Kazakhstan represents an underexplored opportunity, and Kazakhstan's political, commercial and analytical elites perceive ASEAN as an important and large market to access with a population of approximately 656 million and a combined GDP of $3,166 billion. Moreover, he mentions Vietnam's Free Trade Agreement (FTA) with the Eurasian Economic Union (EAEU) in which Kazakhstan is a member and 2021 chair, and Indonesia, Cambodia, and Thailand having Memoranda of Cooperation with the Eurasian Economic Commission (EEC), the EAEU's executive and regulatory body.

Further, Dr. Arduino provides that Kazakh elites noted special interest in economic cooperation with Vietnam on agricultural and livestock products; learning from experiences of Singapore and Indonesia in diversifying and modernizing the economy, intellectual property ecosystem and innovation; tapping into Malaysia's halal food, fintech, and Islamic finance expertise. He argues that ASEAN countries are perceived as less assertive than big powers and ASEAN does not have any negative historical burden in Central Asia.

Seeing ASEAN's success in uniting small states to withstand pressure from larger states, some Kazakh analysts have proposed ASEAN as a useful model for Central Asian regionalism, with "informal" or "soft" features and focus on consensus and consultation rather than on formal integration and institutionalization.

Since the 1990s, the success of the Asian Tigers was seen by Kazakhstan, as well as other Central Asian states, as an economic and political model to emulate. The idea of providing Bolashak (the future) scholarships for thousands of gifted Kazakh students to study abroad came to President Nazarbayev when he visited Singapore in 1993 and witnessed the country's achievements due to its highly educated and skilled workforce. The Samruk Kazyna (Sovereign Wealth Fund) was also modelled after Singapore's Temasek, and other policies, like affordable housing and pension system, are being watched for possible replication.

Overall, ASEAN is seen as a potential economic partner to diversify foreign relations and lessen dependence on a single or few stakeholders. The pandemic is unlikely to diminish this trend and only serve to reinforce Kazakhstan's need to search for new partners in ASEAN, the author concludes.