

Center for Analysis
of Economic Reforms and Communication
of the Republic of Azerbaijan

The MIDDLE CORRIDOR

NAVIGATING CURRENT REALITIES

and

EMBRACING FUTURE PROSPECTS

Edited by
Prof. Dr. Vusal Gasimli

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The book "The Middle Corridor: Navigating Current Realities and Embracing Future Prospects" was developed in response to pressing national and global challenges. Initiated by the Center for Analysis of Economic Reforms and Communication of the Republic of Azerbaijan, it features contributions from 22 experts across 10 countries. Comprising eight comprehensive chapters, the book offers an in-depth analysis of the Middle Corridor's development dynamics, infrastructure readiness, and future outlook. It further explores the economic impact on the countries along the corridor, strategies for more flexible and efficient transportation management, and the potential application of innovative techniques and technologies in logistics.

We believe this publication will serve as a valuable and insightful resource for specialists, students, and researchers in related fields, as well as for private sector professionals involved in transportation, business leaders, and relevant government authorities.

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6. THE MIDDLE CORRIDOR

INTRODUCTION

Prof. Dr. Vusal Gasimli
Center for Analyses of Economic Reforms and Communication of tthe Republic of Azerbaijan

The idea for this book was born in Karpacz at the Polish Economic Forum, in September 2023. While we were discussing the book idea on the Middle Corridor in Poland in September 2023, a Memorandum of Understanding was signed among the United States, Germany, France, Italy, the European Union, India (Bharat), Saudi Arabia and the United Arab Emirates on the establishment of the India-Middle East-Europe Economic Corridor (IMEC) within the framework of the G-20 meeting in Delhi. Perhaps it was an irony of fate that, on the same day, Dani Rodrik, Professor of International Political Economy at Harvard Kennedy School, wrote in a PS that the enemy of the global economy is geopolitics. Furthermore, the Israel-Hamas war that started in 2023 has upended IMEC and, as it stands, IMEC's future depends on the resolution of the Israel-Hamas conflict, considering the extent of collaboration necessary for ensuring peace in the Middle East for the project to succeed.

While I was enjoying the best hiking trails in Karpacz in

September 2023, I was also reflecting on Rodrik's statement, thinking about a new geopolitical competition between India's "Spice Road" and China's "Silk Road." I spent the night before my flight from Poland to Azerbaijan taking stock of everything we had discussed in Karpacz on the book idea so far. Finally, together with my distinguished co-authors, it was decided to take a new approach and focus on a book on the "Middle Corridor."

The Middle Corridor, an emerging intercontinental and multimodal transport artery, has garnered significant attention in the wake of recent geopolitical events as a viable alternative for connecting Southeast Asia to Europe, especially given the Russia-Ukraine and Israel-Hamas conflicts. The Middle Corridor has both geopolitical significance and strategic importance. The corridor traverses a vast expanse, extending from China through Kazakhstan and the Caspian Sea to Azerbaijan, Georgia, and ultimately to Türkiye, providing a strategic link between the East and West. The significance of the Middle Corridor extends beyond its role as a mere transport route. It serves as a catalyst for economic integration and collaboration, fostering trade linkages among the participating nations. Its major advantage is the diversification of trade routes. The Middle Corridor offers a viable alternative to traditional routes by reducing the overreliance on a single pathway, mitigating potential disruptions, enhancing connectivity, promoting economic integration among the participating nations, and stimulating trade and investment opportunities.

As the world grapples with supply chain disruptions and geopolitical uncertainties, the Middle Corridor emerges as a beacon of hope, offering a resilient and efficient alternative for connecting East and West. Its potential to foster economic

integration and collaboration is undeniable, and its strategic importance is likely to grow in the years to come. A trade model from the World Bank predicts a 30% increase in China-EU trade by 2030, with westbound flows accounting for 62% of the total[1]. Trade from Azerbaijan, Georgia, and Kazakhstan will increase by 37%, primarily due to Kazakhstan's exports, while trade between these countries and the EU will increase by 28%. The assignment of routes for freight is determined by factors like cost and time, as well as freight characteristics, and the model does not impose capacity constraints.

Ports located on the Middle Corridor and their potential opportunities



Source: Developed by the author using from the websites https://middlecorridor.com/ru/, https://www.worldbank.org/en/region/eca/publication/middle-trade-and-transport-corridor

[1] World Bank (2023). Middle Trade and Transport Corridor: policies and investments to triple freight volumes and halve travel time by 2030. Retrieved (date) from https://thedocs.worldbank.org/en/doc/6248f697aed4be0f770d319dcaa4ca52-0080062023/original/Middle-Trade-and-Transport-Corridor-World-Bank-FINAL.pdf

10. THE MIDDLE CORRIDOR

The Middle Corridor's journey commences in China, snaking its way through Kazakhstan via rail and road, reaching the Kazakh ports on the Caspian Sea's eastern shores. The map below illustrates the key ports along the Middle Corridor and their capacities, highlighting the transport routes connecting Asia and Europe.

From there, the corridor traverses the Caspian Sea, docking at the Port of Baku/Alyat in Azerbaijan. Resuming its overland journey, the corridor winds through Azerbaijan and Georgia, reaching Türkiye, where it branches into two distinct routes:

1. The Rail Route: This route continues by rail through Türkiye, eventually connecting with the European rail network;

2. The Black Sea Route: This route veers away from Türkiye's land mass, crossing the Black Sea to reach European ports such as Chornomosk in Ukraine, Constanta in Romania, Burgas in Bulgaria and Istanbul in Türkiye.

Another ramification is expected in Azerbaijan after the opening of the "Zangezur Corridor," which connects Azerbaijan with Türkiye and Europe. As the host of COP29, Azerbaijan, together with other partner countries, has been supporting the transformation of the Middle Corridor into a "green" corridor, as well as its digitization. Several states, including Azerbaijan, Georgia, Kazakhstan, and Türkiye, have substantially upgraded their seaports to improve transportation infrastructure along the Middle Corridor. In 2018, the government of Azerbaijan took the lead in constructing the Alat port transportation hub linking the west (Türkiye and the EU), south (Iran and India) and north (Russia and Northern Europe), with the goal of easing congestion in Baku, expanding capacity, and encouraging multimodality.

In its turn, Kazakhstan completed the Aktau port in 2018 and introduced the Kuryk port to address the increasing demand on the Middle Corridor. Georgia's Poti port, which is the largest port in Georgia, handling liquids, dry bulk, passenger ferries and 85% of Georgia's container traffic, is currently undergoing expansion with the establishment of a deepwater port, as a response to the cancellation of the Anaklia project.

The corridor has also witnessed significant rail initiatives, with Kazakhstan completing its east-west segment in 2016, extending tracks by 2500 km. The Baku-Tbilisi-Kars rail line and the Marmaray line, a 76.6 kilometer commuter rail line running along the north shore of the Sea of Marmara from the European side to the Asian side, have both been finalized, enabling rail connections between the South Caucasus and Europe through Türkiye. Notably, private sector engagement in the rail industries of Georgia and Kazakhstan has stimulated investment in fleet modernization. Azerbaijan and Georgia are actively upgrading the East-West highway corridor, emphasizing road construction as a way to enhance overall transportation efficiency in the region.

The establishment and development of the Trans-Caspian International Transport Route aims to facilitate the movement of goods between China, Kazakhstan, Azerbaijan, Georgia, and Türkiye, with the participation of CJSC Azerbaijan Caspian Shipping, CJSC Azerbaijan Railways, CJSC Baku International Sea Trade Port, JSC Georgian Railway, JSC NC Aktau International Sea Commercial Port, JSC NC Kazakhstan Railways, LLC Batumi Sea Port. Key points include the formation of a Coordination Committee in 2013 to oversee the development of the route, the establishment of complex rates and preferential tariffs for

transportation, the approval of technology for container trains, the creation of the "Nomad Express" container service, and the organization of pilot container trains. In addition, new members were added to the Coordination Committee, and an International Trans-Caspian Transport Consortium was formed. In 2016, the decision was made to establish an international association, the "Trans-Caspian International Transport Route", which commenced its activities in 2017.

Recognizing the potential of the Middle Corridor, Azerbaijan, Georgia, Kazakhstan, and Türkiye signed a "Roadmap" in November 2022, outlining priority investments and actions to enhance the corridor's efficiency. In addition, Azerbaijan, Georgia, and Kazakhstan agreed to establish a joint logistics operator in June 2023. Although great strides have been made in terms of infrastructure, legislation and innovation to ensure the effectiveness of the Middle Corridor and, with promising support by international financial institutions, some challenges remain. Stakeholders surveyed by the OECD have identified some challenges within the transportation route, which impact Middle Corridor competitiveness.

The presence of bottlenecks at crucial points results in unpredictable transit times. According to the OECD analysis, the route faces issues related to multimodality and containerization. Ports and border crossings experience congestion due to inefficient multimodality, characterized by low integration between rail and maritime transport.

The sub-optimal utilization of containers is attributed to inadequate infrastructure and challenges in container sourcing. In

the maritime sector, congestion at Black Sea and Caspian ports, coupled with an insufficient ferry fleet in the Caspian, contributes to delays. The OECD concluded that the logistics sector grapples with issues such as the absence of integrated services along the entire corridor, the lack of dry ports, and logistical facilities. These identified problems collectively hinder the overall efficiency of the transportation route. To bolster the Middle Corridor, it is imperative to improve multimodal infrastructure, enlarge the vessel fleet, and augment rail capacity, all while instituting rigorous environmental standards. The Middle Corridor's competition with other routes, along with deep-sea shipping for long-haul cargo transport between West and East, should be considered.

The World Bank estimates that the Middle Corridor can triple its volumes by 2030 compared to 2021, while halving transport times, if the actions below are followed: reimagine the Middle Corridor as an economic corridor, offer corridor-wide logistics solutions, reform and simplify processes, leverage digital data flows and prioritize infrastructure upgrades.[2]

In conclusion, the integration of Artificial Intelligence into the transportation infrastructure along the Middle Corridor would herald a new era of efficiency, safety, and personalized service. As stakeholders continue to embrace AI-driven solutions, the Middle Corridor will not only facilitate seamless connectivity between regions, but also pave the way for a more resilient and sustainable future for transportation networks worldwide.

We hope our book will support the creation of a durable and eco-friendly value chain along the Middle Corridor during

[2] World Bank (2023). Middle Trade and Transport Corridor: Policies and Investments to triple freight volumes and halve travel time by 2030. https://thedocs.worldbank.org/en/doc/6248f697aed4be0f770d319dcaa-4ca52-0080062023/original/Middle-Trade-and-Transport-Corridor-World-Bank-FINAL.pdf

a crucial phase in the evolution of supply chains. In embarking on this journey through the Middle Corridor, we hope this book will serve as a guiding light, illuminating the path towards deeper understanding, collaboration, and progress for all involved.

CHAPTER 1

The middle corridor overview: Trade and transit infrastructure

1.1. THE MIDDLE CORRIDOR: A FUTURE OUTLOOK ON DEVELOPMENT AND INNOVATION

Fariz Aliyev
Head of Transport Policy Department of the Ministry of Digital Development and Transport

The Middle Corridor, a pivotal network of road, rail, and sea routes passing through the Caspian Sea and linking Europe and Asia, plays a crucial role in regional economic development and global trade. Its strategic significance has become even more pronounced due to recent geopolitical shifts, including disruptions caused by the pandemic and the ongoing conflict along the Northern corridor. These developments have heightened interest in the Middle Corridor as a vital link for enhancing connectivity and economic integration between continents.

16. THE MIDDLE CORRIDOR

In recent years, major international organizations, such as the World Bank, EBRD, OECD analyzed the Middle Corridor and accentuated the fact that the Middle Corridor mainly gained momentum after COVID-19, the Russia-Ukraine war, disruptions in ocean routes, Houthi attacks, the war in Gaza, and other factors (OECD, 2023; World Bank, 2023; EBRD, 2023). Of course, all these factors have played an essential role in increasing the importance of the Middle Corridor between Europe and Asia. However, amidst with the current infrastructure shortcomings and procedural bottlenecks on the corridor, all these reports concluded upon the fact that the Middle Corridor has obtained new dimensions, and by the global community it is not merely recognized as a short-term solution to offer temporary link but acknowledged to be the safest, shortest and most efficient connection between the economies of two continents with great potential for future development. Not surprisingly, according to these reports, the volumes on the MC are expected to triple by 2030 to reach 11 million tons and the transit container volume on the corridor could increase from 130,000 TEUs to 865,000 TEUs by 2040, which puts more emphasis on having proactive and holistic approach on the corridor's development.

Even before the recent geopolitical changes, relying on the historical roots of acting as a linchpin between Europe and Asia, Azerbaijan had already recognized the corridor's revived potential and proactively initiated significant development projects. Strategically located at the intersection of the East-West (Middle Corridor) and North-South transport corridors between Europe and Asia, Azerbaijan is keen to realize its potential as a key transit hub. By leveraging its unique geographic position, Azerbaijan is

poised to play a central role in enhancing global connectivity and facilitating the flow of goods and services across these critical regions.

After gaining independence, Azerbaijan became increasingly interested in developing its transport systems and enhancing transit potential. Under the leadership of Heydar Aliyev, Azerbaijan took significant steps toward strengthening its position as a key transit hub between Europe and Asia. One of the major initiatives was Azerbaijan's active participation in the TRACECA (Transport Corridor Europe-Caucasus-Asia) project, which aimed to establish a reliable and efficient transport corridor connecting the Central Asia and Caspian Sea region with Europe. This was part of Azerbaijan's broader strategy to capitalize on its geographical location, develop modern infrastructure, and increase its role in regional and international trade. The country's investments in road, rail, and maritime infrastructure in this period paved the road for being nominated as a vital linchpin of the East-West and North-South transport connectivity, significantly enhancing its transit potential.

This strategic vision continues to thrive under the leadership of Ilham Aliyev, who has prioritized further developing the transport and logistics sectors. Over the past 20 years, Azerbaijan has been conducting a very determined transport strategy complying with the challenges of the modern world with its core pillars of resilience, sustainability, innovation and digitalization in transport systems. Great achievements have been obtained at modernizing the transport systems, expansion the infrastructure capacity, as well as the advancement in regulatory and legal framework to comply with the international standards, and in

application of innovative technologies to ensure sustainable, smooth and seamless connectivity. Doubtlessly, these projects reflect Azerbaijan's foresight and strong commitment to transforming the Middle Corridor into a major trade artery in Eurasia and matching the expectations of the Belt and Road Initiative.

In recent years, Azerbaijan has actively developed the Middle Corridor's potential, investing in its infrastructure and transforming it into a modern, efficient and sustainable transport link. The government has encouraged heavy investments in the reconstruction and rehabilitation of roads and railways along the corridor, as well as in the improvement of our port facilities. Among the important projects, the Baku-Tbilisi-Kars railway line is particularly noteworthy, which was inaugurated in 2017 and reached the annual capacity of 5 million tons. Furthermore, the development of the Baku International Sea Trade Port reinforced Azerbaijan's commitment to boosting maritime trade and driving economic growth. The first phase of the port is designed to handle up to 15 million tons of cargo and 100,000 TEU annually. In addition to these, Absheron Logistics Center- a private logistics center meeting international standards offering a number of services such as container, wagon, customs, broker, terminal, storage, office rent, and transport services was launched in 2018 in the vicinity of the port to provide integrated logistics solutions to the customers.

During the past few years, freight volumes in the corridor dramatically increased, and the Middle Corridor faced several problems. It is natural that there have been challenges with lead time, service reliability, resource availability, regularity,

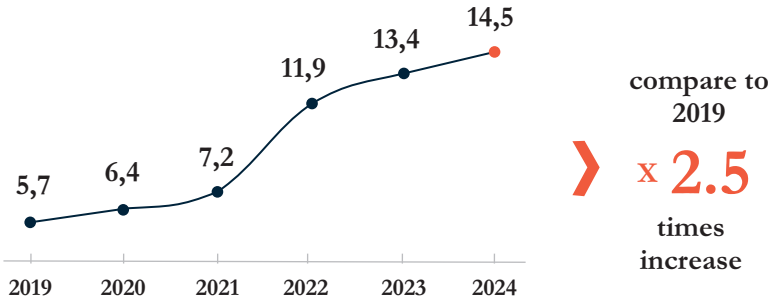
seasonal factors, rolling stock of the operators, and adequate logistics infrastructure. However, recognizing the potential and importance of the Middle Corridor years ago, Azerbaijan has undertaken extensive efforts to enhance the efficiency of this route, aiming to solidify its position as a vital link of the international supply chains. Because for Azerbaijan, it is not just a temporary alternative or contingency plan, but a long-term, sustainable pathway for global trade, reflecting its strategic vision for regional connectivity and economic integration. In order to reach this goal and to increase the operational efficiency of the supply chain in Azerbaijan, the Coordinating Council of the Republic of Azerbaijan on Transit Freight was established in 2015. This body plays a key role in streamlining decision-making processes and ensuring inter-agency coordination across the transport and logistics sectors. Regular meetings are held with the participation of relevant government authorities, customs, port, and railway and road transport authorities to identify bottlenecks, resolve operational issues, and develop practical solutions in real time. The Council also facilitates dialogue with private sector stakeholders and international partners, contributing to a more predictable and transparent transit environment. As a result, it has significantly improved the speed, reliability, and competitiveness of freight transportation through Azerbaijan. Especially after the Covid19 pandemic, in order to comply with the standards of international border crossing facilitation conventions, and to increase the operational efficiency of the corridor and raise the service quality, the "Procedural Rules for the management of operations during the transportation of transit cargo" was signed among the members of the transit council, which resulted in 60%

decrease in ship berthing times at Baku International Seaport. This kind of initiatives served to the achieving the goals of operational efficiency and streamlined transit turnover through Azerbaijan. As a result, the processing time of ships at the port has been reduced from 20 hours to 4-5 hours.

And today, the average delivery time via the Middle Corridor, from Dostyk and Khorgos stations to Constanta port (6500 km), is 15-20 days, which is faster compared to the pre-pandemic years when it could sometimes reach to 45-50 days.

Decades of efforts to enhance regional integration and cooperation are beginning to yield tangible results. According to the analysis done by the Transit Coordination Council of the Republic of Azerbaijan, in 2024 alone, transit cargo through Azerbaijan reached 14.5 million tons, which was 2.5 times more than in 2019.

Figure 1.1. Dynamics of transit transportation by years million tons(exscluding pipeline transportation)



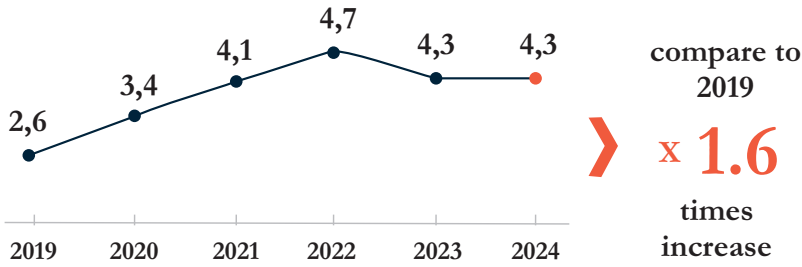
Source: The Coordination Council of the Republic of Azerbaijan

And the freight turnover along the Middle Corridor was 2.6 million tons in 2019 (the base year), this figure reached 4.3 million

tons in 2024. It is noteworthy to mention that, after the completion of the China–Kyrgyzstan–Uzbekistan railway line, the capacity of the southern route of the Middle Corridor is expected to increase significantly, adding extra 8–10 million tons.

Through active cooperation with Middle Corridor partners, significant progress was achieved in 2024, with over 350 block trains transported along the route, to increase the level of containerization in the corridor significantly. Overall, the container volume in the Middle Corridor reached 56,500 TEUs last year

Figure 1.2. Dynamics of transit freights on the Middle Corridor, million tons



Source: The Coordination Council of the Republic of Azerbaijan

In response to growing demand and to further bolster the Corridor's performance, significant projects are currently underway on both soft and hard infrastructure measures aimed at increasing corridors' efficiency and effectiveness. In national level, to fully realize transit corridors' potential, extensive monitoring is currently being conducted to study business processes along the route, identifying key weaknesses and opportunities. In this context, it is important to note that the implementation of the "Action Plan for Transit Freight

Transportation for 2024-2026," approved by the head of state at the end of 2023, to address multifaceted aspects such as infrastructure, operations management, harmonization of border-crossing procedures and application of innovative and digital solutions, ultimately enhancing the transit potential of the international transport corridors passing through Azerbaijan. Currently, works are in progress in all of these areas as outlined in the plan. The ongoing modernization of infrastructure, expansion of international partnerships, and continuous improvement of Azerbaijan's connectivity are key components of the country's long-term economic strategy. Today, the reconstruction of main motorways to the first technical category is undergoing. In the railway sector reconstruction of the power supply system by switching from direct current to an alternating power supply, substantial reconstruction of the railway infrastructure, renewal of rolling stock, and improvement of management systems are going on.

In the realm of physical infrastructure, as the second stage of development of the Port of Baku, the annual handling capacity is planned to be expanded to 25 million tons of cargo and 500,000 containers (TEU).

Currently, plans are underway to develop a new cargo airport within the Alat Free Economic Zone and the 'Silk Way Cargo Village' which will handle up to 1.5 million tons of cargo annually, a project that is set to significantly enhance trade logistics and foster economic development along the Middle Corridor. By bolstering Azerbaijan's transport infrastructure, it will further strengthen the country's potential as a strategic transit hub, solidifying its role as a key player in connecting Europe and Asia through efficient

and modern trade routes.

Azerbaijan aims to further diversify the Middle Corridor by implementing the Zangezur Corridor Project. This project will restore historical connectivity between Azerbaijan's western regions and the Nakhchivan Autonomous Republic. According to the estimations, it will significantly reduce the covered distance, leading to a substantial increase in annual throughput capacity by 10-12 million tons, while cutting transit times by up to 40%. But more importantly, this link will enhance regional connectivity and create great opportunities for the development of the transport and logistics sector as a crucial part of the Middle Corridor. Great progress has been achieved in Azerbaijan side on construction of the railway network of Zangezur corridor while major projects on building the railways links in neighbor countries as Iran and Türkiye have also been approved.

It is also important to mention the Alat Free Economic Zone (AFEZ), established in Azerbaijan, strategically positioned at the crossroads of major railways, highways, and ports. Adjacent to the Baku International Sea Trade Port and interconnected with global transport corridors, AFEZ has the ambitious goal to become a pivotal player in the region to realize the long-term endeavor of the country to transform from a transit hub to the essential economic hub between the continents. This Free Zone promises an exceptional business ecosystem, fostering high value-added, export-oriented manufacturing, and internationally traded services.

And it can be stated that, with all these initiatives, Azerbaijan will be able to integrate air, sea, rail, and road transport with flexible transport solutions, and become more ambitious in

attracting leading global logistics operators to the transport hub with modern facilities and simplified procedures which will in its turn enhance the efficiency of the Middle Corridor.

Acknowledging the fact that strong political will is a key driver for the development of the Middle Corridor, close cooperation is being fostered between the countries along the route, ensuring effective collaboration and integration of infrastructure, trade policies, and transit procedures. In 2022, the "Roadmap for the Elimination of Bottlenecks and the Development of the Middle Corridor for 2022-2027" was signed between Azerbaijan, Kazakhstan, and Turkey to harmonize the border crossing procedures, eliminate the duplications, optimize the operations and synchronize the activities. In 2023, a joint venture "Middle Corridor Multimodal" LLC was successfully established between the railways of Azerbaijan, Georgia and Kazakhstan. This strategic initiative is aimed at increasing freight volumes, attracting new customers and increasing customer satisfaction with rail transportation along the relevant corridor.

Moreover, Azerbaijan maintains close cooperation with China, a pivotal player as the main exporter within the Middle Corridor. In 2023, in the 3rd Belt and Road International Cooperation Summit held in Beijing in October, the president of the People's Republic of China announced 8 priorities to support the high-quality joint implementation of China's Belt and Road Initiative, and the first priority is the Middle Corridor. The recent Joint Declaration of the Republic of Azerbaijan and the People's Republic of China on the Establishment of a Strategic Partnership, along with the Memorandum of Understanding for the China-Europe Railway Express, have had a significant impact

on the corridor's advancement. These agreements underscore a commitment to enhanced collaboration and operational efficiency. In the near future, the signing of additional agreements related to international road, multimodal, and transit transportation will play a crucial role in further development, optimizing the corridor's performance, and ensuring its continued growth as a key international trade route.

As a result of the provided efforts, last year more than 350 block trains were sent along the Middle Corridor from China, with average transit times of 10 days to Azerbaijani ports and 12 days to Georgian ports. This year we plan to increase the number of block trains to 800, with the ultimate aim goal of reaching 1000 block trains a year in the midterm planning.

Moreover, Azerbaijan has successfully launched its first rail-based export of goods to China, marking a significant milestone in its trade and transit capabilities. The Baku-Xi'an block train, carrying 62 containers, is traveling through Kazakhstan to reach the port of Xi'an. This new connection is expected to boost the transportation of goods from West to East and further strengthen Azerbaijan's role in the Middle Corridor.

In addition, road transportation along the Middle Corridor is consistently increasing as well. In May 2024, for the first time, bilateral permission blanks were exchanged between Azerbaijan and China for international cargo transportation by road. As part of the "China-Europe Direct Rapid Transit - Trans-Caspian Test Transports" pilot project, freight vehicles departed from China and arrived in Azerbaijan. Currently, transfers are being carried out continuously.

Moreover, new collaborations are continuously taking

place with organizations such as PSA (Singapore), DP World (UAE), Maersk (Denmark), Shandong Port Group (China), and others.

In parallel with these efforts, Azerbaijan also actively participates in the initiatives to transform the Middle Corridor into a green corridor, prioritizing sustainable and environmentally friendly practices in transportation and logistics. On November 20, 2024, the Ministerial Roundtable on the Sustainable and Digital Middle Corridor and Beyond was held in Baku as part of COP-29. The meeting focused on the Middle Corridor's potential as a shorter, faster, and more sustainable route connecting Europe and Asia. Participants highlighted the corridor's sustainability advantages, with its core reliance on railway transport, a mode of transportation which is responsible for just 2% of global transport emissions.

The roundtable culminated in the adoption of the Communiqué on the Outcomes of the Ministerial Roundtable on the Sustainable and Digital Middle Corridor and Beyond, outlining key measures for enhancing cooperation and further developing the corridor as a critical component of global trade and connectivity.

Building on these advancements, the digitalization of transport corridors is now a key focus. Today, Azerbaijan is actively working on the development of the 'Digital Transport-Logistics' information system to ensure transparency and streamline activities in the transport and logistics sector. This system aims to increase the efficiency, effectiveness, and forecasting quality of these activities, including the 'smart' management of cargo flows, tracking along the entire route, and reducing transportation times. It also involves the creation of a fully digital environment for transport and

logistics operations, integrating the information systems of the country's railways, seaports, maritime agencies, and relevant state bodies involved in transit processes. This platform will enable international trade participants to access a single platform for managing all processes, including obtaining comprehensive trade-related information, understanding import-export and transit procedures, submitting applications for administrative procedures at state borders, and booking multimodal transportation services. And of course, in the future, this system will be integrated with other relevant systems along the corridor.

Political leadership in Azerbaijan firmly believes that the connectivity is not just about transport–it is about economic growth, prosperity, security, and sustainability.

Thus, Azerbaijan is committed to:

• Strengthening multimodal transport networks for seamless global trade.

• Accelerating digital transformation to enhance operational efficiency.

• Advancing green transport initiatives to build a more resilient and sustainable future.

Overall, Azerbaijan's ongoing investments in the Middle Corridor underscore its steadfast commitment to promoting sustainable trade, improving regional connectivity, and driving economic growth on a global scale. The recent surge in freight volumes and the challenges faced highlight the corridor's growing relevance amidst global disruptions. As the government continues its commitment to improving infrastructure, fostering international collaborations, and addressing logistical challenges, the Middle Corridor is poised for a promising future. By

implementing key measures in the transport sector, Azerbaijan is laying a strong foundation for enhancing transport efficiency both locally and internationally. These efforts position Azerbaijan as a key driver in the development of global trade networks, fostering long-term growth and sustainability. With ongoing enhancements and cooperative efforts among all stakeholders, the corridor is set to become a highly reliable and competitive route, seamlessly connecting Asia and Europe!

1.2. EVOLUTION OF THE SILK ROAD AND THE EMERGENCE OF MODERN TRADE CORRIDORS

Eugene Seah
Baku International Sea Trade Port

1.2.1. Historical Genesis: From Han Expansion to Mongol Conquest and Beyond

The Silk Road originated from trade routes established during the expansion of the Chinese Han Dynasty into Central Asia in the late 2nd century BCE. This expansion facilitated the movement of goods such as silk and jade towards the west, while caravans transported furs, gold, and horses in the opposite direction. Alongside commodities, significant Chinese innovations like gunpowder, paper, and the magnetic compass were disseminated westward, reaching destinations like Constantinople and ports surrounding the Black Sea. Cities like Genoa and Venice emerged as vital hubs at the western end, laying the foundation for the

economic Silk Road corridor.

In 106 BCE, a caravan successfully completed the entire Silk Road journey, carrying Chinese diplomats to Parthia. However, significant setbacks occurred, notably in 751 CE when the Chinese army faced defeat at the Talas River, impeding further westward expansion along the Silk Road. The unification of Mongol tribes under Genghis Khan in 1206 marked the beginning of the Mongol conquest, reshaping the dynamics of Central Asia and China and influencing the historical trajectory of the Silk Road.

Genghis Khan's consolidation of Mongol tribes initiated the conquest of Central Asia and China, leading to a relatively unified control over Silk Road territories. This newfound stability facilitated a resurgence in trade along the route, attracting European traders such as Marco Polo. Political stability, economic security, and support from ruling authorities ensured the prosperity of the Silk Road corridor.

The ancient Silk Road network, spanning paths north and south of the Caspian Sea, connected China and India to the Middle East and Europe, fostering the prosperity of cities like Merv, Bukhara, and Samarkand. However, disruptions such as the Black Death and the Ottoman conquest of Constantinople altered trade dynamics, leading to a decline in overland routes' significance. The emergence of European maritime exploration further shifted trade routes, ultimately relegating Central Asia to a peripheral region absorbed into the Russian Empire.

The collapse of ancient powers disrupted trade between China and the Middle East, with the Mongol conquest briefly reviving the route's prominence. However, Ottoman control led to increased taxation and eventual closure of the Silk Road,

prompting Europeans to seek alternative maritime routes. This shift gave rise to the Maritime Silk Road and marked the decline of Central Asia's economic significance.

1.2.2 Contemporary Trade Routes

Trade between the European Union and Central Asian and South Caucasus countries (excluding the PRC) has witnessed substantial growth, with imports to the EU comprising two-thirds of total trade. Mineral products, base metals, machinery, and chemical products dominate trade. Despite this growth, China remains the primary driver of cargo volumes between Europe and Asia, primarily through maritime routes.

The Central Asian nations, having been part of the Soviet Union, inherited transportation infrastructure geared towards trade with other Soviet states. However, following the Soviet Union's dissolution, integrating into the global supply chain and transportation network became a challenge. To establish connectivity with non-CIS countries, both physical and logistical connections needed improvement. Physical connectivity, or hard connectivity, required enhancing infrastructure.

The realization of the need for trade with neighboring countries prompted Central Asia's transition, leading to the development of an extensive railway network between Kazakhstan and Xinjiang since 1990. This network primarily facilitated the transportation of Kazakh minerals to China and Chinese manufactured goods to Kazakhstan.

German automotive companies established collaborative assembly plants in northeastern China (VW/Audi in Jilin and

BMW in Shenyang), necessitating a fast and reliable supply chain. This requirement prompted the search for an alternative to the lengthy Maritime route to manage the supply chain efficiently. Maintaining inventories was deemed unacceptable due to the need to accommodate variations in delivery schedules or the state of goods during transit. To address this need, the Northern Corridor, specifically the Trans-Siberian Railway, emerged as a solution.

Between 2008 and 2009, German manufacturers organized block trains to transport components via this railway to their collaborative assembly plants in China. These journeys not only served as proof-of-concept but also demonstrated the viability of an alternative to the Maritime route, affirming the reality of overland rail transport.

As businesses recognized the feasibility of overland transportation, they became more inclined to establish assembly plants in remote areas. Between 2011 and 2018, major electronics firms like Foxconn, HP, and Acer opted to construct extensive assembly plants for laptops, printers, and other electronic devices in Chongqing. The decision stemmed from challenges faced in exporting products via the Yangtze River and Shanghai due to congestion issues.

This shift served as a catalyst for transformation...

– Individual trains began connecting Sichuan province and Chongqing municipality to Europe between 2011 and 2012, akin to block trains on the Trans-Siberian Railway.

– A consistent railway service between Chongqing and Duisburg was established in 2013, with its frequency increasing to three times a week by 2016 and daily by 2018.

– The Yiwu–Madrid line was established.

– Hubs emerged, with Łódź in Poland becoming an Eastern European hub and Klaipéda in Lithuania serving as a hub for southern Sweden.

The emergence of the Eurasian Land Bridge was propelled by market demand, prompting rail companies to coordinate services and establish transit procedures (Pomfret 2019a). This development led to significant revenues for entities like Deutsche Bahn and China Railway Express, along with transit fees for countries like Kazakhstan, Russia, Belarus, and Poland.

Rail transit times between the PRC and Europe, averaging between 12 to 16 days, offered a more favorable option compared to maritime shipping times from Shanghai to Rotterdam, which spanned between 35 to 45 days or longer for inland destinations. Furthermore, rail tracks prioritize freight trains, ensuring dependable arrival times, whereas maritime transportation faces potential delays due to adverse weather conditions, piracy in the Horn of Africa, and congestion along the Suez Canal.

In response, freight forwarders and couriers expanded their services, including improved tracking, multimodal connections, consolidating part-container loads, facilitating clearance for goods impacted by EU–Russian Federation mutual sanctions, and integrating refrigerated containers in train services. Consequently, hubs like Duisburg, Łódź, and Yiwu gained popularity.

By May 2017, China Railway Express trains had linked 37 cities in China to 11 EU countries. China Railway reported over 6,000 trips in 2018 and 5,266 trips in the initial eight months of 2019 (Global Times 2019).

Traffic along the PRC–Kazakhstan–Belarus route surged from 46,000 twenty-foot equivalent units (TEUs) in 2015 to over

100,000 TEUs in 2016 and reached 175,000 in 2017 (Railfreight.com 2018).

From January to August 2018, the Trans-Siberian route conveyed 590,000 containers, surpassing the 262,000 containers transported in 2017.However, it remains unclear whether this figure for Trans-Siberian traffic encompasses both the bilateral traffic between the PRC and the Russian Federation as well as trains operating between the PRC and Europe.

1.2.3 Development of the Middle Corridor: Overland Multi-Modal Pathway

During the 'New Silk Road' International Transport and Logistics Business Forum in Astana, Kazakhstan, leaders from Kazakhstan Railways, Azerbaijan Railways, and Georgian Railways signed an agreement on November 7, 2013. This agreement established a coordination committee tasked with fostering the development of the Trans-Caspian International Transport Route (TITR). This collaboration introduced the term 'Trans-Caspian International Route,' representing the entire corridor that originates from Southeast Asia and China, travels through Kazakhstan, crosses the Caspian Sea, passes through Azerbaijan and Georgia, and extends into European countries. The route's geography was expanded in 2022, with the inclusion of three additional countries: Singapore, Lithuania, and Bulgaria. Currently, the Middle Corridor boasts 11 member countries and is supported by 25 transport and logistics companies. These expansions signal a growing global interest in the route.

The Trans-Caspian Corridors comprise three main transit

paths which are northern, central and southern Trans-Caspian Corridors.

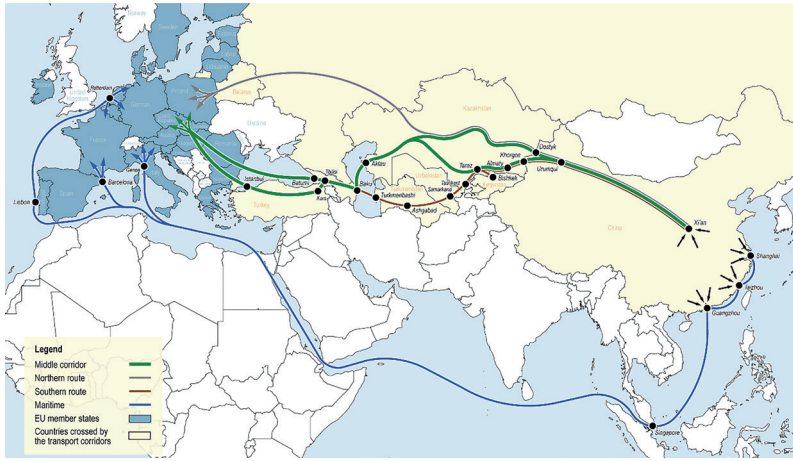
Northern Trans-Caspian Corridor originates at the China-Kazakhstan border. This route passes through North Kazakhstan, specifically Alashankou Station to Dostyk Station in Kazakhstan. It then proceeds to the Port of Aktau/Kuryk, crossing the Caspian Sea by sea transport to reach the Port of Baku in Azerbaijan. Further land-based options extend to Georgian ports like Poti and Batumi, eventually connecting to ports in Bulgaria and Romania via the Black Sea. Alternatively, there is a land crossing from the Caucasus to Turkey via the Baku-Tbilisi-Kars railway, which is part of the Middle Corridor.

Central Trans-Caspian Corridor passes through South Kazakhstan, starting at the China-Kazakhstan border in Khorgos. It traverses Kazakhstan, passing through Almaty, Shu, Shymkent, and Kyzlorda, merging with the Northern Trans-Caspian Corridor at Saksaulskaya. This section is also recognized as the Middle Corridor.

Southern Trans-Caspian Corridor travels through the Kyrgyz Republic, Uzbekistan, and Turkmenistan, starting at the Torugart Pass in the Kyrgyz Republic. It progresses through Osh, Tashkent, Samarkand, Turkmenabat, Ashgabat, and Turkmenbashi by rail before crossing the Caspian Sea via Turkmenbashi port. It then leads to the Caucasus before reaching ports in Bulgaria and Greece via the Black Sea. Alternatively, it can travel through the Caucasus and Turkey before entering the EU.

The Middle Corridor offers an alternative path for transporting goods from the Central Asian and South Caucasus countries to Turkey, the Middle East, and Africa, Europe.

Figure 1.2.1. Trans-Caspian routes



Source: Middle Trade and Transport Corridor. World Bank, November 2023

Significant progress has been made in hard connectivity, particularly in infrastructure construction for the development of the Middle Corridor. Kazakhstan holds a vital role in facilitating land trade between Europe and China, overseeing 80% of transit traffic on both the Northern and Middle Corridors. Actively engaged in the TITR initiative, Kazakhstan leverages its strategic geographical location and well-developed railway infrastructure to emerge as a key logistics hub. From this perspective, the Middle Corridor offers promising prospects for diversifying oil export routes to the EU, including utilizing the BTC oil pipeline and transporting raw energy materials and rare-earth elements. A 2023 study by the European Bank for Reconstruction and Development (EBRD) emphasizes Astana's importance in optimizing the route, highlighting the path from China through southern and central Kazakhstan to the Caspian coast as particularly advantageous.

Kazakhstan is proactively addressing infrastructure challenges, such as road links and railway enhancements, to ensure the success of the Middle Corridor. Expanding capacities of Caspian Sea ports like Aktau and Kuryk is seen as crucial for increasing cargo volumes transported via the Middle Corridor. Despite fluctuations, there is a noticeable increase in using Aktau port's capacity for oil transportation to the West. Kazakhstan is making significant progress in enhancing its port infrastructure, with ongoing expansions at Kuryk and Aktau container port. Additionally, Kazakhstan's transportation and logistics initiatives extend to China's Belt and Road Initiative, securing support from Beijing and involving agreements for railway infrastructure development. Notable achievements include the inauguration of a logistics center at Kazakhstan's dry-port terminal in Xi'an and agreements for the construction of a third rail border crossing and a 1300-km railway on Kazakhstan's side within three years.

Figure 1.2.2. Middle Corridor



Source: Middle Trade and Transport Corridor. World Bank, November 2023

The inauguration of the second Kazakhstan–PRC rail border

crossing at Khorgos/Altynkol occurred in 2011. Additionally, the completion of the Trans-Kazakhstan railroad in 2014, covering a distance of 988 km from Zhezkazgan to Saksaulskaya, Shalkar, and Beyneu, significantly shortened the east–west transport route between the PRC border and the Caspian Sea port of Aktau by approximately 1,000 km.

Azerbaijan has recently completed the construction of a new port in Alat, boasting a capacity of 15 million tons, including 100,000 TEU, with future expansion plans in place.

Both Georgia and Azerbaijan have made significant investments to upgrade their rail infrastructure. The completion of the Baku–Tbilisi–Kars railroad in 2017 restored direct rail transport between the Caucasus region and Turkey, bridging the gap left by the closure of the railroad between Armenia and Turkey due to conflict in the early 1990s. The Baku–Tbilisi–Poti/Batumi main line, equipped with electrification and predominantly double-tracked, has substantial capacity for heavy freight traffic. Between 2017 and 2018, there has been a surge in westbound traffic on this corridor growing from 200 TEUs in 2017 to 15,000 TEUs in 2018. In the 2022, the volume of cargo transported along the route amounted to 1.49 million tons. However, within the first 10 months of 2023, this figure has surged to over 2.26 million tons of goods, equivalent to 16,700 TEU containers.

Additionally, the Zangazur corridor is emerging as a significant component of the region's rail network. The railway line from Baku to the town of Horadiz is already working. A new 166-km (103-mi) railway line will be built from Horadiz to Ordubad in Nakhchivan.There is a need for construction of the 43-km (26.7-mi) section of the line, which will pass from the Armenian part

of the line through the Zangezur region. The 158-km (98-mi) line from Ordubad to the Velidag Station located in the north of Nakhchivan, close to Türkiye, Armenia and Iran, will be extensively repaired. The line, which ends in Velidag, will be extended 14 km (8.6 mi) up to the Armenian border. Türkiye and Azerbaijan also have a railway line project to connect Kars to Nakhchivan.

Figure 1.2.3. Zangazur Corridor



With these developments, established rail transport corridors linking the People's Republic of China to Central Asia through Kazakhstan and reaching the Caspian Sea ports along the TRACECA routes are well-established.

In essence, the Middle Corridor's development demonstrates increased connectivity and efficiency in cargo transportation, attracting broader international attention and fostering expectations for even faster delivery times in the near future.

Despite the Middle Corridor's potential, doubts remain

regarding its effectiveness compared to Europe's geoeconomic ambitions. Various logistical challenges, including digitalization, railway infra-structure, port capacity, and tariff policies, pose hurdles that require concerted efforts to overcome. While the route's capacity is limited compared to the Northern Route, commitment from route participants to address these challenges indicates potential for future success.

Although there has been progress in rail segments and improvements in crossing the Caspian Sea, enduring bottlenecks persist along the Black Sea route. Slow maritime services, outdated vessels from Georgian ports to Bulgaria, Romania, or Ukraine, and congestion issues near Ankara pose challenges for logistics providers.

Figure 1.2.4. Black Sea routes



Source: https://ferryshippingnews.com/black-sea-roro-ship-ping-influence-of-the-russian-invasion-of-ukraine-on-the-regional-transport-industry/

Challenges persist within Turkey's rail network, notably the bottleneck within the Greater Istanbul area, which significantly limits the feasibility of utilizing the Marmaray tunnel for regular

freight traffic. Capacity limitations regarding ferries, terminals, and rail tracks need to be resolved for the practical establishment of a rail freight connection between the Asian and European sides of Turkey.

Various challenges exist in both ferry and overland routes across the Black Sea, including high costs, long transportation times, and limitations of railway capacities. Despite these challenges, transportation of rail wagons, trucks, and vehicles via RORO shipping across the Black Sea facilitates a significant portion of regional trade between Ukraine, Turkey, Romania, Bulgaria, and Georgia.

Efforts are underway to enhance the rail corridor between Bulgaria and Turkey, including doubling the capacity of the main railway line and renovating existing lines to accommodate double tracks.

Cargo arriving in Varna by ferry must traverse rail routes through Serbia, where customs formalities and single-track networks contribute to time-consuming transportation processes.

In addition, inadequate road connections and limited corridors among the countries pose significant challenges. The establishment of new transport routes to interconnect the countries could greatly improve the efficiency of the Caspian route. Moreover, the significance of knowledge corridors, facilitating the exchange of technology, skills, knowledge, and information, should not be underestimated, as they could directly or indirectly impact the utilization of the Caspian route.

Challenges like limited demand from Europe and hindrances to sustained economic development need to be addressed. Strategies

for economic integration include liberalizing trade, establishing regional trade zones, harmonizing industrial growth, and attracting freight volumes from northern trade routes. Collaboration with multilateral development banks and regional programs like CAREC and TRACECA can facilitate the implementation of best practices and drive increased economic integration.

The destabilization caused by Russia's invasion of Ukraine in February 24, 2022, disrupted the traditional transport routes, particularly those involving Russian territory. European sanctions on Russia further restricted transit routes, prompting a shift in attention towards the Middle Corridor (MC) as an alternative. This route, connecting China to Europe via Kazakhstan, the Caspian Sea, Azerbaijan, and Georgia, offered a bypass of conflict zones. Container traffic on the MC surged by 33 percent in 2022 compared to the previous year. However, the MC faced its own set of challenges, including numerous border crossings, modal shifts, and inefficiencies, resulting in slower transit times compared to the Northern route through Russia and the maritime route. Consequently, the initial increase in container traffic in 2022 could not be sustained, with a 37 percent decrease recorded in the first eight months of 2023. Despite its potential amid geopolitical shifts, the MC has not yet emerged as the preferred choice for long-distance trade.

1.2.4 Sustainable Corridors: Bridging Transport and Economic Growth

Transport corridors serve as vital arteries for the movement of goods and people, but their potential extends far beyond mere transportation. Economic corridors, in particular, are

envisioned to be catalysts for regional economic growth, fostering increased trade and collaboration among participating nations. The efficiency of trade outcomes within these corridors heavily relies on the seamless flow of people and goods, especially in cross-border partnerships where mobility plays a pivotal role in facilitating cost-effective trade and supply chain logistics.

In the context of the Central Asia Regional Economic Cooperation (CAREC) region, which comprises countries with varying levels of economic development, there exists a significant opportunity to leverage transport corridors into engines of economic prosperity. However, stringent rules and high trade barriers hinder these countries from fully capitalizing on their complementary strengths. By dismantling these barriers, the CAREC countries can unlock significant opportunities for trade and economic growth.

The Middle Corridor, linking the industrializing People's Republic of China (PRC), semi-industrialized Middle Corridor economies, and post-industrial Europe, represents a strategic pathway for regional economic integration. However, the realization of its full potential faces several challenges. Disparities in economic growth levels, inadequate infrastructure, weak cross-border coordination, and limited private and human capital pose significant hurdles to the seamless integration of these diverse economic regions.

The COVID-19 pandemic underscored the urgent need for robust trade pathways across regions like the Caspian and Black Seas. Establishing efficient trade routes is not just a matter of economic diversification but also a strategic imperative for mitigating the economic impact of future disruptions.

To transform the Middle Corridor into a sustainable economic corridor, it must drive economic advancement in the region, laying the groundwork for increased trade and collaboration. This involves not only facilitating the movement of essential resources for development but also contributing to poverty eradication and achieving inclusive, sustainable development goals.

At the core of leveraging value from logistics networks lies the deliberate creation of pools of cost-effective labor, achieved by reducing wages through encouraging competition among an excess of workers for employment opportunities. A critical aspect of this strategy involves the development of infrastructure corridors and designated "special economic zones." For instance, the Almaty–Bishkek Corridor in Kazakhstan is specifically designed to concentrate 70 percent of the country's population into three planned megacities. The goal is to establish a plentiful labor force for various sectors such as mining, agribusiness, manufacturing, and logistics facilities strategically positioned along the corridor route.

Specific economic sub-corridors within the CAREC region, such as the Almaty–Bishkek Corridor (ABEC) and the Shymkent–Tashkent–Khujand Economic Corridor (STKEC), aim to enhance connectivity and trade, fostering economic activities like advanced health and education services, logistics, and agribusiness.

Significant investment is needed to enhance the Middle Corridor's infrastructure and operational efficiency. The European Bank for Reconstruction and Development (EBRD) estimates the total investment needed at around €18.5 billion, covering various aspects like railway and road network rehabilitation, port capacity enhancements, and improvements to border crossing

points. Achieving sustainability requires coordinated efforts among participating nations and international partners.

One of the recent developments which emphasized interest in improving the Middle Corridor is that PSA International Pte Ltd ("PSA"), a leading global provider of port and supply chain solutions, and Kazakhstan Railways ("KTZ"), the entity responsible for managing Kazakhstan's primary railway network, have forged an agreement to establish a joint venture entity called KPMC Ltd ("KPMC"). The core objective of KPMC is to propel the advancement of the Trans-Caspian International Transport Route (TITR), with the aim of improving connectivity and facilitating trade between Southeast Asia and China, across Kazakhstan, and onward to Europe. The agreement is contingent upon customary conditions, including regulatory clearance.

The collaboration between KTZ and PSA is geared towards fortifying the development of the TITR through various measures such as organizing block trains and offering station-to-station goods and services. These endeavors are geared towards augmenting the flow of cargo, optimizing transit durations, and mitigating transportation expenses along the TITR.

The establishment of the Trans-Caspian International Transport Route (TITR) and the collaboration between PSA International Pte Ltd and Kazakhstan Railways represent a pivotal advancement in global trade dynamics, particularly between Southeast Asia, China, Kazakhstan, and Europe. This partnership signifies a concerted effort to overcome logistical challenges and capitalize on emerging trade opportunities along the TITR. By organizing block trains and enhancing station-to-station services, the aim is not only to streamline cargo flow but also to optimize transit times

and reduce transportation costs. This initiative holds significant implications, not just for the involved parties but for the broader regional economy, as it opens up new channels for commerce and strengthens intercontinental connectivity. Kazakhstan's strategic positioning as a key logistics hub further amplifies the impact of this collaboration, offering promising prospects for economic diversification and fostering deeper integration within the global trade network.

In addition, the "Roadmap" signed by Azerbaijan, Georgia, Kazakhstan, and Turkey demonstrate commitment to improving the Middle Corridor. With support from global financial institutions and partners, the Middle Corridor is poised for considerable growth, positioning it as a sustainable and strategic trade route between Europe and Central Asia.

1.2.5. Port of Baku: Gateway to the Middle Corridor's Future

Current macroeconomic and geopolitical environment provides consistent export-oriented growth opportunities for Azerbaijan.

The Port of Baku, situated along the historic Silk Road bridging Europe and Asia, stands as a critical node in Eurasia's transport and logistics network. It plays a crucial role in the Middle Corridor, serving as a linchpin for trade between Central Asia and Europe. Spanning 400 hectares, this modern facility serves as a vital segment of the Trans-Caspian International Transport Route, offering efficient cargo services and expansive storage capabilities for diverse cargo types. Strategically positioned just 70 kilometers from Azerbaijan's capital, Baku,

and intersecting major railways and highways, the port boasts 13 berths, including specialized terminals for Ro-Ro, ferry, and general cargo operations. With the completion of its initial phase in 2018, the port's capacity surged to accommodate 15 million tons of cargo and 100,000 TEU equivalent containers, with plans underway for further expansion to handle up to 25 million tons and 500,000 TEU containers annually.

The inauguration of the Baku-Tbilisi-Kars Railway Project further solidified the Port of Baku's role as a linchpin in the Middle Corridor. This railway, stretching 829 kilometers, connects Turkey, Georgia, and Azerbaijan, significantly bolstering Eurasian cooperation, economic ties, and trade volumes with Europe. Through substantial infrastructure development along the route, including new tracks and rehabilitated railways, the project facilitates the seamless movement of passengers and freight, positioning the Middle Corridor as a strategic link between East and West.

Figure 1.2.5. Middle Corridor



Source: Middle Trade and Transport Corridor. World Bank, November 2023

The Port of Baku's 2nd phase expansion plan is crafted based

on a comprehensive market study, taking into account various factors. These include the opportunity to augment container trade flows along the Trans-Caspian International Transport Route (TITR) or Middle Corridor, facilitating trade from the Central Asian States through the Port to Europe, particularly in light of increased trade between China and Europe. Additionally, the plan considers the anticipated redistribution of market shares among different transport corridors, with transit flows through the Port expected to rise due to geopolitical shifts, such as sanctions on Russia. Geopolitical changes present additional opportunities for the Port of Baku amid challenging economic conditions, offering a historical chance to potentially double cargo flow within 3-4 years and triple it by 2030. Projections indicate that containers and oil will witness the fastest growth in transportation demand, expected to increase tenfold and fivefold respectively from 2021 to 2030. Grain, fertilizers, and metals also show promise, albeit with higher volatility, contingent upon economic policy and transport infrastructure development in the South Caucasus and Central Asia. It's projected that container, fertilizer, and grain terminals may reach full capacity before 2025, with oil terminal capacities needing expansion by 2030 and general cargo facilities by 2035. If the Middle Corridor is debottlenecked before 2035, the capacity of container terminals should be tripled. The growth of cargo throughput hinges on economic outlook, infrastructure improvements, and the removal of bottlenecks in the Middle Corridor. In a high-case scenario, container throughput is forecasted to reach 561,000 TEU, fertilizer throughput 4.9 million tons, grain throughput 2.3 million tons, and metal throughput 1.33 million tons. Central Asia's burgeoning fertilizer industry presents significant export potential, driven by abundant natural gas

resources. With countries like Turkmenistan, Uzbekistan, and Kazakhstan investing in expanding their fertilizer production capacities, the Port of Baku emerges as a vital gateway for exporting these products to global markets. Additionally, the port's strategic location along the Trans-Caspian International Transport Route offers an alternative route for containerized fertilizers between China, Turkey, and the EU amid geopolitical tensions, further enhancing regional trade dynamics.

A pivotal component of the Port of Baku's expansion is its new fertilizer terminal, poised to handle 2.5 million tons of fertilizer annually. This terminal is poised to facilitate the efficient transportation of fertilizers from Central Asian nations, like Turkmenistan, Uzbekistan, and Kazakhstan, to Western markets via Azerbaijan. Equipped with state-of-the-art conveyor systems and extensive storage facilities, the terminal enhances the region's export capabilities, contributing to economic growth and trade diversification.

Figure 1.2.6. Fertiliser Corridor through Port of Baku



In accordance with the 2040 base case market forecast scenario,

Phase 2 of the Port of Baku's development plan entails several key expansions. This includes the necessity for four new container berths, along with the requirement for two additional fertilizer berths and two more grain berths. Furthermore, existing Berth 2 will be allocated for general cargo use, while no supplementary ferry or RoRo berths are deemed necessary. In addition to these developments, additional storage facilities will likely be mandated. Specifically, the proposal includes a new TIR park for trucks awaiting RoRo services, as well as dedicated storage facilities for both fertilizer and grain to support the increased berthing capacity. Moreover, the expansion plan includes provisions for container storage, with proposals for the implementation of Rubber-Tired Gantry cranes (RTGs). Beyond these immediate needs, the port is contemplating further enhancements, such as an Intermodal terminal featuring a Logistics Centre, additional berths and backup areas, and potentially a second rail jetty if demand necessitates. The intermodal terminal is envisaged to serve as a hub between China/Asia and Europe, taking example of to the Venlo region situated on the German border of The Netherlands enabling optimal access to all European consumer markets. Companies like PHV- Calvin Klein, Tommy Hilfiger, Michael Kors, Maersk, APL, APM, DSV, DB Schenker have shown interest to invest in The Port of Baku as an important global hub, building facilities in the free economic zone. There is also an opportunity for using the route through Port of Baku to use reefer transport for fresh products and foodstuff fulfilling the demand for not only finished products but also crop, crop protection in fruits and vegetables. This will allow to collect and redistribute food, vegetables, crop through Port of Baku.

Port of Baku is actively engaged in the development of Grain And Sugar Terminal. These terminals will play a crucial role in facilitating a consistent flow of grain products from Central Asia to global markets via the Port of Baku. Terminals will significantly contribute to the stability of supply chains and enhance food security within the region.

To optimize freight transport via Middle Corridor through the Port of Baku, concerted efforts are required to debottleneck transport corridors and enhance operational efficiency. This includes modernizing border crossing points, expanding port and railway capacities, and fostering collaboration among transit countries. By aligning infrastructure development with market demands and geopolitical shifts, the Port of Baku can continue to serve as a catalyst for economic growth and trade expansion along the Middle Corridor, promoting regional stability and cooperation.

1.2.6. Conclusion: Evolution of the Silk Road

The trade landscape for Central Asian and South Caucasus countries, alongside the People's Republic of China (PRC), holds considerable promise, fueled by their industrial capabilities and production capacities. The PRC's substantial cargo movements via sea routes and the New Eurasia Land Bridge, coupled with robust trade links with Europe, underscore the critical role of efficient transportation networks in facilitating global trade.

The Trans-Caspian Corridor emerges as a key enabler for reducing transit times between Asia and Europe via rail and sea routes, offering significant opportunities amidst evolving trade dyna-mics. However, realizing this potential hinges on

implementing crucial reforms within partici-pating countries.

Key reforms include establishing transparent legal frameworks to standardize transportation tariffs, streamlining customs procedures, and expediting the development of free trade zones. Furthermore, investments in transport infrastructure, adoption of advanced cargo tracking technologies, and integration of information and communication technology are imperative for enhancing cargo handling efficiency and operational standardization.

Addressing challenges such as prolonged border-crossing times and legal ambiguities in railway legislation is essential to ensure seamless transit along the corridor. Collaborative efforts among Central Asian and South Caucasus nations are vital for effectively implementing these reforms, leveraging economies of scale and scope to maximize trade opportunities.

While rail transportation has made notable strides, road transport continues to face challenges, with border-crossing delays on the rise. This underscores the urgency of coordinated initiatives to improve road infrastructure and streamline border procedures.

To expand foreign trade and diversify product portfolios, the region must prioritize the development of efficient transportation corridors, reduction of trade barriers, and promotion of intra-regional trade. Failing to do so risks relegating these countries to transit hubs without capitalizing on their economic potential, especially amidst global transitions such as decarbonization and digitalization.

According to the World Bank report, Even if we assume the

corridor functions well, it's likely to primarily serve regional needs by 2030, with less than 40 percent of its traffic being intercontinental. The corridor's role in facilitating such trade will still be relatively minor. This is mainly because there are other options for connecting continents, such as deep-sea shipping between Asia and Europe. If the corridor is put into operation, it's anticipated that cargo passing through the Caspian Sea will triple by 2030 compared to 2021, reaching 11 million tonnes. Around 4 million tonnes of this would be for container transportation. Without improvements to the corridor, the demand for transportation will fall short by 35 percent compared to projections. Most of the cargo passing through the corridor is expected to be trade between Europe and Kazakhstan, as well as between Europe and China. Trade between China and Europe is projected to see a massive increase in corridor usage by 2030 (a rise of 5,268 percent), although this accounts for only a small fraction of their total trade (about 1 percent of EU-China trade). If the corridor becomes operational, trade via the Caspian Sea is expected to make up over 60 percent of trade between the countries connected by the corridor by 2030, up from 40 percent in 2021.

Moreover, advancements in 2023 have led to a significant reduction in cargo delivery times along the Altynkol-Georgian ports route, taking 19-23 days, which is twice as fast as the previous year.

Durations expected in 2030 if the Bottlenecks are solved according to the World Bank report dated 2023 are given in (Placeholder1). The duration is expected to decrease from 37 days to 21.2 days (Dostyk-Constanta), and from 26.9 days to 13.7 days (Khorgos-Istanbul).

Table 1.2.1. Durations expected in 2030

Middle Corridor (Dostyk-Constanta)

	2022	2030
Dostyk	2.5	2.5
From Dostyk to Molynty station	1.7	0.9
From Molynty to Dostyk station	0.2	0.2
From Zharyk station to Sekseul station	4	3
From Sekseul station to Aktau station	1.3	1.3
Aktau Port	10	3
From Aktau Port to Baku Port	1.3	1.3
From Baku Port to Gardabani Border Crossing	0.5	0.5
From Gardabani Border Crossing to Tbilisi station	0.1	0.1
From Tbilisi station to Poti Port	0.4	0.4
Poti Port	12	5
From Poti Port to Constanta port	3	3
	37	**21.2**

Middle Corridor (Khorgos-Istanbul)

	2022	2030
From Khorgos to Zhetygen station	0.3	0.3
From Zhetygen station to Almaty station	0.2	0.2
From Almaty station to Arys station	1.8	1.1
From Arys station to Sekseul station	1.9	1.9
From Sekseul station to Aktau Port	1.3	1.3
Aktau Port	10	3
From Aktau Port to Baku Port	1.3	1.3
From Baku Port to Gardabanı Border Crossıng	0.5	0.5
From Gardabanı Border Crossıng to Tbilisi station	0.1	0.1
From Tbilisi station to Kars Border Crossing	2	1
From Kars Border Crossing to Istanbul	7.5	3
	26.9	**13.7**

Source: http://documents.worldbank.org/curated/en/
099092823161580577/ BOSIB055c2cb6c006090a90150e512e6beb

However, in 2024, in the block trains from Xian, the duration from Kazakhstan to Baku has been reduced to 10 days.In conclusion, fostering collaboration among Central Asian and South Caucasus nations is critical for unlocking the region's economic potential, identifying global and regional market niches, and fostering sustainable development. Coordinated action in trade policy, sectoral reforms, diversification strategies, and business environment improvements is imperative to harness the full economic potential of the region.

1.3. TRADE AND TRANSIT INFRASTRUCTURE: THE MIDDLE CORRIDOR OVERVIEW

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The infrastructure corridors possess significant value in enhancing economic growth by connecting economic agents across the trading and transit countries. These corridors connect major production units and economic hubs, fostering spatial development from rural peripheries to urban landscapes. They achieve seamless integration by employing a compatible transportation system that bridges national and global networks. According to Kaptur and Karazhanova (2021), infrastructure corridors enable the efficient flow of trade (goods and services) alongside a wide range of information and communication

technologies (ICTs) at a reasonable cost. However, successful corridors require cooperation among the participating countries. This collaboration extends to financial settings, logistics routes, efficient border crossing points, and the harmonization of rules, regulations, and policies.

Regional Cooperation and Integration (RCI)[3] emphasizes establishing cross-border connectivity through Economic Corridor Development (ECD). This approach aims to expand international trade, facilitate mobility, and deepen economic cooperation among the Asian Development Bank's (ADB) developing member countries (DMCs), particularly to enhance connectivity and economic opportunity among landlocked countries. On the other hand, investment in infrastructure alone is not enough. Effective RCI also requires strong 'software' or policy and institutional components. These include coordinated border procedures, standardized regulations to facilitate cross-border trade and transport, readily accessible raw materials, and most importantly, measures to promote integration into regional and global value chains (GVC).

The ABD's (2023) framework for Practical Implementation Guidance Note for the Economic Corridor Program (ECP) emphasizes a broader approach to development. This shift is driven by the need to address emerging global challenges and enhance value chains in DMCs. The framework recognizes the importance of embracing digitalization to improve efficiency and competitiveness. Additionally, it highlights the importance

[3] ADB established the RCI Fund in 2007 to facilitate the pooling and provision of additional financial and knowledge resources. By 2019, the fund had helped to invest $73.5 million in 96 technical assistance projects. The fund produced some high-impact knowledge products, including regional strategies and master plans. https://www.adb.org/what-we-do/topics/regional-cooperation/overview#:~:text=ADB%20established%20the%20RCI%20Fund,regional%20strategies%20and%20master%20plans.

of implementing measures to mitigate cross-border financial crimes and implement sanitary and phytosanitary (SPS) policies to reduce the spread of communicable diseases. These components underline the evolving nature of corridor development, moving beyond just physical infrastructure to encompass a more comprehensive strategy.

This increased emphasis on comprehensive development strategies coincides with a surge in infrastructure investment. As Thorn et al. (2022) mentioned, infrastructure requires an all-time high investment (Thacker et al. 2019; Zu Ermgassen et al. 2019) and has been growing exponentially (Lakmeeharan et al. 2020). Thorn et al further added that the infrastructure corridors, generally, serve multiple purpose sectors such as energy, water, industry, trade and transit, telecommunication, etc[4]. (Thacker et al. 2019). Thus, investments in infrastructure continue to grow to support these broader development goals. Regional cooperation is significant to promote the effectiveness of these corridors. A prime example of such large-scale regional cooperation is the "One Belt, One Road" (OBOR) initiative. As Kaptur and Karazhanova (2021) mentioned, this ambitious project aims to create the world's largest transport network. OBOR involves 125 countries and 29 international organizations, all working together through 173 cooperation agreements.

OBOR encompasses two main routes: land and sea. The Northern Corridor stretches from China through Russia to Europe. The Trans-Caspian International Transport Route (TITR), also known as the Middle Corridor (MC) or CAREC Corridor 2, provides a trade route from China, Central Asia, and Türkiye to

[4] Council for Science and Technology. A national infrastructure for the 21st century (2009).

Europe. The Southern Corridor connects China with Iran, Türkiye and Europe, with an alternate route going through India, Pakistan, Iran, and Türkiye. These routes form the "One Belt" component of OBOR (ŞENOL and ERBİLEN 2022). The "One Road" refers to the Maritime Silk Road. This sea route follows a path from China to Laos, Malaysia, Indonesia, India, Sri Lanka, Pakistan, Kenya, Somalia, Djibouti, Türkiye, Greece, and Italy (Blanchard and Flint 2017; ŞENOL and ERBİLEN 2022; Yağci 2018).

It's important to note that not all corridors are created equal. Karim and Islam (2018) categorize corridors based on their scope. National corridors, like India's "Golden Quadrilateral", focus on domestic connectivity. Territorial corridors encompass larger regions, such as the Greater Mekong Subregion (GMS) and the Central Asia Regional Economic Cooperation (CAREC) programs. Finally, universal corridors include global infrastructure projects like submarine telecommunication cables (De and Iyengar 2014). The development and management of corridors can involve various stakeholders. Activities can be driven from the "top-down" by governments and global development agencies or "bottom-up" by business associations or civil society (Wiemer 2009).

Factors such as geography (Rodrik, Subramanian, and Trebbi 2004), political stability, and international sanctions (Sattarov 2022) play significant role in determining the feasibility and success of economic corridors. In this context, the MC, traversing Central Asia, the Caspian Sea, and the Caucasus into Europe, emerges as a strategically important route with growing geopolitical significance.

This chapter aims to provide a comprehensive overview of the Middle Corridor, focusing on its historical background,

infrastructure components, trade overview of the economies involved, challenges, and potential opportunities. The subsequent sections will delve into specific aspects of the Middle Corridor, offering insights and analysis to deepen understanding of its significance in regional and global trade dynamics.

Figure 1.3.1. CAREC Corridors



Source: adycontainer.com

Central Asia has historically played an important role in connecting regions for global trade via the ancient Silk Road, facilitating the exchange of goods between Asia, Africa, and Europe. However, with the rise of maritime trade routes, Central Asia gradually saw a decline in its connectivity to global markets, leading to geopolitical isolation. The transport corridors previously constructed between Central and East Asia largely became abandoned for international cargo movement[5]. In recent years, several initiatives have been taken to revive Central Asia's role as trade and transit bridge between Europe and Asia.

[5] World Bank, (2023). Middle-Trade-and-Transport-Corridor-World-Bank-FINAL.pdf (worldbank.org)

In the early 1990s, the European Union introduced the Transport Corridor Europe-Caucasus-Asia (TRACECA) program to modernize land port infrastructure and facilitate cross border trade. However, a more recent development with even greater significance is the Trans-Caspian International Transport Route (TITR), also known as the Middle Corridor (MC) or CAREC Corridor 2. This multimodal transport route connects Southeast Asia and China with Europe, running through Kazakhstan, the Caspian Sea, Azerbaijan, Georgia, Turkey, and the Black Sea (Sattarov 2022). The endorsement of the MC's development in 2013 by the heads of railway companies from Azerbaijan, Georgia, and Kazakhstan reflects a strategic shift away from limitations of existing trade routes. The significance of the MC has attracted investment from both Europe and China, particularly in infrastructure development. This surge in investment is driven by geopolitical factors, including sanctions on Russia and Iran, highlighting the growing importance of diversified trade routes.

Transport corridors play a crucial role in facilitating trade and connectivity, fostering cultural exchange, geopolitical stability, and socio-economic development (Brunner 2013; Rizvi 2014). Throughout history, for example, the Silk Road remained the important route linking continents and facilitating trade along its northern and southern branches. Nowadays, initiatives such as the Belt and Road Initiative (BRI), led by China, aim to leverage a comprehensive network of corridors across Asia, Europe and Africa, encompassing transportation networks, energy corridors, digital infrastructure, and logistics services - all designed to enhance global trade and economic integration (Lau et al. 2022).

Significant progress has been made in developing national

and international corridors in Asia. These include a wide array of initiatives such as "the New Eurasian Land Bridge Economic Corridor; the China-Mongolia-Russia Economic Corridor; the China-Central Asia-West Asia Economic Corridor; the China-Indochina Peninsula Economic Corridor; the China-Pakistan Economic Corridor; the corridors of the Asian Development Bank regional economic cooperation programs for Central Asia, South Asia and the Greater Mekong subregion; the Economic Cooperation Organization Corridor; the Europe-Caucasus-Asia Transport Corridor; the International North-South Transport Corridor; the Chabahar Corridor; and the International Transport and Transit Corridor of the Ashgabat Agreement" (UNESCAP, 2019)[6].

Within the BRI framework, prominent examples include the Bangladesh-China-India-Myanmar Economic Corridor (BCMP) and the China-Pakistan Economic Corridor (CPEC). For instance, CPEC is designed to connect China with Pakistan through extensive infrastructure projects, including roads, railways, and energy corridors from Pakistan Gwadar port to China's Xinjian region. Furthermore, CPEC seeks to provide new land and sea connectivity for 65 countries, including Europe and Middle East, and unlock regional trade potential.

Another important corridor in Central Asia is the Shymkent-Tashkent-Khujand Economic Corridor (STKEC). Although still in its early stages, efforts are underway to formulate roadmap for its development. While the STKEC has a wide range of goals, the initial focus appears to be on developing trade between

[6] UNESCAP, https://www.unescap.org/sites/default/files/ESCAP-DP-WG-2019-3-EN-Development%20of%20intermodal%20transport%20corridors.pdf

Kazakhstan, Uzbekistan, and Tajikistan under the ADB's ECD program. This aligns with its aim to harness the potential of trade between these countries, specifically focusing on Shymkent city and Turkestan Oblast of Kazakhstan, Sugd Oblast of Tajikistan, and Tashkent city and Tashkent Oblast of Uzbekistan[7]. The Middle Corridor (MC) serves as another noteworthy example. This multimodal transport route plays a crucial role in trade diversification for Kazakhstan, Azerbaijan, and Georgia. The World Bank documented that the MC is expected to change the focus on supply chains from the countries, increase their trade resilience and open up access to new global markets by diversifying exports and engaging in the production of complex goods, ultimately reducing dependence on traditional, regionally close trade partners (Russia and China)[8]. The MC is positioned to attract significant investment in the future, particularly benefiting European Union (EU) and East and Central Asian trade relations (Sattarov 2022). According to the World Bank (2023) report, "approximately one-third of the trade along the route is attributed to transit, of which trade between the EU and China is expected to exhibit the most substantial growth until 2030".

1.3.1. The Corridor in the Middle

Corridors, such as historical trade routes like the Silk Road, illustrate the significance of routes as important trade pathways connecting the East and West and facilitating the exchange of goods and services (Mishra 2020)the term ?Silk Road? or?Silk Roads? is of colonial provenance. The elaborate network of ancient routes originating in the fourth millennium bc and linking

[7] Trade potential of cities https://www.adb.org/publications/road-map-shymkent-tashkent-khujand-corridor
[8] World Bank, (2023). Middle-Trade-and-Transport-Corridor-World-Bank-FINAL.pdf (worldbank.org)

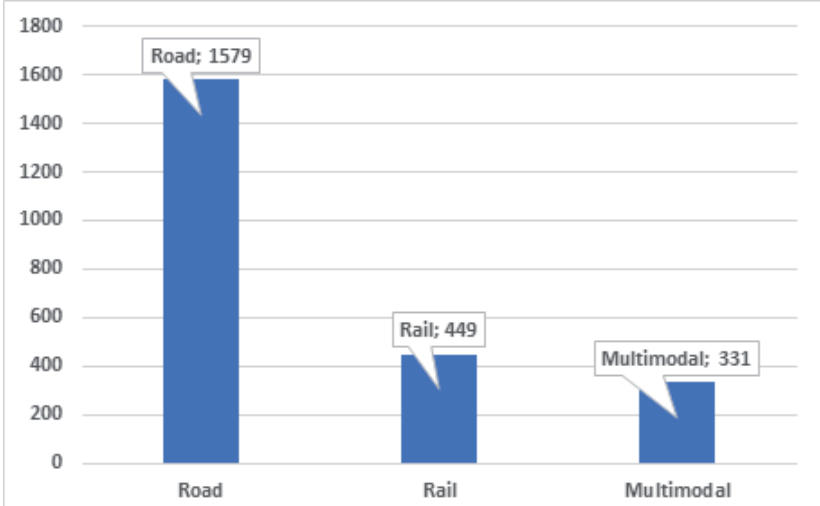
various parts of the Eurasian landmass through Central Asia was re-imagined and reinvented in the late nineteenth century as a ?Silk Road? connecting China with the Roman Empire, thereby undermining the role of the steppe with its various nomadic and oasis cultures which had always been at the heart of this Eurasian system of trade and other exchange. Ever since, historiography has focussed on the role of sedentary civilisations in this system of exchange, with a particular emphasis on China and the West, thus undermining the role of other sedentary civilisations such as India. Contrary to the dominant narrative, the antiquity of the Eurasian trade network goes back to several millennia before the rise of either the Han Empire or Rome. Whereas this network did connect the agrarian civilisations, this happened primarily through the agency of central Asian intermediaries whose culmination is represented by the rise of the vast Mongol Empire in the thirteenth century. The idea of the ?Silk Road(s. In the modern era, advancements in transportation modes and infrastructure, including roads, railways, and ports, have prominently enhanced the capacity of corridors, promoting economic integration through improved trade facilitation mechanisms.

The transportation landscape in landlocked countries holds particular significance in accessing international trade markets. The early months of 2023 have underscored the Middle Corridor's importance. The CAREC Program has established six corridors to boost regional connectivity, with a focus on enhancing economic cooperation in Central Asia through infrastructural projects such as roads, railways, airports and logistics centers. In 2020, 13 associations across nine CAREC member countries collected 2,999 samples of cross-border shipments. Analysis of the data[9]

[9] CPMM (2020). https://cpmm.carecprogram.org/

in Figure 2 revealed that goods were primarily transported via road (61%), railways (24%), and multimodal transport (15%), with perishable shipments which accounted for 30% of total goods transported by trucks.

Figure 1.3.2. Mode of Transportation



Source: Asian Development Bank (https://cpmm.carecprogram.org/)

The MC, also known as ADB's CAREC Corridor 2, expands connectivity beyond Central Asia, reaching Europe, the Mediterranean, and East Asia, offering a cluster of opportunities for regional trade and investment. The length of the Trans-Caspian International Transport Route (TITR), as reported by the working group of the international association "Transcaspian International Transport Route", spans approximately 6,000 km, running from Altynkol to the Port of Aktau, then to the Port of Baku (Alat), Boyuk-Kasik, Gardabani, the Port of Batumi (Poti), and finally to Constanta and Bucharest.[10] The Eurasian Rail

[10] TITR (2024). https://middlecorridor.com/images/content/marshrut_2023/1_en.pdf

Alliance Index (2023) reports that the MC is currently handling 6 million tons of cargo annually, with ambitious plans to increase this volume to 10 million tons by 2025. In 2022, the corridor has achieved a significant milestone by transporting 1.5 million tons of cargo, marking an increase of 2.5 times compared to the previous year.[11]

1.3.1.1. Cargo Movements

Figure 3 shows a significant increase in cargo transported along the MC in 2022. Container traffic grew by 33% compared to 2021, reaching 33,600 TEUs (up from 25,300 TEUs in 2021). Additionally, exports of Kazakhstani goods also saw a substantial rise, amounting to 891,000 tons, which is 6.5 times increase compared to 2021. ERAI reported a decline in both transit traffic (down 3.5% to 257,500 tons) and container traffic (down 25% to 11,000 TEUs). However, the trade volume increased during this period, with exports tripling and imports increasing by 22%. This indicates a movement of over 4,000 containers across the border, illustrating the growing potential of this dynamic transportation route. This notable growth was underlined during the second European Union-Central Asia Economic Forum in Almaty, where Vice Minister of Trade and Integration, Kairat Balykbayev, highlighted the substantial increase in cargo volume.[12]

The CAREC Corridor Performance Monitoring and Measurement[13] (CPMM) primarily focuses on assessing the

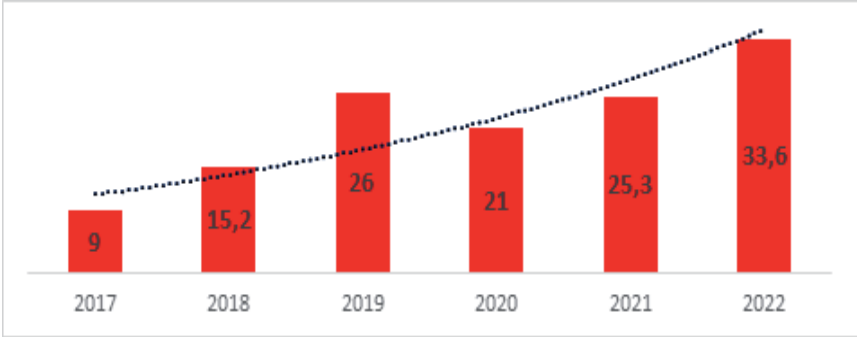
[11] ERAI (2023). https://index1520.com/upload/medialibrary/169/q8i6bxpap6f3f2tpih7xdpuor208lhdk/en_TITR.pdf

[12] https://astanatimes.com/2023/05/cargo-transportation-along-middle-corridor-increases-to-1-5-million-tons-in-2022/

[13] The Corridor Performance Measurement and Monitoring (CPMM) methodology is based on a time/cost-distance (TCD framework and involves four major stakeholders: (i) drivers, (ii) CPMM partners and coordinators, (iii) field consultants, and (iv) the Central Asia Regional Economic Cooperation (CAREC) Program trade

performance of road, rail, and short sea surface transport across the Caspian Sea.

Figure 1.3.3. Cargo Flow via TITR or MC (Thousand TEUS)



Source: ERAI cited from https://trans.info/ru/obyem-gruzoperevozok-po-transkaspijskomu-koridoru-353419

The CPMM uses a combination of road-water or rail-water transport methods. It covers the six CAREC corridors along with the Border Crossing Points (BCPs). Table 1 presents data for each shipment cargo sample, including both origin and destination points, as well as key BCPs crossed along the MC. The cargo movement between Azerbaijan and Georgia via the MC involves (a) transit by road from Georgian seaports to Central Asia, and vice versa. The Alat seaport in Azerbaijan's Baku serves as a crucial hub for water transport across the Caspian Sea, while the Poti and Batumi seaports in the Black Sea region are significant nodes for facilitating cargo movements along the corridor.

facilitation unit.

Table 1.3.1. Cargo Movement and Routes

Country		Cargo Movements
Azerbaijan	2*	Cargo Movement Routes: (1) Transit by road from Georgian seaports to Central Asia (2) Transit by road from Central Asia to Georgian seaports
Georgia	2	Cargo Movement Routes: (1) Transit by road from Georgian seaports to Central Asia (2) Transit by road from Central Asia to Georgian seaports
Kazakhstan	2	Cargo Movement Routes: (1) Imports by road from Kyrgyz Republic and Uzbekistan to major cities in Kazakhstan such Almaty and Astana.

Source: Asian Development Bank

BCP = border-crossing point,
CAREC = Central Asia Regional Economic Cooperation,
CPMM = Corridor Performance Measurement and Monitoring.
2* CAREC Corridor or Middle Corridor

1.3.1.2. Border Crossing Points and Goods Transported: Azerbaijan, Georgia, Kazakhstan

Being landlocked, shippers in Central Asia face elevated challenges in shipping their goods to and from the region since there is no direct access to seaports. The transit of goods relies on the efficiency of BCPs in transit country. A cumbersome border crossing result in additional costs and delays, similar to traveling hundreds of extra kilometers.

The CAREC Corridors, in line with China's "Go West" policy, include large-scale infrastructure projects to enhance connectivity within and beyond the CAREC region.

Table 1.3.2. Average Cost at Road Border-Crossing Points by Activity

Road Cost	Overall	MC
Border Security or Control	14	11
Customs Controls	107	64
Commercial Inspection	39	3
Health & Quarantine	11	35
Phytosanitary	17	8
Veterinary Inspection	6	13
Visa or Immigration	23	78
Transit Conformity	18	8
GAI or Traffic Inspection	8	3
Police Checkpoint	11	6
Transport Inspection	12	10
Weight or Standard Inspection	20	26
Vehicle Registration	10	9
Emergency Repair	85	9
Escort or Convoy	85	201
Loading & unloading	286	38
Road or Bridge Toll	28	65
Waiting or Queuing	12	6

This initiative aims to promote regional and economic integration, as well as facilitate trade and connectivity. Transport operators from Azerbaijan, Georgia, and Kazakhstan are actively promoting the development of the MC as a multimodal trade and transit route that connects East and South Asia to the Caucasus and Europe.

Table 1.3.2 categorically illustrated the dispersion of costs incurred at BCPs along the MC compared to the overall CAREC corridors in 2020. CPMM data revealed that the major cost is associated with loading and unloading, with the MC experiencing comparatively lower average costs in this regard. Corridor 1 stand out as having the highest loading and unloading costs, reaching $1,487 in 2020. Custom controls represented the second-highest cost category for BCPs, with the highest custom control costs recorded for corridors 5 and 1 ($221 and $212 respectively). Corridor 2 or the MC, incurs the highest costs in escort or convoy services for trucks.

Table 1.3.3. Border Crossing Point Across Middle Corridor

Country	CAREC Corridor	Key BCP in CPMM	Commodities
Azerbaijan	2	Baku International Sea Trade Port, Boyuk Kesik, and Qirmizi Korpu	Fruits and nuts, processed food, cotton, vehicles, electrical equipment and machinery, and pharmaceuticals
Georgia	2	Gardabani, Sarpi, and Tsiteli Khidi	Fruits and nuts, processed food, cotton, vehicles, electrical equipment and machinery, and pharmaceuticals
Kazakhstan	2	Altynkol, Dostyk, Nur Zholy, Konysbaeva, and Tazhen	Assorted consumer products, apparel, and electrical equipment and machinery, consumer electronic appliances, textiles and construction materials.

Source: Asian Development Bank, CPMM Annual Report (2020 Azerbaijan

While no estimates are available for railways due to the CPMM's lack of railway samples for MC, notable progress has been made in railway freight services. A train departing from Türkiye for China completed its 8,693 km journey in just 12 days. This development indicates the potential of railway freight services, especially as railway tracks extend to key seaports in Kuryk, Baku, and Poti.

The CPMM report (2020) captured various types of road cargo movements across Azerbaijan. These include goods cargo transported from Poti or Batumi to Baku-Kuryk, terminating in Kazakhstan via the MC. Additionally, the report highlights the advantages of containerized shipments from Tajikistan to Georgia, as well as transit shipments from Türkiye to Kazakhstan. Table 3 provides insights into the common commodities transported via road, including fruits and nuts, processed food, cotton, vehicles, electrical equipment and machinery, and pharmaceuticals.

Georgia

Georgia provides a transit route for Central Asia, with cargo movements crossing the Caspian Sea at Baku-Kuryk. The majority of shipments passing through Georgia via road are non-containerized, including machinery from Türkiye to Central Asia, and industrial goods from Ukraine and other countries. These goods are transported by truck to Central Asia via Poti or Batumi. Table 4 of CPMM data for Georgia shipments to Kazakhstan provides time and cost indicators for a sample of non-containerized cargo transported by trucks from Poti seaport to Kazakhstan, covering a distance of 4,978 km with a transit time of 11.25 hours.

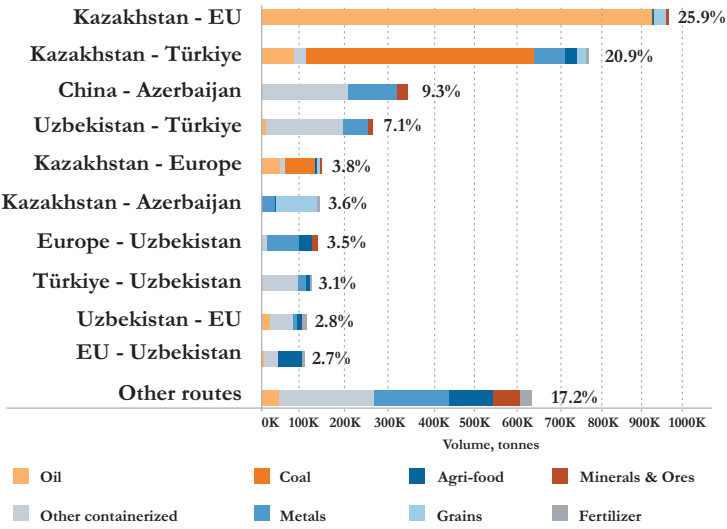
Moreover, Georgia also exports pharmaceuticals to Central Asian countries. Common transit goods through Georgia are fruits and nuts, processed food, cotton, vehicles, electrical equipment and machinery, and pharmaceuticals.

Kazakhstan

According to the World Bank, "the MC has been largely dominated by Kazakhstan exports and trade with other regions;

however, it accounts for only a small portion of trans-continental trade, particularly EU-China trade – less than 5 percent of transit traffic" (Table 1.3.4). CPMM data shows that rail shipments, via the MC include imports form Chongqing and Shenzhen to Almaty, as well as goods from foreign origins transported via ocean containers to cities in Kazakhstan.

Figure 1.3.4. MC traffic was dominated by Kazakhstan's expots (2021)



Kazakhstan commonly transports a mixed variety of consumer goods, apparel, electrical equipment and machinery. Kazakhstan's shipped products by rail include electronic appliances, electrical equipment and machinery, textiles, and construction materials.

Prior to Russia's conflict with Ukraine, China considered the MC as a favorable alternative trade route between China and the EU compared to the Northern land route.

Table 1.3.4. Shipments from Poti, Georgia to Kazakhstan

Route	Poti-Almaty
Distance (km)	4,978
Transit Time (hrs)	111.25
Activities Times (hrs)	196.42
Total Time (hrs)	307.67
Transport Rate $	2120
Activities Cost $	802
Total Tripe Cost	2,922
SWOD (km/h)	44.75
SWD (km/h)	16.18
Transport Rate $/500km	212.94
Activities Cost $/500km	80.55
Total Trip Cost $/500km	293.49
Source: Asian Development Bank.	

Source: World Bank calculations based on the simplified trade & transport modelling in InfraForecast software

The MC increased the trade volume by 10%, which is largely due to changes in regional and intercontinental trade patterns following the Russian invasion of Ukraine. Since March 2022, the shipping option via the MC has become comparatively

more attractive. The World Bank (2023) estimated that maritime transport accounted for 91 percent of China – EU trade in 2021 which consist of 58 percent of the total trade volume. While trail transport accounted for 3.3 percent of China – EU trade, representing 5 percent of the total trade volume.

1.3.1.3. Trade Facilitation Indicators (TFIs)

The CPMM evaluates a set of four TFIs[14] to illustrate the overall annual performance and efficiency of the CAREC corridors, providing a comprehensive assessment of transport and trade initiatives in the CAREC region. Azerbaijan's TFI1 border-crossing performance in 2020, showed in Table 5, increased to 6.3 hours from 2.7 hours in 2019, attributed to longer durations and increased fees, as well as total transport costs. Georgia's TFI1 indicated a rise in border-crossing time, while both TFI2 and TFI3 showed improvements in border-crossing and total transport costs, decreasing from $68 to $48 and $185 to $87, respectively. However, SWOD exhibited divergent performance, decreasing from 56.8 km/h to 46.3 km/h, while TFI4 increased to 27.1 km/h.

Table 1.3.5. Trade Facilitation Indicators

Trade Facilitation Indicators		Azerbaijan	Georgia	Kazakh-stan
TFI-1	Time taken to clear a BCP (hrs)	6.3	13	8.7
	Outbound	2.8	14.2	8
	Inbound	10.2	4.8	9.2

[14] The data from TCD-format questionnaires, four trade facilitation indicators (TFIs) are monitored regularly to enable assessment of improvements made in the CAREC corridors. However, unlike other indicators, TFIs are less easy to quantify as they depend on a variety of factors such as (i) the quality and availability of physical infrastructure, (ii) national policies and regulations for transit and trade, (iii) bordercrossing procedures, and (iv) the degree of harmonization among countries

TFI-2	Cost incurred at BC Clearance $	85	48	123
	Outbound	71	45	58
	Inbound	97	78	157
TFI-3	Cost incurred to travel a corridors section ($ per 500km, per 20 ton cargo)	45	87	1850
TFI4	Speed to travel on CAREC Corridors (km/h)	34.2	27.1	29.2
SWOD	Speed without delay (km/h)	52.7	46.3	52.9

Source: CPMM, Asian Development Bank.
Note: km = kilometer, km/h = kilometer per hour, SWOD = speed without delay, TFI = trade facilitation indicator

TFI2 assesses border crossing performance, revealing an increase in duration and fee from %50 in 2019 to $85 in 2020 for Azerbaijan. Similarly, Kazakhstan experienced an increase in border-crossing costs from $115 to $123 in the same period, with total transport cost surging nearly 2.5 times from $715 in 2019 to $1,850 in 2020 (Table only indicate 2020 statistics)

1.4. MIDDLE CORRIDOR PORTS

Six of the 11 CAREC countries host seaports though three of these countries (Azerbaijan, Kazakhstan, and Turkmenistan) host ports on the landlocked Caspian Sea. Georgia's ports on the Black Sea provide access to the Mediterranean Sea through the Bosphorus Strait. Seaports in Pakistan via CPEC do not fully address the needs of the CAREC region due to the diverse locations of traded goods to and from the CAREC countries.

Table 1.4.1. MC Seaports Access

MC Country	Landlock	Seaport Access	Range to Nearest Seaport (Kilometer)	Mode of Access to Nearest Seaport
Azerbaijan	Yes	Caspian	800	Rail – Road – Canal
Georgia	No	Black Sea		
Kazakhstan	Yes	Caspian	3000	Rail – Road – Canal

Source: UNCTAD, 2014, CAREC Calculation

In landlocked CAREC countries, production and consumption centers are mostly more than 800 km away from the closest seaport, translating to travel times of two or more days. In some CAREC countries, these distances are even greater.

1.4.1. Batumi Seaport, Georgia

Georgia has two ports on the Black Sea dedicated to commercial cargo flows, namely Poti and Batumi, along with two marine oil terminals, Supsa and Kulevi. Georgia's Batumi port, located 85 km south of Poti and just 20 km from the Türkiye border, serves CAREC countries in Central Asia. With five terminals, 11 berths, and a single midstream mooring point for loading liquid bulk petroleum products outside designated areas[15], Batumi port is rapidly developing. In 2018, it attracted 8.67 million tourists by increasing of 9.3 percent from 2017, while Batumi airport received a 23 percent rise in passenger traffic compared to the previous year[16]. Trade figures for Batumi indicate that shipments of crude and refined oil products totaled 978,705 tons from January to November 2018, a decline from 1.906 million tons in the same

[15] Ports and Logistics Scoping Study in CAREC Country https://www.carecprogram.org/uploads/Ports-and-Logistics-Scoping-Study-in-CAREC-Vol-II_4th-proof.pdf
[16] Georgian Tourisim in Figures - Structure and Industry Analysis, 2018

period in 2017. Furthermore, Batumi's seaport handles products such as grain, ores, scrap, sugar, as well as neo-bulk cargoes like steel pipes, wood, with facilities for rail and Ro-Ro ferries. Port statistics indicated that 578 vessels were served in 2019.

1.4.2. Poti, Georgia

The port of Poti is the largest in Georgia. This port handles dry bulk, liquid, passenger, and rail freight ferries, which contribute to nearly 80% of the country's container traffic (Pricewaterhouse Coopers Georgia LLC, 2019). This multipurpose facility boasts 15 berths, with a total quay length of 2,900 m, over 20 quay cranes (some out of commission), and 17 km of rail track within the terminal yard, alongside some rail sidings that are currently inactive with abandoned rolling stock[17].

Situated on a natural low-level plain where the Rioni River empties into the Black Sea, Poti port lies 265 km northwest of Tbilisi and 85 km north of Batumi. It accommodates eight cargo handling complexes across 15 berths in the "northern port" and "inner basin", along with associated warehouses. There are separate facilities for passenger and fishing fleets. Serving as a important gateway for transit cargo, Poti port facilitates cross-docking operations destined for neighboring markets, including Azerbaijan, Armenia, and Central Asia.

1.4.3. Aktau and Kuryk, Kazakhstan

The Port of Aktau is located on the eastern coastline of the Caspian Sea, lies approximately 3,000 km from Almaty via the A2 highway. In comparison to overland routes to major centers in neighboring countries, shipping transits from Aktau are relatively

[17] Same as above

short, with distances of 475 km to Baku, 550 km to Turkmenbashi and 700 km to Bandar Anzali by sea. Commercial operations at Aktau underwent a significant change with the official opening of the Kuryk commercial port in 2018. This resulted in the transfer of all rail-ferry and Ro-Ro ferry operations to Kuryk port, gearing up the way for new business opportunities in dry bulk. Aktau port's remaining commercial activities focus on the handling of containers, liquid bulk (petroleum products), dry bulk (grain), and breakbulk cargoes (such as metal, steel products, sawn-timber, etc.).

The port of Kuryk, though smaller than Aktau, achieved a throughput of 1.8 Mt in 2022, out of a nominal capacity of 6 Mt, representing less than 30% utilization. This specialized port occupies a strategic location, connected by new rail operations linking the port with road and railway services along the Kuryk–Tazhen Customs Point and Kuryk–Khorgos Gateway dry port (CAREC, 2021). Nearly 79 percent of the throughput consisted of general cargo carried in trucks and rail-wagons along the Kuryk-Baku route. The port has direct access to the Kazakhstan railway network, Kuryk port is expected to link the Silk Way between Europe and the PRC.

The total capacity of the ferry complex is projected to reach 10 million tons by 2030. The universal reloading terminal will handle about 3 Mt of container, general, and bulk cargo, while the liquid cargo terminal will handle 2.9 Mt. Kuryk port is the major rail gateway for Kazakhstan connecting with the Russian Federation, Caucasus, and European countries via the MC. Both Aktau and Kuryk ports, with a combined estimated capacity of 24 Mt per annum, are owned by the National Railway Company of Kazakhstan (KTZ) with private capital participation.

1.4.4. Baku/M.tpa, Azerbaijan

Table 1.4.2. Features of MC Countries Ports

	Georgia		Kazakhstan		Azerbaijan
Key Attributes	Batumi	Poti	Aktau	Kuryk	Baku/M.tpa
Year-round navigation	Yes	Yes	Yes	Yes	Yes
Total port area: Hectares	Ha	4,444 ha	100 ha	65 ha	400 ha
Land area: Hectares (ha)	22 ha	51.9 ha	7.97 ha		117 ha
Port capacity: million tons per annum (m.tpa)	20 m.tpa*	63 m.tpa	15 m.tpa	6 m.tpa	15 m.tpa
Water depth alongside berths: LAT meters (m)	6.4 m – 11.5 m	7.2 – 9.1 m	4.6 m	6.5 m	7 m
Total quay length: Combined all types kilometers (km)	2.034 km	2.873 km	1.76 km	1.3 km	2.1 km
Number of commercial berths	11	15	11	5	12
Combined throughput of million tons in 2019	2.986	6.345	3.23	2.4	4.55
Containerized throughput 2019	116,081 TEU	510,000 TEU	14,324 TEU	0 TEU	35,152 TEU
Rail wagon throughput 2019 Truck/Trailer throughput 2019 Passenger throughput 2019					44,175 wagon 33,671 units 46,265 pax
Container Terminals 1 / Capacity per annum	200,000 TEU	550,000 TEU			500,000 TEU
Container Terminals (0) /Capacity per annum			25,000 TEU	100,000 TEU	
Ferry Terminals / annual wagon capacity	28,000 wagons	36,000 wagon	50,000 wagons	60,000 wagons	
Rail wagon capacity pa est					75,000 wagons

Source: CAREC, 2021
Note: LAT = lowest astronomical tide,
TEU = twenty-foot equivalent unit,
m.tpa = million tons per annum

As of June 2023, the port of Baku had an estimated annual capacity of 15 Mt per annum (m.tpa). This capacity breakdown included 6.2 m.tpa through the ferry terminal, 1.8 m.tpa through the Ro-Ro terminal, and 7 m.tpa through the multipurpose terminal (World Bank, 2023). Other ports in Azerbaijan specialize in providing dedicated services to the oil and gas marine supply and exploration sectors. The total capacity of the port is 15 m.tpa, with a depth alongside the berths measuring 7LAT m.

1.5. MIDDLE CORRIDOR – ROAD AND RAIL

The CPMM data introduces four Trade Facilitation Indicators (TFIs) at the country level, segregated by road and rail transport. Border-crossing time and cost data are further decomposed for outbound and inbound shipments. The data are supplemented by average border-crossing time and cost for BCPs along the CAREC corridors. The TFIs for the MC countries are:

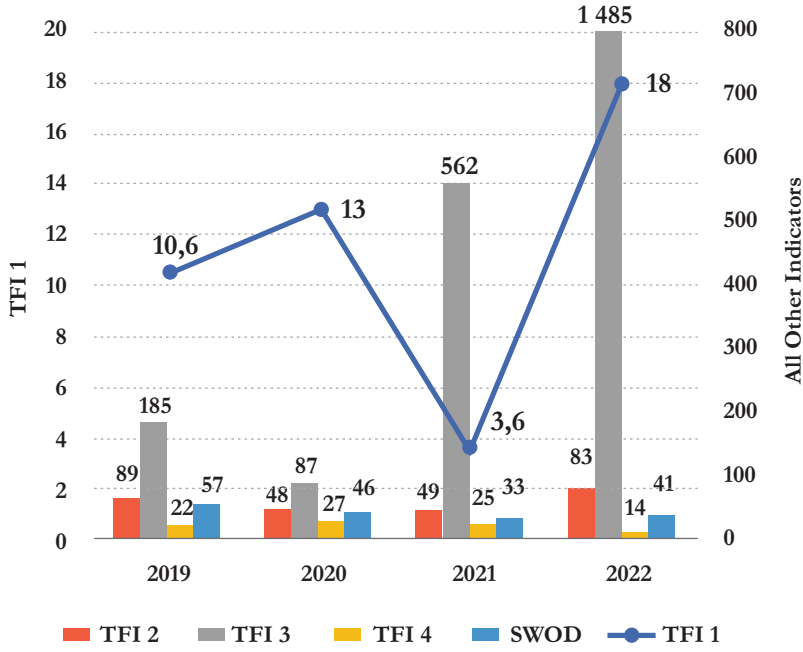
1.5.1. Road – Azerbaijan

Azerbaijan has been a significant contributor to the MC and stands to gain substantially from its effective development. Despite initial challenges, the country has demonstrated resilience and adaptability. Recent data highlights several areas of improvement: border-crossing efficiency has become a key focus, leading to efforts to streamline processes. Cost efficiency has seen remarkable progress, showcasing Azerbaijan's commitment to reducing transport expenses. Investments in transport infrastructure

reflect the nation's dedication to enhancing its overall logistics network. Improvements are being made to optimize speed and manage delays more effectively. Overall, these efforts underscore Azerbaijan's commitment to enhancing its transport corridor performance and leveraging opportunities for future growth.

1.5.2. Road - Georgia

Figure 1.5.1. Road – Trade Facilitation Indicator, Georgia



Source: Author Calculations - Asian Development Bank - CAREC CCPM Data-Bank Access, March 2024

Georgia was a beneficiary of this situation. The Georgia seaports Poti and Batumi on the Black Sea are the gateways for

such traffic linking with Central Asia. Goods proceed overland, either by road or rail, traversing Georgia and Azerbaijan before reaching the Alat seaport in Baku.

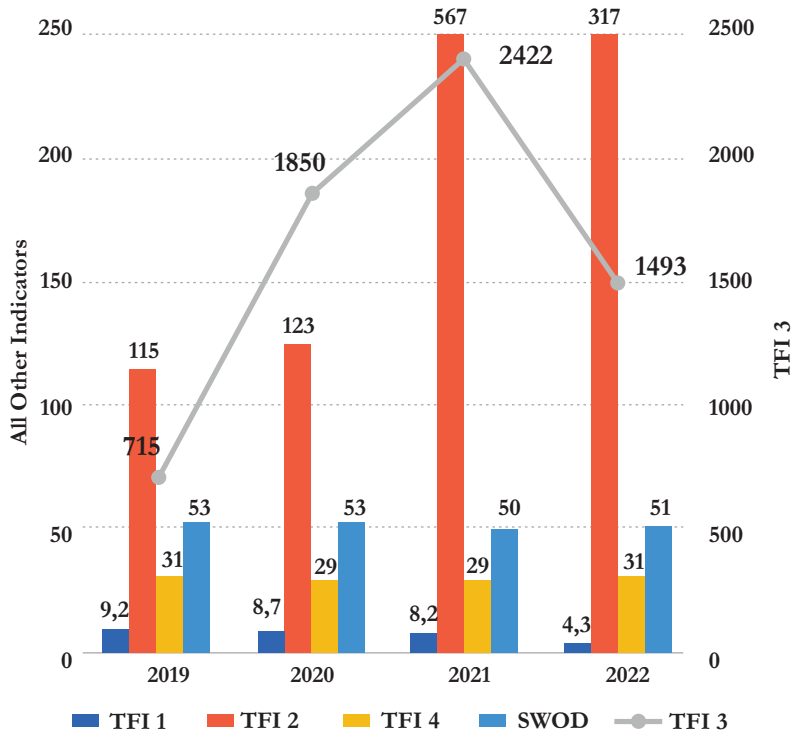
CPMM road transport data for Georgia in 2022 indicated the following year-on-year changes from 2019: The border-crossing time increased from 10.6 hours to 18.0 hours from 2019 to 2022 due to border congestion at Tsiteli Khidi and Sarpi, as a result of the Ukraine crisis. The border-crossing costs for road shipments increased from $68 to $83. The transport costs rose from $185 to $1,485 for travelling a section of the corridor within Georgia. The SWOD declined from 57 km/h to 40.6 km/h during the same period, as depicted in Figure 6.

1.5.3. Road – Kazakhstan

In terms of transit significance, Kazakhstan plays a special role in the region. Operating seaports at the Caspian Sea and being a key member of the TITR (MC), Kazakhstan serves as a vital transit country. The TITR involves a trilateral collaboration between Kazakhstan, Georgia and Azerbaijan[18]. Due to increased interest in the TITR, there was a notable rise in shipments moving across Aktau and Kuryk in 2022. For instance, Aktau port handled slightly over 3.8 million tons of dry bulk and oil cargo in the entire year, marking a 9% increase from 2021.

[18] Although Turkmenistan also has a seaport Turkmenbashy at the Caspian Sea, the country is not a member of the TITR.

Figure 1.5.2. Road – Trade Facilitation Indicator, Kazakhstan



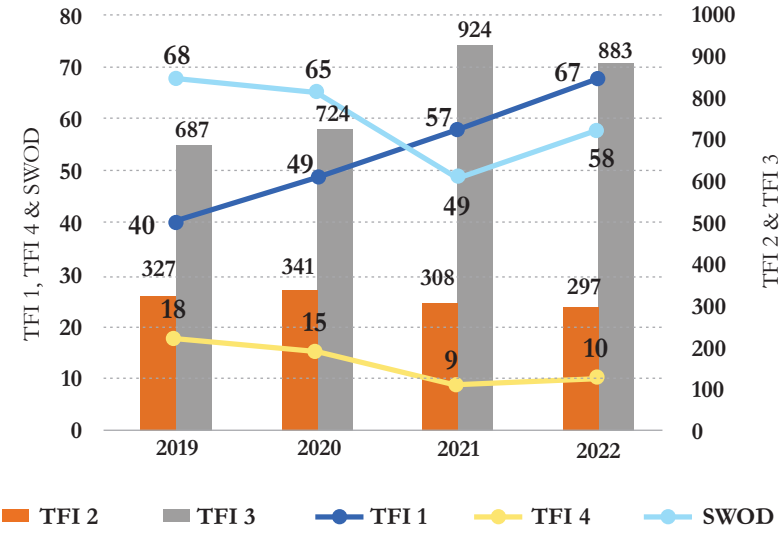
Source: Author Calculations - Asian Development Bank - CAREC CCPM Data-Bank Access, March 2024

The CPMM data for Kazakhstan's road and rail transport in 2022 revealed the following changes from 2019. TFI 1, or border-crossing time for road transport, improved from 9.2 hours in 2019 to 4.3 hours in 2022. There was a significant decline in the cost of crossing the border, from $567 in 2021 to $317 in 2022. TFI 3 indicates a downward trend in road transport costs since 2020. The SWOD indicator showed an increase from 53.2 km/h to 31.2 km/h.

1.5.4. Rail – Kazakhstan

In terms of border-crossing times, there was a significant disparity in performance between road transport and rail transport.

Figure 1.5.3. Rail – Trade Facilitation Indicator, Kazakhstan



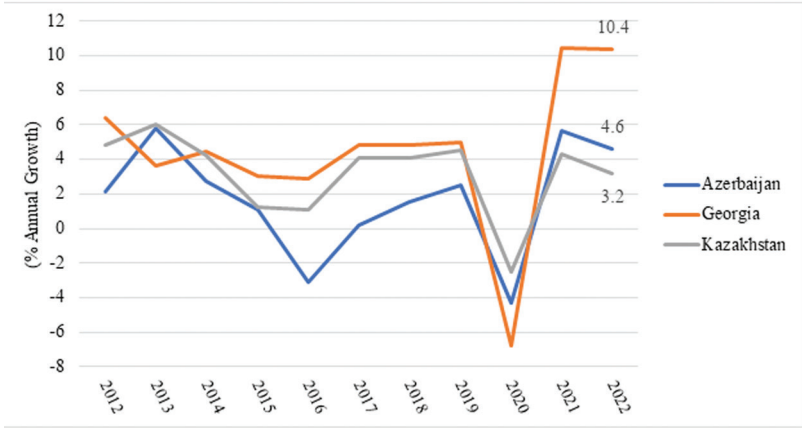
Source: Author Calculations - Asian Development Bank - CAREC CCPM Data-Bank Access, March 2024

Road transport reported a 36.5% reduction in crossing time, whereas rail transport saw a modest 3.4% increase. The CCPM indicator for TFI 1, representing border-crossing time, continued its upward trend from 39.9 hours to 67.4 hours, reflecting a 70% increase. Conversely, TFI 2, marking border-crossing costs, dropped very slightly from $327 to $297. However, total transport costs increased from $687 to $883, and SWOD rose from 68.0 km/h to 57.9 km/h.

1.6. TRADE OVERVIEW OF MC ECONOMIES

Among the three countries, Kazakhstan has the largest GDP, followed by Azerbaijan and Georgia, respectively.

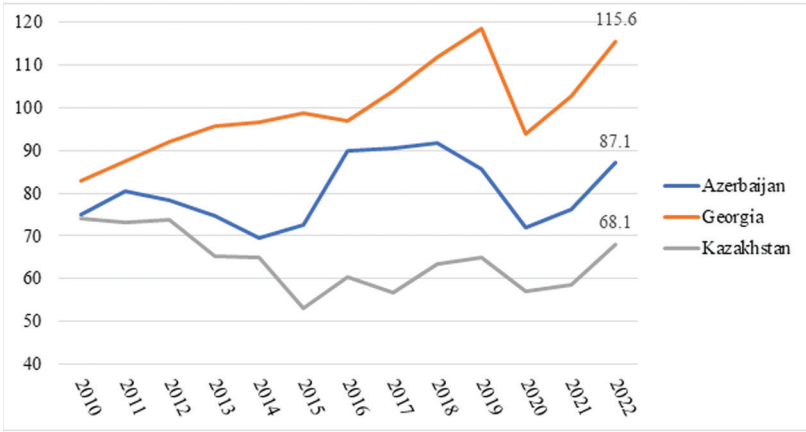
Figure 1.6.1. MC Countries GDP Annual Growth



Source: World Bank Data: https://data.worldbank.org/

Kazakhstan was quite resilient at the onset of the pandemic, with its GDP exhibiting no significant decline, whereas Georgia experienced a GDP drop of 6.8% and Azerbaijan's GDP-4.3% in 2020. Despite trade impediments such as supply chain disruptions, Georgia's economy rebounded, achieving an annual growth rate of 10.4% in 2022. Figure 1.6.1 represents the GDP trends of MC countries from 2012 to 2022.

Figure 1.6.2. MC Economies - Trade Percentage of GDP



Source: World Bank Data: https://data.worldbank.org/

In Figure 1.6.2, trade-to-GDP ratio serves as a common measure to assess the openness of MC economies. It indicated that trade growth relative to GDP is quite volatile across all three countries. Georgia faced a heavy dent during the pandemic when trade declined and growth dropped from 118.6 percent to 93.9 percent of GDP in 2020. Similarly, Azerbaijan and Kazakhstan also experienced declines in 2020. However, MC countries rebounded in trade growth, reaching 115.6 percent, followed by Azerbaijan at 87.1 percent.

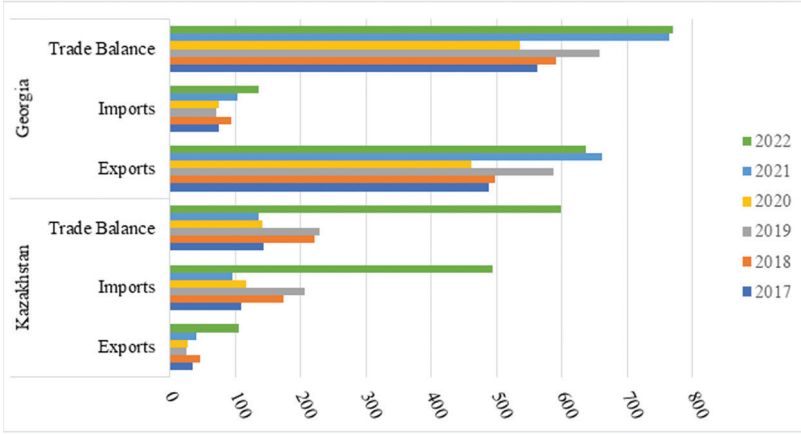
1.6.1. Bilateral Trade of MC Economies

1.6.1.1. Azerbaijan Bilateral Trade

Azerbaijan and Kazakhstan bilateral trade volume surged to $598 million in 2022, marking $463 million increase from 2021 (Figure 1.6.3-1.6.4.). Azerbaijan's imports from Kazakhstan

accounted for $494 million in 2022, up by $399 from 2021. Additionally, Azerbaijan's exports to Kazakhstan reached $104 million in 2022, a remarkable 160 percent increase from 2021. Main commodities of Azerbaijan exported to Kazakhstan included passenger vehicles, sugar, polyethylene, steel, beverages, electrical machinery, etc. Conversely, Azerbaijan imported minerals, fuel, railways and vehicles, cereals, iron and steel, etc.

Figure 1.6.3. Azerbaijan Bilateral Trade (Million US $)



Source: Trade Map, 2024

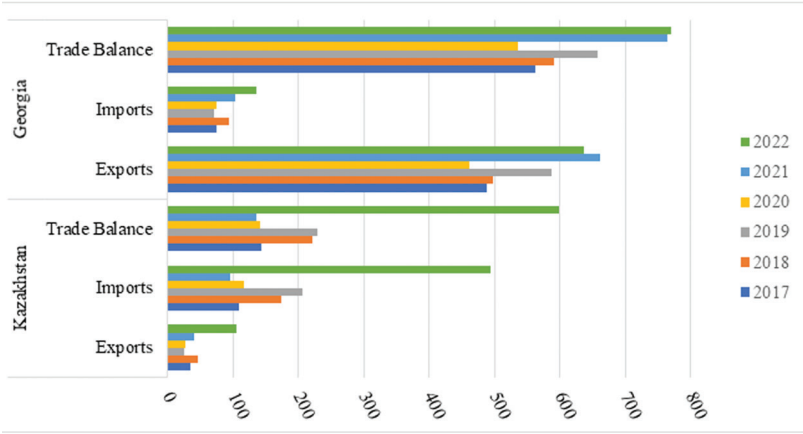
Figure 1.6.4 further illustrated Azerbaijan and Georgia's bilateral trade volume, which reached $770 million in 2022, only $7 million higher than the trade of $763 million in 2020. Azerbaijan's imports accounted for $135 million in 2022 which was up by 31.5 percent from 2021. However, Azerbaijan's exports to Georgia amounted to $636 million in 2022, showing a $25 million decline from 2021. Main commodities exported from Azerbaijan to Georgia included commodities, works of

art, miscellaneous manufacturing toys, games, furniture, and etc. Azerbaijan imported from Georgia live animals, iron and steel, plastics edible fruits, and nuts, vegetables, and beverages.

1.6.1.2. Kazakhstan Bilateral Trade

Kazakhstan and Azerbaijan's bilateral trade volume soared to $461.9 million in 2022, reflecting a significant increase of $129.66 million from the $332.2 million recorded in 2021. Kazakhstan's imports accounted for $86.5 million in 2022, up by $42.2 million from 2021. Meanwhile, Kazakhstan's exports accounted for $375.31 million in 2022, up by $87.43 million from 2021. Main commodities traded between Kazakhstan and Azerbaijan were mineral fuels, cereals, iron and steel, ships, boats polyethylene, fresh cherries, grapes, and tomatoes.

Figure 1.6.4. Kazakhstan Bilateral Trade (Million US $)



Source: Trade Map, 2024

Kazakhstan and Georgia's bilateral trade volume, which reached $600.1 million in 2022, a remarkable increase of $512.7 million from 2021. Kazakhstan's exports accounted for $538.4 million in 2022, showing strong growth, while imports accounted for $62.4 million in 2022. Main commodities exported from Kazakhstan to Georgia included copper, aluminum, iron and steel, petroleum, fertilizers, etc. In the reverse direction, Kazakhstan imported electronic products, pharmaceuticals, edible fruits and nuts, vegetables, and beverages.

1.6.1.3. Georgia Bilateral Trade

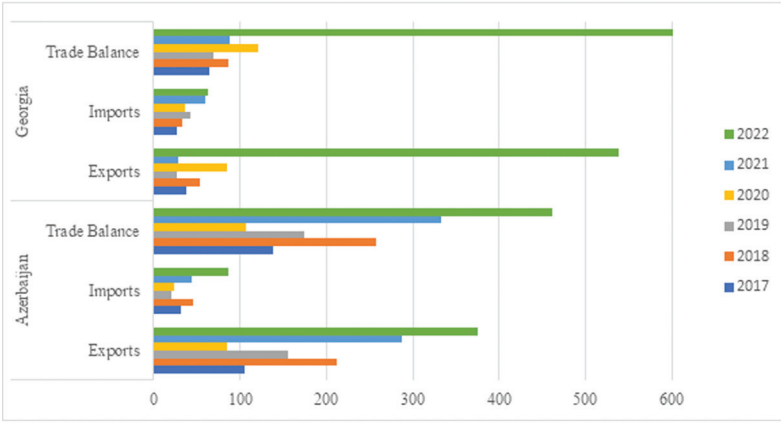
Georgia and Azerbaijan's bilateral trade volume reached $878 million in 2022 which was 11.7% higher than the trade of $704.8 million in 2021. Georgia's exports accounted for $166.8 million in 2022, up by 48% from 2021. Georgia's imports amounted to $620.2 million in 2022, up by 4.8% from 2021. Main commodities exported from Georgia to Azerbaijan included live animals, iron and steel, beverages, polyethylene, fuel oil, etc. Conversely, Georgia imported beverages, plastics, ores, electrical products, and etc.

Georgia and Kazakhstan's bilateral trade volume reached $108.4 million in 2022, marking a notable increase of 24.6% from the $87 million recorded in 2021. Georgia's exports totaled $73 million in 2022, up by 6.6% from 2021. Georgia's imports accounted for $35.3 million in 2022 representing a substantial increase of $91.1 million compared to 2021.

Among the MC countries, Kazakhstan has the highest trade volume compared to others. Figure 14 indicates that Kazakhstan's total export in 2022 amounted to $84 billion, with imports totaling

$50 billion. Kazakhstan's trade volume has increased by $32 billion from 2021 to 2022. Following Kazakhstan is Azerbaijan, with a trade volume of $53 billion. Figure 1.6.6. also shows that Azerbaijan's trade volume increased by $19 billion, due to a $16 billion increase in exports from 2021 to 2022. Meanwhile, Georgia's trade volume remained relatively low compared to other MC economies.

Figure 1.6.5. Georgia's Bilateral Trade (Million US $)



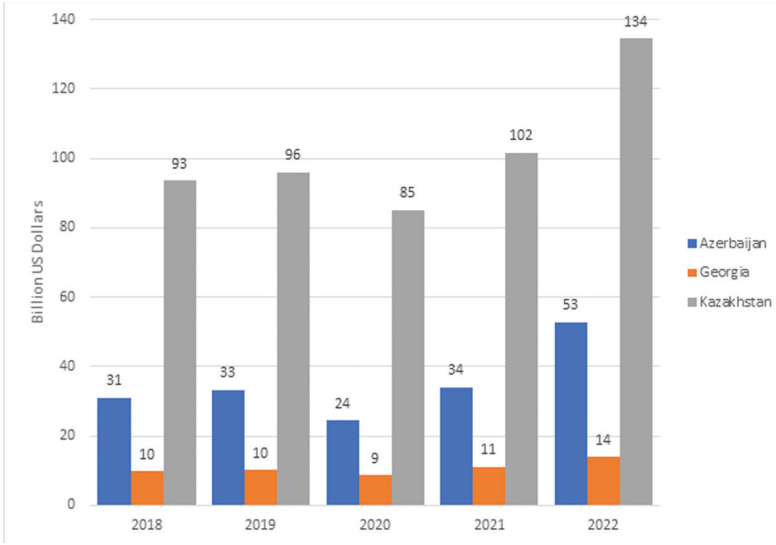
Source: Trade Map, 2024

1.6.2. Trade Volume and Balance of MC Economies

The trade balance between Kazakhstan and Azerbaijan has remained positive over the years, as illustrated in Figure 1.6.6. indicating that both countries have higher values of exports than imports. Figure 6 also reveals that Kazakhstan achieved the highest level of positive trade balance at $34 billion, while Azerbaijan's highest surplus was $24 billion in 2022. Even during

the pandemic restrictions in 2020, both countries maintained a positive trade balance, with $9 billion and $3 billion respectively. However, Georgia has experienced a negative trade balance, ranging between $4 billion to $6 billion.

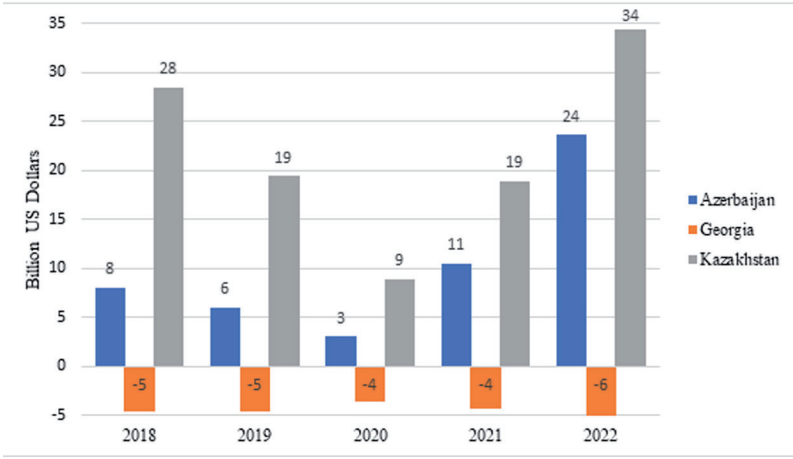
Figure 1.6.6. MC Countries Trade Volume (Billion $)



Source: Authors Calculations – Trade Map, 2024

The Table 1.6.1. presents the list of top trade partner countries for Azerbaijan, Kazakhstan, and Georgia. For exports, Italy is the top destination, taking a whopping 46.6 percent of Azerbaijan's exports. Other significant export partners include Türkiye (9.29 percent), Israel (4.41 percent), India (4.36 percent), and Greece (3.65 percent).

Figure 1.6.7. MC Countries Trade Balance (Billion $)



Source: Authors Calculations – Trade Map, 2024

Similarly, Kazakhstan's top import partners are Türkiye (20.53 percent), the Russian Federation (17.12 percent), China (10.59 percent), Azerbaijan (6.18 percent), and Germany (3.87 percent). Major export destinations for Kazakhstan include China ($703 million), the Russian Federation ($552 million), Bulgaria, Türkiye, and the United States of America.

Georgia's largest bilateral trade partner is the Russian Federation, accounting for 34.66 percent of imports and 10.40 percent of exports. China is another key player, with a 21.94 percent share of Georgia's imports and a15.60 percent share of its exports.

Table 1.6.1. Top Trade Partners - 2022
(% Share)

	Azerbaijan's Trading Partners		Kazakhstan's Trading Partners		Georgia's Trading Partners	
Imports	Russian Federation	18.80	Türkiye	20.53	Russian Federation	34.66
	Türkiye	15.80	Russian Federation	17.12	China	21.94
	China	14.35	China	10.59	Germany	4.45
	Germany	4.56	Azerbaijan	6.18	United States of America	3.82
	Turkmenistan	3.51	Germany	3.87	Türkiye	3.19
Exports	Italy	46.62	China	18.10	Italy	16.42
	Türkiye	9.29	Russian Federation	14.19	China	15.60
	Israel	4.41	Bulgaria	10.88	Russian Federation	10.40
	India	4.36	Türkiye	9.43	Netherlands	6.50
	Greece	3.65	United States of America	6.78	Türkiye	5.63

Source: Authors Calculations – Trade Map, 2024

1.6.3. Multilateral Agreements and Potential Investment

The MC offers new investment and trade opportunities, serving as a multimodal transport route connecting Kazakhstan, Azerbaijan, and Georgia. The MC route is largely attributed to transit trade between the EU and China which is expected to grow substantially until 2030. Data shows that between 2014 and

2021, a total of 49,000 trains, growing at an annual rate of 92.7 percent, linked the EU and China.

The institutional mechanisms are critically important for the development of the corridor, particularly creation of relevant legal frameworks such as intergovernmental Memorandums of Understanding (MoUs), trilateral or multilateral agreements, and engagement with various agencies. The MC is considered to be a backbone for Central Asian and the South Caucasus, requiring the involvement of multiple agencies to facilitate trade and connectivity between China and the EU through these regions. Key stakeholders include the MC states, China, and third-party entities such as the EU, multilateral banks, and other relevant agencies beyond the transport sector. These agreements aim to structure power dynamics effectively, promoting the development of the corridor and aligning national and regional policies, trade, and transport strategies for the MC's development and potential outcomes.

1.6.4. Private Public Partnerships

The Central Asia region has been a recipient of capital investment in various infrastructure projects through several state programs, state-owned enterprises, and sovereign borrowing from institutions such as the World Bank, EBRD, ADB, and other development banks. Private financing, including Foreign Direct Investment (FDI), Foreign Institutional Investment (FII), capital market investments and bank loans, also contributes to financing infrastructure projects in the region, although historically, the share of private financing in such projects has been relatively low. The legal framework regulating Public-Private Partnerships (PPP)

in the region is based on several legislative acts, with primary emphasis on laws such as the "On Public-Private Partnership" and the "On Concessions", alongside various Presidential Degrees and orders. These legislative regulations provide a broad legal basis for the development of infrastructure through PPP mechanisms.

PPP in Kazakhstan has been a pioneer in the Central Asia region. The first law distinguishing PPP as a separate instrument for infrastructure development and modernization was adopted as early as 2007. Since then, Kazakhstan has pursued PPP projects in various sectors, including roads, urban transport, airports, healthcare, and primary education. As of 1 January 2020, 717 PPP contracts have been executed in Kazakhstan with a total value of approximately $3.72 billion, as reported by the Kazakhstan Public-Private Partnership Center JSC, the state entity tasked with implementing PPP projects.

1.7. CHALLENGES AND ADVANTAGES RELATED TO MIDDLE CORRIDOR

The challenges facing the MC can be broadly categorized into three main areas: soft infrastructure, hard infrastructure, and geopolitical uncertainties.

Soft infrastructure poses significant challenges for the MC, encompas-sing measures related to the digitalization of transport documents, interoperability, public-private partnership environment, trade facilitation, market liberalization, tariff-setting mechanisms, and allocation of funding for asset main-

tenance. Overcoming these challenges requires concerted efforts to streamline processes and enhance coordination among stakeholders. Delays and increased transaction costs at multiple border crossing, compounded by the need for unified tracking platforms, add complexity and cost to cargo transportation. Lack of transparency and regulatory harmonization presents bottlenecks to cargo transfer, while a shortage of skilled labor hampers operational efficiency and development. For example, in road transport, when the truck is admitted into the BCP, the driver needs to undergo a series of border activities; immigration, phyto-sanitary, transport and customs. Customers often organize GPS tracking systems to overcome the lack of unified tracking platforms, adding an extra cost to the transportation process.

Hard infrastructure challenges involve substantial investments in the physical components of the corridor, such as the construction and modernization of railways, roads, ports, and BCPs. For instance, container unavailability hinders smooth cargo transportation along the corridor. Underdeveloped road infrastructure connecting to ports in Kazakhstan, along with intracity road congestion management, presents substantial challenges to cargo transportation efficiency. Additionally, challenges related to unreliable electricity supplies, complex customs regulations, and limited access to finance hinder the corridor's growth. Environmental changes, such as the shallowing of the Caspian Sea, reduce ports physical capacity while varying railway gauges between countries and port handling requirements complicate seamless intermodal connectivity along the corridor.

Geopolitical challenges and uncertainties in the region, including the potential for conflict or disruption, pose serious

obstacles to the development and smooth functioning of the trade route. Competition with established trade routes diverts resources away from the MC's development, exacerbating existing challenges and complicating efforts to attract investment and support.

The MC offers several distinct advantages that position it as a competitive and strategically important trade route.

Efficient Transit Times: The MC provides competitive transit times, offering a faster alternative to traditional maritime routes. This allows businesses to reduce shipping time and optimize their supply chain operations, ultimately enhancing their competitiveness in the global market.

Cost-effective Transportation: With affordable transportation rates, the MC presents a financially viable option for businesses seeking to optimize their logistics expenses. This cost-effectiveness makes it an attractive choice for companies looking to streamline their operations and reduce overhead costs.

Potential for Capacity Expansion: The MC has significant potential for capacity expansion, supported by infrastructure investments and political commitments aimed at increasing its share in global rail trade. This expansion opens up new opportunities for businesses to leverage the corridor for their transportation needs and facilitates the movement of goods on a larger scale.

Geopolitical Significance: The corridor's growing geopolitical importance has attracted interest from global players, enhancing its strategic positioning and fostering potential investment opportunities. This geopolitical backing provides stability and security for businesses operating along the corridor, further

bolstering its attractiveness as a trade route.

Government Commitment: Governments of Azerbaijan, Georgia, and Kazakhstan exhibit strong commitment to enhancing and attracting additional cargo flows to the corridor, creating a conducive environment for its development, with policymakers actively supporting initiatives aimed at improving infrastructure and facilitating trade.

Infrastructure Projects: Several high-potential infrastructure projects, such as deep seaport developments and railway expansions, are underway, enhancing the corridor's attractiveness for trade and investment.

Partnership Frameworks: Collaborative initiatives among MC countries, aimed at eliminating bottlenecks and improving operational efficiency, provide a foundation for enhancing the corridor's competitiveness and functionality. By working together to address common challenges and streamline processes, countries along the MC can create a more seamless and efficient trade route.

1.8. CONCLUSION: THE MIDDLE CORRIDOR OVERVIEW

The analysis presented in this paper highlights the significant potential of the MC as a strategic initiative with far-reaching implications for regional trade dynamics. By facilitating the movement of goods and services, the MC can become a key driver of economic growth, foster regional cooperation, and unlock new pathways to prosperity for participating countries.

This paper has explored the historical evolution of the MC,

highlighting its transformation from a traditional trade route into a modern corridor equipped with the necessary infrastructure for efficient trade and communication. The analysis identified several factors that fueled this transformation, including historical background, geopolitical shifts, infrastructural advancements, and evolving trade models. As a result, the MC has emerged as a viable alternative to existing trade routes, offering efficient transit times, cost-effective transportation options, and growing geopolitical influence.

Despite the progress made in key areas like border-crossing times and transportation costs, challenges remain. Infrastructure limitations, regulatory complexities, and logistical bottlenecks continue to hinder seamless operation. However, the focus on strategic investments in critical infrastructure projects, the development of collaborative partnership frameworks, and strong government commitments paint a promising future for the MC. Specifically, the modernization of port infrastructure in key countries like Azerbaijan, Georgia, and Kazakhstan is crucial to strengthening maritime transit potential. Similarly, improvements in road and rail infrastructure, including the expansion of railway networks and upgrades to border crossings, are essential for ensuring smooth connectivity and efficient cargo movement along the corridor.

The trade overview of MC economies provides valuable insights into bilateral trade volumes, trade balances, and key trading partners. While challenges persist in the form of limited port capacity, cumbersome regulations, and competition, addressing these issues will unlock the MC's potential for growth. The MC presents a significant opportunity to expand trade volumes,

diversify trade routes, and ultimately, enhance regional economic integration.

Looking ahead, the MC holds immense potential to reshape the regional landscape. By capitalizing on its strengths, addressing existing weaknesses, and seizing emerging opportunities, the MC can evolve into a linchpin of regional and global trade. This, in turn, will create lasting benefits for participating countries and contribute to broader economic prosperity. As the corridor continues to evolve and mature, stakeholders must remain vigilant, adaptable, and collaborative in navigating the complexities of the global trade and transportation landscape. By working together, stakeholders can ensure the MC reaches its full potential and unlocks a new era of economic cooperation and growth.

CHAPTER 2

The Geopolitics of Energy in the Silk Road Region

2.1. THE GEOPOLITICS OF ENERGY IN THE SILK ROAD REGION AND ITS IMPLICATIONS FOR THE MAJOR POWERS

Damjan Krnjević Mišković
ADA University

The title of these remarks is "The Geopolitics of Energy in the Silk Road Region and its Implications for the Major Powers."

Now, some of you may be perplexed by this term: the "Silk Road region." Most of you are accustomed to saying "Central" or "Core Eurasia" – or, simply, "Eurasia." Well, I've already made my positive case for this term – the "Silk Road region" – in print,[19]

[19] See Damjan Krnjević Mišković, "On Some Conceptual Advantages of the Term 'Silk Road Region': Heralding Geopolitical and Geo-Economic Emancipation," Baku Dialogues vol. 6, no. 4 (Summer 2023), pp. 20-27, https://bakudialogues.ada.edu.az/media/2023/07/12/bd-v6-n4_miskovic.pdf.

and I won't repeat all the details here, although I will say that it's much more than a terminological matter.

I'll also say that a principal advantage of the shorthand "Silk Road region" is that "it does not define [that part of the world] in terms of any external power or national ideology. Instead, it focuses discussion where it should be focused: namely on the character of the region itself; on its distinctive geographical, cultural, political, economic, and historical features; and on the question of whether those features may be the keys to its future."[20]

Now, in terms of geography, my definition is purposefully and constructively ambiguous: the Silk Road region comprises that part of the world that looks west past Anatolia to the warm seas beyond; north across the Caspian towards the Great Steppe; east to the peaks of the Altai and the arid sands of the Taklamakan; and south towards the Hindu Kush and the Indus valley; and then looping around down to the Persian Gulf and back up across the Fertile Crescent and onward to the Black Sea littoral.[21]

Of course, in terms of the political map, the core of the Silk Road region comprises the countries conventionally called the South Caucasus and Central Asia – eight former Soviet republics that are now sovereign states. Some add Afghanistan to the core list. That said, it's obvious that various other countries are bound, in whole or in part, to this region. And those ties are genuine, which is why in some real sense these too belong to the Silk Road

[20] The quote is from S. Frederick Starr, "In Defense of Greater Central Asia," Policy Paper, Central Asia-Caucasus Institute & Silk Road Studies Program Joint Center, September 2008, p. 6. Starr does not adopt or consider the term "Silk Road region" but he does reject the term "Central Eurasia" in favor of the term "Greater Central Asia," which is a step in the right direction. The quoted text is part of his defense of this term. The quoted passage seems to me to be even more persuasive when put in the service of defending the use of the term "Silk Road region."

[21] The definition was first printed in "Editorial Statement," Baku Dialogues, vol. 4, no. 1 (Fall 2020), p. 7, https://bakudialogues.ada.edu.az/editorial-statement.

region; but they certainly don't belong to it in the same way as do its core states.

The Silk Road region thus has finite yet somewhat elastic geopolitical boundaries. Today, "this strategic area interlinks not only the world's two most critically important regions (the Euro-Atlantic and Indo-Pacific basins), but also directly interconnects South Asia, the Middle East, and the Eurasian space with each other. […] In geostrategic terms, [therefore,] this region is the geopolitical hinge where the North Atlantic Treaty Organization meets the Shanghai Cooperation Organization, and where the Belt and Road Initiative connects with the wider European neighborhood and the European Union itself."[22]

In short, the Silk Road region should be understood as a single geopolitical theater with multiple stages, the exits from which are very purposefully not defined with precision.[23]

To close the circle on this brief account of a few of the Silk Road region's main characteristics, I want to say something about the salience of a twenty-first-century version of what in the 1990s was called "Asian values."[24]

[22] Nikolas K. Gvosdev, "Geopolitical Keystone: Azerbaijan and the Global Position of the Silk Road Region," Baku Dialogues vol. 4, no. 1 (Fall 2020), pp. 26, 27, https://bakudialogues.ada.edu.az/media/2020/08/27/bd-1-gvosdev.pdf.

[23] This term thus also has the advantage of being imbued with a Pascalian esprit de finesse conforming to the approach of political phenomenology, in contradistinction to what he called an esprit de géometrie so characteristic of contemporary social science. For the Pascalian distinction, see Pensées L512 (B1).

[24] The "Asian values" concept was developed in practice by the likes of Singapore's Lee Kuan Yew and Malaysia's Mahathir Mohamad and propounded in documents like the Bangkok Declaration (1993), adopted at the Regional Meeting for Asia for the World Conference on Human Rights. The full text of the Bangkok Declaration is available in a UN document identified as A/CONF.157/ASRM/8 and A/CONF.157/PC/59, https://digitallibrary.un.org/record/167021?ln=en#record-files-collapse-header. Article 8 of this document reads, "we recognise that while human rights are universal in nature, they must be considered in the context of a dynamic and evolving process of international norm setting, bearing in mind the significance of national and regional particularities and various historical, cultural, and religious backgrounds." Primers, studies, and reflections on the original Asian values debate are great in number and include: Lee Kuan Yew, "The East Asian Way: Interview with Lee Kuan Yew," *New Perspectives Quarterly* 9, no. 1 (1992), pp. 4-13; Kishore Mahbubani, "The West and the Rest," *The National Interest* no. 28 (1992), pp. 3-13; Bilahari Kausikan, "Asia's Different Standard," *Foreign Policy* no. 92 (Autumn 1993), pp. 24-41; Fareed Zakaria, "Culture is Destiny: A Conversation with Lee Kuan Yew," *Foreign Affairs* vol. 73, no. 2 (March/April 1994), pp. 109-126; Bilahari Kausikan, "An East Asian Approach to Human Rights," *Buffalo Journal of International Law*

Now, I don't have the time to provide a full typology of contemporary Silk Road region values.[25] However, five traits can help illustrate this underappreciated phenomenon.

One, they're more compatible with strictly observing universally-recognized international law – including the purposes and principles of the UN Charter, which are assumed to be in the service of "restrain[ing] the exercise of righteous power" and the "avoid[ance] of unbridgeable schisms,"[26] in Kissinger's memorable phrase – rather than with conducting affairs of state in accordance with what is called by its proponents a 'rules-based liberal international order.'[27] In other words, Silk Road

vol. 2, no. 2 (1996), pp. 263-83; Bilahari Kausikan, "Hong Kong, Singapore, and 'Asian Values:' Governance that Works," *Journal of Democracy* vol. 8, no. 2 (April 1997), pp. 24-34; Nathan Glazer, "Two Cheers for 'Asian Values'," The National Interest no. 57 (Fall 1999), pp. 27-34; Michael D. Barr, "Lee Kuan Yew and the 'Asian Values' Debate, Asian Studies Review vol. 24, no. 3 (September 2000), pp. 309-334; Michael D. Barr, Cultural Politics and Asian Values: The Tepid War (Abingdon, Oxon: Routledge, 2002); Daniel A. Bell, *East Meets West: Human Rights and Democracy in East Asia* (Princeton: Princeton University Press, 2000); Chang-Yau Hoon, "Revisiting the Asian Values Argument Used by Asian Political Leaders and its Validity," Indonesian Quarterly vol. 32, no. 2 (2004), pp. 154-174; Bilahari Kausikan, "The Idea of Asia," Address to the Singapore Writers Festival, 1 November 2014, excerpted as "1990s 'Asian values' Advocate Bilahari Explains the Real Reason Behind the 'Asian Values' Debate," Mothership, 4 November 2014, https://mothership.sg/2014/11/1990s-asian-values-advocate-bilahari-explains-the-real-reason-behind-the-asian-values-debate/; and Bilahari Kausikan, "The 'Asian Values' Debate, 30 Years On," The Straits Times, 16 March 2121. The original "Asian values" debate arose at least in part in thinking through the strategic implications of Samuel Huntington's "clash of civilizations" thesis, itself a response to the worldview contained in Francis Fukuyama's writings on the "end of history." For more on this, see Damjan Krnjević Mišković, "Back with a Vengeance: The Return of Rough and Tumble Geopolitics," *Orbis: A Journal of World Affairs* vol. 65, no. 1, (Winter 2021), pp. 118-135. Cf. Xi Jinping, "Deepening Exchanges and Mutual Learning Among Civilizations for an Asian Community with a Shared Future," keynote address of the Conference on Dialogue of Asian Civilizations, Beijing, 15 May 2019, https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/t1663857.shtml.

[25] One notable articulation of something similar to what I am arguing is provided under the moniker "Shanghai spirit" as defined in the Declaration on the Establishment of the Shanghai Cooperation Organization, 15 June 2001, http://eng.sectsco.org/documents. For more on this, see Thomas Ambrosio, "Catching the 'Shanghai Spirit:' How the Shanghai Cooperation Organization Promotes Authoritarian Norms in Central Asia," Europe-Asia Studies vol. 60, no. 8 (October 2008), pp. 1321-1344. More broadly, see David Lewis, "Who's Socialising Whom? Regional Organisations and Contested Norms in Central Asia," Europe-Asia Studies vol. 64, no. 7 (2012), pp. 1219-1237 and Alexander Lukin, "Eurasian Integration and the Clash of Values," Survival vol. 56, no. 3 (2014), pp. 43-60.

[26] Henry Kissinger, A World Restored: Metternich, Castlereagh and the Problems of Peace, 1812-1822 (London: Weidenfeld and Nicolson, 1957), pp. 206, 193.

[27] For more on one view on this distinction, see Sergei Lavrov, "On Law, Rights and Rules," Russia in Global Affairs vol. 19, no. 3 (September 2021), p. 229. Cf. my account of the intellectual genesis of the concept of a 'rules-based liberal international order' and discussed some of its geopolitical implications in Damjan Krnjević Mišković, "Atticism and the Summit for Democracy: A Little Thought Experiment," Baku Dialogues vol. 5, no. 2 (Winter 2021-2022), pp. 140-165, https://bakudialogues.ada.edu.az/media/2022/01/26/bd_w21_krnjevic.pdf. The 'liberal international order' has been defined as the combination of practices de-

values can be un derstood as being much closer in spirit to recent Chinese formulations, which commits Beijing to "firmly uphold the international system with the United Nations at its core, the international order underpinned by international law, and the basic norms governing international relations based on the purposes and principles of the UN Charter."[28] Those who doubt the veracity or relevance of this point should consider that, of the five permanent members of the UN Security Council, only China continues to recognize the sovereignty and territorial integrity of all 193 UN member states.

Two, Silk Road values are broadly suspicious of outsiders placing soft law-driven limitations on national sovereignty and domestic sources of legitimacy. One example is the narrowing of the scope of the principle of non-intervention in the internal

signed to advance a vision of "open markets, international institutions, cooperative security, democratic community, progressive change, collective problem solving, shared sovereignty, [and] the rule of law." The reference is to John Ikenberry, Liberal Leviathan: The Origins, Crisis, and Transformation of the American World Order (Princeton: Princeton University Press, 2011), p. 2. See also Stacie E. Goddard, "Embedded Revisionism: Networks, Institutions, and Challenges to World Order," International Organization vol. 72, no. 4 (May 2018), pp. 763-797; Beate Jahn, "Liberal Internationalism: Historical Trajectory and Current Prospects," International Affairs vol. 94, no. 1 (January 2018), pp. 43-61; John Ikenberry and Daniel H. Nexon, "Hegemony Studies 3.0: The Dynamics of Hegemonic Orders," Security Studies vol. 28, no. 3 (June 2019), pp. 395-421; and Rebecca Adler-Nissen and Ayşe Zarakol, "Struggles for Recognition: The Liberal International Order and the Merger of Its Discontents," International Organization vol. 75, no. 2 (Spring 2021), pp. 611-634. Perhaps the clearest articulation of the criticism of the rules-based liberal international order is that it "infuriates rivals, alienates potential friends, and pleases only Western progressives" and was Tweeted by Elbridge Colby on 20 May 2023. It served as a comment to passages from Henry Kissinger's interview with The Economist over a two-day period in late April 2023 in which he said, "my impression of talking to Chinese leaders is that what is grating on them is our assumption that we are on the right course, and that if they behave themselves, we will grant them certain privileges. And also when we speak of a world system, a rules-based system, we made all the rules. And they want to participate in whatever new rules emerge. There's another part that thinks that the Americans will never grant us that, so it's foolish to fall for it. […] [To the Chinese,] world order means they are the final judges of their interests. What they want is participation in how the rules are made. Not agreeing on the rules does not mean war, but it is a greater possibility." The transcript of the entire interview may be accessed here: https://www.economist.com/kissinger-transcript. See also Indian External Affairs Minister S. Jaishankar's comments on this in his speech at the General Debate of the seventy-eighth session of the UN General Assembly, 26 September 2023, https://gadebate.un.org/en/78/india, which should be read together with the final paragraph.

[28] "Outlook on China's Foreign Policy on Its Neighborhood In the New Era, 24 October 2023, https://www.fmprc.gov.cn/eng/wjdt_665385/2649_665393/202310/t20231024_11167100.html. Tellingly, the next sentence of this document reads, "China upholds open regionalism, practices true multilateralism, and works with neighboring countries to foster Asian values centered on peace, cooperation, inclusiveness and integration and promote the unity, development and revitalization of Asia" (emphasis added).

affairs of states.[29] Another example of soft law-driven limitations on national sovereignty is the expanded conception of individual liberty that prioritizes the political dimension of the doctrine of human rights.[30] A third example is being threatened with various penalties and conditionalities for not enforcing sanctions unilaterally adopted by a few states or an alliance of countries, i.e., sanctions that have not been ratified by the UN Security Council.

Trait number three: Silk Road values prioritize an allegiance to a strong state with an economically interventionist government. The logic here is that – at least in that part of the world – a weak state more easily produces a failing state. And a weak state also allows foreign capital to leverage economic decisionmaking, which necessarily limits the scope of governmental power, which can affect state security – industrial policy is understood to be an integral part of national security policy. This also explains the increasing emphasis on meritocratic governance pioneered by Singapore over U.S.- or EU-style liberal democracy.[31]

This last brings us to trait number four: Silk Road values generally downplay ethnic and even civic nationalism in favor of what Anatol Lieven calls "state nationalism" – that is, fidelity to

[29] A classic formulation is found in Carlile Aylmer Macartney, National States and National Minorities (Oxford: Oxford University Press, 1934), p. 296: "The doctrine of state sovereignty does not admit that the domestic policy of any state – the policy which it follows towards its own citizens – can be any concern of any other state."
[30] A soft law example of the former is the Responsibility to Protect; of the latter, the Universal Declaration of Human Rights. Regarding the latter, see Vincent J. Carchidi, "The Universal Declaration of Human Rights at Seventy-Five," The National Interest, 19 November 2023, https://nationalinterest.org/feature/universal-declaration-human-rights-seventy-five-207363. It should almost go without saying that the principal drafters of this document were Westerners or individuals disproportionally influenced by the Western tradition. These included John Hunphrey, who drew on the British tradition and its Canadian variant; René Cassin, who drew on the philosophical tradition that produced the text of the Declaration of the Rights of Man and of the Citizen; and Eleanor Roosevelt, who drew on the philosophical tradition that produced the text of the U.S. Declaration of Independence.
[31] On the concept of political meritocracy – "the idea that political power should be distributed in accordance with ability and virtue" – including the contrast between the Singaporean and Chinese experiences, see Daniel A. Bell, The China Model: Political Meritocracy and the Limits of Democracy (Princeton: Princeton University Press, 2015). The definition quoted in the foregoing sentence is found on p. 6.

the state as embodied by loyalty to its leadership.[32] A preference for the exercise of strong executive power tends to be accompanied by a strong distaste for anarchy and chaos – that is to say, a heightened sensitivity for the need to maintain public support and stability.

Related to this is trait number five: Silk Road values do not entail the sublimation of distinct state identities in the name of institutionalizing cooperation among themselves, much less with outsiders. Hence the rise in championing "norms privileging state security, civilizational diversity, and traditional [social and cultural] values"[33] – as well as understanding, rather commonsensically, that the conduct of diplomacy is most effective when backed by one's own military strength and other instruments of hard power that demonstrate resolve without, of course, taking all

[32] This argument has been made regarding Vladimir Putin in particular, but it holds generally for the leaders of the countries of the Silk Road region, including, critically, for the statesmen presiding over its three keystone states (i.e., Azerbaijan, Kazakhstan, and Uzbekistan). See Anatol Lieven, "National Responsibility," The Point: A Journal of Ideas, no. 22 (Summer 2020), https://thepointmag.com/politics/national-responsibility: Putin is "a Russian state nationalist – a very important distinction that has escaped many Western commentators. The criterion for membership of the Russian power elites is not ethnic origin but loyalty to the Russian state, as presently embodied in Putin" (emphasis added). Lieven adds that "Putin seems to me to exemplify something John Maynard Keynes once said about George Clemenceau" and goes on to illustrate this with a passage from Keynes, a slightly different selection of which I reproduce here: "He felt about France what Pericles felt of Athens – unique value in her, nothing else mattering; but his theory of politics was Bismarck's. […] His philosophy had […] no place for 'sentimentality' in international relations. Nations are real things, of whom you love one and feel for the rest indifference – or hatred. […] The politics of power are inevitable, and there is nothing very new to learn about this war or the end it was fought for […]. Prudence required some measure of lip service to the 'ideals' of foolish Americans and hypocritical Englishmen; but it would be stupid to believe that there is much room in the world, as it really is, for such affairs as the League of Nations […] except as an ingenious formula for rearranging the balance of power in one's own interests." The quote is taken from The Collected Writings of John Maynard Keynes, Volume II: The Economic Consequences of the Peace, eds. Austin Robinson and Donald Moggridge (Cambridge: Cambridge University Press, 2013), pp. 20-21. Also, it is important to mention that Ernest Renan first made explicit the distinction between civil nationalism and ethnic nationalism. He identifies the former with the French conception of the nation as a free choice or an "everyday plebiscite" and the latter with the German conception of the nation as a community of language and race. All the relevant texts by Ernest Renan on nationalism have been collected in Qu'est-ce qu'une nation? Et autres écrits politiques, ed. Raoul Girardet (Paris: Imprimerie nationale, coll. Acteurs de l'Histoire, 1996). Hans Kohn's principal works on nationalism make much of this distinction. See his The Idea of Nationalism: A Study in Its Origins and Background (New York: The Macmillan Company, 1946).

[33] Alexander Cooley, "Countering Democratic Norms," in Christopher Walker, Marc F. Plattner, and Larry Diamond (eds.), Authoritarianism Goes Global: The Challenge to Democracy (Baltimore: Johns Hopkins University Press, 2016), p. 118.

the steps that would be required to turn one's country into a fully-fledged garrison state.

Alright? The Silk Road region, its contours, its strategic importance, and its values.

Now, today, I want to connect some of the geopolitical dots that are relevant to the critical question of the EU's energy security and the indispensable role played by Azerbaijan in this regard, but also this same role the country is playing in the context of East-West connectivity more generally – you know, across the Silk Road region.

And that means starting with Ukraine.

Look, we just wouldn't be having a conversation about the nexus of issues concerning the EU and the geopolitics of energy were it not for that war. More specifically, the attempted strategic deepening of the EU's engagement with the Silk Road region is in large part a consequence of the choices the EU made to impose sanctions on Russia and to divest from its dependence on Russian oil and gas.

Now, one manifestation of this attempted deepening engagement is the EU serving as a facilitator in the peace process between Armenia and Azerbaijan.

I don't want to get into this much further because my time is limited. But I do want to underline that, for various reasons, the EU managed to fumble the ball very near the endzone, with fewer than the usual number of well-rested defensive tackles ready to pounce – to use an American football metaphor. This was pretty much an own goal – to use a soccer one. For reasons having much to do with parochial domestic politics in a few EU member states like France, the European Union managed to lose the advantage

it could have gained had Brussels been able to stay evenhanded in its speeches and deeds, and thus retain the trust of both Baku and Yerevan. That didn't happen. The strategic blinders stayed on. And so, if a peace agreement does end up being signed, the EU won't be able to take much credit for having made it happen.

As things stand, Baku and Yerevan seem to be talking to each other directly. That's probably for the best. Maybe the EU will even end up playing an important role in the implementation phase of the peace agreement, although Armenia's increasingly blatant flirtation with the EU may, ironically, make even that more difficult to accomplish smoothly.

Part of the problem is the fact that Armenia is led by someone who is, as Onnik James Krikorian has put it, "predictably unpredictable, consistently inconsistent."[34] This characterization may even be interpreted as an acknowledgment that Prime Minister Nikol Pashinyan is a sophisticated tactician, but I have not come across any account that puts forward the argument that he's a strategist, much less a statesman. In my view, Azerbaijan's president teaches a longstanding masterclass in statecraft, and that his classroom is located in one of the world's toughest, most unforgiving neighborhoods.

I can't help adding that in observing this masterclass being taught, I have often thought of Kurt Riezler's description of a "real statesman" from nearly 80 years ago: "he knows his ends, he has a goal, a hierarchy of purposes, long-term and short-term; he subordinates one to the other; he has a vision of both the possible and the desirable and looks at the one under the aspect of the other; he thinks the possibilities through to their end; [the real

[34] Onnik James Krikorian, "The Pashinyan Conundrum: Predictably Unpredictable, Consistently Inconsistent," Baku Dialogues vol. 6, no. 3 (Spring 2023), p. 147.

statesman, Riezler continues,] follows up his actions, keeping ready a possible answer for whatever their foreseeable consequence – trying to keep his hand on the events and their interaction, flexible at short range, rigid at long range, passionately reasonable, a knower of human nature, suspicious even of his own love and hate and of the many passions that blind the children of man. His eyes are cold and hard yet the flame burns in [the real statesman's] heart as he opposes his specific virtue to the [inter]play that necessity and chance play with each other."[35]

To this brilliant passage by Riezler I would add that when a country's vital interests are at stake, a real statesman never bluffs, and he always keeps his word. This applies particularly to his public pronouncements.

After all, statecraft is neither a morality play nor an exercise in telling others how to avoid perdition. It is, rather, what I take to be Thucydides' definition of the concept: "to know how to remain moderate in prosperity and take care that the state grows concurrently in security as in renown" (Thuc. VIII.24.4).

Now, remember where we were. I had said that one manifestation of the EU's attempted deepening engagement with the Silk Road region was the effort to serve as a facilitator in the peace process. Well, another manifestation of this is connectivity – so, you know, energy and transport and so on. And that's what I want to focus on for the remainder of my remarks.

[35] Kurt Riezler, "The Philosopher of History and the Modern Statesman," Social Research vol. 13, no. 3 (September 1946), p. 375. Cf. Daniel J. Mahoney, The Statesman as Thinker: Portraits of Greatness, Courage, and Moderation (New York: Encounter Books, 2022); Henry Kissinger, Leadership: Six Studies in World Strategy (New York: Penguin Press, 2022); and Robert K. Faulkner, The Case for Greatness: Honorable Ambition and the Critics (New Haven: Yale University Press, 2007) – and, of course, some works by Cicero (e.g., On Duties and Republic) and Aristotle (e.g., Nicomachean Ethics), Plutarch's Parallel Lives, Xenophon's Cyropaedia, Burke's Reflections on the Revolution in France and the lesser read An Appeal From the New to the Old Whigs, and so on – for (slightly) different approaches to identifying the virtues of real statesmen. Sadly, none of the contemporary studies mention Riezler.

A distinction here is in order: connectivity has two interdependent aspects. The first is energy – oil, gas, renewables – and I'll say more about this in a few moments.

The second is everything that has to do with providing a safe, efficient, secure, reliable, bottleneck-free, and procedurally harmonized, land-based transportation and economic corridor between the EU and Asia – you know, Global Gateway, Middle Corridor, TRACECA, TITR, the Belt and Road Initiative. These are not the same, but they're similar in enough ways that we can treat them as being effectually the same for present purposes because, well, they all focus quite a bit of their strategic attention on the Silk Road region.

Also, I should mention that when you trace the routes as they are or will become when completed – the road and rail links, and fiberoptic cables, and all that – well, it turns out that the Middle Corridor is shorter by about 2,000 kilometers than the Northern Corridor. But it has more borders to cross, more choke points to deal with, more tariff and customs regimes to manage, more intermodal transfers to get done, more load capacity limitations to navigate, and so on. So, we're talking about technical and bureaucratic and logistical challenges that impede the seamless flow of cargo.

But this does not amount to evidence in favor of the "end of history" hypothesis, characterized by what Frank Fukuyama famously called the "endless solving of technical problems [and] environmental concerns."[36] Obviously, significant optimization is still needed – and, of course, lots of cash and political will. But this is going to get done; it won't be an endless process.

[36] Francis Fukuyama, "The End of History?," The National Interest no. 16 (Summer 1989), p. 17, emphasis added.

And the groundwork has already been laid. There was a 22 June 2023 agreement between Kazakhstan, Georgia, and Azerbaijan that amounts to a logistics and regulatory union. This and previous agreements mean that, basically, the cargo delivery time along the Middle Corridor will be halved – from between 25-30 days to 18 days, and then with some additional optimization, to 10-15 days. This is projected to happen in 2024 or, on the outside, 2025. The northern route just won't be able to match this.

One good reason I'm bullish on this endeavor is because the growth potential is huge. Really huge. In 2022, the main Middle Corridor route carried around 70,000 twenty-foot equivalent units, or TEUs; the Russian-controlled Northern Corridor carried some 1.4 million TEUs.

Let me repeat those figures: 70,000 TEUs versus 1.4 million TEUs. One route goes through the Silk Road region; the other goes through sanctioned Russia.

Just wait until the Russian railway system itself gets added to the Western list – like trucks and ships have been already – and like the Russian railway company has, too. My guess is that this will happen only when the Middle Corridor is ready for prime time.

Just one more piece of evidence to add. I can quote to you part of the executive summary of a special EBRD study commissioned by the EU on transport connectivity along the Middle Corridor, which came out in June 2023. Here's what it says: "Under a business-as-usual scenario, transit container volume on the [the Central Trans-Caspian Network – the CTCN, so, you know, the Middle Corridor] could increase from 18,000 20-foot equivalent units (TEUs) in 2022 to 130,000 TEUs in

2040. If investment projects and soft connectivity measures were implemented to achieve a free-flow transit time of 13 days, transit container volume could increase to 865,000 TEUs by 2040 on the CTCN. Assuming containerised trade also increased in Central Asia, in addition to the aforementioned improvements, the network could see regional container volumes of 470,000 TEUs by 2040."[37]

So, let's just wrap up this part: in a non-energy context, connectivity encompasses digital infrastructure, pieces of security architecture, food supplies, access to critical raw materials, road and rail links, and so on.

Now, I want to argue that, in the context of the Silk Road region – with respect to both energy and other aspects of connectivity – Azerbaijan is indispensable to the advancement of EU strategic ambitions.

But it's even more important than that, because Azerbaijan plays a similar role regarding American strategic ambitions in the Silk Road region; and those of Turkey, too. I'd say this is the case with China – and even Russia, but it's a less straightforward argument, and some of it involves talking about Iran and

India, and getting into a discussion about what's called the International North-South Transport Corridor, or INSTC. So, for reasons of time, I'm going to skip getting into the nitty-gritty of it.

So, if you forget everything else I'll say today, remember this: in terms of energy and transport and connectivity and all the rest of it, Azerbaijan has become an indispensable country for the

[37] European Bank for Reconstruction and Development, Sustainable Transport Connections between Europe and Central Asia (London: EBRD, 2023), https://www.ebrd.com/news/publications/special-reports/sustainable-transport-connections-between-europe-and-central-asia.html, p. 5.

advancement of Western and Turkish strategic ambitions in the Silk Road region. Of this, there can be no serious doubt.

And grasping this indispensability argument does not require a degree in rocket science: all you have to do is look at the map. If you want to get from Europe to Asia or vice versa by land, well, try as you might, you just can't go around Azerbaijan, unless you want to risk incurring the wrath of Western policymakers. Because to Azerbaijan's north is Russia, and to its south is Iran. And just like the United States, the EU is committed to its sanctions and export restrictions regime in both of these places.

Now, that seems very unlikely to change for quite a while. And this means that nothing resembling a normal, predictable economic relationship between the West, on the one hand, and Russia and Iran, on the other, is in the cards for the foreseeable future.

Now, let me bring in a few recent events. On 19 September 2023, Joe Biden became the first U.S. president to actually attend something called a C5+1 meeting of Central Asian and American senior officials. Since this format was established in 2015, these sessions had taken place at the level of foreign ministers or, sometimes, at an even lower level.

On 29 September 2023, Germany's chancellor, Olaf Scholz, hosted a similar event in Berlin, because that country wanted to get in on the action. This was a sort of follow-up to a meeting with the President of the EU Council and the presidents of the Central Asian Five in Cholpon-Ata on 2 June 2023.

And the EU's Josep Borrell hosted, in Luxembourg, a meeting of the five Central Asian foreign ministers and their counterparts from the 27 member states.

But what got a lot less play outside the Silk Road region was something that took place on 14 September 2023, which is when the Central Asia Five presidents had their own annual summit. This one took place in Dushanbe. And for the first time, they invited Azerbaijan. Six presidents sitting around a table reasoning together. And this, it seems to me, is much more strategically significant. So was the SPECA Summit, which took place in Baku on 24 November 2023. Let me read you a line from his speech: "Azerbaijan and the countries of Central Asia are bound by centuries-long historical and cultural ties. Azerbaijan and Central Asia represent a single historical, cultural, and geopolitical space, with increasing strategic significance."

These last two events – Dushanbe and SPECA – are much more strategically significant than all the C5+1 stuff, it seems to me.

Why is that?

Well, because in the past six or seven years, the Central Asia Five have been taking steps towards institutionalizing regional economic connectivity and cooperation. The scale and scope of the plans now being laid call to mind older arrangements in other geographies: ASEAN, the Nordic Council, the Gulf Cooperation Council, and the original European Economic Community.[38]

Each of those took a long time to achieve their potential, and so will this.

So, well, you could ask: why is this really important?

Well, because we're now more or less at the point at

[38] It is useful to draw attention to the fact that the EEC's founding charter – the Treaty of Rome (1957) – contains not a single reference to "democracy," "human rights," or "European values." The original focus of the European construction was on fostering economic interdependence through a reduction of trade barriers, the establishment of an embryonic customs union, and the setting of terms for a single market characterized by common policies on agriculture, transport, and the like.

which the Central Asian Five are moving ahead with a formal treaty text of institutionalized cooperation, titled "Treaty on Friendship, Good Neighborliness, and Cooperation for the Development of Central Asia in the Twenty-First Century." And this is going to become an even bigger deal because I think everyone now understands that Azerbaijan needs to get involved to take it to the next level.

This again speaks to my indispensability argument. And it also speaks to a larger and even more important point, namely that the Silk Road region's leaders continue to move cogently in the direction of establishing sturdier contours of a fledgling regional order by building upon classical balance-of-power principles applied toward major outside powers. This has gone a long way to ensure that outside rivalries are kept at bay – or at least in check.

The best way I know how to put this succinctly is to say that regionally-driven economic connectivity priorities is on the way in; outside power agenda-setting is on the way out. And some outsiders are seeing their relative power decline whilst others are seeing an increase. But in the aggregate, the power of outsiders is being reduced overall.

And this, in turn, suggests that the Silk Road region might very well achieve its goal of never again being simply an object of great power competition – a geography to be won and lost by others; I think it stands a chance – I think it's on the cusp – of becoming a distinct, autonomous, and emancipated subject of international order.

Already today, the Silk Road region is characterized by "geopolitical [and geoeconomic] heterogeneity."[39] In fact, over

[39] Vasif Huseynov, "Vicious Circle of the South Caucasus: Intra-Regional Conflicts and Geopolitical Heter-

the past decade or two, the Silk Road region has increasingly positioned itself as a significant political and economic crossroads between various geographies, an important intercessor between major powers, and a hard-to-avoid gateway to neighboring parts of the world.

Undoubtedly, an important prerequisite for the further development of the kind of regional order I'm talking about is the existence of a number of states of substantially equal strength, which can enable the Silk Road region to maintain and possibly deepen its own balance of power system. And I think all this is well on its way to being successfully executed, for at least five reasons.

First, the unique complexities involved in realizing the potential of connectivity – of transporting hydrocarbons and other natural resources to market, as well as the infrastructure provisions necessary to facilitate trade – require a region-specific type of cooperation and compromise.

That's why it's right to say that the Middle Corridor is the backbone of the Silk Road region.

Second, no state belonging to the region is strong enough to dominate the others, economically or otherwise, which encourages equilibrium.

Third, no state in the region is weak enough to succumb to crude attempts at all-out domination without others in the region aligning to significantly limit the depth and scope of said attempt.

Fourth, no major outside power truly behaves hegemonically, notwithstanding latent (or not so latent) desires or ambitions.[40]

ogeneity," Caucasus Strategic Perspectives, vol. 1, no. 1 (Summer 2020), p. 128.

[40] Another way of putting this is to assess that not only is no major outside power strong enough to im-

The fifth reason is perhaps the most interesting: the burgeoning set of arrangements characterizing the Silk Road region appear on their way to being anchored by what Giovanni Botero was the first to call "middle powers" a few centuries ago, or what contemporary thinkers like Nikolas Gvosdev have called "keystone states" – in this case, by three of them: Azerbaijan, Kazakhstan, and Uzbekistan.[41]

Botero defined these types of states as having "sufficient force [or strength, forze] and authority to stand on [their] own without the need of help [or rescue, soccorso] from others."[42] In Botero's telling, leaders of middle powers tend to be acutely aware of the dexterity required to maintain security and project influence in a prudential manner beyond their immediate borders; and, because of that, middle powers are apt to have a facility in promoting trade and connectivity with their neighbors and their neighbors' neighbors.

Similarly, a keystone state "gives coherence to a regional order – or, if it is itself destabilized, contributes to the insecurity of its

pose an "exclusive economic zone" or "sphere of influence" upon the Silk Road region, but none save one (arguably) see this as being in their national interest. The (arguable) exception is Russia, which may still see the region through the strategic lens of one aspect of what is sometimes called the Primakov Doctrine (i.e., Russia should insist on its primacy in the post-Soviet space and lead integration in that region) whilst at the same time being unable to act in accordance with it for at least two strategic reasons: its preoccupation with the conflict with the West over Ukraine and its assessment not to oppose directly the ambitions of China, Turkey, and other major non-Western actors in that part of the world. For more on this, see "The Concept of the Foreign Policy of the Russian Federation," March 2023, https://mid.ru/en/foreign_policy/fundamental_documents/1860586/, particularly articles 49 and 54.

[41] Nikolas K. Gvosdev, "Keystone States: A New Category of Power," Horizons 5 (Autumn 2015), pp. 104-120, https://shorturl.at/qOSZ3; Gvosdev, "Geopolitical Keystone," pp. 26-39; Damjan Krnjević Mišković, "From Grand Chessboard to Card Table: The Great Powers, Keystone States, and the Emerging Order in the Silk Road Region, Ludovika Scholar Public Lecture, University of Public Service-Ludovika, Budapest, 29 Mar 2023, https://www.ada.edu.az/frq-content/Articles/Krnjevic_Ludovika_LECTURE_290323.pdf; Damjan Krnjević Mišković, "Superseding Middle Power Theory with the Keystone Concept: The Persuasive Case of Azerbaijan and the Silk Road Region," Caucasus Strategic Perspectives, Special issue no. 1 (February 2024), pp. 31-65, https://cspjournal.az/uploads/files/CSP Middle Powet/(3) Damjan Krnjevic Miskovic_S24.pdf.

[42] Giovanni Botero, Della Ragion di Stato I:2 (my translation). Cf. Carlsten Holbraad, Middle Powers in International Politics (London: Macmillan Press, 1984), pp. 10-44; see also Gabriele Abbondanza, "Middle Powers and Great Powers through History: The Concept from Ancient Times to the Present Day." History of Political Thought vol. 41, no. 3 (2020), pp. 397-418.

neighbors. Such countries are important because they are located at the seams of the global system and serve as critical mediators between different major powers, acting as gateways between different blocs of states, regional associations, and civilizational groupings. A keystone state, even if it's 'small,' [...] may nevertheless be important to regional or global security beyond what its own domestic capabilities may merit.[43]

It may be useful here to bring up another recent event. This one took place on 14 November 2023 in Baku – so, right before the SPECA Summit I mentioned a moment ago. The event was a ministerial trilateral involving the economy and energy ministers of the region's three keystone states: Azerbaijan, Kazakhstan, and Uzbekistan.

The next logical step is a first-ever presidential trilateral involving the three keystone states of the Silk Road region. And the one after that should consist in turning this first presidential keystone trilateral into a regularized format.

It helps a whole lot that the three presidents share a commitment to building a region with more partners and fewer enemies.

Well, anyway, now is not the time to get further into any of this. So, let's leave it at that for the moment.

With my remaining time, I want to turn directly to energy. My starting point here is the EU's interest in diversifying its energy supplies and strengthening its economy, which is predicated on the reliable and predictably-priced supply of energy.

And here, too, Azerbaijan is a strategic prize for the EU. Because the record is clear: effectually, there is no more reliable

[43] Gvosdev, "Keystone States," pp. 104-105.

non-Western pipelined oil and gas supplier to the EU than Azerbaijan.

That's why the EU keeps deepening its strategic partnership with Azerbaijan – we're talking about a predictable, stable, secure, and friendly partnership that goes back to the 1990s.

I don't have time to get into the history very much. Let me just say that everything started when the Contract of the Century was signed in 1994 – the first contract from the former Soviet Union that supplied oil to the West without going through Russian territory, you know, without using Soviet-era pipelines.

The Contract of the Century was worth $7.4 billion, in 1994 dollars. And it enabled Azerbaijan to gradually become an important exporter of crude to the European Union.

Today, the country supplies around 5 percent of the EU's oil imports, almost exclusively via the Baku-Tbilisi-Ceyhan pipeline.

Now, with the discovery of the Shah Deniz offshore natural gas field back in 1999, Azerbaijan gradually transformed itself into a strategic gas supplier to the EU, too.

The launch of the first phase of the Shah Deniz field in 2006 allowed the country to cover its domestic demand and export natural gas to Georgia and Turkey. That already made Azerbaijan a contributor to regional energy security. The second stage of the Shah Deniz field, which began production in 2018, eventually added a further 16 bcm of natural gas production capacity per year to the 10 or 11 bcm resulting from the first stage of the project.

And these became the source-base for natural gas supplies to the European Union via a chain of pipelines collectively known as the Southern Gas Corridor.

Now, this gas mega-project project followed Azerbaijan's oil supply pattern. Both hydrocarbon types are extracted from the Caspian, and both go through pipeline networks that bypass Russia completely.

In other words, Azerbaijan became part of the solution before much of the West even realized it had a problem.

So, here's what you need to know: the SGC's route from Azerbaijan to EU markets consists of three parts of a single mega pipeline project.

The first part is the South Caucasus Pipeline (SCP) and its expansion (SCPX), which moves natural gas from the Shah Deniz field to the Georgia-Turkey border.

This leads into the second part, which is called the Trans-Anatolian Natural Gas Pipeline (TANAP) and runs across Turkey.

And, lastly, we have the Trans Adriatic Pipeline (TAP), which starts at the Turkey-Greece border, transverses Greece and Albania, drops down into the Adriatic Sea, and then comes back ashore in southern Italy to connect to the Italian natural gas network.

So, with the completion of TAP, Azerbaijan began direct commercial gas supplies to the EU – so, without the pipeline terminating in Georgia or Turkey. And this started in December 2020. Crossing six countries and stretching across 3,500 kilometers, the $33 billion Southern Gas Corridor has become one of the most complex gas value chains ever developed.

Now, most of the Azerbaijani gas to the EU is supplied on the basis of long-term, ship-or-pay contracts – they're in place for

25 years. Most of it goes to Italy, and most of the rest goes to Greece and Bulgaria and, as of this year, a bit of this is going to Romania.

So, while the initially planned volume of 10 bcm into the EU via TAP might not sound considerable, the strategic importance of SGC is hard to overestimate – due both to the new supply source and the route it provides.

In addition, all three pipelines within the SGC mega project can be expanded So, for example, SCPX – which is already an expansion of SCP – can go from its current 24 bcm to 34 bcm. The other two pipelines – TANAP and TAP – can double their respective capacities. TAP, for example, can go from 10 bcm up to 20 bcm within 45 to 65 months.

Now, if this happens – and some version of an expansion is likely, but it will probably fall a bit short of a literal doubling of capacity – then this suggests that Azerbaijan's share of supplying in Europe's gas market will hit double digits.

Last year, Azerbaijan already supplied something like 6 percent of Europe's gas needs – and the numbers have been increasing since the onset of the Ukraine crisis, sometimes dramatically so. For instance, in 2022, the amount of Azerbaijani gas deliveries to Italy – TAP's terminal point – increased by 41.2 percent compared to 2021.

That's just one reason why we can have some confidence that double digits by 2027 is quite a realistic possibility.

In terms of quantities, 11.4 bcm was delivered to EU member states in 2022. By the end of 2023, that figure rose some more – to 11.8 bcm. By 2026, Azerbaijan plans to increase the annual

volume of gas exports to Europe to 14 bcm – basically, because Azerbaijan has figured out how to expand the capacity of the three transit pipelines that make up the Southern Gas Corridor.

Now, more than that will require expanding the Southern Gas Corridor – and this largely depends on the willingness of the EU to invest in new infrastructure. Negotiations are ongoing. And if they're successful, by 2027 we'll be talking about at least 20 bcm – maybe even a bit more – if some of the gas that is delivered to Turkey through TANAP ends up exported onwards to the EU market.

To be clear, the year 2027 is important because that's the target that was agreed by the EU and Azerbaijan in an MoU they signed in July 2022 – the document that deepened their strategic energy partnership. And 2027 is also the year the EU says it will fully divest itself of Russian gas.

And because of the way the global gas market is structured – if you take Russia out of the equation, in the EU context – well, then, without this Azerbaijani gas, the EU just won't have enough reliable supply, which includes a predictable pricing structure, because other players worldwide are locking in new longer-term contracts with non-Russian suppliers, as well as with Russia, of course, which means there will be less gas left for the EU to buy in the spot market and so, all other things being equal, the price will go up.

Certainly, the EU just won't have enough without driving up spot market prices, which will certainly not help the EU's economy and its ability to stay the course with its Ukraine policy. And even then – all other things being equal – it would be tougher to achieve without having recourse to more Azerbaijani gas.

Let me come back to this July 2022 MoU between Azerbaijan and the EU. It speaks to the point that Azerbaijan is understood today by all relevant actors to be and to remain an integral part of the EU's energy equation – not just in the short term, but for many years to come. This is evidenced by the fact that the MoU I just mentioned commits the EU to support what the document calls "long-term, predictable, and stable contracts."

By the way, this clause constitutes one of two policy reversals by the EU, because for the past several years the EU has had a policy in place that prevented its member states from signing new contracts of such length. This work-around is that signing a new contract will not be signing a new contract – it'll be signing an extension or an annex, or something.

The second EU policy reversal found in this MoU has to do with financing the deal. It looks like the regional financial institutions under the EU's control may help finance it: the EBRD and perhaps the European Investment Bank, too. They should find a way to participate. And for the past several years such institutions have had a policy not to finance new hydrocarbon deals. The work-around looks like it will be that these new deals will not be new deals; rather, they'll be seen as the expansion of an existing deal. And this looks like it will be combined – I'll get back to this in a moment – with an argument that references what's called the "EU Taxonomy." In layman's terms, this signifies that the EU considers natural gas to be a green source of energy, which in turn means that the banks under the EU's control can channel funds to the gas industry. That's the most obvious way to qualify for the kosher certificate – if I can put it that way.

Now, it needs to be said that this "taxonomy" is a temporary

regulation, but geopolitical realities and strategic ambitions tend to, well, inform the interpretation of the length of "temporary."

But again, negotiations are still ongoing.

Now, my point is this: Brussels says that gas is vital to moving towards the total green transition that's a declared political goal of the EU – this is what the European Green Deal is all about. And the details and nuances are not necessary to get into. What does concern us is the big picture, strategic takeaway – namely, that gas supplied by Azerbaijan represents one of the biggest energy security blankets for the European Union.

Also – and this is really important – something like doubling the capacity of the SGC by 2027 would be especially crucial for the markets of Central and Southeast Europe, which have long been called the Achilles Heel or the soft underbelly of Europe's gas infrastructure because of their reliance on Russian gas supplies.

Now this is not just the EU we're talking about here; it's the non-EU Western Balkan states. The strategic benefits of the expanded Southern Gas Corridor will be extended to that part of the world. That's one way the EBRD can get to finance the deal, by the way. Shoring up the energy security of the Western Balkans through an increase in the diversity of sources and suppliers is one of its political priorities, as is making sure this region – along with the EU itself, of course – can achieve "climate neutrality" by 2050.

And in the Western Balkans, this will require decommissioning a bunch of coal power plants. So, gas will need to play an important and perhaps integral transition role. There's no way to do this without gas – not just with gas, but without gas it's effectually

impossible. And provisions will need to be made regarding future-proofing infrastructure that can be switched to hydrogen, which is, as it happens, something that the July 2022 MoU between Azerbaijan and the EU foresees.

Anyway, that's the path to get the EBRD involved.

Let me stay in the weeds for just a moment longer, by mentioning what Azerbaijan has been doing with Hungary in this context. In June 2023, Azerbaijan's SOCAR signed a deal with MVM CEEnergy for 100 mcm of Azerbaijani gas to be supplied to Hungary by the end of 2023. On 20 August 2023, the President of Azerbaijan and the Prime Minister of Hungary concluded a political agreement for an additional 1 bcm of Azerbaijani gas to be supplied to Hungary. If this agreement turns into a contract – which would either go through Turkstream via a swap or necessitate building an interconnector from Romania, likely secured through EBRD financing or solidarity funds or something similar, and thus an EU regulatory green light – then Azerbaijan would be able to fill somewhere between one quarter and one third of Hungarian needs. This would, of course, reduce Hungary's dependence on Russian gas, which currently flows into the country through Druzhba and TurkStream and so on.

It's also very important, in this context, for me to mention a not-so-well-known MoU that was signed in Sofia on 25 April 2023 at the ministerial level to bind Azerbaijan's SOCAR, Bulgaria's Bulgartransgaz, Romania's Transgaz, Hungary's FGSZ, and Slovakia's Eustream, into something called the Solidarity Ring. Now, in principle, this gas corridor project has been blessed by the EU Commission, and the idea is to upgrade and develop cross-border pipeline infrastructure between four EU member states, in

order to increase gas supplies from Azerbaijan to the EU.

In other words, the Solidarity Ring is about expanding the capacity of a pipeline route involving Bulgaria, Romania, Hungary, and Slovakia to between 5 and 9.5 bcm, depending on demand projections. The cost estimate is €730 million, and the deal is for work to be completed by the end of 2026. Some existing infrastructure would be used, new interconnectors would need to be built, and so on. The most serious work – and largest investment – would need to be undertaken in Hungary, along the south-north axis, but it may also require the reactivation of plans to build stage two of the BRUA pipeline project, which was shelved in 2020, the same year the first stage of BRUA was completed. Now, the old plan was to expand the pipeline's capacity from its initial 1.75 bcm to 4.4 bcm, which would have been wonderful had it happened. BRUA, by the way, stands for Bulgaria-Romania-Hungary-Austria – the third stage would have expanded to route to, you guessed it, Austria.

Anyway, for the Solidarity Ring to work, the Turks would need to get involved, too, since the gas would enter Bulgaria from that country.

I can also mention that in the Eastern Balkans, the recent completion of the 3 bcm/year Interconnector Greece-Bulgaria (IGB) paves the way for the delivery of Azerbaijani gas northward to Bulgaria – the capacity of this piece of infrastructure can and probably will increase to 5 bcm/year. Also, an interconnector between Bulgaria and Serbia is about to become operational. Austria will probably get in on this, too, whether in the context of reviving BRUA's expansion plans or some other way. There is also the proposed Ionian Adriatic Pipeline (IAP), which could connect

TAP in Albania with Montenegro, Bosnia and Herzegovina, and Croatia.

So, lots of moving parts and plans and ideas involving more Azerbaijani gas entering the EU gas market.

Let me say something more about green energy to wrap up, because this is an integral part of policymaking in the European Union, as it seeks to make its energy security sustainable and achieve its goal of becoming "climate neutral" by 2050.

Here the big news is the quadripartite agreement that was signed in December 2022 in Bucharest on the supply of green electricity from Azerbaijan and Georgia to Romania and Hungary, and probably some other countries in Southeast Europe. The EU Commission has given its blessing to this strategic deal, which was foretold in the central section of the July 2022 MoU that I mentioned earlier.

Here's what it's about: in Azerbaijan, generate electricity from solar and wind, both onshore and especially offshore; and in Georgia, generate hydro power. And then feed this into a submarine transmission cable across the bottom of the Black Sea, and then this enters into the grid in Romania and goes into Hungary, and then elsewhere.

Originally, the talks did not involve Azerbaijan. It was just Georgia plus the Europeans. But when Azerbaijan got involved, the project got much bigger. That's the main reason this green transmission cable will be built to carry much, much more electricity than the initial contracts are likely to indicate. And unlike the expansion of the Southern Gas Corridor, Azerbaijan is willing to carry more of the financing burden directly.

Obviously, this is a long term project, but the crucial point

is that Azerbaijan has a rich potential of about 135,000 MW of onshore renewable capacity; Azerbaijan also has enormous offshore wind potential: the country's Ministry of Energy and a World Bank report indicate that the figure is 157,000 MW (35,000 MW in shallow water and 122,000 MW in deeper water)[44] – now, just the offshore potential is about 20 times more than all of Azerbaijan's current installed energy capacity, including all its hydrocarbon production. In fact, it appears that the Caspian Sea basin ranks second in the world for its offshore wind energy potential – and a lot of it is located in Azerbaijani waters.

Now, of course, we all know that some generated power is lost in the transmission process – especially over long distances. But technological innovation means that this loss is much less than it used to be one or two decades ago.

The point here is that the potential is just tremendous.

And market tests are still ongoing. And my guess is that when these are completed, the numbers will not be spectacular: they will be break-even or thereabouts. But my forecast is that this will not be a major impediment to making it happen – basically, for both geopolitical and pro-green reasons, but also because over time, the technological costs for making this a profitable enterprise will come down while the price of electricity probably won't. So that's a commercial win-win, as our Chinese friends like to say.

Now, audience, think back to the map of the Silk Road region I sketched out at the beginning, and then connect the dots you've heard me lay out: you know, the indispensability argument, and so on.

[44] Ayse Yasemin Orucu, Sean Whittaker, and Mark Thomas Leybourne, Offshore Wind Roadmap for Azerbaijan (Washington, D.C.: The World Bank Group, 2022), https://shorturl.at/ltzCE; Ministry of Energy of Azerbaijan, "The Use of Renewable Energy Resources in Azerbaijan," 14 June 2023, https://minenergy.gov.az/en/alternativ-ve-berpa-olunan-enerji/azerbaycanda-berpa-olunan-enerji-menbelerinden-istifade.

It means that the EU needs to make itself more attractive to Azerbaijan – more so than the other way around. That's what happens when you choose to get into a geopolitical game taking place in the midst of a global transformation of the international system.

And how does the EU do this? Well, part of it requires the EU to understand Azerbaijan as it understands itself – to see the country as it is and not as Brussels or Berlin or Paris would like it to be.

Now, just like you don't need a degree in rocket science to look at the map, you don't need a rocket science degree to understand that Azerbaijan simply doesn't see itself as belonging to the West. And because it doesn't see itself as belonging to the West, it has no interest whatsoever in joining the West's two leading interstate organizations: NATO and the EU.

Let me put it this way: one, Azerbaijan is perfectly comfortable living in the Silk Road region's "jungle"; two, Azerbaijan has no desire to walk over into the West's "garden"; and three, Azerbaijan sure doesn't think that the gardeners have a right to mosey on into the jungle and tell the animals what they can or can't do. Now, for those of you who didn't catch the reference, look up Josep Borrell's speech at the College of Europe in Bruges in October 2022.[45] Take it from a former speechwriter, it's quite something.

Well, now why is all this so important? Because the carrot of eventual membership is – at the same time – the stick that is used to get EU and NATO hopefuls to fall in line. You know, if you

[45] Josep Borrell, Address to the College of Europe on the Opening of the Pilot Programme of the EU Diplomatic Academy, Bruges, 13 October 2022, https://www.eeas.europa.eu/eeas/european-diplomatic-academy-opening-remarks-high-representative-josep-borrell-inauguration_en.

do what we ask, then you get closer to the finish line – or at least that's the idea, if the goalposts didn't keep moving.

But I'm not being cynical here, because there's really nothing wrong with the Brussels posture: I'm not making some anti-imperialist argument. That's what joining any club is like: there's never any real back and forth between an aspirant and the membership committee.

Look, it's a lot like taking your car for a mandatory inspection before you're allowed to register it. There's no room for any real bargaining in that situation. You don't negotiate with the man or woman doing the inspection. You don't say, give me a pass on the bad brakes, or the busted taillight, because, on my word as a jungle-dwelling animal, I'll get it fixed next week. Your car has to fulfill the criteria and if it doesn't, well, then it fails the inspection. Until you choose to get it fixed.

Now, the EU folks in Brussels don't really know how to negotiate in a real and substantive manner with a country like Azerbaijan. They're used to being the car inspectors and the gardeners.

But what do you do when that's not enough – when the power dynamics are not disbalanced in your favor?

Well, if you're Brussels, you should be digging deep and performing a very clinical examination of what cannot be achieved as much as of what can be. You drop the carrot/stick approach. You re-learn the art of compromise and diplomacy. You negotiate as at least sort-of equals.

And if you're the EU, you should accept the very real consequences of the fact that like America – which for three

straight years has led the world in LNG exports to the EU (in 2021, it exported 22 bcm; in 2022, it exported 56 bcm; in 2023, it exported over 73 bcm) – Azerbaijan has benefited from the choices you made to impose sanctions on Russia and divest from its dependence on Russian oil and gas since the onset of the present stage in the conflict over Ukraine.

But you should also think through what Azerbaijan had to do – the geopolitical risks it chose to take, notwithstanding the conduct of one or two of its neighbors – to increase its oil and gas deliveries when you picked up the phone to call Baku. And if you're the EU, you should think through the sort of precautions Azerbaijan is willing to take to increase them further still.

And you should remember that Azerbaijan really is a predictable, stable, and reliable supplier of natural gas. And that in order to keep giving you more of what you genuinely need from them, you'll have to carry more of the financing burden to expand the Southern Gas Corridor – unlike when it was first built, when Azerbaijan had to secure quite a bit of the financing.

But that's a very small price to pay, and I'll tell you why: if the EU fails to anchor its attractiveness to Azerbaijan, its strategic foothold in the Silk Road region just can't become a sustainable reality. It would, for example, close off opportunities to receive oil from Kazakhstan and gas from Turkmenistan – unless, of course, the EU wishes to do so via Russia or Iran. Of course, this case is even easier to make once we factor in the non-energy aspects of connectivity – once we factor in the geopolitical and geoeconomics logic of the Middle Corridor, the ambitions of Global Gateway, and all the rest of it.

Let me read you something that Azerbaijan's president said

on 6 December 2023 in answer to a question at a conference held at ADA University, "For people like Josep Borrell, it [should be] enough to look at the map and see where Azerbaijan is situated. If they want to be active in Central Asia, and we see that they do want, […] how can they avoid Azerbaijan? Are they going to contact the Central Asia countries through Iran or through Russia? Or do they have wings?"

And, so, well, my conclusion is that the EU's failure to anchor its attractiveness to Azerbaijan would surely constitute a missed opportunity. One could even say it could amount to geopolitical and geoeconomic malpractice.

2.2. INTERNATIONAL TRANSPORTATION AND SUSTAINABLE DEVELOPMENT ISSUES

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The Middle Corridor, which enables multimodal transport between China and Europe, the primary route for global freight flows, can also be described as a value chain. More broadly, the Middle Corridor facilitates transport from China to Kazakhstan (Aktau), across the Caspian Sea to Baku (Alat), and then through Georgia and Turkey over the Black Sea to Europe, thus connecting Asia and Europe. The increasing tensions in Ukraine-Russia relations have drawn further attention to the Middle Corridor.

Diversifying trade routes and creating resilience in economic connections present new perspectives for the Middle Corridor as an alternative.

To effectively realize these perspectives, a series of tasks must be undertaken, and sustainable projects implemented. It is evident that the Middle Corridor is a complex and essential route connecting Asia to Europe via Central Asia and the South Caucasus. The realities emerging from Russia-Ukraine relations have renewed the approach to the Trans-Caspian International Transport Route. In practice, there are three routes for transport from China to Europe – the Northern Route, the Middle Corridor, and the Maritime Route. A schematic depiction of these routes is provided below.

Figure 2.2.1. The trade corridors connecting Europe and Asia



Source: "The Middle Trade and Transport Corridor: Policies and Investments to Triple Freight Volumes and Halve Travel Time by 2030".

The Word Bank, november 2023, p.13

Among these routes, the multimodal transport network (including road, container, rail, freight, and ferry routes) connecting Asia to Europe via Kazakhstan, the Caspian Sea, Azerbaijan, Georgia, and Turkey attracts the most attention. The Middle Corridor, an alternative to the Northern Route and various maritime routes between Europe and Asia, also promises new opportunities for expanding regional trade and economic development for the countries along the route.

Starting at the China-Kazakhstan border, the Middle Corridor connects Asia to Europe through Central Asian countries, across the Caspian Sea, and through Azerbaijan, Georgia, and Turkey. In the favorable geopolitical environment of the region, interest in the Middle Corridor, the shortest and most convenient route between Europe and Asia, has increased further. The Middle Corridor, a key alternative to the Northern Route, enables transport from China to Europe within 12 days, covering 7,000 kilometers instead of 10,000 kilometers. Since 2020, regular container shipments from Turkey to China have been carried out twice a month via the Middle Corridor. In 2021 alone, rail transport between China and Europe totaled $84.9 billion. Although the total volume of goods transported along this corridor ranged from 350,000 to 530,000 tons in 2020-2021, this figure increased to 3.2 million tons in 2022. The Middle Corridor facilitates the transport of goods from China through Kazakhstan to the Caspian Sea, Azerbaijan, and then through Georgia and Turkey to their final destinations in Europe. In this regard, the importance of the Middle Corridor and the Baku-Tbilisi-Kars railway, as part of this corridor, should be particularly noted.

Table 2.1. Time and Cost for Transport between the European Union and China (from Chengdu, China, for a 40-foot container)

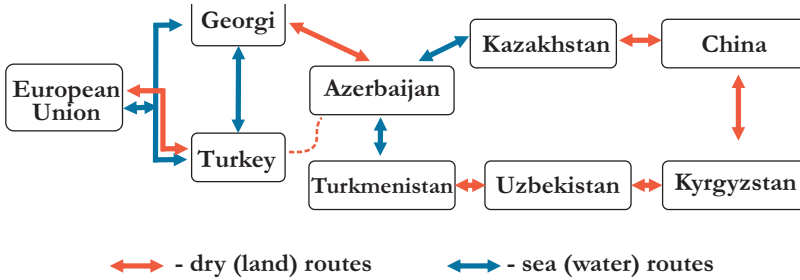
	Cost Range (USD)	Average Time (Days)	Northern Europe Time (Days)	Central Europe Time (Days)	Balkans Time (Days)
Northern Route	2800-3200	14-18	16	15-16	20
Middle Corridor	3500-4500	16-20	18	17	14
Maritime Route	1500-2000	28-40	28-40	28-40	28-40

Source: "Realising the Potential of the Middle Corridor, OECD Publishing, 2023, Paris, p.18

The Middle Corridor, which reduces transportation distance and time, also stands out as a value chain. First and foremost, the reduction in time and distance is attractive to carriers and cargo owners. The impact of transportation costs on finished products creates a new value. All countries along the corridors have a role in shaping this value. At the same time, this value significantly affects the decent living standards of society and the normal functioning of the economy. However, increasing the attractiveness of the corridor necessitates several steps. Overall, the reduction in time and cost along the aforementioned routes is crucial.

As can be seen, one of the three routes differs significantly in terms of time and cost, making the primary alternatives (competitors) the Northern Route and the Middle Corridor. Except for the Balkans, the Middle Corridor lags behind both in terms of time and costs. This suggests that the current

attractiveness of the Middle Corridor is largely due to the tensions in Russia-Ukraine relations. To ensure the permanence of this advantage and enhance the attractiveness of the Middle Corridor, appropriate steps must be taken. We can schematically describe the Middle Corridor through the countries it passes as follows.



The attractiveness of the Middle Corridor depends on all the countries located along the route. To further strengthen this corridor and increase its attractiveness, two main initiatives (the Trans-Kazakhstan railway and the Baku-Tbilisi-Kars railway) were completed in 2014 and 2017, respectively, following the establishment of the Coordination Committee for the Development of the Trans-Caspian International Transport Route. As is known, although the Middle Corridor has significantly lower traffic intensity compared to the "Northern Route," the difficulties in trade relations caused by the Russia-Ukraine war have led to a sharp increase in traffic along the corridor, highlighting the necessity to develop the Middle Corridor. The Middle Corridor is a competitive transit route.

As shown by the time and schedule, the Middle Corridor even offers a competitive advantage for transit. Compared to

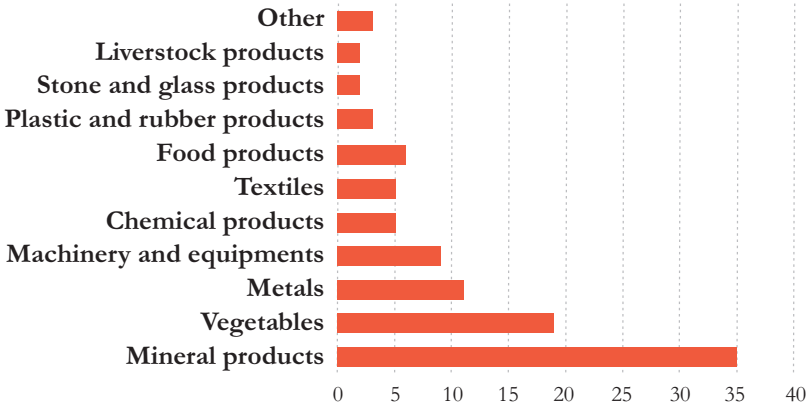
the Northern Corridor, the Middle Corridor allows a six-day reduction in transit time for goods between China and the Balkans. Considering the access to the Mediterranean Sea from Georgian and Turkish ports, the Middle Corridor also serves as the shortest route for trade between China and North Africa through Central Asia. The expansion of the Trans-Caspian International Transport Route and the increase in traffic intensity have the potential to reduce transportation costs and further strengthen trade relations among the countries it covers. Realizing this potential requires not only significant infrastructure investment but also procedural simplification and trade facilitation.

As noted, cargo transportation along the Middle Corridor sharply increased in 2022 due to the shift away from the Northern Route. The volume of freight along the route increased by 2.5 times in 2022, reaching 1.5 million tons, and the volume of container transportation almost doubled, reaching 50,000 TEU containers (ITF, 2022; Middle Corridor Association, 2022). Similar dynamics were observed in the volume of cargo passing through the Caspian Sea, creating new trade opportunities for countries along the corridor. For example, the volume of Kazakhstan's freight along the corridor increased 6.5 times, reaching 900,000 tons compared to 2021, and container transportation via the Caspian Sea increased by 33%, reaching 33,600 TEU, of which 18,000 were transit shipments (Port Aktau, 2023; Adalet, 2023).

This route also offers prospects for future trade and transit growth by connecting Asia to Europe through rapidly developing economies. Research shows that in recent years, Kazakhstan, Azerbaijan, Georgia, and Turkey, as well as other countries in Central Asia and the South Caucasus, have been dynamically

increasing in terms of GDP and population, and this trend is expected to continue. There are over 100 million consumers around the Caspian Sea, with nearly 76 million living in Central Asia. This means that the transport corridors and routes passing through these areas also serve as trade gateways to a rich market. According to estimates by the European Bank for Reconstruction and Development, the volume of transit containers transported along the route could increase from the current 18,000 TEU to 130,000 TEU by 2040, primarily due to population and GDP growth (EBRD, 2023).

Figure 2.2.2. The Structure of trade turnover in Central Asia and the South Caucasus, in percentages



Source: compiled by the author

Experts believe that trade turnover will expand to such an extent that China will transform into a more consumption-oriented economy rather than an export-oriented one. Naturally, in this case, the economies of Central Asia and the South Caucasus will also advance along the value chains. The transition in China

towards development based more on consumption will shape additional routes of the Middle Corridor, which is an important part of the East-West project, and will further intensify trade relations with Central Asia and the South Caucasus. Research indicates that the development of the processing industry in Central Asia and the South Caucasus will help increase exports. Additionally, the production of high value-added technological products is expected to increase the import of intermediate and spare parts. Overall, the intra-regional trade structure of Central Asia and the South Caucasus for 2022 is approximately as follows:

The conducted analysis and research confirm that the expansion and intensification of trade will consequently lead to the intensification and positive prospects of logistics services and transit. Alongside this, the mutual impacts of transportation and the environment must be seriously considered. Through successful policies, programs, and projects, as well as continuous economic reforms, Azerbaijan has become a significant transport-transit hub between Europe and Asia. Currently, the most efficient routes for transportation between the two continents pass through the Caspian Sea and Azerbaijan. However, the increase in transport and cargo intensity requires a more serious approach to environmental factors. It is not coincidental that, several years ago, continuous efforts began in Azerbaijan to ensure the transportation system's compliance with COP29 and "Solidarity with a Green World" requirements. Both COP29 and "Solidarity with a Green World" advocate for the implementation of transportation methods that are harmless or minimally harmful to the environment. These initiatives stem from the Sustainable Development Concept and the Sustainable Development Goals. For instance, at COP28 held

a year ago, calls were made for mobility, decarbonization, and the use of alternative fuels in urban transport systems, and similar efforts are being undertaken in our country. One of the directions of "Azerbaijan 2030 – National Priorities for Social and Economic Development" is "A Clean Environment and Green Growth Country," and in the "2022-2026 Socio-Economic Development Strategy of the Republic of Azerbaijan," decarbonization and environmental protection are set as global challenges. The preparation of the "Urban Mobility Plan" and other measures indicate that transport and environmental factors are in focus. Additionally, decisions to enrich the national transport fleet with vehicles running on alternative fuels and hybrid engines, along with the adoption of incentivizing measures in this direction, are clear examples of attention to transportation-environment issues.

At the same time, it is essential to seriously consider environmental impacts during international transportation along international transport corridors. Issues such as pollution of water bodies and green areas, and the release of harmful gases and waste into the atmosphere must be prioritized. This requires compliance with both the operational rules and the international requirements for the transportation of various types of cargo. Only in this way is it more appropriate to approach environmental factors comprehensively regarding both the transport means and the transportation object. This is because only ecologically harmless and efficient transportation can be considered generally efficient.

Given the aforementioned, it is necessary to evaluate the long-term prospects of the Middle Corridor in the context of environmental factors. Naturally, steps must be taken, and work needs to be done regarding the Middle Corridor. This is because

the sustainability of the attractiveness formed on the Middle Corridor, influenced by the geopolitical situation in the region and the Russia-Ukraine relations, requires attention to various measures in the corridor countries. As noted in the World Bank's report "Middle Trade and Transport Corridor: Policies and Investments to Triple Freight Volumes and Halve Travel Time by 2030," certain challenges need to be considered.

As noted in the report, it is crucial to strengthen the coordination of the corridor's operations and establish unified (harmonized) management. Particularly, the absence of an operator responsible for transportation from the point of origin to the destination can lead to delays in interfaces and logistics. The agreement reached on the establishment of a single operator, if properly implemented, can resolve this issue, reduce time, and enhance the attractiveness of freight.

One of the critical issues related to the Middle Corridor is the strengthening of ports in both the Caspian Sea and the Black Sea, as well as the enhancement of maritime services in the Caspian Sea. Strengthening the first/last mile connections of some ports with railways would be appropriate. However, due to climatic conditions, it is sometimes impossible to establish port-rail connections during certain periods of the year, leading to prolonged storage times of goods at ports and increased costs. Additionally, it is essential to increase the number of vessels operating in the Caspian Sea, enhance navigation speed, and offer more attractive freight rates. Furthermore, the drop in sea level may necessitate engineering solutions such as deepening the port or accommodating new-generation vessels with lower draft capabilities. This may also include investments in modern aids

for navigation and port vessel traffic management, tugboats, and other support vessels.

Another necessary direction for improving the Middle Corridor involves the railway infrastructure. Theoretically, railways have a comparative advantage in the Middle Corridor considering the long distances and the types of goods transported through the corridor. Nevertheless, modernizing railway operation equipment, strengthening connections for multimodal transportation, continuously adapting the workforce to current requirements, and forming flexible and efficient operational practices can help eliminate delays and reduce costs.

It is imperative to expedite the flow of information and establish flexible coordination between service providers and regulatory bodies along the Middle Corridor. This can eliminate delays at border-crossing points where railway operators from different countries converge, thereby increasing the attractiveness of the Middle Corridor. Notably, the State Customs Committee of the Republic of Azerbaijan has introduced a new platform that, with the help of digital technologies, is implementing a project to simplify transit customs procedures using the "Single Window" principle along the Middle Corridor.

Specialists from the State Customs Committee of the Republic of Azerbaijan are consistently working on creating a Unified Transit Portal to ensure reliable and secure electronic exchange of transit data using the "Single Window" principle. As part of the implemented project, a presentation on the main objectives and tasks of the Action Plan for developing and applying a simplified transit procedure along the Middle Corridor has also been demonstrated.

Although many stakeholders of the Middle Corridor utilize modern ICT solutions, there is still a need for unification and harmonization, as well as close integration in this area. The absence of these elements can lead to duplication of documents, weak standardized and unified data requirements, and inefficient processes at interface points between service providers within the same country and between corridor countries.

In addition, to enhance the attractiveness and ensure the sustainability of the corridor's operations, it would be appropriate to combine short-term efficiency gains through better, flexible coordination, efficient logistics, and digitalization with medium-term investments. The Middle Corridor will require substantial investments over the next 10 years, as determined and agreed upon by the participating countries (as per the Road Map signed in November 2022). In the short term, it is possible to achieve increased efficiency through better, flexible coordination, logistics, and digitalization. Crucially, there is a need for institutional unity and flexible coordination along the corridor. Azerbaijan, Turkey, Georgia, and Kazakhstan are already working in this direction.

Thus, by implementing these measures, the Middle Corridor could potentially triple the volume of freight transported by 2030 compared to 2021, while simultaneously halving transit times. With carefully coordinated investments and political interventions, the Middle Corridor could to some extent ensure economic and geopolitical resilience for transcontinental trade. As a reliable route, the corridor will contribute to unlocking the trade and development potential of Central Asia and the South Caucasus, providing access to ports and facilitating integration with China, Europe, and the world.

2.3. ENVIRONMENTAL SUSTAINABILITY AND GREEN CORRIDORS

One of the pressing issues in the modern era is balancing the observed disbalance in the nature-society relationship. The negative impacts of society and industry on the environment, atmosphere, water bodies, and greenery, as well as pollution levels, have become global concerns. In this context, transportation and environmental issues, as primary sources of pollution, are of particular importance. Furthermore, the development of a sustainable green transportation system is a necessity arising from the priorities of modern national and global economies.

The Middle Corridor holds critical significance for the environment and quality of life. Concepts such as "ecological sustainability" and "green corridors" are vital, primarily used to protect environmental integrity and preserve green spaces.

The term "ecological sustainability" refers to the comprehensive protection of environmental factors such as biodiversity conservation, ecological security, and the cleanliness of air and water. The planning and construction of the Middle Corridor contribute to ensuring environmental sustainability. The Middle Corridor serves as significant points for the integration of ecosystems and the protection of biodiversity. This corridor facilitates connections between different habitats, allowing for the movement of various species and preserving the diversity of natural populations.

"Green corridors" are environmental areas used to protect biodiversity and maintain natural habitats in urbanized or human-impacted environments. These corridors enable the

structure of trees, plants, and other natural elements, ensuring the movement and expansion of various species. This approach supports biodiversity and ensures the safety of transportation and infrastructure around natural areas in urban centers.

The "Middle Corridor" concept is often linked to urban planning and environmental sustainability. It involves creating roads or corridors in urban areas that facilitate wildlife movement and promote ecological connectivity. Urban development often fragments natural habitats, hindering wildlife movement and proper ecosystem functioning. The Middle Corridor approach aims to address this issue by creating pathways that connect green corridors or fragmented habitats, allowing species migration, seed dispersal, and the preservation of genetic diversity.

These corridors can take various forms, such as linear parks, greenways, or even wildlife bridges and tunnels along roads and highways. They are designed to mimic natural habitats as closely as possible, providing food, shelter, and breeding areas for wildlife while offering recreational opportunities for urban residents.

By promoting ecological sustainability, middle corridors help mitigate the negative impacts of urbanization on biodiversity and ecosystem health. They also contribute to improving air and water quality, reducing the urban heat island effect, and enhancing the overall quality of life in cities.

It is clear that transportation is one of the primary sources of environmental pollution, accounting for 60-65% of overall emissions. Studies indicate that over 2.0 billion tons of oil produced annually worldwide are consumed as fuel for vehicles. Considering that the normal and clean combustion of 1 liter of

fuel requires approximately 15 kg of O2, the volume of oxygen consumed solely for fuel combustion by global transportation becomes evident. Simultaneously, vehicles in operation worldwide emit over 1 billion tons of harmful gases into the atmosphere each year, weakening nature's self-regeneration capacity and disrupting the balance.

All substances released into the air undergo various transformations. Gaseous substances mix with the atmospheric mass through air currents and wind, while solid (heavy) pollutants settle on the ground. Notably, the transportation system, particularly automotive transportation, is one of the main sources of atmospheric pollution. Although all modes of transport have certain environmental and atmospheric impacts, observations reveal that gasoline-powered vehicles are the principal sources of pollution. In megacities, harmful emissions from cars account for 68-70% of the total composition of polluting gases. In previous years, when the number of cars was relatively low, this issue did not attract much attention. However, with the current annual fuel consumption exceeding 2 billion tons due to the increasing number of vehicles, a simple calculation shows that a car traveling approximately 10,000 kilometers annually, consuming 10 liters of fuel per 100 km, uses 15 tons of oxygen for complete fuel combustion each year.

If the carburetor of a gasoline-powered car is not properly adjusted, the amount of harmful gases released into the atmosphere can increase by up to 4-5 times. Additionally, cars pollute the environment and atmosphere not only through exhaust gases but also through fuel vapors and dust particles from tires. On average,

each car emits up to 10 kg of dust particles from tires into the atmosphere annually.

To mitigate negative ecological impacts, it is essential to gradually transition to fuels characterized by lower ecological impacts, implement electric-powered public transportation, expand "pedestrian" zones, especially in central cities, and develop a green transportation system. As mentioned, the term green transportation is primarily associated with the ecological issues of transportation. Therefore, the main component of a green transportation system comprises ecological vehicles. Compared to conventional automotive transport, ecological vehicles have less environmental impact, although the extent of this impact is relative when considering the entire lifecycle. Electric vehicles, depending on the source of electricity, have the potential to reduce CO2 emissions. Hybrid vehicles, which are becoming increasingly widespread, achieve better fuel efficiency by using both internal combustion engines and electric motors. Additionally, natural gas is used as a fuel for internal combustion engines. Although currently used less frequently, the use of biofuels is also expanding. The widespread application of successful fuels, taking into account local conditions, will not occur without new environmental impacts; thus, ecological concerns persist even in this case, albeit to a lesser extent.

The European Commission has developed a plan to ensure the mobile and environmentally safe operation of transportation in major cities. According to the plan, wider use of hybrid vehicles, biodiesel fuel, compressed natural gas, electric vehicles, and hydrogen-fueled transport is recommended. Additionally, the plan prioritizes the development of public transportation,

the establishment of rapid bus transit systems, the creation of integrated ticketing systems for various types of transportation, extensive use of market research in organizing transport services, continuous improvement of the quality of public transport services, application of different tariffs during peak hours, efficient regulation of parking, restricted access to certain central streets during specific times, relaxation of speed limits on applicable roads, and other similar measures.

Despite these efforts, it is necessary to implement several preventive measures to mitigate the negative environmental impacts of the transportation system. Primarily, the main causes of negative environmental impacts can be grouped as follows:

– Poor technical condition of vehicles;

– Low quality of fuel;

– Additives in fuel, particularly the presence of lead;

– Weak management systems for transportation flows;

– Low proportion of environmentally friendly modes of transportation, etc.

Naturally, this list can be expanded, and the sub-causes of individual points can be elaborated upon. However, the outcome remains the same and is particularly concerning. Despite all these efforts, the environmental concerns and challenges associated with the transportation sector are relevant to all transportation corridors, including the Middle Corridor. The Middle Corridor faces various environmental problems depending on the specific regions, transport routes, and means of transportation, which can be generally classified as follows:

Disruption of habitats: the development of infrastructure along the corridor can fragment residential areas, green spaces,

and wildlife migration routes, leading to a loss of biodiversity. The migration and population processes of wildlife are essential for normal living conditions at any stage. Therefore, the fragmentation of habitats, water bodies, and green areas, leading to an imbalance in nature-society relations, is undesirable and should be maximally considered as one of the main environmental challenges along the Middle Corridor.

Air pollution: air pollution, an ongoing issue, is also relevant for the Middle Corridor. The increase in the number and intensity of vehicles along the corridor can negatively impact both human health and the environment, leading to higher levels of air pollution. Naturally, this problem is more pressing for megacities and urban areas along the route. Therefore, decarbonization or minimal pollution should be a priority along the corridor. In terms of safety, efficiency, and cost, sea transport is 3.5 times cheaper than rail, 7 times cheaper than road, and 22 times cheaper than air transport. As a result, sea transport is the most widely used mode for transporting large volumes over long distances globally. However, sea transport also impacts water bodies. In reality, all modes of transport have varying degrees of environmental impact depending on various factors.

Water pollution: it is evident that water resources are essential for the normal life of living organisms. Therefore, protecting water bodies and water reserves is a crucial issue along the Middle Corridor. This issue is not solely related to the operation of transport vehicles but can also depend on adjacent areas. Runoff from roads and industrial facilities can pollute water bodies along the corridor, negatively affecting

water ecosystems and potentially harming communities, society, and living organisms dependent on these water sources. Hence, protecting and preventing pollution of water bodies should be a focal point for states and transport companies along the Middle Corridor.

Deforestation: the construction of roads and other infrastructure may require clearing large forest areas, leading to deforestation, the destruction of critical carbon sinks, and the annihilation of wildlife habitats. As previously mentioned, in general, wildlife, particularly forests, are essential for society's normal living conditions. Therefore, all transport projects, including those along the Middle Corridor, must seriously consider forest conservation, minimizing damage to green areas and forest cover.

Noise pollution: today, noise-induced illnesses rank third in terms of human fatalities. The increase in transport along the corridor can lead to high levels of noise pollution, creating natural imbalances, disrupting ecosystems, and negatively impacting human health and well-being. In the current era, termed the information age, the stress created by information overload and life intensity is further exacerbated by noise from the transport system, causing serious concerns in people's psyches and nervous systems. Therefore, it is necessary to use appropriate protective structures, implement non-transparent acoustic screens, create noise protection zones in high-noise areas, and improve planning in residential areas to reduce noise pollution from transport vehicles.

Climate change: the transportation sector significantly contributes to greenhouse gas emissions, which drive climate

change. Increasing transportation along corridors can further amplify these emissions, accelerating the impacts of climate change, such as extreme weather events and rising sea levels. It's worth noting that climate has changed throughout Earth's history. However, natural causes do not explain the particularly rapid warming of the past century. Recent climate changes are predominantly due to anthropogenic factors, mainly the extensive use of fossil fuels – coal, oil, and gas – in homes, factories, and transportation. When fossil fuels are burned, they release greenhouse gases – primarily carbon dioxide (CO2) – into the atmosphere. Additionally, ecologists' studies confirm that the high altitude at which cargo planes fly activates more toxic substances, contributing to the greenhouse effect and affecting climate change. Research shows that the amount of greenhouse gases emitted by passenger planes during a single flight exceeds the amount of nitrogen oxides and carbon monoxide released by urban transport in a day. Unfortunately, to date, air transportation, including cargo planes, remains outside the purview of ecological tax policies. If policies requiring ecological taxes on pollution were implemented, every enterprise and organization, including air and rail transportation, could be incentivized to reduce the emission of greenhouse gases and harmful waste. According to an international climate change expert, night flights have a three to four times greater impact on climate change, resulting in the release of carbon dioxide that intensifies global warming. The "white clouds" formed in the sky – compressed gases, water vapor, water droplets, acidic nitrogen, and sulfates – can linger in the air for up to two hours, significantly impacting ecosystems. The processing of coal production seriously affects the ecological environment,

potentially leading to ecological disasters. Worldwide, 60% of the obtained oil turns into waste, contributing to environmental pollution and the formation of toxic sulfur gases. All these factors necessitate taking measures along the Middle Corridor to address climate change, prevent global warming, and combat desertification.

Invasive species: the transportation corridor can serve as a pathway for the introduction and spread of invasive species that can compete with local species and disrupt ecosystems along the route. Observations show that while international transportation corridors can positively impact national transportation systems, they also have environmental consequences. The intensity and density generated by these corridors can affect the transportation system and, consequently, the environment. Therefore, national governments should carefully consider bilateral and multilateral cooperation agreements, aiming to neutralize potential negative environmental impacts and prioritize minimal ecological impact.

Generally, the Middle Corridor, known as one route of the Silk Road, extends across Central Asia, connecting Europe and Asia. Like any region or route, it faces ecological challenges. Environmental issues in the Middle Corridor include desertification and land degradation, biodiversity loss, waste management, and air and water pollution. Considering the global aspiration to develop "green energy," "green economy," and "green transportation," the relevance of these issues along the Middle Corridor becomes evident. Only by deeply analyzing, studying, and considering these environmental issues can a "Green Corridor" be established.

2.4. THE MIDDLE CORRIDOR AS AN ENERGY SYSTEM

John Roberts
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Ever since the collapse of the Soviet Union in 1990, the route of what is now known as the Middle Corridor has played a significant role in the geopolitics of energy on the Eurasian landmass.

First it was an idea, as western companies investing in newly discovered oilfields in and around the Caspian sought to find new routes to export their output that would avoid both Russia and Iran; then the same imperatives led to development of new gas pipelines through the Corridor. Currently, the focus is on how it can be used to carry renewables-based electricity to markets from Europe to China.

In the energy context, the key section at the western end of the Middle Corridor is the transit through the South Caucasus from Azerbaijan's Caspian coastline to Georgia's coastline on the Black Sea or on to Turkish terminals on the Mediterranean for oil and on to Turkey's borders with Greece and Bulgaria for gas.

To the east, the Middle Corridor, integral to the development of oil exports from Kazakhstan and gas exports from Turkmenistan to China, is a way of integrating the energy systems of a cluster of Central Asian nations, initially to improve local energy balances that can help sustain fossil fuel exports to China but, in the longer term, perhaps to promote the export of renewables-generated electricity to China as well.

Today, the oil and gas pipelines that connect oil and gas

producers in Central Asia and the Caspian to markets as far afield as North America and Southwest China provide everyday proof of the practical utility of the Middle Corridor so far as fossil fuel deliveries are concerned. But that leaves open the question of the role that the Middle Corridor might play in the delivery of renewables-based energy at a time when intensifying climate change is accelerating energy transition worldwide.

The infrastructure that already exists in the Corridor is the prime mechanism that enables producers in the Caspian region to monetise their oil and gas production through dispatches to export terminals and markets that may be hundreds or even thousands of kilometres away. For example, the pipeline outlets to Turkey and Georgia (for oil) and to Turkey (for gas) commonly account for around 90 percent of Azerbaijan's export revenues and for more than half of the state budget. Thus in 2023 Azerbaijan earned $16 bn from oil exports and can expect to earn much the same in 2024. As for Azerbaijan's 2024 budget, this is conservatively based on an oil price of $60 and therefore anticipates that government revenues from oil and gas (which are not the same as export earnings) will contribute 16,756 million manat ($9.86 bn) or just under half of total budget revenues amounting to 33,765 million manat ($19.86 bn). But this is likely to be a considerable underestimate since oil prices in the first four months of 2024 averaged well above $80 a barrel.

2.4.1. Five Pipelines

In geopolitical terms, the role of the Middle Corridor in the classic fossil-fuel focussed geopolitics of energy is highlighted by five pipeline projects in particular.

In order of opening, these are:

1. The Caspian Pipeline Consortium (CPC) line from Kazakhstan's giant Tengiz oilfield which delivered its first oil to its terminal at the Russian Black Sea port of Novorossiysk in October 2001. The line primarily serves producers in Kazakhstan but smaller volumes of crude from Russian producers are added at Novorossiysk with the joint output sold as CPC blend.

2. The Baku-Tbilisi-Ceyhan (BTC) oil pipeline, which delivered its first oil from Azerbaijan to a loading terminal at the Turkish port of Ceyhan in May 2006. The line also carries, albeit to a lesser extent, oil from Kazakhstan and Turkmenistan. From Ceyhan the oil can reach global markets by tanker.

3. The Western Kazakhstan – Western China Oil Pipeline. This delivered its first oil to China in July 2006 but really only got under way in 2009 when major oilfields in central Kazakhstan were added to the system.

4. The South Caucasus Pipeline which subsequently evolved in the Southern Gas Corridor. The SCP began flowing gas from Azerbaijan to Turkey in September 2006 while the SGC, which extends as far as Italy, delivered its first gas to western Turkey in June 2018, with ongoing work enabling gas to flow to Turkey's border with Greece in June 2019 and reaching Greece, Bulgaria and Italy at the end of December 2020.

5. The Central Asia China Gas Pipeline (CAGP) opened in December 2009, carrying gas from Turkmenistan via Uzbekistan and Kazakhstan to the Kazakhstan-China border at Khorgos, where it enters China's own giant East-West gas pipeline system. The system also serves to carry gas from Uzbekistan and

Kazakhstan to China, although at much smaller volumes than those from Turkmenistan.

These are not the only pipeline systems that utilise Middle Corridor routes. Two smaller oil pipelines, from Baku in Azerbaijan to the Georgian Black Sea port of Supsa and to the Russian Black Sea port of Novorossiysk played a significant role in development of Azerbaijan's initial oil export capacity, but these were essentially forerunners to the much larger BTC pipeline, which is also known in Baku as the Main Export Pipeline. To all extents and purposes the five pipeline systems listed above comprise the traditional fossil fuel element for energy transit in the Middle Corridor. However, the main reason for the current focus on energy in the Middle Corridor is the fact that the first of these lines, the CPC system from Kazakhstan to Novorossiysk, remains a matter of serious concern to both producers in Kazakhstan whose oil feeds into the system and to the Kazakh Government, which depends on export deliveries through the system for a large proportion of government revenues.

2.4.2. The CPC System

The 1,510-km CPC system is crucial to the Kazakh economy. In 2023, it carried around 56.5 million tonnes of Kazakh crude to Novorossiysk, notably including crude oil from three of the country's most important fields. These are Tengiz, where the principal foreign shareholders are Chevron (50%), ExxonMobil (25%) and Lukoil (5%); Kashagan, with ExxonMobil (16.81%), Shell (16.81%), Total (16.81%), Eni (16.81%), China National Petroleum Corporation (8.33%) and Japan's Inpex (7.56%); and

Karachaganak, with Shell (29.5%), Eni (29.5%), Chevron (18%) and Lukoil (13%).

Kazakh deliveries via CPC accounted for 80% of the country's 70 mt in total oil exports. With oil accounting for $42.3 bn of Kazakhstan's total 2023 exports worth $78.6bn, this means that CPC was responsible for handling no less than 43% of the country's entire export earnings. But both the companies producing the Kazakh oil that is carried by CPC and the Kazakhstan government have serious concerns regarding CPC. One is historic, concerning who serves as operator for the system; the other is contemporary, the consequences of Russia's all-out invasion of Ukraine in February 2022.

When CPC was initially developed, the international companies producing the Kazakh crude that would feed into the pipeline were insistent that one of their number should serve as the line's operator. This essentially ensures that normal commercial conditions are routinely applied and that no external party can halt or limit the flow through the system, or direct where the throughput should go. All the other four systems are essentially operated by companies which are also involved in producing the oil or gas flowing through the pipelines. The CPC consortium, which included such giants as Chevron, Exxon and Shell, initially succeeded in this objective, but a sustained dispute over what was supposed to be the automatic expansion of the pipeline to match increased potential input resulted in a standoff that was only resolved with a complex agreement that eventually ensured that Russia's pipeline monopoly Transneft, the trustee for the Russian state shareholding in CPC, would become the operator. In effect, this ensured that Transneft, which serves the interests of all Russian exporters and

not just those who contribute to CPC blend, had effective control over all the line's throughput. Since some 87% of this throughput routinely comes from Kazakhstan, this was of grave concern to both the producers in Kazakhstan and to the Government in Astana.

2.4.3. The BTC Pipeline

The 1,768 km Baku-Tbilisi-Ceyhan pipeline was developed by a consortium led by BP and delivered its first oil from Baku to the Turkish Mediterranean terminal at Ceyhan on 28 May 2006. The line constitutes Azerbaijan's main export pipeline, carrying crude from its giant Azeri-Chirag-Guneshli (ACG) oilfield complex and condensate from the Shah Deniz gasfield to world markets. The pipeline was designed with the capacity to carry one million barrels of oil but such levels were only achieved in testing sessions. The use of drag reducing agents means that current capacity is 1.2 mb/d.

Actual throughput in 2023, however, was only just over half of this, with the line carrying around 620,000 b/d, of which 27,840 b/d came from Kazakhstan. This primarily reflects the steady decline of production at ACG, where output peaked in 2010 at 835,000 b/d but which amounted to just 363,000 b/d in 2023. In 2024, Azerbaijani deliveries, in decline as a result of the aging of the ACG field, are continuing to fall, but deliveries from Kazakhstan are on the rise. In the first quarter of 2024, total throughput was stated to be 7,277,000 tonnes, equivalent to around 583,000 b/d, of which around 5,866,900 tonnes (about 470,650 b/d) came from Azerbaijan and some 1,400,300 tonnes (about 112,350 b/d) from Kazakhstan and Turkmenistan. In

Spring 2024, Baku and Astana held talks on a further increase of Kazakh oil transit across Azerbaijan, but with the focus on reviving transit through the Baku-Supsa line. Major increases in Kazakh deliveries would require an increase in tanker traffic across the Caspian.

Azerbaijan also has two other export pipelines. One, the 1,330-km line from Baku to the Russian Black Sea port of Novorissiysk, has proved unreliable, and has rarely, if ever, operated at its nominal capacity of 100,000 b/d. The other, the 833-km Baku-Supsa line, operated fairly continuously from its opening in 1999 until the spring of 2022, when BP opted to switch oil shipments to the BTC.

2.4.4. The Southern Gas Corridor system

A corridor is, by definition, a passageway with the potential to connect, in an energy context, various suppliers at one end and with various customers along the route. In this sense, the Southern Gas Corridor can be said to have first opened in 2006-7 with the development of three pipelines; the original South Caucasus Pipeline (SCP) between the Sangachal gas terminal in Azerbaijan and the Georgian border with Turkey; the accompanying line from the Georgian border to a connection with Turkey's existing gas distribution network at Erzurum; and a new line from Karacabey on the Turkish system to Komotini in Greece. This enabled Azerbaijan to sell gas to Turkey, some of which Turkey then re-sold to Greece. First deliveries to Georgia and Turkey began in September 2006 and to Greece in November 2007.

In contemporary terms, however, the term "Southern Gas

Corridor" is generally understood to refer to the integrated system that connects Azerbaijan to Italy – and indeed to southern Europe in general – by means of three pipelines: the South Caucasus Pipeline Expansion (SCPX), the Trans Anatolian Pipeline (TANAP) across Turkey; and the Trans Adriatic Pipeline (TAP) from the Turkish border with Greece to Southern Italy, It also includes, in effect, the Interconnector Greece-Bulgaria pipeline (IGB).

This complex of pipelines was developed on an integrated basis under a set of agreements concluded in late 2013, under which final investment decisions were taken not only for the construction of the lines but also for development of the second phase of Azerbaijan's giant Shah Deniz gasfield, the project known as SD2. These FIDs were themselves made possible by the simultaneous signing of various sets of agreement covering the sale and purchase of the gas to be dispatched through the new system. Initially, the system was implemented so that SCPX would be able to carry an additional 16 bcm/y of SD2 gas as far as the Turkish border, where it links up with the TANAP pipeline, which also has an initial 16 bcm/y capacity. The TAP pipeline, which links up with TANAP at Kipoi on the Turkish-Greek border, has an initial10 bcm/y capacity. All of these lines, however, were built with the capability of carrying twice those volumes, as and when extra compression facilities were added to the system. Moreover, there is always some flexibility built into these systems. This is particularly important in the case of TAP, which is currently handling around 12 bcm/y.

Concerning capacities, there are some substantial differences. The SCP-X system also has to be able to carry around 6.6 bcm/y

as far as the border with Turkey, as per the original SCP deliveries dating back to 2006. But those 2006-era deliveries flow into the Turkey's existing gas distribution network operated by Turkey's BOTAS. The TANAP line, which is essentially owned and therefore operated by the Shah Deniz shareholders, is a completely separate venture, although Botas has a significant stake in it.

The initial concept was for these lines to carry 6 bcm/y of SD2 gas for delivery to Turkey and 10 bcm/y for delivery to EU customers beyond Turkey. In the event, the sales agreements underpinning the FIDs provided for Botas to purchase 5.7 bcm/y and for the EU buyers to take 10.9 bcm/y. The total cost for the combined pipeline and SD2 development, was originally estimated at around $45 bn but was actually delivered for around $35-36 bn, split almost evenly between the costs of developing the upstream element, production and processing facilities at Shah Deniz itself, and the three pipelines.

First deliveries were made to Turkey in June 2018 and to Italy in December 2020. But while actual deliveries to Turkey sometimes fell short of what was expected, those to Europe were greater, in particular in the wake of Russia's all-out invasion of Ukraine in February 2022. The invasion demonstrated the corridor's importance with the European Union and Azerbaijan signing a Memorandum of Understanding in July 2022 which spoke of doubling "the capacity of the Southern Gas Corridor to deliver at least 20 billion cubic metres to the EU annually by 2027" but without specifying the source of the gas that would ensure such an increase. At the time the MoU was signed, Azerbaijan was already delivering close to 12 bcm/y to the EU, with TAP's operators maximising the capabilities of the pipeline to enable

it to carry a bit more than its baseplate capacity. In practice it is clear that both parties to the MoU were – and still are – looking to Azerbaijan itself to provide all or at least the vast bulk of the gas that would go into delivering 20 bcm/y via an enlarged SGC. However, the pace of actual field development in Azerbaijan makes it unlikely that any doubling of actual throughput will be achieved by 2027, unless some other supplier becomes involved. In September 2023, France's Total announced its agreement to implement a second phase of development at its Absheron field, which would add four bcm a year of export-oriented output by around 2027. But that will probably take Azerbaijan to its near-term production limit, since the giant projects that could enable it eventually to produce much more, a third phase at Shah Deniz and the development of the deep gas reservoir under the existing Azeri-Chirag-Guneshli oilfield, will almost certainly take five or six years to implement.

2.4.5. Gas from Turkmenistan

In all probability, some other supplier will be needed if deliveries to the EU are to reach 20 bcm/y by 2027. The logical choice would be Turkmenistan, which has for decades pondered the idea of delivering its gas westwards via a Trans Caspian Pipeline, which could then serve as a feeder to the SGC.

As of May 2024, prospects for such a development look reasonably good as a result of two memoranda of understanding signed by Turkey. The first, signed with Turkmenistan in Antalya on 1 March 2024, envisages Turkmen gas being delivered first to Turkey and then on to the EU. The second, signed with Azerbaijan in Istanbul on 14 May, provides for the transit of Turkmen gas to

Turkey, in effect, by use of the SGC system through Azerbaijan and Georgia.

"With this exemplary cooperation Turkey and Azerbaijan will contribute significantly both to our own supply security and Europe's energy supply security," Turkish Energy Minister Alparslan Bayraktar said on 14 May. So far, neither the volumes envisaged nor the mechanism by which the gas would reach Azerbaijan from Turkmenistan have yet been disclosed. But the volumes would appear to be modest since Azerbaijan has stressed previously its willingness to grant Turkmenistan access to existing infrastructure rather than seeking to develop a brand-new multi-country set of pipelines. Under such circumstances Turkmen input of around 10-12 bcm/y would seem reasonable as and when the doubling of the SGC's capacity is completed. Initial deliveries would have to be significantly smaller. As for the mechanism for delivering the gas to China, the logical answer is a Trans-Caspian Pipeline, for which numerous proposals have been put forward over the last 25 years.

2.4.6. The Western Kazakhstan – Western China Oil Pipeline

The Western Kazakhstan – Western China Oil Pipeline is, in fact, a complex set of interlocking pipelines, extending for around 2,500 kms, which was developed in stages and which was expected to serve as a mainstay of Kazakh oil exports. However, exports through the line not only fell far short of what was expected but were – and are – simply dwarfed by comparison with those through the CPC line. The system was originally developed to carry 10 mt/y (about 200,000 b/d) with the ability to double capacity in

due course to 20 mt/y. Technically, it possessed the ability to carry crude from such major fields in western Kazakhstan as Tengiz and Kashagan, but distrust of Chinese pricing formulae means that the international companies developing those fields are not eager to dispatch their output eastwards.

Initially, as the system expanded to serve Chinese-operated fields in Central Kazakhstan, throughput rose, reaching a peak of 11.3 mt (226,000 b/d) in 2013. But as production in the Chinese-operated fields slumped, so too did throughput, falling to 1.3 mt (26,000 b/d) in 2018 and staying at much the same level thereafter. In 2023, the line carried just 1.2 mt (24,000 b/d) of Kazakh oil exports to China. As of early 2024, Kazakhstan believed that it could increase deliveriess to China by flowing oil from some of the smaller fields in western Kazakhstan into the system, eventually raising Kazakh throughput to around 6 or 7 mt (120,000-140,000 b/d).

Meanwhile, however, the line is far from idle. Rosneft has for several years used the 988-km Atasu-Alashankou section of the line to transport Russian oil to China and, under a 2022 agreement, is currently delivering around 200,000 b/d though the line.

2.4.7. The Central Asia China Gas Pipeline (also known as Trans Asia Gas Pipeline)

Between 2007 and 2009, Turkmenistan undertook to deliver to China no less than 40 bcm/y, under a set of agreements that provided for the China National Petroleum Corporation (CNPC) to build the pipeline to carry this gas to market. In the event, a 15 2,250 km, 15 bcm/y pipeline, known as Line A, was built

through Uzbekistan and Kazakhstan, and opened in 2009. This, in turn, was followed by the construction of two more lines, each of 20 bcm/y capacity and named B & C, laid alongside Line A. In November 2011, when Turkmenistan President Gurbanguly Berdimukhammedov paid a state visit to Beijing, this was followed by a further agreement to supply an additional 25 bcm/y. The presumption was that this would then be delivered to China by Line D, which would take a radically different route to the first three lines, since it would cross Tajikistan and Kyrgyzstan before reaching China. In the event, this line has still to be built.

Production in Turkmenistan was ramped up accordingly and by 2014 Turkmenistan was supplying China at a rate of 25 bcm/y. Since then, however, the ramp up has faded. Instead of supplying China with 40 bcm, the target for 2016, or 65 bcm, the target for 2020, Turkmenistan delivered around 33 bcm to China in 2023. This is somewhat curious for two reasons. The first is that Turkmenistan undoubtedly has the resource base that would enable it to produce enough to meet such a level of exports while still meeting domestic demand and the requirements for other export customers. The second is because it is CNPC that actually plays the biggest role of any foreign production company in Turkmenistan. CNPC has both a long-standing production sharing agreement at the Bagtyyarlyk field and also a series of service agreements for development of Galkynysh, the world's largest onshore gas field.

One possibility is that the Chinese Government, and CNPC as a state company, are quite content to limit development of Turkmenistan gas in order to put pressure on Russia to supply gas to China on terms that would be more favourable to Beijing than to

Moscow. If Russia does not acquiesce, then China can always turn back to Turkmenistan. Such a view would seem to indicate that while Turkmen gas sales to China, bolstered by lesser quantities from Kazakhstan and Uzbekistan, remain a key component of China's overall energy balance, they are at least equally important as leverage for China to secure even larger volumes of gas from Russia.

2.4.8. Tanker traffic

As noted previously, the BTC line has long carried some Kazakh oil to international markets. But the lack of large tankers in the Caspian has limited such traffic and remains a weak point in terms of the Middle Corridor's energy role. Azerbaijan, for example, has 23 tankers but the largest are only capable of carrying 12,000 tonnes and many can only carry around 7,000 tonnes. In contrast, the tankers that load Azerbaijan's export crude at the Turkish terminal at Ceyhan are commonly around 200,000 to 300,000 tonnes.

Kazakhstan would like to see a significant increase in deliveries due to the growing uncertainty about the future of its oil exports. It would therefore like to increase Kazakh use of the Baku-Tbilisi-Ceyhan (BTC) pipeline, which has considerable spare capacity since the primary source of its input, Azerbaijan's principal oilfield, Azeri-Chirag-Guneshli, is currently producing at little more than 60 percent of its peak production thirteen years ago.

Some progress has already been made. Kazakh input into BTC rose from a mere 5,000 b/d in 2022 to close to 28,000 b/d in 2023, with some 20,000 b/d coming from Tengiz. Kazakh reports

say that the agreement that ensured the increase of Tengiz crude through BTC also provided for it first to reach 1.5 mt (30,000 b/d) and then to climb to 5 mt (100,000 b/d).

The problem is that it will take time to lay a pipeline between the two countries–and such a project would be particularly difficult for two reasons. One is technical, in that it would either have to cross a deep trench between the two countries or else make a detour through Turkmenistan's sector of the sea. The other is political. While Kazakhstan and Azerbaijan (and Turkmenistan) hold that pipeline links between adjacent countries in the Caspian do not need to secure the approval of other Caspian states.

This means that oil from major fields in Kazakhstan, such as Tengiz, Karachaganak, and Kashagan, would have to be shipped by tanker across the Caspian. Fifteen years ago, Kazakhstan and Azerbaijan had big plans for such trade and set up the Kazakhstan Caspian Transportation System (KCTS). Kazakhstan then ordered – from Russian shipbuilders – six new tankers of 12,000 to 13,000 tons dwt to carry the crude to the BTC terminal at Sangachal. At that stage, however, the CPC was operating relatively smoothly and the tankers were used much less than expected and, indeed, three of them were then sold to Azerbaijan. If all six vessels were available to carry the crude, they would be able to deliver around 100,000 b/d into the BTC. Kazakh sources also say such trade will be aided by the construction of their new port of Kuryk, 43 miles south of Aktau, which means that for every ten trips between Aktau to Baku, tankers from Kuryk can make eleven.

If there is to be a new generation of tankers., these would

have to be built in the Caspian itself, since Russia is hardly likely to approve the import of tankers to the Caspian via Volga-Don canal system, the only way that ships can enter the Caspian from waters connected to the world ocean. Various proposals have been put forward, of which the most promising appears to be a plan by Kazakhstan's giant gas company, KazMunayGas, in partnership with Abu Dhabi's AD Ports Group, to establish a new shipyard that can, inter alia, build and repair not only tankers but also container vessels, bulk carriers and ferries. Announcing this in December 2023, KazMunayGas Chairman Magzum Mirzagaliyev said: "We have started working on the project of the establishment of a shipyard in the territory of Kazakhstan." Although there has been no indication so far concerning the size of any tankers to be built at the new facility, the key issue is to ensure that they are significantly larger than the tankers currently carrying Kazakh crude to Baku or to the Russian port of Makhachkala. In July 2023, Azerbaijan's representative of Kolin, a major Turkish construction and engineering group, spoke of the possibility of building a new fleet of tankers in Baku. The representative, Baris Altinparmak, said: "We have shipyards. We're building ships for Spain, Norway. We can build vessels for Kazakhstan to take oil from Aktau to Baku for input into BTC." It is understood that these vessels would be around 25,000 tons dwt each with the first ships available within three years of the project receiving the FID. However, such an FID does not appear to be imminent. A fleet of four such vessels would certainly enable a substantial flow of oil to enter BTC, possibly around 300,000 b/d. However, it would take three years and by then, depending on the outcome of the war in Ukraine, Kazakhstan might not be so worried about

shipments through Russia.

2.4.9. Rail: The North-South Transport Corridor

Rail also plays a role in energy traffic through the Middle Corridor. Trains loaded with oil products cover the whole network from China to the Black Sea, with a key role played by the railway from the port of Baku to the Georgian ports of Poti and Batumi. The railway network also provides a useful backup. Chevron, operator of the giant Tengiz field in western Kazakhstan, has from time to time experimented with dispatching Tengiz oil by rail as far as China.

Regional trade is not confined, of course, to East-West connections. Increased Russian interest in strengthening contacts with Iran, not least for military purposes, has contributed to a considerable strengthening of north-south links. New railways and highways have been built on both sides of the Caspian. However, these appear to have little connection to energy shipments.

Although there are some indications of increasing regional energy trade – essentially meaning trade that involves the landlocked countries of Central Asia and Azerbaijan – north-south energy trade beyond these confines remains much the same as ever, with some Turkmen gas flowing north to Russia and south to Iran. However, although Turkmenistan used to supply as much as 10 bcm/y to Iran, the small volumes of gas it sends there at present, amount to no more than 2 bcm/y. This is because Ashgabat has a swap deal with Tehran and Baku that means Azerbaijan is the ultimate recipient. There have been talks with Iran and Iraq concerning the possible delivery, either directly or

by more likely by similar swap deal with Iran, of some 10 bcm/y. But no contracts have yet been signed.

2.4.10. The Energy Transition: Renewables and Power Transmission Networks

There are ambitious plans both to develop renewable energy in many of the Caspian states and to transport it as electricity to Europe. Two main elements are involved. The first is a long-standing plan for an electricity cable under the Black Sea between Georgia and Romania; the second is the desire for cooperation on such a project both between Azerbaijan and Georgia and, more recently, between Azerbaijan, Kazakhstan and Uzbekistan. All four countries have considerable potential to develop renewables-based electricity while increased interconnectivity would enable them to envisage joint electricity exports to Europe.

There is a need to improve grids and storage in order to develop resilient energy systems with Azerbaijan and Uzbekistan specifically noting the need to strengthen their electricity grids. Integration of the various power networks on both sides of the Caspian should help significantly, helping to even out the vagaries of wind and sunshine throughout the region. The United Nations, via two of its agencies, the Economic and Social Commission for Asia (ESCAP) and the Economic Commission for Europe (UNECE), is currently running a programme to promote energy connectivity in Central Asia and the Caucasus, focussing, inter alia, on coordination and harmonisation of regulations and development of a regional master plan for power sector connectivity and coordination of cross-border transmission planning.

One example of such coordination came on 1 May 2024 when the economy and energy ministers of Kazakhstan, Uzbekistan and Azerbaijan signed in Tashkent what Azerbaijan's Economy Minister Mikayil Jabbarov termed "A Memorandum of Understanding on Merging the Energy Systems of Azerbaijan, Kazakhstan, and Uzbekistan." Their goal is to cooperate in the development of green energy and then deliver electricity to the European Union.

The three countries start with a strong resource base – and with existing programmes for harnessing green energy sources.

Uzbekistan stands to gain the most from energy cooperation since it is doubly-landlocked so that any energy exports would have to cross Kazakhstan before they even reached the Caspian. Meanwhile, it has embarked on a programme to increase its renewables out by around 2GW a year, so that in 2030 it aims to be producing around 12 GW of a total 29.2 GW from renewables.

Kazakhstan has a massive project under way just inland from the Caspian where it has set aside no less than 270,000 square kms for solar and wind as part of its Hyrasia One project. The initial concept was the generation of no less than 40 GW farms of wind and solar power which would then be used to produce green hydrogen, with Europe as the principal intended market. However, it is unclear whether such an intense focus on hydrogen will become actual policy, and the May MoU could well mean the focus is now shifting to more conventional ways of exporting green energy, namely in the form of electricity. Kazakhstan's immediate target is to have some 25.6 GW of installed capacity in 2025, of which around a quarter would come from renewables, including 4.3 GW from wind and 2.5 GW from hydropower.

Azerbaijan is naturally focussing on renewables in light of its chairmanship of COP 29. Like Uzbekistan, it, too, is working to ensure than 30% of its electricity comes from renewables by 2030. Moreover, just as the Caspian has been the prime source of the country's fossil fuel wealth so too, does it have the potential to become a major source for green energy production with the Ministry of Energy planning, as the UNECE has reported, "to create a total of 1,500 MW of new generation capacities, including 440 MW in 2023, 460 MW in 2023–2025, and 600 MW in 2026–2030, at the expense of renewables." The UNECE report added: "The real gamechanger, however, could be Azerbaijan's offshore wind potential of 157,000 MW. On 3 June 2022, the Ministry of Energy of the Republic of Azerbaijan, the World Bank, and the International Finance Corporation (IFC) published a new roadmap indicating the possibility to install 7GW of offshore wind power by 2040".

Azerbaijan has already engaged with the UAE's Masdar and Saudi Arabia's ACWA for cooperation on a number of projects whilst BP, the operator of most of the country's conventional oil and gas fields, is currently implementing the Sunrise project, which will bring green electricity from Azerbaijan's highlands to replace the gas-fuelled electricity in use at the giant Sangachal oil and gas processing facility. Overall, these agreements, if implemented in full, would produce around 10,000 mW from renewable sources.

Two crucial elements have yet to be resolved in order to ensure the success of such cooperation. One is the commercial factor. Delivering electricity over long distances is a complex – and expensive – affair. It would certainly help the European Union, both in terms of absolute supply and general resilience, to secure

supplies from Caspian producers, but at what cost? In particular, would European purchasers be prepared to work out some kind of long-term purchasing arrangements to help underpin the initial investments in developing this new energy corridor? At the Tashkent meeting the ministers said they were working to develop a business plan for their proposed combined electricity exports.

2.4.11. The Caspian and Black Sea Cable Projects

The other element is technical. In physical terms, the keys to unlocking the export potential of such cooperation are subsea cables across the Caspian and the Black Seas. The Kazakh Minister of Energy, Almasadam Satkaliyev, disclosed in Tashkent that the three countries had prepared a draft technical specification for a high-voltage cable under the Caspian. Further details have not yet been disclosed. More advanced are plans for the 1,195-km Black Sea Energy submarine cable. This would be a high voltage direct current (HVDC) cable with a voltage level of 500 kV and a capacity of 1,000-1,500 MW. On 17 December 2022, the EU signed in Bucharest an MoU with Romania, Hungary, Georgia and Azerbaijan on development of the cable while it has also helped fund a feasibility study for the project and is expected to provide much of the project's costs, initially estimated at around €2.3 bn. European Commission President Ursula von der Leyen, said at the Bucharest MoU signing ceremony that "the project holds a lot of promises. Now it is up to us to deliver on security of energy supply and on decarbonising our economies."

The study was expected to be completed by the end of 2023 but Azerbaijani President Ilham Aliyev of Azerbaijan said in

May 2024 it would be finished in a few months. "Azerbaijan is working actively on a project to lay an electricity cable [under the Black Sea] with partner countries, including Bulgaria," Aliyev said after meeting with Bulgarian President Rumen Radev in Baku on 8 May 2024. Aliyev then added: "European countries will need additional energy, and we are working on that. As you know, the green energy cable from Caspian to the Black Sea and then further down to Europe is now in the last phase of feasibility study. As soon as the feasibility study is ready, we will start, and we are already discussing on a practical track the opportunities of connecting this cable with Central Asia. Actually, what we are talking now is that we're expanding that project. Because it started as a Black Sea cable from the Georgian Black Sea to the Romanian Black Sea coast. We expanded it to the Caspian Sea, and now we're expanding it further down to the Eastern Caspian, to Kazakhstan".

The Black Sea cable would originate in Georgia, which means that it would also serve as a mechanism for Georgia, which is rich in hydropower, to deliver surplus electricity to Europe. There are political complications, however, since Georgia's biggest hydropower facility, the Enguri Dam complex, is de facto controlled jointly by the Georgian Government and by the Russian-backed breakaway authorities in Abkhazia. While the dam itself is in terrain controlled by the Georgian Government, the actual power station for the 1,320 mW facility, is on the Abkhaz side of the contact line.

Likewise, the fact that the planned cable is not only longer than any submarine cable currently in existence but might also become

a target as a result of tension in the Black Sea poses a problem. As a German study noted: "A bigger concern is the physical vulnerability of such a project. The cable would run less than 150 km from the southernmost tip of Crimea, currently occupied by Russian forces, and thus within easy reach of the Russian navy, also from Novorossiysk, in sovereign Russian territory. The sabotage of Nord Stream in September 2022 has underscored that multibillion-dollar infrastructure projects are not off-limits."

2.4.12. Regional Connections: China

While the prospect of earning hard cash from exporting renewable energy to Europe provides an obvious incentive for green energy development, the advantages of developing interconnections within Central Asia itself and of developing exports to China should also be considered. This is particularly important in the case of Turkmenistan, which possesses considerable potential for the development of both wind and solar power and, crucially, which would benefit enormously from the use of renewables to help abate one of the highest levels of methane emissions on the planet. Whether Turkmenistan will feel ready to cooperate in major multilateral initiatives, such as the delivery of green energy to Europe, has yet to be determined. Both its past record with fossil fuels and more recent developments in electricity would, however, seem to indicate that it will look eastwards. Turkmenistan currently has an agreement with Kyrgyzstan under which it is supplying some 1.7 billion kWh throughout 2024 and in May 2025 held negotiations on continuing this agreement in 2025.

The question of how the landlocked countries of Central Asia

might contribute to Chinese energy requirements was analysed in a perceptive study by the China Institute of International Studies in 2014. The study, which focussed on what it considered would be a "very long process" to replace exhaustible energy resources with renewables, argued that "Central Asia is one of the world's best places for developing wind energy," whilst also assessing its solar and hydro potential.

The study said that "Kazakhstan has the world's richest per capita wind resources. Its wind electricity generation potential reaches 1.8 trillion KWH, 20 times equivalent to its current national electricity consumption." Consequently, "developing wind energy could be the first choice in all development investment options in Kazakhstan thanks to its most mature investment environment."

On solar, the study said: "Thanks to its vast desert, Central Asia is fairly suitable for building large-scale solar power plants." It added: "Turkmenistan's Karakum Desert covers an area of 350,000 square kilometers. As the world's fourth-largest desert, it has 800 watts per square meter of solar radiation and 2,500-3,000 hours sunshine per year. Its total amount of radiation calculated is between 72×108 joules per square meter and 86.4 × 108 joules per square meter, higher than Qinghai-Tibetan Plateau, which has China's most abundant solar power resources (70×108 joules per square meter). Other regions in Central Asia have a similar situation. Uzbekistan is known as the "sunny state" thanks to its Kyzyl Kum Desert, where solar radiation energy is equivalent to 50.973 billion tons of oil, 10 times Central Asia's proven oil reserves".

The study further noted that these solar resources also meant that Central Asia was well-positioned to produce biomass. It also said that the Amu Darya and other rivers originating in the Pamir

mountains "make Tajikistan the world leader in terms of per capita hydropower resources" while the Syr Darya and other rivers originating in the Tien Shan glaciers ensure that Kyrgyzstan has the potential to generate 18.5 million kilowatts of hydro-electricity.

While the study said that Tajikistan and Kyrgyzstan were only exploiting around a tenth of their hydropower reserves, it cautioned against China getting too involved since "China should bear in mind not to get itself involved into water resource disputes involving the five Central Asian countries." But it did add: "In terms of hydropower, parts of the Murghab River in Tajikistan and the upper reaches of the River Naryn in Kyrgyzstan are close to Chinese border areas. If cascade hydropower stations are established on these two rivers, it would take only a short distance to transmit electricity to China's Kashi and Aksu prefectures."

2.5. CONCLUSION

The role that pipelines have played in establishing the Middle Corridor as a set of giant arteries that carry oil and gas from Central Asia and the Caucasus to the rest of the world is truly massive. The question now is whether this will be replicated with the development of green energy in and around the Caspian and its export in the form of electricity or even hydrogen. As of mid-2024, it is too early to judge the outcomes of the major initiatives to develop renewable energy resources in Central Asa and the Caucasus and the projects required to carry their output to Europe via the proposed Caspian and Black Sea high-voltage cables. There

is a pressing need both for internal as well as international project coordination, for the alignment of regulatory practices and for public and private sector coordination to ensure the projects are both commercial and sustainable.

However, given Azerbaijan's determination to push ahead with a renewables-based energy strategy, its forthcoming presidency of COP 29 and European backing for the Black Sea submarine cable, it is reasonable to argue that significant progress can be expected in 2025 on integration of renewable energy between Azerbaijan, Georgia and the EU member states in and around the Black Sea. Integrating Kazakhstan and Uzbekistan in such a system may take a little longer.

CHAPTER 3

The middle corridor as an energy corridor prospects and challenges for the european union

3.1. THE MIDDLE CORRIDOR: GENERAL GEO-ECONOMIC IMPLICATIONS OF A RESOURCE-RICH ROUTE

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For centuries, bridging the gap between China and Europe has been the cornerstone of economic interests and cultural exchanges, dynamics that have for long played a decisive role in shaping our societies. Connecting the Far East with the Old West,

the Silk Road became the paramount of economic prosperity, and the South Caucasus and Central Asia, as the middle region between China and Europe, have always played a key role in this important route.

During the 19th and 20th centuries, the "Silk Road Region" became the playfield of the "Great Game", which refers to the geopolitical rivalry and strategic competition between the British and the Russian Empire for supremacy and influence in Central Asia. However, when the maritime trade became the most efficient way to connect Asia with Europe, the trade activity through the Silk Road decreased gradually before being finally virtually frozen during the Cold War era. In fact, it was not until 2013 when Xi Jing Ping announced at Nazarbayev University in Kazakhstan its roadmap for the Belt and Road Initiative, with the aim to revive the lost trade avenues of the Silk Road. Since then, the project has advanced, and in 2020 the first train using the Middle Corridor trade route arrived from China to Turkey (Chang, 2023), connecting again the Far East with the Old West with a direct inland trade route.

This region, "containing centuries-old Eurasian trade routes and abundance of resources" (Geri & Hajiev) is now the ground where different great world powers interact, sometimes in cooperation and sometimes in conflict. The Great Game seems to have revived during the last decade in a much lower profile mode, focused on the economic sphere, with new players and interests.

Amidst recent geopolitical and evolving global dynamics, the Middle Corridor has gained renewed attention as a potential route to connect Asia and Europe. Offering a secure and shortest alternative to the Northern Route affected by sanctions and the worrisome maritime routes around the Malacca and the Bab-

el Mandeb straits, the Middle Corridor stands now as a viable trade avenue between continents. In fact, the Silk Road region was not a priority for any external power until the outbreak of the war in Ukraine and the tensions in Taiwan. Then, almost simultaneously, the threat of using land routes through Russia with a reorientation towards the Middle Corridor increased and the security of sea routes in the Asia-Pacific region decreased. (Abykayev & Gusseinov, 2023)

Together with trade and goods, the big powers have also turned their attention towards the potential of the Middle Corridor as an energy corridor. Thus, the rich hydrocarbon resources of the Caspian became a desirable option for China, which tried to diversify constantly-growing gas demands and maintain its security of supply, and for the European Union, which is still looking for reliable energy partnerships after decoupling from a "decades-long dependency" on Russian energy sources. (Imamova, 2023)

From the Chinese side, Central Asia is regarded not only as the gateway to European markets but also as an important source of hydrocarbons and raw materials exports (Saari, 2019). During the early 2000s, the Chinese approach to Central Asia and the Silk Road region was dominated by the energy factor. (Siddi & Kaczmarski, 2021) Seeking to diversify energy imports (primarily, natural gas) through secure inland transport routes, China began the construction of new oil and gas pipelines, together with investments in the upstream hydrocarbon sector. Thus, the investment in the energy sector was of such magnitude that by the end of the 2000s, China challenged the Russian dominance over the transport of Central Asia's natural resources. (Siddi & Kaczmarski, 2021)

After the 2013 Belt and Road declared objective to decrease dependence on the Straits of Malacca[46] for its energy needs (Cekuta, 2023), and conscious of the increasing internal demand for fossil fuels, the influence of China has increasingly grown in the Eastern side of the Caspian Basin, becoming an important trade partner for countries like Kazakhstan and Turkmenistan, from which imports 55% and 75% of their total natural gas exports respectively. (Sánchez Tapia , 2023)

In this sense, China is growing a considerable influence over most Central Asian countries, which could in turn determine key aspects of their export and energy policy in favour of Chinese interests. (Vasić, Pekić, & Šimić, 2023) (Sánchez Tapia , 2023)

The European Union, on its side, sees similar advantages to those of China in accessing the energy resources of the Caspian basin. In fact, the Middle Corridor project is closely aligned with the EU's connectivity strategy with Central Asia and the South Caucasus. While the REPowerEU and the EU's Strategy for an external energy engagement in a changing world guide the energy decoupling from Russia, the Caucasus and Central Asia are becoming strategically important in the attempt to diversify Europe's energy supply.

However, the European Union has historically failed to access the energy resources from Central Asia. While the Southern Gas Corridor has consolidated the position of Azerbaijan as a reliable source of gas for the EU, initial plans (and others disregarded like the Nabucco pipeline) failed to tap the gas resources of

[46] Against the backdrop of the escalating situation around Taiwan, China faces the potential threat of losing 60 per cent of its exports and about 70 per cent of its energy supplies across the South China Sea (Paszak, 2021). It is therefore important for it to diversify its transport routes to reduce its dependence on maritime supplies. (Abykayev & Gusseinov, 2023)

major Caspian producers like Iran and Turkmenistan. (Siddi & Kaczmarski, 2021)

A third major power exerting its interests in the region is the Russian Federation. While Chinese, and to a lesser extent European economic penetration in the region has been consolidated during the last decade, Moscow has lost its economic grip in the region and seems to be willing to tolerate it as long as economic cooperation does not challenge its position as the dominant security actor in the region. (Siddi & Kaczmarski, 2021)

Furthermore, from a Russian geoeconomic perspective, the Chinese acquisition of Turkmen gas ensured that potential EU imports of natural gas from the Eastern side of the Caspian would remain limited, thereby presenting no threat to the Russian dominance of gas exports to Europe. (Siddi & Kaczmarski, 2021)

As a conclusion, Russia and China have exerted a significant historical influence over Central Asia and the Caucasus and continue to do so. At the same time, the European Union could emerge as an important competitor, as a new route linking the region with Europe offers mutual benefits for energy diversification. However, the European Commission has also stated that the EU's involvement in the project does not try to monopolize the Middle Corridor and accepts the inclusive collaboration of China and Russia.

3.2. UNDERSTANDING THE ENERGY COUNTRY PROFILES IN THE REGION: AZERBAIJAN, KAZAKHSTAN, UZBEKISTAN, TURKMENISTAN

The region holds an immense energy potential, as their

countries are rich in energy resources that have not yet been depleted. However, it is important to understand the energy profile of the different countries encompassing the Middle Corridor project as a contextual framework to understand the "common but differentiated" engagement of the European Union with the different countries.

Azerbaijan is the only Caspian gas provider of the EU, playing a crucial role in the European Union's energy diversification plans. The discovery of the Shah Deniz off-shore gas reserves in 1999 and the development of a series of rail and pipeline connection projects through Georgia and Turkiye lowered the European ambitions to access further Central Asian resources and transformed Azerbaijan into an energy hub between the Caspian Region and the European Union.

The country has three oil pipelines from which Caspian oil can flow westwards: the Baku-Novorrossiysk, with a capacity of 100kb/d, the Baku-Supsa (Western Export Pipeline) with 150 kb/d, and the most important, the Baku-Tiblisi-Ceyhan (BTC) Pipeline, with a capacity of 1.2 mb/d.[47] (Sánchez Tapia , 2023)

When it comes to gas, Azerbaijan is the only regional gas provider to the EU, using the major energy infrastructure known as the Southern Gas Corridor. This pipeline, which transports gas from Azerbaijan to Italy encompasses several pipelines including the South Caucasus Pipeline Expansion (SCPX) with a capacity of 24 bcm/y[48], the Trans-Anatolian Pipeline (TANAP)[49], with a capacity of 16 bcm/y and the Trans-Adriatic Pipeline (TAP)

[47] Additionally, since 2008, Azerbaijan has been transporting by rail small quantities of crude oil from Kazakhstan and Turkmenistan, as well as from the Azeri-Chirag-Gunesli field, to the Georgian port of Batumi.
[48] Expandable to 31 bcm.
[49] Expandable to 31 bcm.

transporting 10 bcm[50] from Greece to the Lecce province in Italy. (Sánchez Tapia , 2023)

The Southern Gas corridor is an important infrastructure for the European Union's diversification efforts. In 2021, Azerbaijan delivered 8.1 bcm of gas to Europe, and 11.4 bcm in 2022, representing 2.4% and 3.4% of total EU gas imports respectively. (European Commission, Diversification of gas supply sources and routes, 2023). Furthermore, in July 2022, the European Union and Azerbaijan signed a new Memorandum of Understanding on a Strategic Partnership in the field of Energy to double Azeri gas exports towards Europe before 2027, reaching an expected 20bcm/y level. (European Commission, 2022)

Thus, given Azerbaijan´s extensive hydrocarbon exporting infrastructure and its strategic geographical location, the country holds a central role in the relations between the European Union and the Middle Corridor region. As long as Russian routes are closed, Azerbaijan will stand as the necessary link between the region and Europe.

In energy terms, Kazakhstan is a major oil producer country that works closely with international oil companies, although its exports also encompass natural gas, petrochemicals[51], and mine natural resources such as coal, uranium and other minerals. (Pirani, 2019).

Despite being a key energy partner for the European Union,[52] Kazakhstan lacks direct connections with Europe and most of its oil exports (80% of the total) flow westwards through the

[50] Expandable to 20 bcm.
[51] Polypropylene and polyethylene among others. (Pirani, 2019)
[52] Kazakhstan provides around 6% of total EU oil imports and 21% of total uranium imports. (Abdrahmanov & Zhumagulova, 2023)

Caspian Pipeline Consortium (CPC), co-owned with Russia, until the Russian terminal in Novorossiysk before being loaded into oil tankers. (Sánchez Tapia , 2023) (Tskhay, Why Central Asia will not be the answer to Europe's energy needs, 2023). The necessity to depend on Russian transit for its exports has been demonstrated to be a chronic inconvenience for Kazakhstan, facing several systematic problems and disruptions caused by Russian political interests[53], which results in a multimillion-dollar cost for the Kazakhstani economy.

(Abdrahmanov & Zhumagulova, 2023). Furthermore, the Novorossiysk port facilities have been precautionarily closed given its proximity to the warzone in Ukraine, leaving Kazakhstan with fewer options for exporting its oil.

In this scenario, the development of the Middle Corridor (TITR) stands as a key infrastructure project for Kazakhstan, providing broader access to global markets for oil (leveraging Azerbaijan's infrastructure) and other commodities while diversifying its export routes, mitigating the risks from disruptions or delays on the Russian route.

Thus, Tokayev stated in a recent state-of-the-nation address the need for a "comprehensive plan for maritime infrastructure development" (Official website of the President of the Republic, 2023) to increase the traffic volume along the Trans-Caspian route. In this sense, Kazakhstan would like to boost the capacity of the TITR to 15 million tons of oil by 2025. While the plan might sound ambitious, it still remains arguably insufficient when

[53] As an illustrative example: A Russian court ordered in July 2022 the suspension of the Caspian Pipeline Consortium just two days after Kazakhstan's President Kassym-Jomart Tokayev assured the European Council that Kazakhstan was ready to «utilize the potential of its hydrocarbons to stabilize European and global energy markets,» although the CPC suspension was lifted shortly after, the action delivered a powerful political message.

compared with the current annual capacity of 67 million tons of the Caspian Pipeline Consortium. (Interfax, 2023)

Regarding natural gas, Kazakhstani exports to the European Union remain unlikely unless new discoveries boost new production, as the expected rise in domestic consumption will lead to negligible spare capacity for export activity.

While the future fitting of Kazahstani hydrogen into the Middle Corridor transport capacity is still unclear (see section 4.3), efforts to further develop the Middle Corridor route will not only facilitate the export of oil to European countries and global markets but of chemicals and non-energy and energy minerals as well.

Uzbekistan's commercial relations with the European Union are marginal, represented by a mere 3% of total Uzbek exports reaching the EU in 2021, while its imports from the European market constituted 13% of the country's total imports.

Similar to Kazakhstan, prospects for the European Union to import gas from Uzbekistan remain unlikely, given the lack of necessary transport infrastructure and the negligible spare capacity of Uzbek gas production. Although the country has produced around 55 bcm/y since 2010, it domestically consumes more than three-quarters of the total production (Pirani, 2019) and the remaining export-ready gas goes to China, using up to 10bcm/y of the Line C of the Central Asia-China pipeline corridor. (Pirani, 2019)

The Uzbek internal demand for gas could rise even more in the coming years, as the country develops its petrochemical capacity using gas as a feedstock. (Pirani, 2019) While gas is difficult to export in the absence of a pipeline connection, petrochemical

products could be exported along the Middle Corridor route. Thus, products like polypropylene, polyethene, ethylene, propane-butane and fertiliser could be sent by train cargo towards Europe, China or Russia, easing the export difficulties of a double-landlocked country.

Another similarity with Kazakhstan is the presence of large reserves of important minerals such as silver, titanium, lithium, uranium and copper, which makes the country "a vital player in the global critical raw material landscape" (European Commission, 2023)

Turkmenistan is the biggest gas producer country and holds the largest gas reserves in the Middle Corridor region. (Pirani, 2019). The country has established itself as a major gas supplier to China while being hesitant to cooperate with international oil companies and foreign investors.

The necessary investments in Turkmenistan's upstream energy sectors and several legal and political difficulties behind the Trans-Caspian pipeline project frustrated the EU's plans to access Turkmen gas, while China was fast to make all necessary investments, eventually creating a division into Caspian export resources, where Azerbaijani gas flowed westwards and Turkmen, Uzbek and Kazakh gas flowed eastwards.

Following a similar model as the initial EU-USSR gas relations, Chinese institutions financed the construction of a 55bcm/year triple pipeline infrastructure called the Central Asia–China gas pipeline, with the expectation to be repaid through discounted gas exports from Turkmenistan. The pipeline, which is now used at near full capacity, is expected to include an additional fourth line (via Kyrgyzstan and Tajikistan) which could bring up the total

transport capacity to 85bcm/y.

In September 2013, an agreement between Chinese and Turkmen leaders raised Turkmen gas exports to China up to 65 bcm/y and, in return, China committed to financing the development of the second stage of the Galkynysh and the fourth pipeline (line D) of the Central Asia-China pipeline. This could in turn provide Turkmen gas to the transit countries Tajikistan and Kyrgyzstan. (Pirani, 2019)

Although most of its current natural gas production is exported to China, it is believed that Turkmenistan can have spare capacity for exporting to other markets (Hedlund, 2024)

For example, there have been conversations for a five-year swap of 10bcm/y deal with Iraq, where Turkmen gas would be sent to Iran and, in turn, the same volume would be exported from Iran to Iraq. (Hedlund, 2024)

Another long-time discussed option is to deliver gas to Pakistan and India through the TAPI project, although the economic prospect of the project makes them impractical, given that high transport costs of pumping the gas through such long distances make the gas unable to be price-competitive with other supply sources.

Turkmen gas could also be exported to Europe. In the swapping gas agreement between Turkmenistan, Iran and Azerbaijan in 2021, two bcm of Turkmen gas were delivered to Iran, which in exchange provided the equivalent volume to Azerbaijan. Following this swapping model, Turkmen gas could indirectly reach European markets through the Southern Corridor Gas pipeline. (Tskhay, 2023)

In addition, leveraging the EU's desperate energy quest momentum, Turkmenistan tried to step in as a potential new long-term supplier, marking a significant shift from the country's recent export policy, announcing that Turkmenistan was ready to diversify its energy flows, and "continue is cooperation with partners in the imple-mentation of the Trans-Caspian Pipeline project" (Hedlund, 2024)

Furthermore, under the current gas infrastructure, if additional volumes of Turkmen gas were available, Russia would be in a better position to obtain them in front of the European Union. (Siddi & Kaczmarski, 2021)

3.3. THE EUROPEAN UNION STRATEGY FOR THE SOUTH CAUCASUS AND CENTRAL ASIA: STRENGTHENING ENERGY CONNECTIVITY

The strategic geographical location of the Middle Corridor region, at the crossroads of Europe and Asia, and its relevant share in EU energy imports have brought the EU to regard Central Asian and South Caucasus countries as increasingly important partners for the block.

In 2019, the European Union stated on its Strategy for Central Asia Document stated the intention to increase the role that Central Asia played in contributing to its energy supply security, and the diversification of "suppliers, sources and routes of the EU" [54] in exchange for regulatory, technological and financial assistance on renewable energy projects and electricity distribution

[54] Including assessing the possibility to build the Trans-Caspian pipeline.

infraestructures. (European Commission, 2019)

With the recent establishment of a new energy partnership with Azerbaijan and the celebrations of the EU-Central Asia summmits, Brussels is emphasizing its increasing commitment to establish deeper economic relations with the region while diversifying its dependence on strategic resources such as hydrocarbons and minerals away from Russia.

The European Union's approach to the Middle Corridor region is based on establishing mutually-beneficial sustainable connectivity partnerships through the Global Gateway, with a primary emphasis on transportation, digital connections, and notably, energy. (European Commission, 2019)

Understanding the different implications of the connectivity concept into the energy dimension is key to have a broader view of the European approach towards the region and the Middle Corridor itself.

As the High Representative Josep Borrell declared in 2022, "connectivity is a combination of politics and engineering. It is about overcoming borders, which are scars of history, by building hard and soft infrastructure". (HR/VP Josep Borrell, Central Asia's growing importance globally and for the EU, 2022) As an energy corridor, the Middle Corridor would mean building the veins through which pass flows of hydrocarbons and natural resources such as critical raw materials.

Furthermore, the connectivity concept is directly linked with EU's dogma of Strategic Autonomy, where the declared intention is to engage with several international partners without generating new dependencies out of this new partnerships.

As a consequence, the heterogeneous energy profiles of Central Asian and South Caucasus countries have moved the EU towards a common but differentiated energy cooperation strategy with every country along the Middle Corridor route. It is common because is all based on the "connectivity" objective, but it is also differentiated because it features partnerships on different topics and resources.

Despite the initial declaration of intentions described in the South Caucasus and Central Asia Strategies, the political ambitions to re-energise diplomatic ties and energy cooperation with the Caspian countries in Central Asia (Dutta, 2019) were met with unfavourable technical and financial prospects, which ultimately made the former intentions unlikely. While energy diversification was considered important, desfavourable economic reasons and the preference of the European institutions towards the energy transition faded away any serious efforts on energy cooperation on this matter.

However, the Russian invasión of Ukraine in 2022 and the consequent efforts to decouple from Russian energy sources brought again the energy diversification as a top priority for the euro-bureaucrats. The European Union, cornered after a decades-long dependence on Russian gas, started to move in a frenetic search to find alternative gas suppliers, diversificating and redrawing the map of its global energy imports.

Although the South Caucasus and Central Asia were not regions of strategic importance for the EU, in this new paradigm, were every bcm of gas and oil barrel matters in the urgent quest for hydrocarbons, the engagement with a resource-rich and geographically near region as the Caucasus-Caspian region

became essential for the EU. (Sánchez Tapia , 2023) (Vasić, Pekić, & Šimić, 2023) Therefore, it would be logical to see how the EU is now trying to establish strong diplomatic relations with a region that is rich in energy resources, and at the same time geopolitically stable and out of direct armed conflict zones. (Vasić, Pekić, & Šimić, 2023)

In this new reality is where the Middle Corridor is inserted right now. According to the European perspective, the implementation of the Middle Corridor as an energy corridor would be mutually beneficial for the region aswell, contributing positively to deepen economic relations (Basaran, 2022) and becoming the backbone of a new economic area comprising the whole Caucasus-Caspian region. (Geri & Hajiev, 2023) Furthermore, as South-Caucasus and Central Asian countries try to diversify its economic (sometimes monopsonistic) relations, the EU is seen as a possible partner.

In this sense, the integration into the Middle Corridor connectivity network is increasingly regarded by regional nations as a desirable foreign policy of economic diversification, providing access to global markets and decreasing dependence on single-option transit routes. For example, Astana has been actively transitioning towards a possible Trans-Caspian route to facilitate the export of its strategic resources-oil, grain, and uranium, among others - to global markets. (Mammadov, 2023) Therefore, from a regional perspective, the Middle Corridor represents an opportunity to connect resource-rich land-locked countries in Central Asia and the Caucasus to the global energy markets while reducing its transport dependency and energy-import security on Russia and China. As a consequences, other Central Asian countries like Uzbekistan, Kyrgyztan and Turkmenistan have

mirrored Kazakhstan initiative and are now planning to build their own railway connections to the Middle Corridor route. (Chang, 2023)

3.4. CHALLENGES AND PROSPECTS FOR THE EU'S ENERGY AMBITIONS IN THE MIDDLE CORRIDOR

The next section will analize the different challenges and prospects for opportunities that the European Union might encounter on its energy engagement in the South-Caucasus and Central Asian region. The section is broken down into different thematic subsections to provide a more detailed understanding of the overall dimension of energy relations in the region.

3.4.1. The Middle Corridor's centrifugal energy competition

As it has been previously analized, the Middle Corridor region has been of a great interest for foreign powers since the dissolution of the USSR, given its geostrategic position and its richness in natural resources. (Vasić, Pekić, & Šimić, 2023) In this geopolitical context, the European Union must balance its renovated energy ambitions in Central Asia with already established geopolitical players as China and, to a lesser extent, Russia.

However, analizing the Middle Corridor as an energy corridor can be misleading, as the conventional energy dynamics are different from other goods and comodities that could be transported along the centuries-old silk road route. The logic behind the Middle

Corridor is that it offers a mutually beneficial route for China, the European Union, and all countries participating alongside the route, from which goods and commodities can be sent westwards and eastwards in an indistinctive manner, fostering trade relations and economic development.

Conversely, when it comes to energy, the dynamics are different because energy routes alongside the Middle Corridor are not expected to be bi-directional (from East to West and vice versa) like it happens with other goods, but rather centrifugal (from the Caspian epicentre to the European, Russian or Chinese edges). Therefore, while the Middle Corridor offers a sum-sum game for goods trade between the EU and China, if we analize it as an energy corridor, it creates a zero-sum game where foreign powers compete for the natural resources of the Caspian.

This situation can create a competitive-cooperative tension between Chinese and European interests around the Middle Corridor investments. While investments on transport infrastructure may seem to be mutually beneficial for all parts involved, as it fosters multilateral trade, investments on natural resources extraction and transport can lead to conflict when two or more foreign actors are interested in securing such resource.

For instance, the division of gas flow across the Caspian currently maintains a balanced status quo, as neither China nor Europe can access gas resources from the opposite shore without a dedicated pipeline. However, a hypothetical Trans-Caspian pipeline, with a sufficient bcm capacity to transform the balanced status quo of existing export routes and policies, could open the door to enhanced centrifugal competition.

In the case of oil, a new route with significant capacity to

connect Kazakh, Uzbek and/or Turkmen oil to the BTC pipeline (by-passing de facto the Russian co-owned Caspian Pipeline Consortium on its way westwards towards Europe) could lead to similar competition between the EU and Russia.

Therefore, we can state that, as long as the two shores of the Caspian are not connected for the transport of hydrocarbons, the centrifugal competition between the three great powers will maintain a similar status quo to the current one.

However, beyond the exploiting interest of the foreign powers involved, it is crucial to consider the aspirations of the Caspian region countries to establish its own energy export policies, based on equitable partnerships and mutually beneficial agreements between energy producer and energy importer countries of the Middle Corridor.

3.4.2. Hydrocarbons

There are several challenges and opportunities to export more hydrocarbons from the Caspian region to the European Union.

When it comes to natural gas, it has already been discussed how the current European quest for gas diversification has brought a renovated interest of the European Union into the Azeri gas resources, and the possibility of reviving the Trans-Caspian Pipeline is an idea that start to resonate again in the distant background.

In fact, the Trans-Caspian pipeline represents the most cost-effective (and, currently, the only economically viable) means of moving natural gas across the Caspian Sea. (Coffey, 2020) However, there are several dimensions that still challenge the

possibility of building the pipeline, despite Europe's urgent needs to diversify its gas supplies and the apparent Turkmen will to direct part of it spare capacity westwards across the Caspian.

In the economic sphere, the TCP is an ambitious and costly project from which the long-term profitability is still questionable. On top of that, European financial institutions no longer offer support for fossil fuel projects and, although Azerbaijan announced its willingness to accept the additional Turkmen gas flow through the Southern Gas Corridor, it said it will not contribute to the financing of the project.

For this reason, the US company Trans Caspian Ressources Inc suggested the construction of a much smaller Caspian Interconnector. This 42 miles pipeline, connecting Turkmen and Azerbaijani off-shore gas fields, could enable the export of 10 to 12 bcm/y within 24 construction months, (TCRI Trans Caspian Resources Inc, 2020) being strategically interesting for the European Union, as it balances fast implementation times with politically affordable long-term import commitments.

However, Turkmenistan rejects any alternative to the initial expandable shore-to-shore Trans-Caspian Pipeline linking with its onshore pipeline system, as the country tries to maximize its energy-import security by supplying European markets with significant volu-mes and long-term contracts (Bryza, Cutler, & Vashakmadze, 2020).

In the geopolitical sphere, the Convention of the Status of the Caspian Sea, still unratified by Iran, can become a possible obstacle for the development of the project, as legal environmental concerns could be strategically used by Russia or Iran to impede the construction of the pipeline. In this aspect, a Caspian Interconnector

connecting the Banka Livanova gas field in Turkmenistan and the Azeri Chirag Gunesgli gas field could encountier fewer possible objections from Russia or Iran. (Coffey, 2020)

Finally, a decisive element to consider before considering any future gas project towards the EU is the existence of spare capacity in the producing countries along the Eastern Caspian shore.

In the case of Azerbaijan, it is still unclear wether the country will be able to double its gas exports to Europe by 2027. In one hand, it is estimated that Azerbaijan could provide a maximum of 15-16 bcm/y, this is 5 bcm less than the agreed in first place with the European Commission. (Muradov, 2022) In the other hand, the reluctance of the European Commission to commit for long-term contracts hinders the willingness of international energy companies to further invest in expanding the extraction. (Sampson, 2024)

In this situation, the contribution of Turkmen gas could be of key importance after 2027, filling the gap between Azeri production and the Southern Gas Corridor expanded pipeline capacity. However, Turkmen gas is already linked with exports to China (Kizeková, 2022) and is unclear wether it could be any spare capacity to export westwards once the fourth pipeline of the Central Asia-China Pipeline is finally built (Pirani, 2019). Furthermore, unless a direct pipeline crossing the Caspian is built, Russia will be better positioned to access spare Turkmen gas than the European Union, given the already existing infrastructure connections. (Kizeková, 2022)

When it comes to oil, most of the region's exports towards Europe comes from Kazakhstan, through the Caspian Pipeline Consortium and, ultimately, the Novorossik port. Additional

volumes come from Azerbaijan oil fields, through the BTC pipeline. Although the Caspian region holds enough oil reserves to diversify European imports away from Russian sources, there are some challenges preventing a larger flow of Caspian oil towards Europe. First, due production quotas imposed to Azerbaijan and Kazakhstan as members of the OPEC+, and second, the necessary use of Russian infrastructure to export Kazakh oil to Europe. (Sánchez Tapia , 2023)

With the new situation, and taking into account the Russian blackmail, there is also a mutual interest from the EU and Kazakhstan to diversify oil export routes. In fact, Kazakhstan recently presented its New Kazakhstan Program, which highligts the need of diversification and prioritize energy transportation infrastructure. Complementarily, the project does also fit into the EU's Global Gateway connectivity priorities.

Finally, a promising opportunity for the Middle Corridor is petrochemical and refined products. Regarded as a new promising sector for the future development of Central Asian countries, Kazakhstan, Uzbekistan, and to lesser extent Turkmenistan, are trying to leverage its oil and gas resources for producing easy-to-export petrochemical and refined products. (Tskhay, 2019).

3.4.3. Renewable energy

The Central Asia and the South Caucasus region has a significant potential for renewable energy. (Laldjebaev , Isaev, & Saukhimov, 2021)The Caspian winds and the strong and constant sunlight of the area generates substantial potential for solar and wind power in countries like Azerbaijan and Kazakhstan, while hydropower potential is concentrated in Tajikistan mountainous

regions.

It is estimated that power demand in Central Asia will increase at an average of 50% compared to present levels, and by 90% in Kazakhstan. Thus, addressing the surging energy demand while improving the energy security of the region will require the integration of additional renewable energy into the system. (Meirkhaniva , 2023)

However, despite the official recognition of the need to decarbonize and diversify their energy sectors, renewable potential in the region remains untapped and the implementation of renewable energy projects is still marginal. The countries in the region largely rely on domestically produced fossil fuels to power its energy needs, and oil, gas and coal industries are strongly linked to the political and governmental spheres. (Kizeková, 2022)

Furthermore, other there are other several barriers to renewable energy in the Central Asia-Caucasus region:

Barriers to renewable energy in the Middle Corridor Region			
Regulatory framework	**Infrastructure**	**Finances**	**Expertise and know-how**
Domestic support to fossil fuels.	Aging and overloaded energy infrastructure.	Low electricity prices disincentivise investments.	Lack of technical capacity and qualified personnel.
Lack of (or unstable) regulatory framework and legislation.	Geographical challenges.	High capital costs of RE facilities.	
Lack of measurable goals.	Lack of technical requirements to integrate RE facilities into the grid.		
Pending unbundling of state-owned electricity companies.			

Source: Own elaboration based on (Laldjebaev, Isaev, & Saukhimov, 2021)

For all these reasons, renewable energy deployment remains minimal, despite the fact that some general strategies and political commitments have been adopted since 2010. (Vasić, Pekić, & Šimić, 2023)

Beyond environmental and climate concerns, tackling the barriers mentioned in the above chart would provide Central Asian and South Caucasus enhanced energy security, as renewable energy would green and diversify the energy mix and could supply energy to communities residing far from the current distribution grids. (Laldjebaev, Isaev, & Saukhimov, 2021)

In this sense, renewable energy cooperation could be an important nexus between the EU and the Middle Corridor region during the coming decades. As it has been previously analyzed, the EU has already committed in its 2019 Strategy on Central Asia to cooperate with the region providing regulatory, financial and technical assistance in the transition towards a low-carbon economy, renewable energy projects and energy efficiency. This cooperation will result in tangible business, job opportunities and economic growth for the region (Kizeková, 2022) while simultaneously reducing the historical regional dependence on fossil fuels. (Komilov, 2023)

Following this cooperation framework, the European Union, together with the IEA, the Energy Community, other institutions, and the implementing countries, established from 2016 to 2022 the EU4Energy programme. Focused on the countries of the Eastern Partnership (among them, the South Caucasus) and Central Asia, the program provided technical and regulatory assistance and energy data capabilities to all countries involved. (IEA, 2023) Brussles stated that this programme could tap the

energy potential of participating countries (Kizeková, 2022) however, the programme was renovated until 2025 focusing only on the Eastern Partnership, which left behind this cooperation all Central Asian countries.

An strategic comparative advantage for the EU in this domain is related to the fact that, when it comes to advancing renewable energy deployment in Central Asia, Chinese interest remains rather limited. Similarly, to EU's historic engagement so far, Chinese investments in the region have been directed to traditional energy sources. Beyond major hydropower projects in Tajikistan and Kyrgyzstan, wind and solar energy represent only a 2.6% of total Chinese investments.

With a renovated energy cooperation strategy between the EU and the Caspian-Caucasus region, a new field for mutually-beneficial renewable energy partnerships could be the development of green hydrogen production. In fact, Kazakhstan is strategically positioning itself as a relevant player in the future global hydrogen market, aiming to produce two million tons of hydrogen by 2032 extracting water from the Caspian Sea. (Sánchez Tapia , 2023)

The Hyraces One project will use desalination technologies before obtaining hydrogen through electrolysis, but addressing the water management problem is of a crucial importance for the success of green hydrogen production in the region. (Zabanova, Williams , Andresh, Melnikov, & Tumysheva, 2023) Uncontrolled green hydrogen production without propper water management policies could lead to the depletion of water sources, and the consequent social conflicts and environmental problems. (Tskhay, Green Mirage or Oasis: Navigating the Complex Path to Decarbonisation in Central Asia., 2023) For the moment,

this project seems to offer an extra benefit in terms of water, as desalinated water could be used not only for producting hydrogen, but also to supply water to the local Mangystau region residents.

In this terms, the EU should prioritise water responsible energy projects and green industrial partnerships focusing not only on an extractivist logic, but on promoting a broader local socioeconomic development around the hydrogen and the renewable energy value chain. (Zabanova, Williams, Andresh, Melnikov, & Tumysheva, 2023)

3.4.4. Critical Raw Materials

The changing dynamics of modern energy geopolitics are increasingly demanding the participation of a broader group of nations around a wider set of commodities when it comes to energy security policy. (Cekuta, 2023) In this sense, the modern Great Game in the resource-rich Caucasus-Caspian edge will not be based only on trade-tional energy sources, but will also include the new essential elements for the ongoing energy transition such as critical raw materials.

Diversification of critical raw materials supplies will remain the core driver of energy security in the future energy systems. As it happened previously with oil and natural gas, securing supply chains for metals and minerals like lithium, nickel or rare earths among others will be of critical importance to sustain electrification process (Cekuta, 2023) and achieve the climate neutrality objectives that countries around the globe have already set.

To set a proper framework of understanding, we will refer as

critical raw materials in this chapter the definition of J.L.Caldron et al. definition, where these are defined as "materials that have proven value in supporting the development of low-carbon technology". (Calderon, Brazilian, Sovacool, & Nguyen, 2020).

Central Asia (and to lesser extent, the Caucasus) will gain international relevance in the near future given the diversity and significant magnitude of its mineable reserves of critical raw materials, making it a pivotal region for mineral economics, supply security and geopolitical considerations. (Vakulchuk & Overland, 2021)

Despite the extensive attention that China has received in critical raw materials literature, the neighbouring Caspian-Caucasus region has received comparatively much less attention. Historically, since the dissolution of the Soviet Union in 1991, the region has been primarily perceived as a source of oil and gas extraction, diverting most of academic works away from its mineral potential. However, under a growing concern that Central Asian fossil fuel infrastructure could become stranded assets during the energy transition, the growing demand for clean energy technology materials could reignite the geopolitical interest in the region. (Vakulchuk & Overland, 2021)

In fact, with access to Central Asian mineral reserves, a major foreign power could secure most of the materials required in its clean energy technology supply chains. For example, 99 of the 110 elements of the periodic table are present in Kazakhstan, and the country hosts the largest reserves of chromium, a mineral used in wind turbines, and the fifth largest zinc reserves.[55] Uzbekistan, another major mineral player, is rich in copper, silver, molybdenum,

[55] Furthermore, and although they are not considered as critical raw materials, Kazakhstan supplies 72% of EU's phosphorus and 21% of its uranium.

selenium, cadmium and lithium. (Vakulchuk & Overland, 2021)

While the EU's total imports of Central Asian critical raw materials have been historically lower than those of China and Russia (Vakulchuk & Overland, 2021), the Covid-19 and the 2022 energy crisis sparkled a new attempt by the European Commission to step in as a relevant player of the global critical raw material's rush.

Despite the region's potential, there are still some risks related to the critical raw materials mining activity that should be addressed before the region can untap its full potential:

Risks of minerals mining development in the Middle Corridor Region		
Aging mining infrastructure	**Source of contestation and social conflict**	**Export dependency**
Old sovier-era infrastructure and machinery presents poor environmental and efficiency track records.	Environmental degradation as a consequence of mining activities and limited community benefits generates social tension and protests.	Decades-long reliance on raw material export have hindered economic diversification, creating vulnerability to economic shocks and commodity price changes.

Source: Own elaboration based on (Vakulchuk & Overland, 2021)

In March 2022, the European Union leaders discussed in a historic European Summit the consequences of the Russian invasion of Ukraine. In the conclusion's document, the heads of state and government highlighted the need to reduce the EU's strategic dependence on critical raw materials. Accordingly, the European Commission presented in March 2023 the Crtitical Raw Materials Act, which was finally approved by the Council in March 2024. The regulatory proposal – framed within the

Green Deal Industrial Plan, was the first attempt to regulate the supply of critical minerals in the European Union. On the external supply dimension, the Commission determined that no single country should supply more than 65% of the Union's annual consumption of any strategic mineral. This will be done through the development of mutually beneficial strategic projects in third developing countries.

Leveraging the EU's Global Gateway resources, the European Commission signed a Memorandum of Understanding with Kazakhstan on cooperation on green hydrogen and critical raw materials that became operational in May 2023 (European Commission, 2023) after concreting some operational measures and areas of action including "cooperation between industrial stakeholders to identify and fulfil joint investment projects, a roadmap for cooperation on geological exploration, research and innovation, the formation of skills, and on capacity building utilising the EU Horizon Europe programme and other funding instruments.".

The European Union and Uzbekistan also signed in 2023's Global Gateway Forum another Memorandum of Understanding in the field of sustainable critical raw materials (CRM) to advance trade and investments into secure, sustainable and resilient raw materials value chains. Additionally, the country committed to join the EU's initiative of the Critical Raw Materials Club (European Commission, 2023)

Therefore, Kazakhstan and Uzbekistan are called to play a crucial role in securing and diversifying the EU's critical mineral imports required for clean energy technologies. In a mutually-benefitial agreement, the EU will support raw materials extraction

and exports while promoting and assisting with the region's green transformation. Committing expertise and investments for better infrastructure and exploration of critical raw materials, and the development of clean energy technologies, the EU could set an attractive framework for minerals and sustainable energy cooperation in the Caspian-Caucasus region. (Kizeková, 2022)

While the EU's critical raw materials list only includes non-energy minerals, another area of cooperation between the EU and the region could be the uranium exports. Kazakhstan, as world's leading uranium producer and Uzbekistan, with a non-negligible 5% of global share, provide uranium to the 126 commercial nuclear power reactors operating in 14 EU member states. In this sense, Kazakhstan and Uzbekistan are the 5th and 7th uranium exporters to the EU respectively. (Dutta, 2019)

To conclude, as global markets shift towards decarbonization, the Caucasus-Caspian region faces the challenge to transitioning from fossil fuel exports dependency to a new over-reliance on critical raw materials exports if international parterships are not matched with mutually benefitial agreements and economic diversification efforts. In this sense, the Middle Corridor could represent an opportunity for the region not only to export raw materials to global markets, but also to become a nexus hub between China and Europe for critical raw materials processing and manufacture of clean energy technology components.

3.5. CONCLUSIONS

There are several conclusions to drawn from the analysis of

the Middle Corridor as an energy corridor and the challenges and prospects that it could offer to the European Union, the South Caucasus, and Central Asia.

The realization of the first point underscores the necessity to explore alternative avenues for energy cooperation, such as renewable energy projects (wind, solar and green hydrogen) critical raw materials, and energy efficiency initiatives, which are already being projected for cooperation between the EU and the region.

Finally, the discussed Silk-road region should adopt a forward-looking perspective and map the energy landscape for the coming decades with international partners. In this sense, the political focus should shift from fossil fuels to a much broader perspective, where renewable energy and clean technology, critical raw materials, petrochemicals, and other manufactured products can drive economic development along the Middle Corridor backbone.

CHAPTER 4

Realizing the potential of the middle corridor

4.1. INTRODUCTION

Pierre de Trémiolles
based on a report led by Grégory Lecomte and Amélie Schurich-Rey, with contributions from the OECD Istanbul Centre

The polymorphic macroeconomic consequences of Russia's war of aggression against Ukraine have prompted renewed attention to the development of the Middle Corridor, a multimodal route running through Kazakhstan, Azerbaijan, Georgia, and Türkiye. Despite recent progress on removing technical obstacles to the facilitation of trade, many challenges still remain.

The business climate in Central Asia and the South Caucasus can only be significantly improved if national authorities commit themselves to support the private sector in its initiatives. Likewise,

the integration of regional markets into the global economy will only come to reality if all modes of infrastructure (railways, truck lanes, ports, border crossing points, etc.) are developed in a synchronised fashion. Aligning already-existing regulations might also prove crucial to support capacity-building, transport connectivity and the greening of the region's economies.

As things stand, the various stakeholders of the Corridor's long-term development should ensure that their efforts to integrate erstwhile isolated economies into global value chains do not create negative side effects for small businesses. From a logistical point of view, legal and technical requirements' overlay still accounts for delays during border-crossing operations. Permit and consignment note systems constitute a particularly challenging conundrum. Nevertheless, a combination of processes' digitalization, capacity-building efforts at transshipment facilities and border crossing points, and cooperation frameworks could still pave the way towards a faster, greener, and more digital Middle Corridor.

Since February 24th, 2022, sanctions have brought logistic disruptions that have, in turn, hampered this itinerary's viability. Therefore, even though the economies of the South Caucasus and Central Asia remain closely integrated with Russia, the Middle Corridor appears as an increasingly relevant alternative for the transit of goods across Eurasia.

The current Middle Corridor is a relatively recent trade route. As a matter of fact, the two major initiatives to strengthen it, i.e., the Trans-Kazakhstan railroad and the Baku-Tbilisi-Kars railway, were completed in 2014 and 2017 respectively. Recent studies indicate that transporting goods from China to the Balkans or North Africa through the Middle Corridor offers transit time cuts

numbering up to 6 days, in large part due to it having access to the Mediterranean Sea from Georgian and Turkish ports. While the same cannot be currently said for time of transit to Central and Northern Europe, delays relatively to the Northern Corridor do not exceed two days.

At the western end of the route, Türkiye, located at the crossroads of continents, builds on its strong experience as a logistics hub and actor very much integrated into global markets. At the eastern end, China's interest in the South Caucasus and Central Asia is growing and could fuel new trade opportunities, especially when it comes to non-energy commodities. As a matter of fact, China has become a major source of imports for all Central Asian countries except Turkmenistan, as well as for Azerbaijan and Georgia, albeit to a lesser extent than for Central Asia (OECD, 2023; OECD, 2022).

Nevertheless, a variety of obstacles remain for the potential of the Middle Corridor to fully materialise.

From a private sector's perspective, the Middle Corridor is currently less attractive than other alternative routes. Limited traffic on the route largely reflects the absence of demand for goods from Central Asia and the South Caucasus, as well as the relatively low level of intermediate import demand from these countries. As a result, the corridor is mainly used as an East-West transit route, while regional trade links and West-East traffic are largely insignificant. Moreover, the Middle Corridor's multimodal nature and multiple border crossings make it challenging to develop.

While increasing regional economic integration can only be achieved in the long-term, governments from Central Asia and

the South Caucasus can support the creation of regional demand in the short and medium-term. Consequently, policy makers, in collaboration with the private sector, should (i) further improve the overall business climate across the region to support private sector development and increase regional economic potential, both demand and trade-wise; (ii) develop multimodal infrastructure to better integrate regional markets; and (iii) define a common regulatory framework to support capacity-building, transport connectivity and the greening of the region's economies.

Increased regional economic and trade integration could pave the way for better integration in/of global value chains (GVC). The Middle Corridor could then assume a major role by turning into a major trade route connecting Asia to Europe. Cost and efficiency gains and increased market size for regional production - following from deepened regional economic integration - would create regional demand and incentivise actors from the private sector to participate in Middle Corridor development.

4.2. IMPROVING FRAMEWORK CONDITIONS FOR PRIVATE SECTOR DEVELOPMENT, STIMULATING DEMAND, PROMOTING REGIONAL TRADE AND EXPORTS

As of now, trade volume between Central Asia and the South Caucasus remains quite limited. Trade with the neighbouring region accounts for an even smaller share of those countries' total exports (Figure 1.6), which can be indicative of their low integration in regional and global value chains. Indeed, manufacturing output in

the South Caucasus countries and even more strikingly in Central Asia displays low levels of added value, reducing exports and requiring only small levels of foreign components as intermediate inputs (OECD, 2022; OECD, 2023).

The challenges related to the development of the Middle Corridor go beyond the purely technical aspects related to the construction of modern infrastructure or trade facilitation procedures. Indeed, if the increased activity along the Middle Corridor currently benefits from a substitution effect from the Northern Corridor due to the war in Ukraine, the longer-term sustainability of the route requires sufficient local demand, as well as enhanced regional economic ties. If the impetus for the development of the Middle Corridor is, for the moment, prompted by the war, it nevertheless represents a real opportunity for the region to develop and benefit from enhanced trade and co-operation.

The economic development of the countries concerned by the Corridor needs to be spurred by that of diversified and complexified production activities and industries. Trade with other countries of the region would then ensue as a trickle-down effect. Governments in Central Asia and the South Caucasus should therefore continue to promote innovation and entrepreneurship through as many institutions as possible: innovation hubs, research centres, entrepreneurship programs, etc. Besides an improved field for SME development (through a faster access to financing, technology, and market information), such a policy move would foster innovation and technology-driven growth.

Governments in the region could also formulate comprehensive export promotion strategies tailored to the comparative advantages

of each local trade partner. These collaborative strategies should provide a push for sector-based incentives, market diversification efforts, and capacity-building programmes.

Local industries would thus be encouraged to look for new opportunities across regional and international markets. Policymakers should support linkages between local SMEs and national or international multinational enterprises (MNEs) to boost GVC integration through know-how and technology spillovers. Exposure to a more demanding competition comes as a logical next step when a country engages in enhanced and deeper integration into larger markets like the EU (Wang, 2014). Remaining gaps in local firms' operational environment, in relation to trade and investment, should then be addressed.

4.3. PREPARATION OF A SINGLE LEGAL FRAMEWORK REGULATING ALL TYPES OF TRANSPORT

Governments should comprehensively review all transport and vehicle standards and build a minimal standard for navigation rules, road signs, truck dimensions, axle loads, safety standards for vehicles and drivers. The topics of consignment notes' unification, permit interoperability and the inclusion of the private sector into the decision-making process along the aforementioned axes also bear significant relevance. First, the relevant bodies should develop a minimal standard for truck requirements. National authorities should then consider increasing the road quotas for one another and raise the number of road permits (CAREC-ADB, 2022). Standardised requirements would help reduce the

need to tranship from foreign trucks to local ones at each border. Kazakhstan should consider joining the European Conference of Ministers of Transport (ECMT) to help centralise requirements in a single space together with other ITF members, including Azerbaijan, Georgia, and Türkiye, which already contribute to the surveys on that matter (ITF-OECD, 2022).

Two different, competing consignment notes are currently in use in Central Asia and the South Caucasus: the CIM and the SGMS. Unfortunately, both notes pose a translation issue, as the SMGS consignment note is issued only in Russian or Chinese, whereas the CIM one is issued in the country of dispatch's language with a translation into French, German, or English. As cargo needs to be registered under both systems, businesses frequently end up having to duplicate documents. In May 2023, a memorandum was signed between the railway administrations of Azerbaijan, Georgia, Kazakhstan, Türkiye, and Ukraine on piloting of the CIM/SMGS electronic consignment note (UNECE, 2023). To a large extent, this consignment note contributes to the objective of unification of legislative frameworks for trade, which significantly reduces transport costs and accelerates trade flows. While the legal framework exists, though, de facto implementation lags persist: OECD interviews indicated that the joint note is not systematically used nor recognised in practice, leading once again to a duplication of procedures. Governments should focus ensuring the practical implementation of the joint CIM/SMGS consignment note. Azerbaijan, Georgia, Kazakhstan, and Türkiye, in particular, should work towards implementing the legal, technical and technological conditions for the application of this standard (OSJD, 2023).

Given that neither CIM nor SMGS applies over the entire journey between Europe and Asia (UNECE, 2022), governments should support the development of the Unified Railway Law (URL). As multimodal container transport is becoming increasingly important across the Middle Corridor, a trend which the URL is better fit to tackle than the CIM/SMGS consignment note, this instrument is likely to prove helpful in filling a gap in the international regulations for international rail freight carriage. The development of the Agreement on the Contract for International Carriage of Good by Rail between Europe and Asia (CMR) would constitute a first URL Convention. Georgia should join the other Middle Corridor countries and sign the URL declaration.

The Middle Corridor countries should create a transit system in-line with EU standards. Azerbaijan, Georgia, Kazakhstan, and Türkiye should work to harmonise their standards with those of the EU's transit system, which allows for the movement of goods under customs control.

The implementation of trade agreements and/or economic areas to promote trade among the countries along the Middle Corridor and their neighbours would enhance the development of regional trade by providing firms a better environment to trade with other countries. Additionally, governments should prioritise providing efficient dispute-resolution mechanisms., transparent and investor friendly investment policies should be formulated to attract foreign direct investment and nurture local entrepreneurship.

Countries can also look at the accession to, and implementation of, other conventions like the ECMT model bilateral agreement, which has been successful in developing an efficient European road transport environment and promoting regional convergence

(World Bank, 2021), the Convention on International Multimodal Transport, or the International Federation of Freight Forwarders Associations (FIATA) Multimodal Bill of Lading.

The relevant authorities should expand the usability of permits and promote their uptake to government and business to reinforce security and trust. Given that regional integration processes entail the creation of common transit and trade areas, a careful cost-analysis should be conducted when assessing the Black Sea Economic Co-operation (BSEC) permit system, the Carnet Admission Temporaire/Temporary Admission (ATA Carnet) system and the Transport Corridor Europe-Caucasus-Asia (TRACECA) permit system. In general, governments should promote any permit and their electronic version to build trust and boost trade, though the objective should be to establish a single transit document on corridor. This should subsequently be developed to allow for the electronic exchange of data between transit countries on all maritime, rail and road transport operations and the acceptance of pre-submitted transit declarations as a transit document.

Improved logistics services can increase the efficiency and reliability of the Middle Corridor and contribute to more integrated regional markets. Bearing this in mind, governments in Central Asia and the South Caucasus should incentivise private sector participation in establishing modern logistics centres, located in strategic locations of the corridor. These centres can act as hubs for efficient cargo handling, storage, and distribution, thus reducing transit times and costs. Improved logistics services would help mitigate the costs arising in connection with the multimodality of the route. Alongside the development of logistics

centres, policymakers should support professional training and higher education in the field of logistics and transport. They could also give the private sector a greater voice in the design of national logistics policies.

4.4. DIGITIZATION OF BORDER PROCEDURES AND TRANSIT DOCUMENTS, STRENGTHENING OF ELECTRONIC DATA FLOW

On all indicators related to customs administration as well as the overall score, the performance of both Central Asian and Caucasus customs in the World Bank's Logistics Performance Index (LPI) lies below EU average and Türkiye. Furthermore, progress in the past 15 years has only been modest. In theory, the Transports Internationaux Routiers Carnet (TIR carnet) guarantees the seamless flow of road cargo from the origin to the destination country, with transit customs recognising the results of inspections carried out in the origin country. In practice, though, businesses interviewed by the OECD report controls and inspections at each border crossing point.

To remove said process duplication at borders, countries can further operationalise their national Single Window systems and integrate them with all relevant agencies (ADB, 2022). Ideally, bordering countries would integrate existing systems on either side of the border on a common digital platform where data on trade, transport, commercial and SPS-related matters could be exchanged electronical-ly among various government agencies and

other key stakeholders. Georgia's One Stop Shop (OSS) principle at its Border Crossing Points (BCPs) should be replicated in other countries and Türkiye should consider establishing an OSS at the Sarpi-Sarp BCP with Georgia (BSEC-URTA, 2023). An important point to bear in mind is that any multilateral, regional transit system would need an insurance guarantee chain and the recognition of customs authorities to be successful (CAREC-ADB, 2022).

To deliver tangible benefits, digitalization should first pave the way towards streamlining and rationalising permits and documentation issuance. To that end, the current mosaic of paper-based permits, whose implementation on the field is deficient, should not disappear only to be replaced by a patchwork of digital permits which would be insufficiently interconnected along the Middle Corridor.

The authorities should first provide incentives and raise awareness to enhance the digital uptake of certificates and the submission of documents. For instance, governments could provide fiscal and nonfiscal incentives to encourage digital filing of certificates by the traders to reduce dwelling time for cargo at the trading gateways. This has already been done in the past. During the Covid-19 pandemic, using the UN Conference on Trade and Development (UNCTAD) Automated System for Customs Data, some countries implemented the use of e-trade permits, paperless processes, and the exemption of taxes to facilitate imports of medical supplies during the pandemic (UNCTAD 2020). Workshops to raise awareness among both traders and customs officials can encourage the online submission of all documents and the advance filing of declarations (ADB, 2022). Countries should also consider developing e-Visas, e-certificates, and

e-Permits (i.e., BSEC e-Permits, e-CMR, CATS, etc.), all of which enhance the security, transparency, and flow of goods. As of now, e-CMR seems to be the preferred option across the region.

National authorities should then modernise and improve the underdeveloped infrastructure and layout at BCPs to address time-consuming delays at high-traffic BCPs. For instance, countries could rely on digital weight bridges to reduce time and eliminate corruption opportunities. Azerbaijan has recently automated truck and wagon weighing in the Port of Baku, which it should replicate at other BCPs; other countries should do the same (UNECE, 2023). Governments should construct cross-docking stations to temporarily store goods that need to be transloaded and temperature-controlled storage for perishable agricultural goods, an important import and export sector (CAREC-ADB, 2022). Azerbaijan, Georgia, and Türkiye should consider developing joint BCPs. This is a complex undertaking requiring co-ordination and collaboration between policy makers and border agencies from both countries. Co-ordinated border-crossing management involves standardising and extending the border-crossing operating, establishing green lanes (i.e., TIR shipments, perishable and time-sensitive cargoes), facilitating advanced shipping notification or declaration that allow risk management, and offering OSS services. Georgia has improved its internal agency co-ordination by involving just two agencies at BCPs – the Patrol Police and the Revenue Service who, respectively, control passengers and conduct truck driver and customs controls (Revenue Service, 2023). In contrast, Azerbaijan should look to reduce the number of agencies involved at its borders. Georgia and Türkiye should also look to create a joint BCP one on the Sarp-Sarpi crossing,

though this concept is not possible in seaports. Significant and rising traffic pressure produces long border queues across the Middle Corridor borders, notably due to inspections for the rising number of vehicles. Consequently, governments should increase the number of passing lines and differentiate lines according to goods type, priority, and risk assessment levels. Additionally, the contracting parties could establish separate TIR lanes at borders and develop risk-based controls for TIR operations (UNECE, 2021). For instance, the relevant authorities at the Georgian-Turkish Sarpi-Sarp BCP should create a TIR park facility on the Turkish side and a dedicated TIR lane, as Georgia has already constructed its dedicated lanes (ADB, 2017; BSEC-URTA, 2023). Kazakhstan and Uzbekistan have opened green lanes for digital TIR transits in 2021, so they could build upon this experience with Azerbaijan (Silk Road Briefing, 2022).

Apart from solid infrastructure, governments should build capacity and skills of their border officials. For instance, with support of the EU, Azerbaijan and Georgia conducted extensive capacity building activities at the Red Bridge BCP. The EU, the UNDP, and the Organisation of Turkic States (OTS) have already provided training on customs control procedures, phytosanitary, sanitary, veterinary and food safety border control issues to State Customs Committee representatives. In a balanced mix between upskilling and technological innovation, national authorities could require border officials to take online courses on the matter.

In parallel with improving capacity, governments could enhance the transparency and predictability of border crossing times and costs. National authorities should aim for stable rail and maritime tariffs. The pricing policy along the route should

also be predictable and transparent. Clarity would be reinforced by communicating these tariffs and other associated issues via a single channel. These harmonising actions could be performed by a single regional oversight body, e.g., the UNECE or the TRACECA, allowing for an easier transmission of the data needed for tariff calculations. Hereafter, while creating a fixed timetable for trains or ferry crossings across the Caspian Sea may not be necessary, communicating schedules in advance would help alleviate an industry pain point and would accompany well the planned expansion of the Caspian Sea fleet (see next chapter). Modernised BCPs could share estimated border crossing times as close to real time as possible, further contributing to operational planning capabilities. To bridge the gap between the official tariffs and actual payments experienced by logistics firms, governments could make sure to share the actual costs for Caspian Sea crossings and permits. Over the longer term, Middle Corridor countries can continue efforts to set unified tariffs by rail, despite the operational difficulties to achieve (i.e., economic conjuncture, transfer and handling procedures, customs fees, additional charges, and transport costs of individual railway undertakings).

4.5. DEVELOPMENT OF MULTIMODAL INFRASTRUCTURE IN SOUTH CAUCASUS AND CENTRAL ASIAN MARKETS

Targeted adjustments to the infrastructure network along the Middle Corridor can translate into increased traffic in the short and medium term. Thus, in recent years, Azerbaijan, Georgia,

Kazakhstan, and Türkiye have been modernising and developing their road, rail, and maritime infrastructure. However, congestion at border points and seaports remains high. In particular, container and vessel fleet capacity are not in line with railway freight volumes, leading to delays in seaports. Such a trend is reinforced by the low level of port infrastructure automation around the Caspian Sea. The lack of multimodal infrastructure entails that goods are loaded and unloaded multiple times during a single ferry journey. The same issue arises at border points. All interviewed private actors reported congestion issues to be the most pronounced for the Kazakhstani-Chinese Khorgos as well as the Azerbaijani-Georgian Red Bridge border crossing points despite efforts to renovate and improve those facilities.

Increasing regional trade flows through the Middle Corridor will require targeted infrastructure investments. Given the uncertainty about long-term traffic volumes along the route, governments should focus on developing multimodal (rail-road) capacity at border crossing points and seaports; increasing fleet capacity and regularity in the Caspian Sea; and developing rail capacity. At the borders between (i) Kazakhstan and China, and (ii) Georgia and Türkiye, where track gauges impose transhipment, operators should aim at improving both bogie exchange and transshipment facilities. Containerisation and the upgrading of cranes' stocks could ease this process.

Efficient multimodal hubs at the borders could also allow the transfer of goods from trucks to trains. Such new terminals located close to the border could integrate custom procedures and ease congestion at the road border crossings. This configuration could be particularly helpful between Azerbaijan and Georgia,

to decongest the Red Bridge border crossing. More broadly, competing standards for road transport are holding back the development of a competitive freight forwarding market along the Middle Corridor. This is especially true for companies headquartered in Central Asia and the South Caucasus. Structures interviewed by the OECD indicate that compliance with weight and dimensional parameters for trucks is the most arduous.

The multimodality of the Aktau, Kuryk, Alat and Poti ports should also be enhanced by prioritising the construction of transshipment facilities for containers. This includes container berths, container storage facilities and container cranes. Transferring containers more efficiently between trucks, trains and ships could reduce waiting times at ports. To develop containerisation of freight transport along the corridor, governments should develop inland container handling facilities, sometimes called "dry ports". These include container yards and Container Freight Stations (CFS). While container yards store containers and dispatch them between different transport modes, a CFS combines loose cargo into containers or separates cargo for pickup. Demand for CFS could be important as the use of containers rises on the corridor, so governments should seek to attract international CFS operators to develop such infrastructure and share their expertise with local companies (freight forwarders, shipping lines, and third-party logistics providers) through partnerships.

As a logical next step, Kazakhstan and Azerbaijan should extend their fleet of cargo ships in the Caspian Sea, with a focus on container ships' capacity and regularity. Alongside the extension of the existing ferry and Roll-on/Roll-off (RoRo) fleets, operators should introduce more container ships.

Container ships have a higher capacity than ferry and RoRo ships of equal dimensions and can contribute to significantly increasing the throughput of the link once multimodal infrastructure to handle containers is commissioned at the ports. Indeed, according to one of the respondents, container ships belonging to the Kazakhstan Maritime Transport Fleet (KMTF) can carry up to 1000 containers, when RoRo ferries can load 40 platforms, implying a load of just 40 containers. This capacity growth should rely on both the Azerbaijani and Kazakh national maritime operators, namely ASCO and KMTF. Kazakhstan's operator being a smaller player than Azerbaijan's ASCO, the fleet growth should be even more important for KMTF in order to have a healthy competition between two companies of a similar size and market power.

The route's competitiveness would gain from the implementation of fixed timetables for ferry operations between the Kazakh ports and Alat. Departures at fixed hours and important frequencies allowed by the growth of the fleet would contribute to shorter waiting times at Aktau and Kuryk.

Lastly, national governments can invest in road and rail infrastructure to bridge the "last mile" gaps, ensuring the smooth movement of goods from production hubs to the trade route (OECD-ITF, 2019). This connectivity enhancement will enable local economies to leverage the corridor's potential for export and import activities.

4.6. THE MIDDLE CORRIDOR'S THROUGHPUT AND SUSTAINABILITY CAN ONLY MATERIALISE IF LOCAL ACTORS AGREE TO DECISIVELY DEVELOP RAIL CAPACITY

Since 2017, Azerbaijan, Georgia, Kazakhstan, and Türkiye have consistently improved their performance across all areas covered by the OECD Trade Facilitation Indicators (TFIs). To ensure the Middle Corridor's competitiveness, rail companies should increase capacity along the route. Potential bottlenecks must be identified ahead of time to plan infrastructure enhancements such as double tracking on critical sections. To support the required investments in railway infrastructure, governments should rely more firmly on Public-Private-Partnerships. Railway companies should aim for the Middle Corridor to be entirely electrified, to avoid locomotive changes and to ensure the sustainability of the route, with reduced CO2 emissions compared to road or maritime transport. This would require particularly high investments in Kazakhstan (CAREC, 2021).

An exhaustive picture of the current logistical strains endured by carrying personnel along the route is needed here. Bottlenecks at the main seaports and border points currently increase transit times by as much as 10-15 days due to congestion. In some cases, those delays can reach from 20 to 30 days. For example, the rail gauge change at the border between China and Kazakhstan can last from one to 10 days, followed by two to three days to discharge the merchandise at the Baku Alat port, and finally two to 10 days' waiting in Georgia's Poti port (EBRD, 2022).

To solve this multi-faceted issue and keep up with traffic

growth, rail operators should first and foremost address the insufficient number of locomotives and wagons on the trans-Caucasian section. For instance, the Georgian government should seek to increase the fleet of locomotives and wagons among Georgian Railways and the other private operators in the country to replace their aging fleet. To do so, it would be well-inspired to mobilise Kazakhstan's industrial capacity, as well as that of international manufacturers implanted in Georgia, through joint procurement contracts. In the meanwhile, railway operators should also use digital tracking devices to increase the availability of freight wagon.

Finally, planners should bear in mind that enhancing the throughput of rail freight should not be detrimental to local passenger connectivity. For instance, city bypasses can be an efficient way to increase freight capacity and reduce noise and risk of accident without diverting passenger traffic from the city centres.

4.7. ADEQUATE ENVIRONMENTAL STANDARDS AND INCENTIVES SHOULD BE SET UP TO ALLOW FOR A LOW-CARBON TRANSPORT OFFER

The Middle Corridor development provides an opportunity to mainstream sustainable transport infrastructure planning, which can boost the route's attractiveness significantly. During interviews, public and private stakeholders alike have highlighted the importance of integrating environmental sustainability into

the route's planning and regretted the small scale of reforms and subsidies in that direction so far. Interviewees noted that developing freight transport via rail can bring both efficiency gains and a more climate-friendly transport network, while allowing the route to align with the EU taxonomy and supply chain legislation, creating greener and more sustainable ways of doing business. Network electrification efforts along the corridor can only contribute to the route's sustainability if the share of rail freight increases considerably and the electricity originates from low-emitting sources. To make the route truly sustainable in environmental terms, planners should move away from coal and develop greener sources of electricity to power the railway electrical grid.

An enabling environment to develop a more sustainable trade and transport network is missing in the countries along the Middle Corridor. More generally, interviewees highlighted that despite heightened attention towards the design of sustainability strategies by both the public and private actors, no comprehensive environmental standard setting strategy has been implemented at national or regional level. The majority of existing sustainability strategies consider either a modal shift from road to greener modes of transport like rail or targets to reduce greenhouse gas emissions. However, sectoral energy efficiency standards, carbon footprint calculators, or subsidies to kickstart greener transport or pilot projects for alternative fuel options in the road transport sector especially are yet to be implemented. Clear sectoral decarbonisation plans for transport including GHG emission reduction targets are also lacking. The absence of robust Measurement, Reporting and Verification (MRV) systems and carbon accounting systems contributes to the low

development of environmental planning.

Türkiye and Georgia are largely exposed to the Green Deal agenda and its implications. The 2021 Green Deal Action Plan published by the Ministry of Trade of Türkiye includes priority actions for the government institutions with respect to carbon border adjustment mechanisms (CBAM), circular economy, green finance, clean energy, sustainable agriculture, and smart and sustainable transport systems. The Action Plan sets the basis for future regulatory changes as regards the logistics industry in Türkiye.

Adherence to the Green Deal will certainly encourage the already existing trend in the country to switch from road transport to railway, improve inter-modal transport and usage of zero emission vehicles as well electrification and development of alternative fuel capacity in all modes of transport. In the case of Georgia, the context of EU membership aspirations makes transport decarbonation goals even more important to reach.

Complementary reforms to modernise ports and develop environmental plans in the maritime sector can further support this trend. Azerbaijan, Kazakhstan, and Georgia have been modernising and expanding their main seaports and have introduced international environmental standards, including ISO certifications on energy usage, environmental impact, and waste management. Azerbaijan and Kazakhstan's Caspian Sea ports also received the EU "green port" certification. Azerbaijan's port of Baku has developed a "Climate Strategy 2035" accompanied by a concrete Action Plan to mitigate the port's contributions to climate change and achieve its full decarbonisation by 2035 (WPSP, 2023). Kazakhstan's port of Aktau has become

the first in the country to receive the Ports Environmental Assessment System certification and EcoPorts status from the European Sea Ports Organisation (ESPO) in July 2022, a global standard for environmental management certifying ports working to reduce their negative impact on the environment (OSCE, 2022). Additional expansion projects of the port are to follow the same standards and will benefit from EBRD financing.

Successive modernisation and expansion plans of Georgia's port of Poti have systematically followed environmental and social impact assessments (ESIA) since 2010 and have been compliant with IFC standards (ADB, 2010). OECD interviews also indicated that the port also aims to attain 75% carbon neutrality by 2030 and reach full carbon neutrality by 2040, while investing in new technologies for handling bulk cargo by minimising negative environmental impact. However, room for improvement exists, as a recent study indicates that the port has been the second most important contributor to air pollution in Georgia, after the port of Batumi, over the period 2010-2018, with emissions from container and general cargo ships amounting to more than 80% of total emissions in the four main Georgian ports (Tokuslu, 2021).

Address intensified road freight traffic through targeted incentives to avoid greater negative externalities While an increase in road transport can bring considerable productivity gains in the short term, in the longer run, negative environmental externalities such as local pollution and CO2 emissions are high. For instance, the emission impact of transport in the countries of the Belt and Road Initiative (BRI), of which the Central Asian and the South Caucasus countries are members, finds that transport-related emissions are set to

increase by 150% in the business as usual (BAU) scenario over the next 35 years, well above the targets set by the Paris climate accords. Emissions would still increase by 80% by 2050 compared to 2015 if all countries were to invest in best-in-class transport infrastructure technologies, while a two-degree scenario would require an emission reduction of at least 20% (UNESCAP, 2022).

Measures to limit the emissions of the road freight sector and incentivise a shift towards rail transport could include fuel taxes or targeted road pricing. But a more sustainable way to reduce transport emissions would be to adopt a comprehensive policy framework, including coherent interventions across freight-transport modes, with emission reduction target for each transport mode adapted to the local context (ITF, 2022).

Infrastructure planning should include resiliency as part of its sustainability agenda. In addition to climate mitigation strategies, climate adaptation and resilience have gained importance when planning important transport infrastructure. In France for instance, the future Montpellier-Perpignan high-speed rail line is being planned as a response to the current rail line's vulnerability to climate change and floodings along the Mediterranean coast. Potential climate-related vulnerabilities occurring on the entire life cycle of the infrastructure have been addressed in the planning of the new line. The life cycle approach to infrastructure planning is particularly relevant for the Middle Corridor, with climate change affecting the reliability of transportation in the future, from lower Caspian Sea levels to heat waves. The notion of resilience should also incorporate resistance to geopolitical or social shocks, and market evolutions with evolving energy prices.

4.8. A RESOLUTE COORDINATION AND CAPACITY-BUILDING FRAMEWORK SHOULD BE DEFINED TO ENHANCE REGIONAL CO-OPERATION

Partner countries should clarify the Middle Corridor co-operation framework to avoid overlap. Compared to individual country actions, co-operation and common approaches at the Middle Corridor level can leverage mutual expertise in capacity building, research, information, and data gathering. Coordination organisations and mechanisms already exist for the Middle Corridor, but there is important overlap in their scope, and competition logics can exist between the different institutions. In certain cases, they cover a bigger region than the four project countries, and in other cases such as the TITR roadmap, they are not formalised. The more formalised the management body will be the more important visibility and enforcement power it will have. This would pave the way for an improved project prioritisation process (EBRD, 2023).

Azerbaijan, Georgia, Kazakhstan, and Türkiye should formalise the dialogue between stakeholders involved in the development of the Middle Corridor. Rather than creating from scratch a new management body for the Middle Corridor, governments should formalise the dialogue between the existing international and regional organisations and the relevant administrations in each country. This framework could take the form of regular meetings between representatives of regional organisations and initiatives (TRACECA, CAREC, BSEC, OTS, TITR Association), relevant ministries in each country and National Trade Facilitation

Committees. Both high-level ministerial committees and technical committees should be gathered. The participation of private stakeholders in working groups could also be relevant, replicating at the regional scale what is already done in some countries, like in Georgia with quarterly meetings organised with the Business Association of Georgia. Relevant private stakeholders could include business associations, freight forwarders, manufacturers, and investment funds. For this framework to be efficient, governments should entrust institutions with clear and consistent mandates, preventing to the extent possible any overlaps in responsibilities both in terms of infrastructure sectors and functions (policymaking, planning and execution). They must also provide entities with ample decision-making powers and allocate sufficient financial resources to ensure their ability to react more promptly to evolving situations (ADB, 2022) (IRU, W., 2017)

Planners should involve all institutional and community stakeholders to seek consensus around the Middle Corridor-related projects. At the institutional level, governments should present the long-term infrastructure plans to parliament to ensure political approval over the definition of the strategic vision. Regional co-operation shouldn't diminish the importance of involving subnational governments in the process of identifying infrastructure needs, making sure to address concerns related to regional disparities and urban-rural gaps. Authorities should also establish a detailed process for public consultation on the strategic vision and subsequent plans. To do so, they should map thoroughly the key stakeholders involved, identifying and addressing participation barriers faced by under-represented and vulnerable populations.

Countries in Central Asia and the South Caucasus are also contributing to the emergence of trade routes. The intensity of high-level dialogue within the region and with global partners shows that trade facilitation is a priority topic for policymakers. Governments have been carrying out trade reforms and have invested heavily in East-West transport infrastructure.

These consultations highlighted the capacity limitations at several bottlenecks along the corridor. The increase in traffic following the shift away from the Northern Route in 2022 increased waiting times at ports and border crossings, hampering the competitiveness of the route. Issues preventing the development of the corridor are not only related to infrastructure, but also to the lack of economic integration in Central Asia and the South Caucasus. Enhancing the route's attractiveness will require facilitating trade to ease pressure at border crossing and increase demand for transport in a regional perspective.

A regional approach to border and transit documents should be adopted, and much room remains for national authorities to improve the capacity of border crossing points. In what constitutes an encouraging initiative, Azerbaijani Railroads, Georgian Railway, and KTZ have signed an agreement to create a single logistics company to simplify TITR cargo handling and transport processes, among other goals (Prime Minister, 2023). Likewise, Kazakhstan, Azerbaijan, Georgia, and Türkiye have all ratified the TIR Convention, which facilitates cross-border trade using a standard, internationally recognised customs document and transit guarantee known as the or, more commonly, the TIR Carnet. TIR is nevertheless perceived to be costly, especially for shorter hauls (CAREC-ADB, 2022), as well as unable to respond

to private sector needs in terms of digitalisation, as significant delays have been observed in implementing the e-TIR system.

While infrastructure issues have a direct physical effect on traffic (such as the low number of lanes at border crossing points or inefficient multimodality management), unharmonised and complex border procedures lead to similar consequences on freight flows. This situation is often aggravated by cumbersome transit and trade procedures. The combination of those two factors results in inconsistent and unpredictable transit and crossing times, further reducing the Middle Corridor's attractiveness as a route. Despite trade facilitation reforms in Azerbaijan, Georgia, Kazakhstan, and Türkiye, a regional approach to the route's development is still missing. The overlay of multiple and unharmonised license and permit requirements further hinders the Corridor's potential in the eyes of the private sector, as it results in transit time and cost increases. Cooperation between customs agencies and border customs capacity are also deficient on many aspects, which in turn leads to repetitive inspections and delays, creating congestion when traffic increases.

Further advancing trade facilitation reforms at the regional level can increase the Middle Corridor's capacity in the short and medium term. Governments along the route can rapidly reduce transit times and costs as well as increase predictability of transit times by (i) further harmonising and fully digitalising transit and border documents for all transport modes; and (ii) improving customs capacity through enhanced data exchange, modernised border procedures, and training of border officials.

Governments should draft a long-term infrastructure plan in coherence with the priorities established through coordination

mechanisms. These types of plans establish long-term time horizons and generally range between 10 and 20 years. The plan should frame the choice of what to build with a cross-sectoral approach to the region's future, considering synergies and trade-offs. It should have measurable goals and targets to be achieved through the infrastructure investment programme. The document would present a pipeline indicating priority projects, for each one with an explanation of the purposes and objectives and their alignment with the overarching infrastructure strategy. It should also include a timeline illustrating the different project phases and milestones. Planners should publish the long-term plan and ensure transparency of the strategy.

The authorities should monitor and update the plan regularly. They should define specific indicators to monitor and evaluate the implementation of the long-term plan, such as overall traffic and capacity on the route, waiting times at border points, or the carbon footprint of the corridor. The plan should also be as adaptable as possible. Experts should conduct on a regular basis a technical assessment of infrastructure needs and take stock of existing infrastructure. They should keep track of rapidly evolving technologies, environmental or climate change hazards and behavioural changes in society to adapt strategic plans accordingly. From the beginning, the strategic plan should be formulated in a way that is flexible enough to adapt to changing contexts. A formal process should be established to update the long-term infrastructure plan, ensuring this update is undertaken at fixed time intervals.

Businesses interviewed by the OECD in Kazakhstan indicated that though the framework has eased the PPP process, the

transport sector represents only 3% of the country's PPP projects (ADB, 2022; KZPPP, 2023). To address this issue, the Kazakh government's current infrastructure development strategy, Concept 2030, consecrates PPPs as a major tool to develop the infrastructure of seaports and attract private investment to create specialised terminals, while entrusting private investments to finance transport and logistics infrastructure (Adilet, 2022). Türkiye, which stood as the third largest recipient of PPI (Private Participation in Infrastructure) investments in the world for 2021, remains a model in this field. Such a success can be attributed to two, long-standing types of contracts: Build-Operate-Transfer (BOT) and Transfer of Operating Rights (TOR). Other countries should emulate those legal frameworks to raise the share of infrastructure PPPs within their respective investment portfolios. While the Turkish regulatory framework provides for the inclusion of PPPs in the national budgetary framework and details a specific procedure to ensure the consistency of PPPs with other public investment priorities, such provisions are absent in Azerbaijan, Georgia, and Kazakhstan (World Bank, 2020).

Countries of the corridor should adopt a common methodology to collect data on their current and future infrastructure needs. To ensure that the different segments of the corridor are not weighted down by capacity-related bottlenecks, governments should identify infrastructure requirements at a regional scale. Line ministries and agencies responsible for different infrastructure sectors should therefore be mobilised, to foster synergies. A rigorous analysis of evidence and data on the matter would help maximise the efficiency of investments. Into the future, strategic foresight tools could be used to project needs

and consider future risks and uncertainties.

Governments should capitalise on the part of trade and transport data which is already available and broaden the access to the remainder. Quantitative assessment tools, such as the International Transport Forum's International Freight Model, could be drawn upon for efficient infrastructure planning. These models require access to transport and trade data to be refined and adapted to local and regional contexts. Therefore, South Caucasus and Central Asian countries should make efforts to better collect and disseminate data. For example, authorities should define standards for data sharing and establish common platforms. The Middle Corridor's coordination body could also create a "regional observatory for data collection" (ITF-OECD, 2019). The private sector would be set to benefit from better interoperability between public and private data systems and promoting open data. Such a shift would indeed inspire private actors to address logistic and connectivity challenges.

Middle Corridor partners should consider modernising the route's various segments via joint investments. Past experiments, e.g., when Azerbaijan's State Oil Fund funded the Georgian section of the Baku-Tbilisi-Kars Railway, could constitute a learning case. Given that the different countries don't have the same financing abilities, with Azerbaijan and Kazakhstan enjoying a serious advantage over the remaining stakeholders, joint financing schemes might prove to be the best tool for propelling the Middle Corridor forward. The Middle Corridor's coordination body, whether it be through subsidies or a common lending institution, may come up as the keystone of those initiatives. Quite interestingly, most individual companies surveyed by the

OECD favoured deepen regional co-operation through the establishment of supranational transport and trade oversight bodies.

Governments should involve the private sector to improve the transparency, affordability, and fiscal sustainability of investments. When possible, planners should identify alternative sources of financing, including Public Private Partnerships (PPP). The PPP framework in Central Asia and the South Caucasus should therefore be accordingly improved, insofar as it does not preclude a careful cost-benefit analysis on each project. Decisions related to investment and those related to projects' procurement through private actors should be made separately. Governments should conduct a Value for Money (VfM) assessment for all projects, based the whole life cycle (i.e., design, construction, operation, maintenance, adaptation, and decommissioning). (OECD, 2012; ADB, 2022; Zhao, J. et al., 2022; Watermeyer, 2013).

4.9. CONCLUSIONS AN ANNEX

The study relied on two main dimensions:

(i) A series of qualitative online surveys building on the recent ITF Policy Brief (ITF, 2022) focusing on trade facilitation, infrastructure development and national and supra-national stakeholder co-ordination in the four project countries.

(ii) A series of qualitative interviews with selected public and private stakeholders, as well as with IOs (EBRD, World Bank, etc.) active in the four project countries to broaden the perspective on the challenges and opportunities for realising the route.

The analytical work relied on a continuous dialogue between the OECD, the governments of Kazakhstan, Georgia, Azerbaijan and Türkiye, the private sector, and international partners, including through several bilateral consultations in the first half of 2023. In particular, the OECD has used a series of tools, including questionnaires, data requests and collection, analysis of surveys and interviews, to collect data and information.

CHAPTER 5

Impacts and oppartunities of new payment and clearing systems, fintechs, decentralized finance for national currencies usage in foreign trade

5.1. INTRODUCTION

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The World is changing. Technology and digitalization, extreme risks, new economic concepts, climate change, wars and sanctions, problems in supply chains, inflation and central banks' monetary

policies, decentralized finance, globalization and being a self-sufficient economy, collaborations and new emerging markets are just some of the topics in this change. In addition to the need for raw materials resulting from the opening up of economies after the pandemic, the World also experienced very serious price increases in oil and commodities due to wars as well. While the World experienced blockage and supply chain problems in the Suez Canal due to the ship problem with a locked rudder and Middle East issues, it also saw a slowdown in transit due to the climate crisis, drought, and lack of water in the Panama Canal. While all these were reflected as the negative aspects of globalization, they revealed the importance of international cooperation and trade routes, apart from the need for self-sufficiency in economies. In the financial field, it is not possible today to consider other topics that are closely related to capital movements, payment and exchange systems, such as cryptocurrencies, decentralized finance, digital money of central banks, embargoes placed on countries, separately from the real economy. In the light of these developments, the fact that the Middle Corridor, which serves as a bridge between the West and the East in this changing world, can serve as a bridge not only in terms of trade and energy routes, but also in financial terms. It offers an opportunity not only for the regional and route economies but also for the World. In order for the Middle Corridor to be a financial bridge and support for trade, there is a need for a conceptual discussion as a roadmap to examine alternative systems and developments within different possibilities and to implement the necessary and appropriate ones within the framework of a consensus. This section focuses on this area for further studies. Naturally, there may be topics that are

not covered, but after the financial topics covered and examples examined, the aim is to provide a framework for decision makers, academics and professionals by discussing the requirements and alternatives. As a result, implementing these topics for the Middle Corridor through detailed working groups, collaborations and more comprehensive analyzes will benefit everyone. National currencies usage in trade is one of them.

After 2000, the World entered a much faster transformation process. With the evolution of internet technologies, digitalization has gained great momentum. With digitalization, the new industrial revolution of the new century has occurred and accelerated. With the "Fourth Industrial Revolution", social media and artificial intelligence entered our lives very quickly. Robotic technologies, mechatronics, (commercial) space industry and space economy have accelerated thanks to these developments. While decentralized finance and cryptocurrencies have led to changes in concepts such as payment systems, money and investment, fintechs have created important dynamics in the financial services sector. While technology companies replaced classical production companies, they became the drivers of the stock indexes called the "Magnificent Seven" in the US stock markets. As data replaces oil in the new economy, the security of personal information has become more important with cloud technologies. While deep fake, artificial intelligence, noise risk in financial markets, and perception management with bot accounts in socities have come to the fore with the speed of social media, the failure of the common legislation to keep up with the same speed has accelerated the cases of fraud, especially in finance, as well as the formation of digital oligarchy. With the acceleration of Industry 4.0, the

digital economy has become an intermediate economic generation for the transition to the space economy, while at the same time a new phase has been entered called "the new economy". ESG and Impact Investing for the climate crisis, carbon tax and green bonds have begun to form the new agenda of economies. New concepts such as gig economy, circular economy, data economy, green economy, neuro economy, influencer economy, digital economy, sheconomy, sharing economy were added to classical and neoclassical economic understandings, and the inability of orthodox policies to be sufficient for new economic problems led to heterodox policies coming to the fore.

After the biggest crisis experienced by the stock markets in 2000, the accelerating money supply, especially M2, was crowned with the financial turmoil of 2008, causing central banking to realize "Keynes' Liquidity Trap". The balance sheet expansion of central banks has recently reached nearly 10 times greater than before 2008, with the pandemic. While this situation has led to the questioning of fiat currencies, it has also increased efforts to move away from base currencies in recent years. While being a self-sufficient economy has gained importance with the devastating transformation created by COVID-19, new topics such as remote working, silent resignation, grand resignation, and distance education have entered business life. While the COVID-19 pandemic was brought under control with vaccination, the decrease in production was replaced by supply problems. When the supply could not keep up with the rapidly increasing demand outside the logistics routes blocked by ships in the Suez Canal, supply side inflation appeared in the World. While the problems in the Black Sea and the Middle East caused

energy shocks in the World, similar to those between 1971 and 1984, they further increased supply schocks and problems with commodities. In this process, supply inflation combined with cost inflation began to put more pressure on central banks. Fiscal policies could not provide much support to fighting inflation due to budget deficits skyrocketed during the pandemic period. With the price increases of monopolistic enterprises by taking advantage of this period, the definition of "seller's inflation" and "profit-driven inflation" were introduced. Developing economies, especially those stuck in the interest rate increase cycle, began to create more risks for global financial stability. For these reasons, the depreciation of national currencies against base currencies began to open the door to bigger problems in global trade. For this reason, the need for foreign trade with national currencies was added to the expansion efforts of alternative economic blocs, especially the BRICS countries. Some countries preferred foreign reserves diversification with Bitcoin, and some countries preferred swap agreements between central banks to bypass the IMF (loans). In the same period, the runaway from government bonds, especially from the US T-Bills, and the processes that occurred with increasing interest rates and budgets brought alternative money, payment and clearing systems to the fore. The World, which entered the "Free Floating Exchange Rate Regime" period after 1971 with the "Smithsonian Agreement" signed in 1974, similarly entered the "Free Floating Interest Rate Regime" period with the complete elimination of LIBOR in 2023. While these developments highlighted the use of national currencies in foreign trade, they accelerated the questioning of base and fiat currencies, especially by the help of cryptocurrencies, and the

search for alternatives.

Global trade has gained more importance after the technological and economic developments that have caused so many distruptive changes and headlines in the last 20 years. While the economic and monetary unions formed with globalization trigger more common interests and periodic/regional collaborations after this transformation, they still continue to make countries dependent on each other due to the "Theory of Comparative Advantages". While an economy that is superior in industry is dependent on foreign energy, a country that is good in technology still depends on the Far East in chip production. A country that is lucky in mines and elements remains dependent on OPEC in oil. Due to such examples, the bridge between the East and the West should not be broken, global inflation should be extinguished, income distribution inequalities should be reduced, and capital movements should not create a further burden on the already problematic government budgets, especially the current account balances. The opportunities that the Middle Corridor offers and can offer in the light of the historical reality of the old Silk Road are more important due to all these headings. Financially supporting these opportunities will be a gain for all regional economies and therefore for the World economy, in addition to sustainability. Given this information, in this work, money, payment and clearing systems that can contribute to the Bretton Woods-like economic understanding and structure of the Middle Corridor, including foreign trade with national currencies, will be discussed. Suggestions will be presented with alternative scenarios and titles for future studies and collaborations among countries. Since it contains many topics and possibilities, it is

natural that there may be elements that can be overlooked, and there could be limited discussed topics. With this study, an initiative was made to create a road map for future requirements and needs, and conceptually, relevant and alternative topics for the financial architecture of the Middle Corridor were discussed. Perhaps the most important finding and outcome of this section will be that the Middle Corridor should have a global financial center and the existence of a new economic theory unique to itself (e.g. called the "Istanbul or Baku School" like Austrian School, Chicago School).

5.2. DECENTRALISED FINANCE AND CRYPTOCURRENCIES

"DeFi (Decentralized Finance)" has not only changed the existing financial markets but also caused its scope to expand. It also includes person-to-person money transfers and smart contracts. In this way, DeFi has become a new paradigm in financial services. In decentralized finance, technology is more important than (financial) intermediaries. DeFi makes a difference not only with its automatic processes but also with its distributed structure. DeFi examples can be seen as account-wallet, asset tokenization, payments, credit, stock market, derivative products, asset management, insurance and data management, depending on the level of simplicity and complexity (Schueffel, 2021).

DeFi specializes in new financial technologies through blockchain technology and smart contracts. It differs from "Centralized Finance (CeFi)" with three features: transparency, control and ease of access. They can provide "Centralized

Finance (CeFi)" titles such as stock exchanges, loans and derivative products. It differs from CeFi with its features such as the possibility of public approval and monitoring of its authenticity, privacy, storage opportunity, uninterrupted market, transaction costs and anonymity. Although the possibility of risk-free returns, such as bonds, is not seen in CeFi due to their volatility, cryptocurrencies connected to a basket such as stablecoins create an alternative. Although the issue of inflation in CeFi is not fully reflected in cryptocurrencies, it can be thought that cryptocurrencies, which are seen as financial assets in DeFi, are not very different from CeFi due to reasons such as manipulation and being reciprocated with dollars. If it is traded on different exchanges, an arbitrage situation may occur. Who controls it (e.g. central banks), transparency and recording (accounting) privacy (traceability) features for the end user can be seen as distinction points (Qin et al., 2021).

Cryptocurrencies created through blockchains (cryptology) have been discussed in the literature and corporate life for a long time. Since there is no consensus on whether they are money, payment system, investment instrument or commodity, they are called financial assets.

It was first suggested by an anonymous person in an article that blocks created with features such as secure payment, time stamping and inability to be canceled could also be used in payments as money (Nakamoto, 2008).

The milestone that started with Bitcoin reached its peak during the pandemic period and led central banks to work on their own digital currencies. In addition to examples such as Ripple, which is an alternative to payment systems among thousands

of cryptocurrencies, there are exchange and payment gateways such as BTCPay, BitPay (later CoinGate, NOWPayments) that mediate merchant provision transactions with cryptocurrencies (Bezhovski, Davcev & Mitreva, 2021).

The working system of cryptocurrencies is different from fiat currencies. While the emission authority of fiat currencies lies with central banks, cryptocurrencies are created in a distributed structure with blockchains. Since there is no single center in this distributed structure, it is called "decentralized finance" (Makarov & Schoar, 2022).

Agarwal et al. (2018) suggested adding cryptocurrencies created by central authorities (i.e. Central Bank Digital Currency - CBDC) as "M5" to the definitions of money supply in the light of monetary theories. "M4" is defined by adding postal banking deposits (postal check) accounts to the definition of "M3" (excluding certificates of deposit). "M5" is created by adding cryptocurrencies to "M3". They called Bitcoin a new "hawala", that is, a remittance system outside the banking system, and highlighted the money laundering aspect. They claimed that "M5" would create a new source of wealth for states and offer other benefits such as financial inclusion.

Benefits of using cryptocurrencies in international trade: If the parties use the same type of cryptocurrency, there is no exchange rate, the transactions are fast, it eliminates the value date problem with fast money transfer, low cost and tax advantages, and safe storage of records (Karpych, 2019). The lack of provision for cryptocurrencies in international reporting standards such as IFRS and GAAP is a dimension that needs to be clarified in terms of accounting in international trade (Melnyk, 2019). Foreign trade with

cryptocurrencies can reduce problems in letters of credit through smart contracts, simultaneous document sharing can facilitate processes, reduce supply chain problems, and make it easier for small businesses to get involved in foreign trade (Gürsoy, 2021).

Decentralized finance opens up new opportunities. Legislation in financial services generally lags behind. When credit cards, derivative products and internet banking were first introduced, legislation had not been established. In all cases, transactions that are for the benefit of the end user are compensated over time. There is no central structure in foreign exchange markets, but it continues to operate 24/7 with its own rules around the World. Similarly, although social media has a central company structure, its legal implementation may differ in each country. Artificial intelligence does not have an owner or legislation, but banks use it. The same should be considered for DeFi and cryptocurrencies.

5.3. CENTRAL BANK DIGITAL CURRENCIES

Bengtsson (2003) stated that with the monetarist approach, central banks control money supply to ensure price stability, and this has led some economists to reject the existence of a market with free liquidity (in here could be assumed as e-money, CBDC and/or cryptocurrencies) for inflation control in a cashless society. Then he discussed the evaluation of electronic money and its impacts on inflation control in a cashless society. He examined the alternatives of money from the payment systems dimension (barter, cash cards, etc.) and said that different payment systems reduce transaction costs. Finally, he stated that central banks are the focal point in the management of inflation (and interest rate)

with their monopoly on printing/issuing money.

The issue of electronic money (e-money) by central banks is a frequently discussed issue due to the general characteristics of cryptocurrencies (especially their distributed structure, lack of interest, limited supply, etc.). In the analysis made in the article published by Saint Louis Fed, it was evaluated in terms of whether it could be in the form of a token or account, its impact on monetary policy, security and cyber risk, and the financial system stability. They mentioned the findings that there will be no alternative to FedCoin or national money transfer systems (EFT) in the token-based case and that central banks will be in direct contact with individuals, and stated that in the intermediary model, central banks should receive services from third reliable parties. In terms of monetary policy, they pointed out that its independence may be at risk with the possibility of a decrease in seigniorage revenues, and the negative effects if central banks are not the only issuers of e-money (for example, in Türkiye, licensed institutions that meet the conditions within the payment systems law regarding e-money supply can supply e-money) (Kahn, Rivadeneyra & Wong, 2019).

One of the reasons why central banks issue their own digital currencies is that decentralized finance remains out of the control of the public, especially central banks, due to the distributed nature of cryptocurrencies. The findings of the Feinstein & Werbach (2021) study show the opposite. The effects of news and developments regarding legislation on the cryptocurrency market, exchanges and prices are not as high as expected (claimed). Cryptocurrencies, as a new type of financial asset, offer the potential to create capital for startups, to be an

effective payment system for cross-border payments, and to create an innovative new economy. Competition creates benefits for new market entrants and investors. However, the results of the research show that legislative regulations are not an obstacle to this development, as feared. That's why legislators should not remain timid and should be able to quickly implement regulations.

Digital currency studies of central banks continue. Their future can be shaped in both directions within the scope of the discussions in the literature. While CBDC with its distributed structure logic contradicts the conventional logic of central banking, CBDC with its centralized structure does not offer the attraction of cryptocurrencies.

5.4. PAYMENT, FINANCIAL TELECOMMUNICATION AND CLEARING SYSTEMS

There are many different clearing and payment systems in the World. Differences in countries' banking systems and legislation are too complex to be solved immediately and with a program such as artificial intelligence translation services. International examples on a global and regional scale stand out in terms of business models and cooperation in foreign trade with national currencies, as they can overcome and/or manage these complexities. In this section, global and successful examples will be briefly summarized.

5.4.1. Türkiye's Case: Electronic Money Law, CBRT Payment Systems and PTT UPT

Electronic money (not cryptocurrencies while this section has been written) and credit cards are regulated by law in Türkiye. Payment and clearing systems are similarly rapidly being included in regulations within the scope of the prevalence and leadership of electronic banking. Studies on cryptocurrencies continue.

In parallel with the developments in electronic money in the World, a legislative regulation was made in Türkiye in 2013 with the adoption of the law (Law No. 6493) for payment systems and electronic money. The law and its relevant regulations are not related to cryptocurrencies or central bank digital currencies. It was issued in relation to the regulation of companies that issue electronic money such as bill payment centers and prepaid cards. In this regard, institutions licensed by the "Banking Regulation and Supervision Agency" were allowed to operate in these areas. Within the scope of developments in the field of Fintech, licensing and auditing authority was given to the "Central Bank of the Republic of Türkiye" due to its proximity to the subject (Cantürk, 2021).

Electronic payment systems include credit card, electronic funds transfer, electronic check, smart card and electronic money. Although the different definitions set by the "The Basel Committee on Banking Supervision" in the European Union indicate that there is no full consensus, their common denominator is that they are stored electronically and accepted outside the issuing institution. In Türkiye, Law No. 6493 was

enacted in line with the European Union directive. As a type of electronic money, virtual currencies are grouped differently as closed systems, one-way or two-way. Bitcoin is seen as a two-way virtual (digital) money. However, it does not fall within the definition of electronic money by central banks (Yüksel, 2015).

After Law No. 6493, fintechs accelerated the introduction of different solutions in the field of money transfer. Money transfer solutions without the need for a bank, such as Papara, Paycell, Sipay, have become widely used. With FAST, CBRT offers users 24/7 money transfer and payment via TR QR Code. CBRT's EFT infrastructure has also opened the door to requesting services in addition to sending money. Aktifbank's UPT service (subsidiary), which connects "PTT (T.R. Post and Telegraph Organization Inc.)" branches and its system to the banking and CBRT EFT system, has paved the way for sending money to the most remote parts of Türkiye through the post office distribution channel (Canbaz, & Erbaş, 2021) .

Postal enterprises, which provide payment services with postal checks and postal savings accounts in different countries around the World, also serve as banks within the scope of different business models or provide intermediary services as distribution channels in cooperation with banks. With the Eurogiro payment system, they can also integrate with SWIFT-based international payment systems (Dirican, 2018).

The "Electronic Fund Transfer (EFT) System" of the "Central Bank of the Republic of Türkiye" provides payment infrastructure services to the banks' customers and the banks themselves. The "Electronic Securities Transfer System,

(EMKT)" provides real-time infrastructure services regarding the storage, transfer and reconciliation of securities. "T.R. Post and Telegraph Organization Inc. (PTT)" is included in the EFT system. "Central Registry Agency (MKK)" is a participant in the EMKT system. "Instant and Continuous Transfer of Funds System, (FAST)" is a payment infrastructure developed differently from the EFT system for 24/7 money transfer to licensed institutions and banks that provide payment services under Law No. 6493 (TCMB, 2024).

5.4.2.Takasbank, MKK, BKM, TROY

It is possible to summarize the clearing process in three main steps: The first step is clearing, that is, matching the orders in pre-clearing transactions, making them ready for exchange, and fulfilling the debts. In other words, it is the process of confirmation, matching and netting. The settlement process is the second step. Finally, there is the final step of custody process. The "first central counterparty (CCP)" was established in England in 1864, and "central depository institutions (companies) (CDC)" were established in 1942 in France and 1973 in the USA. CDCs provide entitlement records without the need for physical change. Clearstream (Banking Luxembourg) received a banking license in 1995 and Euroclear in 2001. As "ICDC (international central depository institution/company)", they also provided different services such as Eurobond and collateral management, unlike MSKs. "Istanbul Stock Exchange (ISE) Clearing and Custody Bank Inc. (Takasbank)", which was separated from the stock exchange in Türkiye and established in 1992. It was

the first institution to provide clearing and custody services. Dematerialization of securities in Türkiye is carried out by "Central Registry Agency Inc. (MKK)" in 1999. Dematerialization of investment fund participation certificates and stocks started in 2005. After the CDC function was transferred to MKK, Takasbank provides cash settlement intermediation, pre-central clearing transactions and banking services within the framework of its duty to operate the central clearing system. With the "Electronic General Assembly System (e-GMS)" established in 2012, the operation of the infrastructure through which all joint stock companies in Türkiye can manage their general assembly meetings provided by MKK. It is designated as the "Electronic Registry Agency" by the "Electronic Product Receipt (ELÜS) Regulation" and "MKK Electronic Product Receipts Center (e-PRODUCT)" also provides financial contract storage services for agricultural products. It also manages the "Public Disclosure Platform, (KAP)". While acquisitions, mergers, partnerships and collaborations are increasing in CCPs, CDCs will stand out in technology-intensive services with the introduction of the "TARGET2-Securities (T2S) system". It would be beneficial to include ICDCs in the Turkish central custody infrastructure (Peker & Karaağaçlı, 2015).

"Central Registry Agency Inc., (MKK)" is a company established for the purpose of keeping records, electronically monitoring and central storage of capital market products issued within the framework of capital markets legislation and was authorized to operate in 2015. Financial underlying assets of capital market transactions are made at Borsa Istanbul, for example, stocks, debt instruments, lease certificates, etc. It is

subject to reconciliation and custody through the integrated system connection between Takasbank and MKK (TCMB, 2024a). Takasbank operates the "Equity Market", "Debt Securities Market" and "Takasbank Check Clearing Systems" within its authority (TCMB, 2024b).

"Interbank Card Center, (BKM)" was established in 1990 by 13 banks and acts as an intermediary for all banks in domestic clearing and settlement transactions, not-on-us card transactions, virtual POS and mail order clearing transactions. BKM has introduced innovative products such as "Fintech Istanbul Platform, Chip&PIN, Bay Bay Nakit, BKM Ekspress, TROY" to the market (Değirmenciler & Kahraman, 2020).

TROY, abbreviated from Turkish initials (TR) Türkiye, (O) Payment and (Y) Method, was launched in 2018. Reasons such as the high number of commissions paid abroad due to the intense use of cards in the country, the prevention of the informal economy, the lack of equivalents of local practices abroad such as installment payments or loyalty programs that can be considered as case studies, led to the commissioning of TROY (Kayalıdereden & Çetiner, 2018).

"Identification of the Relevant Market", which is important in terms of competition, is also important for BKM TROY. The definition of "card payment systems market" has been made in order for licensors such as "Visa, Mastercard, American Express" to compete with card payment systems (Mercangöz, 2022).

5.5. MOST COMMON INTERNATIONAL CASES: EU'S CASE: SEPA, IBAN, EUROCLEAR

"SEPA (Single Euro Payments Area)" means that individuals, institutions and economic parties carry out payment transactions with the same system, legislation and conditions regardless of where they are in the Eurozone, cross-border or within the country. Transfers can be made in three ways: credit card payment, direct debit and credit transfer (Maillard & Vermeulen, 2007).

Cross-border payments can already be made around the World. The main reason for establishing SEPA is the common currency. Since the cost of transition to a common currency is high, the European Union rules and infrastructure aimed to reduce costs by transitioning to a uniform system. It is aimed to halve transaction costs, which correspond to 2-3% of GDP, within ten years. While there is a VISA and Mastercard infrastructure in credit cards, a multi-card infrastructure will be created with the "EAPS (Euro Alliance of Payment Schemes)" established in 2006, but this was expected to make a positive contribution to competition. A common currency is not always necessary for the establishment of a common payment infrastructure. With the active participation of institutions in payments, the expected welfare will increase (Schaefer, 2008).

SEPA, which was implemented with the aim of reducing transaction costs and bank fees for cross-border payments within the European Union, will serve this purpose by operating through a uniform bank account number system. "IBAN (International bank account number)" was created for this purpose. The first two characters of the IBAN number, which is limited to 34 characters, contain the country code. The bank account number comes after the following two-digit control number, calculated according to the ISO 7064 standard. The most important difference from the

SWIFT system is that it is completely under the control of the European Union and its the account number system (Gibinski & Chistiakova, 2021).

Clearing is the determination of the receivables and debts of the parties, and settlement is the transfer of money in exchange for securities of the parties. "Central depository institutions (companies) (CDC)" is generally the place that carries out these transactions. While "French Sicovam and German Deutscher Kassenverein (DKV)" carry out these transactions on a national basis, companies such as "Euroclear or CEDEL" carry out the international clearing and settlement of products such as Eurobonds and government bonds of European countries. Among the Eurohub business models with multiple-access, which mediates the transactions of institutions in different countries, spaghetti link, where clearing organizations carry out transactions in connection with each other, and central transaction, the last one is considered more suitable in terms of cost and speed (Giddy, Saunders & Walter, 1996).

5.5.1. PayPal, Western Union Payment Systems

Paypal has emerged as a secure platform for payments between individuals and businesses. It allows payments electronically via e-mail addresses, credit and debit cards or PayPal wallet. Similarly, there are companies such as online payment gateway provider (gateway service provider) Stripe and Amazon Pay (Ramakrishnan & Lakshmi, 2023).

The central bank in Türkiye has implemented a similar practice with the CBRT FAST system, and customers can match their bank accounts with their phone numbers or e-mail addresses, and

barcodes can be used for member merchant payments (TCMB, 2022).

Western Union can be briefly described as an interpersonal money transfer system. The business model is based on contracted local businesses providing international money transfer services in their own countries through a system and screen in return for a commission (Fellahi & Lima, 2005).

It is thought that money laundering transactions through over-invoicing or under-invoicing and the use of eBay, Western Union and PayPal for products that are said to have been sold but have not actually been sold cannot be easily eliminated by legal regulations (M.Cook & Smith, 2011).

5.5.2. SWIFT, Eurogiro Financial Telecommunication and Payment System

"SWIFT (Society for Worldwide Interbank Financial Telecommunication)" was established so that banks can exchange messages securely. It is not a clearing, custody or settlement bank or institution. With its history dating back to the 1840s, communication with the telegraph infrastructure of the period later turned into the telex infrastructure. Due to the fact that national EFT systems are not sufficient for international (trade) payments, a uniform, encrypted, fast and low-cost infrastructure has been required due to reasons such as telex being costly, time consuming and security risk. SWIFT which is a a non-profit organization, was founded on May 3, 1973 in Brussels in order to remain neutral between New York and London. At the beginning there were 239 banks members from 15 different countries. After the first messaging transactions in 1977, member banks of the

system were connected to each other with "BIC (Bank Identifier Code)" (Scott & Zachariadis, 2012).

Eurogiro is a network established in 1989 for the purpose of sending money across borders between postal operators of member countries. Today, the Denmark-based company also includes banks. The critical question in money transfer networks for efficiency and effectiveness is whether it is appropriate to compete in the market with a single network or for many networks to compete among themselves. What is more critical than this question, which does not have a single answer, is that whether a payment network is preferred by users, can be easily adapted and has standards (Kemppainen, 2003).

5.5.3. Common Currencies: Euro, IMF SDR, BRICS

1999 Nobel Prize winner Robert Mundell is known as the father (creator) of the "European Monetary Union (EMU) and the Euro", with his article "The Theory of Optimum Currency Areas" in 1961. However, those who are skeptical of monetary unions oppose him with the same article. While he wrote in his first article that monetary unions are valid for smaller regions, his article written in 1970 and published in 1973 states that if a monetary union can keep the purchasing power and value of the common currency constant, it can be used for larger geographies and even geographies where different countries come together (McKinnon, 2002).

In their study, Rose and Stanley (2005) stated that economists believe that monetary unions reduce inflation and increase trade, and that this result can be confirmed from the literature they scanned with the meta-analysis method, and that monetary

unions increase mutual (foreign) trade between 30% and 90%. Cîndea and Cîndea (2012) analyzed Rose's study over 28 studies and found the same result between 8% and 26% 11 years after the monetary union.

In their study, Achy and Sekkat (2003) examined the real effective exchange rate's effect on the exports of North Africa, Middle East countries and Türkiye to Europe. In their analysis of 11 different sectors between 1970 and 1997, they found that the deviation occured in the real effective exchange rate should put more emphasize and be focused on the volatility of the exchange rate. They have seen that pricing in the food sector is less open to this situation due to the agricultural (subsidy) policies of the European Union (Eurozone).

Kamps (2006) found that after the Euro transition in candidate and member countries, invoicing in foreign trade in Euro increased, and the dollar remained at the forefront in exchange rate volatility.

Obstfeld (2011) stated that IMF SDR, which is the right of withdrawal of countries towards reserve money, has a very low percentage in the reserves of central banks, and that countries with low incomes prefer reserve currencies more, and if IMF SDR were more preferred, IMF SDR would be more effective in foreign exchange markets. He said that it could be an insurance to reduce volatilities. However, in both cases, he stated that low (interest) yields could affect exchange rate changes regardless of the reserve form. He suggested that if the swap lines of central banks after the 2008 crisis were supported by exchanging SDR with national currency instead of more reserve money, it could be positive due to less elasticity on exchange rates, and that pegging

national currencies to SDR would reduce real effective exchange rate volatilities.

After the 1970 "Free Floating Exchange Rate Regime", the framework that led to the existence of the SDR disappeared. The SDR amount is determined not by need but by the economic size of the countries and their quotas in the IMF. Member countries do not want to give a greater role to the SDR. For these reasons, the SDR does not stand out in trade and foreign exchange markets as a common currency. In the case of the Riksbank, SDR volumes reveal a similar finding (Gislén & Kangas, 2020).

In 2016, Renminbi was officially included to the IMF SDR basket. However, because the need for to be less dependent on the IMF, "the BRICS Reserve Fund" and "the BRICS New Development Bank" were established in 2014. China later established the "Cross-border Interbank Payment System (CIPS)" payment infrastructure, which later Iran joined the system. While the usage of Yuan through swap agreements is increasing in mutual trade, the Indian Rupee currency is not considered close to being a reserve currency due to high inflation. The progress of BRICS countries in the global financial system is slow but regular (Kondratov, 2021).

In their study, Coquidé, Lages and Shepelyansky (2023) analyzed the euro, dollar and the proposed BRICS common currency with a Monte Carlo simulation and found that the euro is preferred in the Mediterranean and Europe, the dollar is preferred in Anglo-Saxon countries, and the BRICS money is preferred in South America, Asia and Africa. In 2020, 60% BRICS, 21% EURO and 19% dollar usage came to the fore in the countries subject to the research, and they suggested that a shift

in reserve currency dominance may occur over the years.

5.5.4. Bank for International Settlements, Fed, ECB

The "Bank for International Settlements (BIS)" was established in Basel Switzerland in 1930 as an interstate "quango", as a limited company under Swiss law, with the aim of increasing coordination between central banks (and supporting Germany's payments after World War I). The IMF uses its SDR as currency to conduct transactions only with central banks. It shapes banking in the World with the Basel Committee (Seabrooke, 2006).

Thanks to production shifting primarily to the Far East and technological developments in China, productivity growth and wage increases remained low, allowing the Fed's monetary expansion and allowing inflation to remain at a controllable level (Cosgrove & Marsh, 2004).

Contrary to popular belief, the US dollar became preferred at World War I and replaced the British Pound herein after. The main reasons behind the US dollar being the global reserve currency are the fact that American banks started to take part in (foreign) trade with foreign branches, and the interest of the public and investors due to the development of secondary markets along with trade (Eichengreen & Flandreau, 2012).

Michel (2022) states that the Fed's FedNow payment system is unnecessary because private banks run the payment systems, similarly, the unbanked segments can access finance through prepaid cards, checks and mobile financial applications, and he argued that it would lead to that the central bank's own digital money and payment system which will lead to a contraction in the sector.

"The European Council" decided to establish "the Economic and Monetary Union (EMU)" in June 1988. In the first stage, "ECU (European Currency Unit)" started to be used and "the Committee of Governors" came into play. In 1994, a board of directors consisting of the president, his deputy and four members is determined (similar to the Fed). In the third stage, the Euro is created and begins to be used first dematerialized and then physically (www.ecb.europa.eu/ecb, 2024).

How the foreign trade volumes of the leading countries in the union, Spain, Italy, Germany and France, reacted to the ECB policy rates, the central bank of the Eurozone (Europe), was examined by cointegration analysis using data between 1999 and 2008, and interest rates in trade with the USA and Japan were also examined, significant long-term results have been seen on real incomes (Tria & Galloppo, 2010).

5.5.5. Social Media Cases and Card Licensing Companies: X (Twitter) Payments LLC, Facebook, Libra, VISA, Mastercard, UnionPay

In their study on stablecoins whose price is fixed to a cryptocurrency, fiat money, Giudici, Leach & Pagnottoni (2022) found that stablecoins fixed to a single fiat currency are more volatile than stablecoins indexed to a basket. They examined Libra, the stablecoin (cryptocurrency) of Facebook (Meta), by comparing it with the IMF SDR fiat currency basket. They found that since most (stablecoins) cryptocurrencies are pegged to the dollar, they are more open to exchange rate impacts/shocks than stablecoins based on a basket of different cryptocurrencies.

Elon Musk, who changed his brand to X after purchasing

Twitter, announced that he will start sending money from person to person via the X platform (social media) which is licensed in 14 states by 2024, according to "the Nationwide Multistate Licensing System" website (Capoot, 2024). Given that Elon Musk is the founder of Paypal, adding different services to the X platform and offers different alternatives given its relationship with Dogecoin's cryptocurrency bring different ideas to minds.

Credit cards entered our lives with Diners Club in 1949. American Express was launched in 1958. Bank of America's Americard brand evolved into VISA in 1976 to compete with non-bank card programs. Mastercard was the most used card system in Russia before, but the use of the "national card payment system (NSPK)" and the "Mir system", which has a more limited infrastructure, has been launched due to embargoes after 2014 (Nedoluga & Mustafin, 2017).

While the security controls and application procedures of VISA and Mastercard operation and the network technological infrastructure are an advantage for the parties by being included in the system, brokerage/provision clearing commissions and their unique legislation also pose the risk of domination (monopolization) that disrupts competition and directs the market (Hunt, 2003).

After the 1960s, some countries began to implement their own card payment systems for financial benefit, low commissions, financial access and inclusion, that is, expansion to the financial base, and rapid adaptation to value-added technological developments. Chinese UnionPay, which is a public institution, was established in 2002 by the coming together of 85 Chinese banks. Although it was established for political reasons under

the influence of international politics, its benefits were similar to other national networks and it was opened to the World in 2004 due to competition in global trade. Similarly, when the transactions of Russian VISA and Mastercard holders were rejected due to embargoes, Russia launched the MIR payment system in 2015 (Kayalıdereden & Çetiner, 2018).

5.6. FOREIGN TRADE WITH NATIONAL CURRENCIES

Rose and van Wincoop (2001) emphasize that, contrary to popular belief, monetary unions are more beneficial than trade with national currencies and increase transaction volume.

Fischer (1983) discussed the IMF and SDR in three different scenarios similar to "the International Clearing Union" proposed by Keynes in 1943. In the first one, he modeled the role of the IMF as "the World Central Bank" and whether the SDR would become the World reserve currency (single currency). In the absence of national currencies, capital controls are impossible and a fixed exchange rate system is natural. In the second scenario, countries trade with their own national currencies. Foreign exchange transactions and clearing take place at "the World Central Bank". National central banks adjust their monetary policies based on their reserves at "the World Central Bank". The third is that "the World Central Bank" operates in a free exchange rate regime. In this case, it will carry out world balance (monetary) policies through open market operations. "The World Central Bank" is effective only when national central

banks lose power. It can act speculatively like the Fed. The best way is for the IMF to encourage the use of SDR in private commercial transactions.

Kaya & Hacıevliyagil (2024) analyzed foreign trade with national currencies, which gained ground among the BRICS countries and in the World under the leadership of Russia, with unit root and causality tests and concluded that it was beneficial for the country's exports. Among the embargoes placed on Russia after 2014, its exclusion from the SWIFT system is seen as one of the factors.

Since BRICS countries' trade with national currencies is indexed to the energy economic value in trade among themselves, it can be seen as equivalent to a basket similar to the IMF SDR, which will reduce the volatility of national currencies and enable the BRICS international investment bank to issue long-term financial assets and securities and ensure the sustainability of the system. While the "BRICS Exchange Alliance" and "the BRICS Business Council" work towards monetary cooperation, new structures are required with the participation of new countries with BRICS+. "BRICS Conditional Foreign Exchange Reserve Pool (PUWR)" will be an alternative for these requirements (Bryndin, 2022).

Correspondent banking, by definition, is the act of a bank opening an account at another bank for various payment, banking and brokerage transactions (generally in foreign trade and foreign transactions) and exchanging money and documents. It is used more intensively in clearing and settlement transactions in periods when central structures (clearing houses) are few or absent. The institution who provides the service is the correspondent bank,

and the instituion who receives the service is the addressee bank. The account in the correspondent bank is called nostro by the addressee bank and vostro by the correspondent bank. Although the impact of uncertainties regarding cryptocurrencies is not foreseen, it is thought that the need for correspondent banking in foreign trade with national currencies will continue for a long time (Saruhan, 2023).

After a comprehensive literature review on foreign trade in national currencies, Dirican (2019) explains the actions needed in Türkiye's accounting, tax, payment systems, banking, clearing, exchange rate risk, legislation, etc. for the usage of national currencies in foreign trade. In his study, he examined the actions that should be taken from different angles and discussed approaches to payments through different alternatives such as opening correspondent accounts in central banks or public banks, central bank swap agreements, barter, and common currency (Dirican, 2019).

Trade in national currencies reduces the effect of dollarization and helps exporters to see the future and close the current account deficit. However, national currencies (TL) should be preferred more with countries that have a foreign trade deficit rather than a foreign trade surplus, in order to gain reserve currency status. Widespread use in foreign trade is possible when the national currency is in demand on the other side (Yerlikaya, 2019).

The use of national currencies in trade between Azerbaijan and Turkey will reduce the cost of conversion to foreign currency, eliminate exchange rate risk, and eliminate price uncertainties (Bölek, 2012).

The increase in smart contracts and decentralized finance applications with blockchain prevents fraud, eliminates physical documentation and intermediaries, and creates a competitive advantage by reducing transaction costs and times (Başar, 2023).

The first effect in foreign trade with national currencies is that it creates changes in import and export items as much as the exchange rate effect. In general, if the national currency is preferred for exports, the value of imports (sudden decline of the J curve) changes. However, the fact that some exports are foreign currency and imports are national currency affects this situation. In general, the use of national currencies is more common in countries with large foreign trade volumes (Page, 1981).

5.7. FINDINGS AND DISCUSSIONS

The Middle Corridor stands as an independent structure for the transformation of the economies of the countries of the region. In terms of supply, China's transportation by rail seems feasible. However, demand-side factors indicate that the existence of excess regional ties provides lower economic justification for intercontinental freight flows (Kenderdine & Bucsky, 2021).

Azerbaijan's becoming a WTO member will provide it with an advantage in foreign trade in terms of many issues such as tariffs and trade discussions (Nahmadova, 2021).

Eichengreen (2011) pointed out the year 2020 for the Chinese Renminbi to reach the reserve currency position, considering the negligible share of dollar in World trade in the 1914s and its historical development. Despite its increasing share in trade and

swap agreements with central banks, and it was added in the IMF SDR basket and although its share has increased relatively, it has not yet achieved yet the reserve currency status. The dominance of the dollar continues despite the Euro. However, with the BRICS+expansion, it is obvious that national currencies will take a greater place in foreign trade, and news in this direction, especially in energy, is becoming more frequent day by day.

Apart from these sources, there are different opinions in many studies in the literature regarding the success and future of the Middle Corridor. In addition to Türkiye being a NATO member country, there are many issues that need to be reconsidered and resolved on common ground, such as the contribution it makes to stability in the region, the fact that China's foreign trade surpluses may create a deficit for other countries and logistics costs and fees, and Azerbaijan being a balance country in the middle.

On the other hand, the subject of the study in this section is to reveal the benefits of payment, clearing (exchange) systems and the use of national currencies on the effectiveness of the Middle Corridor. In this regard, in the light of the different alternatives and business models in the major examples given in the above headings, the possibilities that can contribute to this situation are discussed and a conclusion is presented for future studies, efforts and collaborations. Accordingly, in this section, the subject has been approached solely from the perspective of finance and economy and discussed independently of other variables.

First of all, due to the nature of foreign trade, more than one country is required to carry out mutual trade and cross-border transfers. By so, the breadth of the Middle Corridor geography amply reveals its importance in the supply chain of the World and

the region. Apart from the foreign trade between the countries in the Middle Corridor, especially Azerbaijan and Turkey, there are also foreign trade transactions with the rest of the World through the connection of this corridor. At this point, payment, clearing and use of national currencies in foreing trade and foreign trade itself for the countries or parts of the Middle Corridor are again taken into account as the subject of the study in this section.

Naturally, when other variables are taken into consideration within the framework of bilateral and multilateral relations, it is obvious that some of them will become more prominent or may fall off the agenda, may cause difficulty or ease in implementation, different alternatives may arise over time according to needs and developments, the functionality of current systems and business models may increase, or issues not taken into account here may arise. It may be possible that the applicability of the topics suggested or discussed from different and broad perspectives in this section may not be possible for various reasons. Within the framework of all these constraints, different possibilities, cooperation models, discussion topics and what needs to be done have been tried to be presented below under the main headings and at a high level. If there are prominent topics, they will need to be studied more comprehensively and in detail.

According to the literature review under the above headings, a common currency, that is, a monetary union, is seen as more advantageous in many aspects in foreign trade. However, in terms of the Middle Corridor, it does not seem easy for all countries along the route to be included in such a currency union due to cost, time, economic and political reasons. In addition, the fact that some countries already have a customs union among

themselves and are already included in a union or bloc makes this difficult. However, it may remain aside as an option that can be considered in the medium-long term, especially within the borders or different commercial proximity of some countries. The two separate headings that need to be evaluated here are as follows: a) The transition of the European Union to the Eurozone through monetary union brings with it different problems in the economy, markets and trade (such as budget deficits) since there is no full integration of fiscal policies. Although the national currency is associated with the right to sovereignty through the right to seigniorage, and although this part has been overcome in monetary unions, full integration with fiscal policies means a completely different phase in terms of other issues. b) Neoliberal economic thought, which aims to eliminate dollarization problems by giving up its national currency and using the dollar, which was featured in the media during Argentina's transition to the Milei period, is actually already present in many countries. El Salvador has accepted Bitcoin and the US dollar as its official currency, both in terms of purchasing power and other aspects. Likewise, 15 countries in Africa currently use franc-denominated (indexed) currencies printed by the French Central Bank. However, another critical issue that needs to be considered is whether a new central bank will be established for the common currency, as in the case of the Euro, or whether a central bank will assume this role on behalf of everyone. From this angle, it is believed that there is no need for a separate cooperation structure such as "the Bank for International Settlement", even if the central banks continue as they are or move to a common central bank. Although monetary union seems advantageous from the perspective of increasing

the functionality of the Middle Corridor and facilitating foreign trade, it is not a priority. Therefore, examples such as Fed, ECB, BIS, Euro should appear out of scope. Likewise, since dollarization, that is, the use of the dollar, is currently the current situation due to its importance in global trade, what is sought, discussed and suggested in this study are alternative solution scenarios to this situation.

Since the monetary union scenario remains in the background, the need for a structure similar to SEPA will not be necessary in the short term. Based on this, the use of IBAN will continue to facilitate transactions in countries where IBAN is used, but the establishment of a common bank branch and account code system will not be a priority as it will be costly and long. However, based on national examples such as the Mir system and UnionPay, alternative scenarios may still need to be evaluated in the processes to be followed against financial interruptions for various reasons. It should not be forgotten that until 30 years ago, letter of credit texts were sent by fax and telex. At this point today, when the regulations are put aside, it is possible to send money with fintechs, DeFI and cryptocurrencies. The conclusion here is that alternatives for the speed, cost and security of financial messaging are possible in every situation, from the most primitive solution to the most technological solution. Therefore, although there is no common currency, payment and exchange system, alternatives will always be found. What is important is what advantages the alternatives offer compared to the existing ones.

Since there will be no need for alternative development or cooperation regarding organizations related to legislation and regulations (i.e. "WTO (World Trade Organization)", "ICC

(International Chamber of Commerce)", Incoterms, AML, etc.), it will not be beneficial to move these structures to a fully distributed point in the World, to different blocks. It should not be forgotten that there is a principle of mutual gain in the logic of trade.

The usage of a common currency is an another alternative in the possibility of a monetary union, such as Bitcoin, or the creation of a common stablecoin (cryptocurrency) such as the IMF SDR, which is indexed to the countries' own currencies or another basket (e.g. energy, gold), and the countries in the Middle Corridor. Although Middle Corridor countries currencies are not a reserve currency, the use of this newly created stablecoin (cryptocurreny) in payments and in trade can be considered as a strong scenario. There are different alternatives for the use of electronic money, central bank digital money, existing cryptocurrencies or newly created (stable) cryptocurrencies in payments for Middle Corridor foreign trade transactions. Due to the volatility of existing cryptocurrencies, they are not currently preferred in large-scale transactions in foreign trade, except for exceptional cases, due to regulatory uncertainties. In the scenario of creating a stablecoin similar to the IMF SDR or Facebook Libra, what it will be indexed to, for example, a basket of national currencies, is a question that needs to be resolved. If it is indexed to the current fiat currencies accepted as reserve currencies, it will not differ greatly from the current foreign trade structure, except for the benefits provided by smart contracts through blockchain technology. In case of use of (stable) common crypto money(s) created in this way, issues such as taxation and money laundering will need to be evaluated separately. If it is connected to a basket of national currencies, its coefficients, weights,

clearing and payment and reconciliation infrastructures will need to be considered separately. While it can be designed as a digital currency under the leadership of central banks or a central bank, it is a possibility that a new company or an existing company, based on the electronic money regulations of one of the countries, can mediate these transactions with its infrastructure as a clearing, payment and storage center (kind of like the role of a central bank). As can be seen, many different alternatives need to be discussed and analyzed separately, and many topics need to be taken into account in order to determine the generally accepted structure.

Among other possibilities that will make foreign trade transactions in the Middle Corridor more attractive for all parties, especially the countries in the region, establishing a common clearing bank and a payment system, as in the examples above, stands as one of the important alternatives. Establishing an infrastructure such as Euroclear or Mastercard can be seen as a topic that requires time and cost, such as SEPA, IBAN, common currency. In this case, another alternative could be considered as an alternative for ready-established structures from Türkiye, such as Takasbank, MKK, BKM, Troy, to offer their services and infrastructure to countries that want to be included in the system, in exchange for stocks, partnerships or commissions. Based on this, it may be a possibility for the countries included in the system to adapt their national currencies to these systems, and the national currencies of some countries in the Middle Corridor coming to the fore to gain reserve currency status may be an alternative to other reserve currencies. At this point, using blockchains that enable lower-cost and secure smart contracts,

such as CBDC, stablecoin and electronic money discussed in the above scenarios, will provide a greater advantage in competition. Based on this, it is also possible for the countries or some of them in the Middle Corridor to increase cooperation and standardize cryptocurrency legislation, electronic money and central bank digital money legislation without the need for a union.

Generally, in countries or unions that do not enter into a monetary union but want to develop mutual trade, development banks generally take on the role of central banks, clearing and payment centers in the scenarios discussed above. "Black Sea Trade and Bank" and "Islamic Development Bank" can be given as examples of this situation. "BRICS Bank (New Development Bank)" is one of the important examples against dollarization. Another scenario possibility would be to try to realize the above alternatives through these banks, within the limits of the possibilities.

Apart from all these discussed scenarios, naturally there are other issues. Establishing free zones in the Middle Corridor to develop foreign trade and even establishing a financial center specific to the region or transferring those whose infrastructure is relatively ready to this role, making special customs union agreements such as those between the European Union and Türkiye and the United Kingdom, necessary regulations at customs gates, insurance and freight are some of them. Identifying common requirements in integrating warehouse and loading, logistics, port and container centers with the financing infrastructure (here, such as blockchains and smart contracts, integrations with banks' systems, DeFi and fintech solutions) are the topics that need to be studied according to the

needs and process.

Although a common currency payment system such as SEPA is not the first scenario that comes to mind, the possibility of encrypted messaging of financial institutions through smart contracts over blockchains or an existing payment system should be considered. If SWIFT remains the only alternative, it may restrict competition in the development of the Middle Corridor for many reasons (e.g. cost, speed, value difference, restriction of use of the system, etc.). Instead of establishing a new secure payment system infrastructure, developing and disseminating ready-made infrastructures is also a possibility. Similarly, it also applies to payment infrastructure with credit cards. Possibilities such as disseminating the BKM or Troy example may be considered. Here, the possibility of countries that want and do not want to be included in the system to use alternatives should always be provided.

Apart from the possible scenarios and alternatives for foreign trade with national currencies, which have been discussed so far with payment and exchange systems, there are also other possibilities. Barter, which is used to exchange goods instead of payment, and the use of national currencies in foreign trade with existing systems and methods without the need for any new payment and barter system infrastructure, are examples of this situation.

Aksu and Gürbüz (2017) analyzed Türkiye's potential for expansion in foreign trade through the barter example in D-8 countries and stated that countries with different economic dynamics can avoid the costs incurred in foreign currencies, and Bağcı (2018) stated that although barter is increasing in BRICS

and SAARC countries with the entropy technique, found that it remained relatively low.

Finally, the scenario of foreign trade with national currencies stands out from other alternatives in the short term, as the most realistic and fastest business model scenario until it is found to be beneficial, reach consensus and become widespread rapidly. To summarize based on the limited example in the literature above, there are different possible scenarios and requirements in foreign trade with national currencies. First of all, it will be necessary to remind that there are two opposing views: cross exchange rate costs can be eliminated in foreign trade with national currencies, and on the other hand, the loss of value and devaluations caused by the purchasing power of national currencies and reserve currencies and current account deficits do not eliminate the risk factor and exchange rate costs in all cases. However, there is a critical point that should not be forgotten here. High inflation, foreign trade deficit and current account deficit may also occur in countries using the dollar, even is US. In other words, what appears to be a risk between the country's national currency and the dollar in foreign trade with dollars can actually create different results in countries like Türkiye. Türkiye's imports are generally dollar-based and exports are Euro-based. A significant part of the foreign trade and current account deficit is realized through energy imports from Russia in exchange for dollars. This situation creates constant pressure on dollarization and central bank reserves. In other words, despite the use of dollars in foreign trade, it has negative effects on foreign exchange liquidity and exchange rates and is equally affected by changes in the Euro/dollar parity. In summary, it is currently experiencing the

risk of exchange rates that may occur if foreign trade in national currencies becomes widespread. On the contrary, when the dollarization effect will decrease thanks to foreign trade in national currencies, dollar-based exchange rate shocks will decrease more over time. However, other factors that need to reconsider and to be implemented in foreign trade with national currencies stand out. First of all, one of the formal conditions is that the currencies of the countries with which foreign trade is carried out using national currencies must be convertible and available. At this point, central banks must mutually keep these currencies on their own or be able to find them quickly when necessary.

Swap agreements between central banks are an important gain here. Swap agreements, which were preferred to bypass the IMF after the 2008 crisis, are also used in foreign trade with national currencies. It is seen that swap agreements are made more frequently between the central banks of countries with mutual trade (Aizenman, Jinjarak & Park, 2011). The fact that accounting for swap agreements according to their types affects the money supply should be evaluated. When foreign trade is carried out in national currencies, the effects of foreign trade deficits that may arise in the balance of payments on the money supply and inflation should also be evaluated.

It is also possible for public banks or regional development (and investment) banks to undertake this task. Providing private banks with capital-like external financing in national currencies will positively affect the process in mutual trade and correspondent banking. However, one of the first formal conditions is that capital movements should be free and the legislation of the countries should be harmonized with this situation, including the

tax aspect.

In foreign trade with national currencies, banks are required to conclude mutual agreements such as correspondent banking, nostro and vostro accounts. Reconciliation will be required in cut-off time principles and value date applications that may occur due to time differences. Banks that will enter into a correspondent banking agreement will need to establish a mutual credit line and make "list of conditions" agreements. Banks with branches or representative offices in many countries in the Middle Corridor will be more advantageous at this point. On the other hand, the costs and operational workload of this option, increase in transactions in correspondent banking (reconciliation, number of messages, impact on capital, etc.) should not be a deterrent. In other words, at the end of the day, the numerical benefits provided by the decrease in exchange rate volatility and the increase in mutual trade should be more than the total cost of foreign trade with reserve currencies such as the dollar. It cannot be ignored that there will be an additional need for cash in addition to these financial transactions between banks. Therefore, banks' cash operation costs in multiple currencies are another topic that should be considered. While companies gain advantages in foreign trade with national currencies due to cost and exchange rates, the net gain of banks' with increased operational costs due to cash and treasury back office operations should be evaluated well. If private banks' mutual correspondent transaction volumes are low, there may be a risk of avoiding foreign trade in national currencies through the banking system after a while.

These alternative scenarios in banking can be shaped

according to the own situations and legislation of the countries in the Middle Corridor. Even in using these already implemented infrastructures, which can be carried out in the fastest way through existing legislations, clearing and payment systems in foreign trade with national currencies, important issues for importers and exporters need to be evaluated. First of all, it is necessary to carefully analyze whether companies that import or export to more than one country with a single or two reserve currencies will prefer to engage in foreign trade in a larger number of currencies. Companies that have to master the different legislation of different countries in foreign trade will also need to understand and follow local payment, money, clearing and banking systems and regulations. On the other hand, if exports and imports are not carried out continuously between the parties, transaction and exchange rate costs may be a deterrent by using different national currencies. At this point, facilitating topics such as tax advantages and incentives can be evaluated. Additionally, the possibility of foreign trade capital companies should be evaluated. Companies can import and export through foreign trade capital companies that specialize in issues such as legislation, exchange rate risk, cost, lack of information, and documentation preparation. Here, the necessary infrastructure will also need to be studied in detail in order to avoid problems in matters such as taxes, tariffs, incentives and exchange controls.

In any case, other applicable international legislation, issues such as double taxation, and anti-competitive elements such as dumping will need to be evaluated separately. It should not be forgotten that countries' foreign exchange regimes may have an opportunity cost at this point. Likewise, cooperation opportunities

between country Eximbanks will also be an important topic.

In the light of this information, it may be possible for some currencies to come to the fore in foreign trade with national currencies. In order to overcome these discussed issues, instead of separate structures, we can proceed with a structure such as BRICS money. However, in this case, there will be a need to make necessary analyzes to prevent the negative effects of dollarization from being experienced with such a reserve currency. In any case, the best method for the Middle Corridor to gain a significant share in foreign trade would be to use any of the above suitable scenarios at the right moment by the relevant parties.

5.8. CONCLUSION

In the study, it was discussed how and under what conditions payment and clearing systems could support this structure holistically in order to increase foreign trade transactions in the Middle Corridor. Examples of international and national payment and clearing systems in practice and literature are given based on examples from the World and Türkiye. These examples were examined and discussed in order to shed light on the financial requirements for increasing the functionality of the Middle Corridor. Naturally, among many different examples, there are those that are not covered in this study or may occur over time.

In the light of the above example clearing and payment systems and developments in the field of finance, requirements and areas of need have been tried to be determined through different business models, scenarios and possibilities. Each scenario and business model has its own advantages and disadvantages.

With the contribution of technological developments, blockchains, cryptocurrencies, decentralized finance (DeFi), fintechs and finally digital currencies of central banks (CBDC) have come to the fore. These topics offer opportunities to ensure rapid integration of the Middle Corridor in financial services and foreign trade. New technologies must be taken into consideration, both in terms of joint (stablecoin) (crypto)currency creation, management of foreign trade documentation and its workflows, insurance with smart contracts. Joint payment, custody and clearing systems should be studied in detail by joint working groups and more even by related or newly established organizations. At this point, central banks, public or development banks may be appointed, and existing successful and likely international examples (BKM, Troy, Takasbank, etc.) may also be candidates for these roles and leadership in certain areas. Since the establishment of a common monetary union, clearing and payment systems may take time (and the cost dimension due to economies of scale), foreign trade with national currencies through existing structures and systems seems to be the fastest method in the short term. However, in foreign trade with national currencies, many issues like central banks, banking system, tax, money laundering, foreign exchange regime, customs legislation, accounting, payment and clearing systems, etc. need to be studied in detail. Foreign trade with national currencies is a win win situation and a big opportunity for the future and success of the Middle Corridor. And the usage of national currencies in foreign trade is the quickest way among alternative scenarios. Türkiye and Azerbaijan should lead this efforts among other Middle Corridor participants. Given the fact that US budget

deficit sustainability is a question mark, the dollarization will put more pressure on countries current account deficits and purchasing powers. Acting as fastest as it can will bring balance to the World economy, in the first rank to the Middle Corridor. Starting with the usage of national currencies in foreign trade will lead to look for new chapters that can create new added value to the Middle Corridor.

CHAPTER 6

Trade, investment, free economic zones and facilitating equal access for local smes along the middle corridor: a governance perspective

6.1. TRADE, INVESTMENT, FREE ECONOMIC ZONES

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6.1.1. Introduction

As a key hub connecting Asia and Europe, the Middle Corridor is highly regarded for its position in the current reality and future prospects. This chapter will focus on the trade, investment and free economic zones of the Middle Corridor, with the aim of

exploring in depth the role of this region in the global economic landscape. As the core of international economic cooperation, trade is not only related to the economic ties between countries, but also to the prosperity and development of the whole region. At the same time, investment, as an engine to promote infrastructure construction and economic growth, plays a crucial role in the future sustainable development of the Middle Corridor. The free economic zone, as a mechanism to promote trade liberalization, provides a more flexible cooperation platform for participating countries. By analyzing these aspects in depth, we are expected to gain a more comprehensive understanding of the Middle Corridor's place in the current complex global economic environment and provide strong support for future prospects. In the face of global trade turmoil and economic uncertainty, the real and potential future development prospects presented by the Middle Corridor have made it the focus of academic and practical fields. Through in-depth research on trade, investment and free economic zones, we are expected to provide more precise suggestions for the strategic positioning, policy formulation and international cooperation of the Middle Corridor. In the current wave of globalization, the geographical location, economic potential and strategic value of the Middle Corridor will determine its position in the future international economic order. This chapter will comprehensively present the status quo of the Middle Corridor in trade, investment and free economic zones through the review of relevant literature, data analysis and case studies, and provide useful information and insights for further deepening the understanding of the Middle Corridor.

6.1.2. The Impact of bilateral trade agreements in the Middle Corridor

Strengthen economic cooperation. Within the Middle Corridor, bilateral trade agreements play a key role and provide strong support for promoting economic exchanges and cooperation. First, by signing bilateral trade agreements, participating countries can reduce tariffs and trade barriers and create a more open trading environment. This would help stimulate intraregional trade and enable goods and services to flow more smoothly through the middle corridor. Secondly, the increase in trade flows has directly promoted the construction of the middle corridor. Bilateral trade agreements have promoted the improvement of infrastructure, including transportation and logistics networks, to accommodate the growing demand for trade. This process not only improves the transportation efficiency of the middle corridor, but also provides a more convenient trade channel for countries in the region. Overall, bilateral trade agreements not only strengthen economic ties among countries in the region by facilitating trade flows, but also provide a strong impetus for the sustainable development of the Middle Corridor.

Take, for example, the entry into force of the visa waiver agreement between China and Kazakhstan. The implementation of these two policies quickly attracted a large number of foreign businessmen to seek business opportunities in China. The speed of cargo and passenger clearance at the port has also been continuously improved, bringing new opportunities for the development of trade between the two countries. In addition, new forms of foreign trade such as cross-border e-commerce will also

usher in new development. The visa-free policy will help speed up the logistics of cross-border e-commerce goods, allowing sellers to ship goods to Kazakhstan more quickly and shorten delivery times, thereby increasing customer satisfaction. At the same time, the official entry into force of the visa exemption agreement will also unleash greater vitality in the tourism markets of China and Kazakhstan.

Improve the investment and business environment. Bilateral trade agreements play a key role in the construction of the Middle Corridor and have a positive impact on many aspects by optimizing the investment and business environment. The signing of bilateral trade agreements has opened more open and transparent business doors for participating countries and created a strong legal framework and trade rules to attract domestic and foreign investment. This process helps reduce investor uncertainty and provides a predictable business environment for the construction of the middle corridor, thus driving more capital investment. An optimized investment and business environment stimulates innovation and competition through clear regulations and reduced administrative barriers. This improved environment has attracted more domestic and foreign companies to participate in the Middle Corridor and promoted the development of related fields, including transportation, energy and digital infrastructure. This not only provides more opportunities for entrepreneurs and investors in the region, but also enhances the overall competitiveness of the Middle Corridor. At the same time, this process not only promotes the infrastructure construction of the middle corridor, but also creates more local employment opportunities. With the increase of enterprises, the demand for

labor also increases, providing residents in the region with more opportunities to escape poverty and get rich. Taken together, the bilateral trade agreement provides solid support for the sustainable construction of the Middle Corridor by optimizing the investment and business environment. This optimization has not only attracted more funds and enterprises to participate in infrastructure construction, but also created favorable conditions for economic prosperity and employment opportunities in the region. This process is a typical example of bilateral trade agreements playing a positive role in promoting the construction of the Middle Corridor.

Strengthen political stability. Bilateral trade agreements have played a key role in the construction of the Middle Corridor, which has had a profound impact by enhancing political stability. First of all, the signing of bilateral trade agreements creates a solid economic partnership for the participating countries, allowing all parties to form close cooperation on the basis of common economic interests. This mutually beneficial economic relationship can help ease potential political differences and promote political harmony in the region. Second, through bilateral trade agreements, countries have established a stronger basis for cooperation at the political level. The signing of the agreement symbolizes a shared commitment to peace and stability, and makes political relations in the region more cooperative and win-win. Such political cooperation has not only promoted political dialogue, but also provided stronger political support for the construction of the Middle Corridor. Finally, strengthening political stability through bilateral trade agreements provides a stronger political guarantee for the construction of the Middle Corridor. Political harmony

and stability have provided a reliable environment for infrastructure construction and investment, attracting more international investors to participate in projects in the Middle Corridor. This political stability will help both to boost investor confidence and to promote sustainable development in the Middle Corridor. On the whole, the bilateral trade agreement has created more favorable conditions for the construction of the Middle Corridor by enhancing political stability, skillfully combining political and economic interests, and laying a solid foundation for the prosperity and development of the region.

6.1.3. The significance of cross-border trade zones and special economic zones

Facilitate the flow of trade. The construction of cross-border trade zones and special economic zones has far-reaching significance in promoting trade. First, they create a more flexible and efficient trading environment for the participating countries of the Middle Corridor. By breaking down traditional geographical and regulatory constraints, cross-border trade zones and special economic zones provide innovative models for cross-border trade, making trade smoother. This has provided a more convenient and rapid passage for trade activities between the countries of the Middle Corridor and stimulated the growth of international trade. Secondly, these regions usually have more relaxed trade regulations and tariff reduction policies, which attracts more enterprises to participate in trade. The establishment of cross-border trade zones and special economic zones has reduced the trade costs of enterprises and stimulated the enthusiasm of enterprises to participate in international trade.

This growth in trade has not only promoted mutually beneficial economic cooperation among the Middle Corridor countries, but also provided a broader market and more trade opportunities for enterprises in the region. Therefore, cross-border trade zones and special economic zones have injected new impetus into trade cooperation in the Middle Corridor by creating favorable trade conditions.

Attract domestic and foreign investment. The significance of cross-border trade zones and special economic zones in promoting investment cannot be ignored. First of all, these regions have set up preferential policies to attract a large number of domestic and foreign investors. Cross-border trade zones and special economic zones have attracted strong financial support for the Middle Corridor countries through incentives such as lower taxes and the provision of land and infrastructure. This influx of investment has provided strong support for the infrastructure construction and industrial upgrading of the Middle corridor. Second, cross-border trade zones and special economic zones often become hubs for innovative industries, attracting investment from high-tech companies. By providing innovation incentives, such as research and development funding support and intellectual property protection, these regions serve as incubators for science and technology innovation and research and development. Such investment has not only improved the scientific and technological level of the Middle corridor, but also injected new impetus into the transformation and upgrading of industries in the region. Therefore, cross-border trade zones and special economic zones create strong economic support for the sustainable development of the Middle corridor by attracting investment.

Promote economic growth. The development of cross-border trade zones and special economic zones is crucial to boosting economic growth in the Middle Corridor. First, economic growth in these regions has created a large number of jobs and increased the employment rate. The increase in employment not only improves the livelihood of the residents, but also raises the standard of living of the entire region. Secondly, the economic growth of cross-border trade zones and special economic zones has led to the improvement of social infrastructure and public services in the surrounding areas. This social development has provided a solid foundation for the economic prosperity of the Middle Corridor. In addition, the economic growth of cross-border trade zones and special economic zones has also driven the development of related industrial chains, forming a more complete industrial system. By improving the industrial level of the Middle Corridor, this economic growth provides more development opportunities for enterprises in the region and promotes the sustainable economic development of the entire region. Therefore, cross-border trade zones and special economic zones have laid a solid foundation for the prosperity of the Middle corridor by promoting economic growth.

In the context of the current global economic turmoil, an in-depth analysis of the significance of cross-border trade zones and special economic zones in promoting trade, investment and economic growth is crucial to understanding the current reality and future prospects of the Middle Corridor. Together, the two are driving the economic development of the Middle Corridor and providing a sustainable impetus for the future.

6.2. INVESTMENT OPPORTUNITIES AND DEMAND IN THE MIDDLE CORRIDOR

6.2.1. The investment opportunities presented by infrastructure projects

Railway and road construction projects. Railway and road construction projects in the Middle Corridor region are one of the important areas to attract investment. The implementation of these projects will not only help strengthen intra-regional contacts and trade exchanges, but also promote the development and growth of the regional economy. First, the improvement and expansion of railways and roads can improve the efficiency and quality of transportation, reduce logistics costs, and speed up the flow of goods and people. This is of great significance for promoting trade activities within and outside the region, attracting more companies and investors to participate in it. Secondly, the construction of railways and highways has also created a large number of local employment opportunities and promoted the economic development of the region. By participating in railway and road construction projects, investors can achieve long-term stable investment returns, provide more job opportunities for local residents, and promote sustainable economic growth in the region.

Energy facilities construction projects. The construction of energy facilities in the Middle Corridor area is also one of the important areas to attract investment. With the rapid development of regional economy and the growth of energy demand, investment in energy facilities construction projects has great development potential. First, investors can participate in oil

and gas exploration and development, renewable energy projects (such as wind and solar), and power facilities construction to provide more options and security for regional energy supply. Secondly, the implementation of energy facilities construction projects also helps to improve the security and stability of regional energy supply, and provides strong support for the sustainable development of regional economy. By participating in energy facility construction projects, investors can realize considerable return on investment and contribute to the security of regional energy supply.

Communication infrastructure construction projects. Communication infrastructure construction projects in the Middle Corridor area are also one of the focuses of investors. With the popularization of digital technology and the growth of communication demand, investment in communication infrastructure construction projects has great potential for development. First, investors can participate in the construction of communication networks, the development of Internet and telecommunications services, and the application of digital technologies, so as to provide more options and guarantees for the growth of regional communication demand. Secondly, the implementation of communication infrastructure construction projects will also help improve the informatization level and competitiveness of the region, and inject new impetus into the development of the regional economy. By participating in communication infrastructure construction projects, investors can achieve robust investment returns and contribute to regional informatization.

6.2.2. The financial investment required for infrastructure development

The scale of infrastructure is huge and requires huge financial support. The substantial financial investment required for infrastructure development in the Middle Corridor is reflected first and foremost in its massive construction projects. Infrastructure projects such as railways, roads, ports, energy facilities and communication networks often require huge sums of money to build and maintain. For example, building a long-distance railway line involves land acquisition, road leveling, track laying, station construction, and so on, each of which requires a large amount of investment. For example, in the "Belt and Road" initiative promoted by China in recent years, according to the initial cooperation intention reached between China and Pakistan, by 2030, the direct investment of China-Pakistan Economic Corridor in infrastructure such as roads, railways, ports, oil and gas pipelines, optical cables and power grids will reach 46 billion US dollars, which is a key driving force for the accelerated economic and social development of Pakistan. Similarly, the construction of ports and energy facilities also requires huge investments, including equipment procurement, infrastructure construction, personnel training and other expenditures. These projects often take decades or longer to pay off their investment, placing extremely high demands on the financial strength of investors.

The investment cycle is long and requires stable financial support. Infrastructure development in the Middle Corridor requires significant financial investment, not least because of the long investment cycle of these projects. Infrastructure projects typically have long construction and payback cycles and

require ongoing financial support. Building a railway or a port, for example, can take years or even a dozen years, and investors need to keep putting in money to cover costs during construction. Even after the project is completed and put into use, its return on investment will take a long time to realize, so investors need to have sufficient financial strength and capital reserves to cope with long-term investment needs, and the government and investors need to jointly undertake long-term investment to ensure the smooth implementation and sustainable development of the project.

Cross-border cooperation and coordination is required, which increases the complexity and risk of investment. The Middle Corridor region spans many countries and regions, and infrastructure development requires transnational cooperation and coordination, which increases the complexity and risks of investment. Different countries and regions have different legal, policy, tax and market environments, and investors need to face the policy differences and legal constraints in different countries, which increases the uncertainty and risk of the project. In addition, transnational infrastructure projects also need to face cultural differences and language barriers between different countries, which increase the difficulty of communication and coordination. Therefore, transnational infrastructure projects require investors to have strong international operation ability and risk management ability to cope with complex and changing market environment and policy risks. In order to effectively address these challenges, it is necessary to strengthen communication and cooperation among countries, establish a stable policy environment and legal system, and provide more protection and support for investors.

6.3. CONCLUSION: TRADE, INVESTMENT, FREE ECONOMIC ZONES

In this chapter, we delve into the importance of trade, investment, and free economic zones for the Middle Corridor. As a key corridor connecting the East and West, the Middle Corridor plays a key role in regional economic integration and development. As a link connecting countries in the region, trade has injected new vitality into regional economic development. By promoting cross-border trade and market opening, the Middle Corridor region has achieved optimal allocation of resources, technological innovation and industrial upgrading. Investment is an important driving force for economic growth and structural adjustment, and has provided more financial and technical support for the Middle Corridor region. By attracting domestic and foreign investment and strengthening infrastructure construction and industrial development, the Middle Corridor region is expected to achieve sustainable economic development and prosperity. The construction of free economic zones has created more favorable conditions for regional economic opening and cooperation, and promoted the optimal allocation of resources and the prosperity of the market. Through free economic zones, countries in the region can use resources more effectively, promote industrial upgrading and improve economic efficiency. To sum up, trade, investment and free economic zones are the three pillars of economic development in the Middle Corridor region, which are intertwined and mutually reinforcing, and jointly promote the development and prosperity of the regional economy. In the future, we look forward to further deepening cooperation, strengthening communication and

promoting win-win results to jointly promote more prosperous, stable and sustainable development of the CPEC region. Only through joint efforts will we be able to fully tap the potential of the Middle Corridor region and achieve common development and prosperity.

6.4. EXAMINING THE IMPACT OF THE MIDDLE CORRIDOR ON THE VISEGRAD GROUP (V4) COUNTRIES

6.4.1. Introduction

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Globalization and the consequent changes on the global power constellation coupled with technological enhancements and climate change, are all defining features of the new era in the contemporary world economic order. During these changing times, the world needs to learn how to change along with it to make the best use of its opportunities. Through fostering innovation, inclusiveness, and sustainable development we can envision and create a better tomorrow for us all.

Some organisms were able to adapt and survive after the Cretaceous–Paleogene extinction event that happened around 66 million years ago[56]. Much like an organism changing with its

[56] James Barnet, "What Caused the Cretaceous/Paleogene Mass Extinction?," Geology Today 35 (2019): 45-47, https://doi.org/10.1111/gto.12260.

surroundings, economies have to adapt and make corresponding changes in response to the modern economy. Fostering economic cooperation, promoting technology and innovation, supporting sustainable development, encouraging cultural exchange, and facilitating political cooperation, states could contribute to the adaptation and resilience of economies in the new world order.

In an ever-evolving world, where the dynamics of global trade, connectivity, and economic cooperation continually redefine the contours of international relations, one geographic landscape stands at the crossroads of profound change and opportunity: The Middle Corridor.

A recent document from MGI[57] reveals that the growth in global flows is currently propelled by intangible assets, services, and talent. The prevailing geopolitical dynamics are presenting considerable obstacles to global cooperation, which typically serves as a safeguard against global risks. As per the Global Trends 2040 report by the US National Intelligence Council, it is unlikely for any single nation to dominate all regions or domains, and a wider array of actors will engage in competition to advance their ideologies, objectives, and interests[58].

6.4.2. The Geographical Significance of the Middle Corridor

The Middle Corridor is the most essential area of Europe due to its special geography, which is necessary for today's globalization. As a lynchpin for energy transit through South Caucasus, it links resource-rich regions of Central Asia with

[57] Migration Governance Indicator by The International Organization for Migration.
[58] US National Intelligence, Welcome to Global Trends 2040 (March 2021), https://www.dni.gov/index.php/gt2040-home/introduction.

powerful industrial centers in Europe. Furthermore, its impact goes deeper than just economy; it provides opportunity for building of diplomacy, culture exchange, and even peace-keeping in the difficult environment that is region.

The Middle Corridor has potential to enhance RVC-led development in Heartland of Eurasia and link context-based RVCs with EU, Caucasus and Central Asia's national economic development policies of states. The World bank states that various policy domains play part in making GVCs succeed. Such measures for example are trade policy, logistics and trade facilitation, regulating of business services, investments, business taxation, innovation, industrial development, adherence to global standards of governance and an enabling environment that creates business opportunities[59].

6.4.3. Unlocking the Middle Corridor's Economic Potential

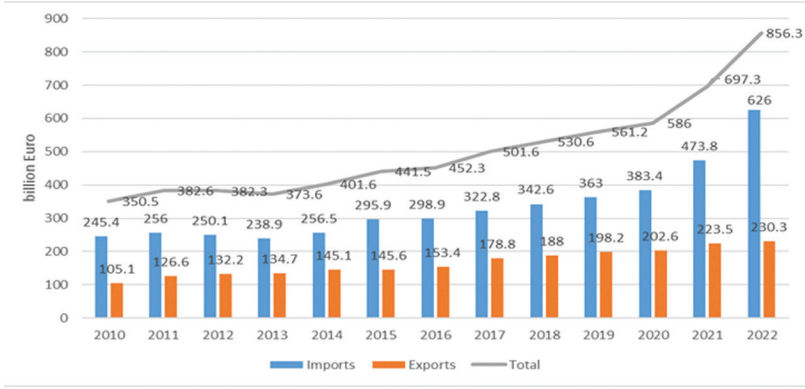
The Middle Corridor is one of the important alternative corridors which cuts the transits in the common Northern route which covers approximately 10,000kms to around 7,000kms and reduces the journeys from Asia to Europe from ten to twelve days[60]. The advantages emanating from this geographical efficiency make the Middle Corridor stand out as one of the most important thoroughfares in the international economy.

In this regard, it should be noted that despite its slight jump of 4.6 percent year on year in 2020, interchange between

[59] World Bank. «The Middle Trade and Transport Corridor: Policies and Investments to Triple Freight Volumes and Halve Travel Time by 2030».
[60] "Freight Traffic from China to Turkiye via Middle Corridor May Be Reduced," Report.az, 2022, https://report.az/en/infrastructure/freight-traffic-from-china-to-turkiye-via-middle-corridor-may-be-reduced/.

EU and China witnessed impressive gains over the last few years with even higher values recorded during both 2021 and 202 In light of the recent geopolitical and geo-economic trends in the Eurasian space (such as the Russia-Ukraine war) (Figure 6.4.3.1.)[61]. So, it is worth noting that these emerging opportunities allow for a reconceptualization of the freight forwarding potentials of the Middle Corridor.

Figure 6.4.3.1. EU Trade with China in Goods, 2010-2022



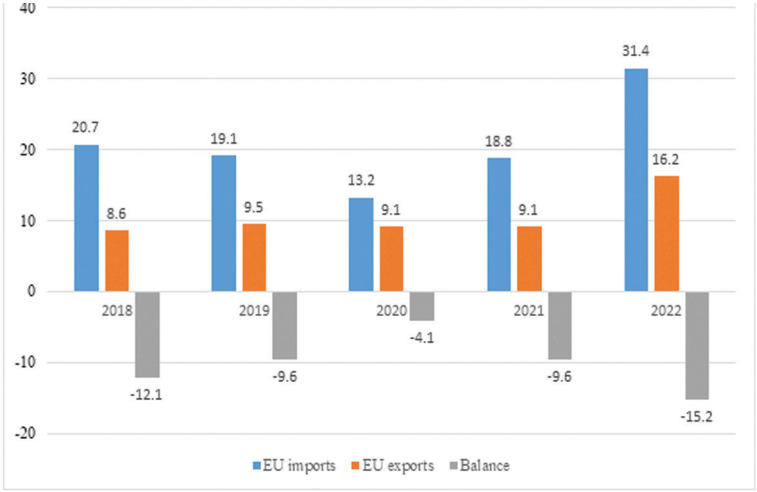
Source: Eurostat, 2023

The export-import flow between the EU's and Central-Asia, an essential segment for the Middle Corridor policy, shows unambiguous increases over the period 2018-2022. In 2018, with European Union's imports from Central Asia being up to 20.7 billion euros and the exports, which totaled 8.6 billion euros, this signified a more dynamic and mutually beneficial partnership. In

[61] "China-EU - International Trade in Goods Statistics," Eurostat, last modified February 2023, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=China-EU_-_international_trade_in_goods_statistics.

2020, this model started changing with the EU import sliding down to EUR13.2 billion and export leveling at EUR9.1 demonstrating positive balances. The reduction of this importation for a period of one year (that is partially caused by global economic crisis that happened because of the COVID-19 pandemic) highlights the need to employ durable transport routes such as the Middle Corridor. Nevertheless, this fall was brief, and in 2022, this positive trend resumed with EU imports from Central Asia shooting up to EUR 31.4 billion while exports increased significantly, amounting to EUR 16.2 billion (see Figure 6.4.3.2)[62].

Figure 6.4.3.2. European Union and Central Asia: Trade in Goods, Billion Euro



Source: European Commission. 2023

These numbers not only affirm the increasing appetite of the

[62] «European Union and Central Asia: Trade in Goods, Billion Euro,» European Commission, 2023, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=EU_international_trade_in_goods_-_latest_developments.

EU towards imports from the Central Asia, but also represent the crucial function of trade channels like the Middle Corridor into making and preserving the favorable course of trade fluxes within the areas.

New Artery to the Middle Corridor

According to a detailed review by Kenderdine and Bucsky (2021)[63] under the Asian Development Bank, total cargo shipment amounted to over one hundred twenty million tons in the year 2018 with approximately two point two million tons moved through the railway lines[64]. The success of this corridor is likely to improve when the interlinking of countries that run along it is enhanced. However, if other economy is going to be included in the scope of the middle corridor this would even enhance its potential more.

With this concept in mind, the Zangezur corridor linking the Caspian and Mediterranean seas, South-East, Central Asia, and Europe, becomes the primary channel of diversification of the trade way and its enhancement (Figure 6.3.3.1). On its part, the Middle Corridor gains an extra route towards integration through the establishment of Zangezur Corridor among other linkages that make up an extended web of connectivity in the region.

The Zangezur corridor sees an opportunity of massive revenue to be realized by the special economic zones established therein. On July 1st, 2021, Azerbaijan opened the first ever free economic zone of its kind and dubbed it Alat Free Economic

[63] T.Kenderdine and P. Bucsky, "Middle Corridor – Policy Development and Trade Potential of the Trans-Caspian International Transport Route," ADBI Working Paper 1268 (Tokyo: Asian Development Bank Institute, 2021), https://www.adb.org/publications/middle-corridor-policy-development-trade-potential.

[64] This study emphasizes on the huge market which is in the rail transportation segment of the Middle Corridor with the projection of over 80 million tonnes of capacity

Zone (AFEZ)[65]. It can be linked with the newly built Baku International Seaport which is nearby at Alat only about 50 miles far from the capital. The proposed AFEZ spans approximately 850 hectares and expects to bring in additional income while transforming the country's export oriented manufacturing environment[66].

Figure 6.4.3.1. The Zangezur Corridor



Source. TRT World and Anadolu Agency

It should also be noted that Kazakhstan (Aktau and Atyrau) and Turkmenistan (Ashgabat) have significant EZs within this region. Kazakhstan's free economic zones-Aktau and Atyrau commenced operation in 2022, and their role should be perceived as an addendum of the Azerbaijan Free Economic Zone. The future of the Ashgabat region also comes with

[65] Museyibov, A. (2021, August 12). The Alat Free Economic Zone's Role in Azerbaijan's Long-Term Geo-Economic Strategy. Jamestown Foundation.
[66] News.Az. (2023, June 9). President Ilham Aliyev attends opening ceremony of first stage of Alat Free Economic Zone.

great economic potential. Therefore, the Zangezur Corridor will provide easy transit of economic values between Special Economic Zones in the South Caucasus and Central Asia as well as other neighboring countries. The Middle corridor promoted increased economic linkage in these regions as well as in tune with EU interests. As a key driver of regional economic development and cooperation, the Middle Corridor will meet the EU's rising trade associations and economic engagement in this space.

Moreover, the Europe is partnering with Middle Corridor on important megaprojects in Eurasia for the sake of energy security and connectivity enhancement. Some of these projects include Trans-Anatolian Natural Gas Pipeline (TANAP) and the Trans-Adriatic Pipeline (TAP) which Azerbaijan has been praising and implementing[67]. Therefore, being a forward-looking actor, the EU supports these efforts which are of great interest for diversification of energy resources and their transportation systems. The southern Gas corridor includes a total length of 1850 km of TANAP, which is a backbone of SGC and is designed to ensure diversification of the EU's energy security. The Southern Gas Corridor that stretches over 3,500 kilometers will provide the European Union with an adequate substitute for Azerbaijani gas with a volume of up to 31 billion cubic meters[68]. The TANAP runs across Azerbaijan, Georgia, and Turkey leading it join TAP which continues throughout Bulgaria, Greece, Macedonia, Albania, Serbia then Bosnia and Herzegovina. Looking ahead the master plan intends to increase TANAP capacity from 16 BCM

[67] Ministry of Energy of the Republic of Azerbaijan, "The Southern Gas Corridor," 2023, *https://minenergy.gov.az/en/layiheler/cenub-qaz-dehlizi_2196.*
[68] Ibid, 14.

to 31 BCM per year. (Figure 6.4.3.2)[69].

Figure 6.4.3.2. Southern Gas Corridor



Source: Southern Gas Corridor. Extraction from www.sgc.az/en

Additionally, the EU's interest in the Trans-Caspian Fiber Optic (TASIM) initiative demonstrates its commitment to enhancing digital connectivity between Europe and Asia, with the project aiming to establish a cross-border fiber-optic network spanning from Frankfurt to Hong Kong, encompassing the entire expanse of Eurasia.

In addition to it, it is noteworthy that Azerbaijan has embarked on a significant initiative aimed at establishing the "Caspian-European Green Energy Corridor" in collaboration with European partners (Figure 6.4.2.2.). An important milestone in this effort occurred on December 17, 2022, in Bucharest, Romania, where an agreement pertaining to "green energy" was solemnly emphasized among the Governments of the Republic of Azerbaijan, Georgia, Romania, and Hungary. This accord, denoted as the "Agreement on a strategic partnership in the field of green energy development and transmission between the Governments of the Republic of Azerbaijan, Georgia, Romania and Hungary" not only marks a historic agreement but also

[69] «Southern Gas Corridor,» 2023, https://www.sgc.az/en.

heralds a new era of opportunities for Azerbaijan[70].

This visionary initiative has already spurred the establishment of the Green Energy Advisory Council, entrusted with overseeing the realization of the project. On February 3, 2023, a high-level discussion convened in Baku, with the active participation of relevant ministers from Azerbaijan, Georgia, Hungary, and Romania, focusing on the conceptualization of future activities related to the development and transmission of "green energy". Furthermore, in June of the same year, the third ministerial meeting took place as part of the Baku Energy Week. These deliberations were instrumental in advancing the objectives outlined in the Agreement reinforcing Azerbaijan's commitment to sustainable energy and enhancing its role as a key player in the region's evolving energy landscape.

Figure 6.4.3.3. Caspian-European Green Energy Corridor



Source: Gasimli, 2024 a; 2024 b

[70] "Azerbaijan, EU Discuss Establishment of Caspian-European Green Energy Corridor," Report News Agency, 2023, https://report.az/en/energy/azerbaijan-eu-discuss-establishment-of-caspian-european-green-energy-corridor/.

These megaprojects, with their substantial investments and operational capacities, collectively advance the EU's goal of mitigating energy vulnerabilities and fostering closer cooperation with nations along the Middle Corridor, thereby positioning the EU as a key player in shaping the geopolitical and economic dynamics of the region.

6.4.4. Welding the EU with the Rest of Eurasia

In Europe's overall transportation strategy, the Trans-European Transport Network (TEN-T) Core Corridors are crucial, and their importance extends outside of the EU to areas like the South Caucasus, Central Asia, and Türkiye. The Middle corridor is in line with several TEN-T corridors including Mediterranean corridor and the Orient/East-Med Corridor. Such alignments give a boost in synergy effects as well as logistical transit chains essential for trade between Europe and Asia passing through the South Caucasus and Türkiye. With the Middle Corridor connecting with TEN-T core corridors, transport of goods and people becomes easy and time taken in transit is lowered as seen in Figure 6.4.4.1[71].

Many of these TEN-T core corridors are designed towards a specific geographical region and objective that collectively builds towards the development of a complex and interlinked European transportation system. For instance, the Baltic-Adriatic Core Corridor that links countries such as Poland, Czech Republic, Austria, Slovenia, and Italy among others. Stretching from the Baltic to the Adriatic it is. The objective of this corridor is to facilitate trade between northern and Baltic regions with the

[71] «Trans-European Transport Network,» Port News, 2023, https://www.portnews.it/en/european-observatory/radar/trans-european-transport-network/.

Mediterranean. It promotes sustainable and ecological transport alternatives and uses the different modes of transport such as roads, rails, and seas.

Figure 6.4.4.1. TEN-T Core Corridors

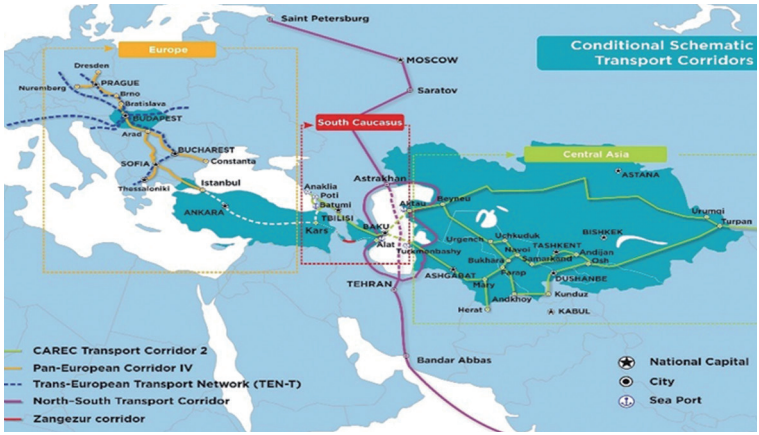


Source: PortNews Magazine

Additionally, some of the transport corridors within the EU may connect to other corridors going through Central Asia, the South Caucasus and Türkiye with respect to this, it is very relevant in case a state is land locked and wants connection to European markets. This will enhance the creation of transport corridor networks which will enhance trading between Central Asia, the South Caucasus and Europe. The Corridors align their objectives of improved connectivity, trade facilitation, and economic growth with the EU's interests that seek to promote regional stability and cooperation by integrating with the TEN-T

Core Corridors. (Figure 6.4.4.2)[72].

Figure 6.4.4.2. Conditional Schematic Transport Corridors Connecting the Middle Corridor



Source: prepared by the CAERC

6.4.5. Role of Visegrad Countries (V4) and Impact of the Middle Corridor

The Middle Corridor boasts of a strategic location and an ideal economic atmosphere that makes it one of the most important global economics. Thus, the V4 countries from a geopolitical location within central Europe play a vital role in boosting the effectiveness of the middle corridor upon world trade activities. The V4 (countries meeting in Europe) would benefit immensely from intensified regional interactions that can be supported by the Middle Corridor. With the Middle Corridor linking Asia with Europe, the V4 states might explore fresh markets, expand trade relations, and firm-up economic exchanges with areas found on

[72] Gasimli et al., Turkic States Economy.

the Middle Corridor[73].

Meanwhile, the V4 countries with solid infrastructure can offer expertise and investments in developing transport links of the Middle Corridor[74]. Development of the joint infrastructure for the V4 countries is not just about them. Such activities will fuel economic progress along the Middle Corridor. However, energy security is essential in the V4 states' national interests. Energy diversification among others and energy routing are among the primary goals of V4 countries and the Middle Corridor suits them well. Joint programmes within energy sector improve both V4's energy security and that of the EU.

It is also part of the objectives of the Caspian-European Green Energy Corridor in which sustainable development becomes crucial for the V4 countries. The V4 countries' sustainability agenda, as well as the overall objectives for environmental management within Middle corridor can also be enhanced through collaborative efforts on green energy projects.

Significant knowledge about the dynamics of regional economies can be gained by carefully examining the products of the networks of trade and foreign direct investment (FDI) for the Visegrad Group (V4) nations, namely the Czech Republic (CZE), Hungary (HUN), Poland (POL), and Slovakia (SVK)[75]. Relevant findings[76] into the dynamics of these partnerships are provided

[73] Foreign Policy Research Institute. «The Middle Corridor through Central Asia: Trade and Influence Ambitions».

[74] International Institute for Strategic Studies. «Greater consensus on improving the Middle Corridor»

[75] Social Network Analysis (SNA) is utilized in the analysis part based on the graph theory. The primary dataset used in this study is the International Monetary Fund's Coordinated Direct Investment Survey (CDIS). This is the dataset, which employs 2019 as its base year in order to minimize influences of global economic fluctuations caused by Covid-19 pandemic. Using Python-based NetworkX package, graph theory ideas are incorporated for network creation.

[76] Anand Bihari and Manoj Pandia, "Eigenvector Centrality and Its Application in Research Professionals' Relationship Network," in Proceedings of the 2015 1st International Conference on Futuristic Trends in Computational Analysis and Knowledge Management (ABLAZE 2015) (2015), 10.1109/ABLAZE.2015.

by the examination of their trade and Foreign Direct Investment (FDI) networks, with an emphasis on degree centrality metrics, the Revealed Comparative Advantage (RCA) index, and key exporting products[77].

Additionally, as seen by its high degree centrality in Figure 3, the Czech Republic's significant participation in the V4 trade network is a result of its advantageous geographic location, diversified industrial base, and longstanding trade relations. The trade patterns of the Czech Republic indicate a diverse approach to trade, as evidenced by the country's significant relationships with both EU and non-EU nations. Additional analysis of the Czech Republic's main trade sectors, including machinery and automobiles, reveals the country's advantages and disadvantages in the international marketplace.

Furthermore, Slovakia's trade centrality score highlights its integral role in regional trade, particularly in the automotive and electronics sectors. Slovak Republic's trade patterns, heavily influenced by its EU membership and geographical proximity to key markets, demonstrate its economic strategy focused on high-value manufacturing and export-oriented growth (Figure 6.4.5.1.).

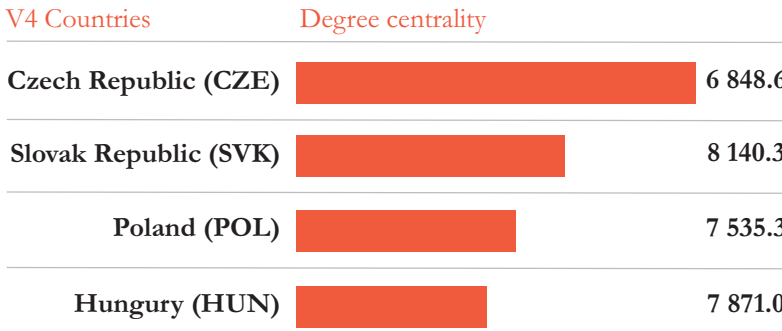
On the other hand, Poland's centrality (7535.3) indicates a considerable trade network, reflecting its diverse economic structure and significant role in regional trade (Figure 6.4.5.1). It can be attributed to its large market size, diversified economy, and strategic position as a bridge between Eastern and Western Europe. Poland's trade structure, emphasizing sectors like machinery, food products, and textiles, reflects its historical economic transformations and ongoing efforts to

7154915.

[77] Hausmann, R., Hwang, J. & Rodrik, D., 2007. What You Export Matters. Journal of Economic Growth, 12(1), pp. 1-25.

diversify its trade portfolio (Figure 6.4.5.1.).

Figure 6.4.5.1. Degree Centrality Measures of V4



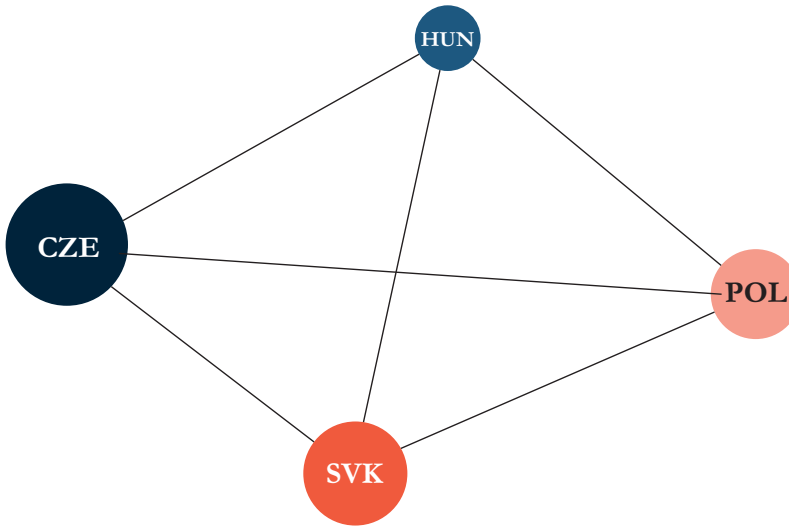
Source: Author's own elaborations

However, Hungary's centrality in the trade network, while lower than its V4 counterparts, is nonetheless noteworthy, underscoring its active participation in regional trade (Figure 6.3.5.1.). Hungary's economic focus on sectors such as pharmaceuticals, automotive, and electronics, coupled with its strategic initiatives to bolster trade ties within and beyond the EU, presents a nuanced picture of its trade dynamics. Indeed, it does not mean that the efforts should be limited which Hungary must work on further development and cooperation.

The Czech Republic's leading position in RCA with 1968 products suggests a diversified economic structure, with a particular emphasis on sectors such as machinery and transport equipment. This diversification not only provides a buffer against market fluctuations but also positions CZE as a key player in the European industrial landscape. Hence, Poland 's diverse range of products with a high RCA index also highlights its multifaceted economic base.

With 1138 and 965 items, respectively, Slovakia (SVK) and Hungary (HUN) exhibit noteworthy but different economic profiles. SVK's industrial policies and FDI attraction methods are in line with its emphasis on electronics and the automotive industry. HUN's RCA distribution, on the other hand, shows a concentration in machinery and pharmaceuticals, which is influenced by its recent policy measures and past economic development.

Figure 6.4.5.2. Degree Centrality Nodes of V4 Countrie

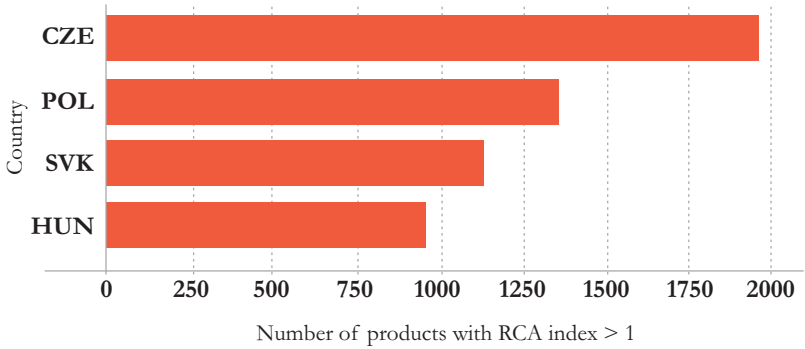


Source: Author's own elaborations

Meanwhile, the total export corresponds with the high degree of RCA index because as countries getting more number of products with RCA index greater than 1, it in turn affects the export capacity of those countries. in this regard, CZE plays a leading role and its total export reaches to 40 billion USD whereas POL is following CZE with total export of about 35 billion USD. Moreover, although SVK's total export exceeds 25 billion

USD, it is together with Hungary lacking behind CZE and POL among V4 countries.

Figure 6.4.5.3. Number of Products with RCA Index >1 in V4 Countries



Source: Author's own elaborations

According to Table 6.4.5.1, all four countries are recorded with degree centrality of 2. The total number of neighbors connected directly to an interconnection node represents this measure. It means that in this situation there are two links to a particular country may be by way of relationships or exchanges between other entities in the network. The third measures known as In-degree centrality or 1 per country, signifies of incoming links. It may indicate how dependent these nations are on the network, meaning that they may be input from, by other nations in the network.

Likewise, the out-degree centrality for each country is also shown as one for all four countries. Thus, these countries have some form of outward relations in the network. These commonalities in the values for all of the four countries suggest a relatively standard level of connection and sway among them in their

environment under review, which could be taken to imply that each country has about the same status or role as any other one of them.

Table 6.4.5.1. Centrality Measures of V4 Countries

Country	Degree Centrality	In-Degree Centrality	Out-Degree Centrality
Hungary (HUN)	2	1	1
Czech Republic (CZE)	2	1	1
Poland (Pol)	2	1	1
Slovak Republic	2	1	1

Source: Authors' own elaborations[78]

Due to equal degree centrality, this means countries interact at approximately the same proportions, hence this suggests balance between them. If well handled, this equilibrium can promote an environment that embraces equality and respect, key ingredients for successful working together. These countries have equal influence on each other, as indicated by the corresponding in-degree and out-degree centralities. The reciprocal nature of this process helps keep steady, beneficial relationships. Additionally, unified centrality measures suggest a high degree of coherence among the V4 states. Indeed, this cohesion is paramount in order to act in concert in external relations, including talks with EU or at major summits. Finally, such information may indicate similar levels of starting and reacting in general to joint activities among these nations within a common program as well as for inter-regional efforts.

[78] Freeman, L. C. «Centrality in Social Networks: Conceptual Clarification.» Social Networks 1, no. 3 (1979): 215-239.

6.4.6. Policy Recommendations and Concluding Remarks

Taking into account all aforementioned facts and points, several policy recommendations are formulated:

- Enhancing regional integration will be a driver for the trade facilitation and connectivity considering the rising role of the Middle Corridor.

Initially, the Middle Corridor as a bridge between Asia and Europe offers massive possibilities of trade and improved connectivity. Developing stronger economic linkages and infrastructures will propel the V4 into the critical logistics and business heart of this area. However, this is not merely concerning physical connectiveness between member states; it involves the harmonization of policies, aligning regulations, and common infrastructure projects between the member countries. These will simplify cross border trade, remove logistic hindrances towards achieving efficiency in the corridor of trade. Leveraging this competitive advantage will be critical in determining whether the future economic of the V4 would grow or not. These countries should improve on integration to attract more investments, increase their trades and be able to compete favorably in the world of international economics. Additionally, this strategy complies with EU's objectives on economic convergence and competitiveness. With the change of the economic landscape globally, the capacity of the V4 countries to act simultaneously as one powerful, agile and effective economic region of Europe will form the basis of their endurance. Thus, enhanced regional integration is a short-term strategy towards gaining a significant

place in the world market network. Therefore, it is needed to utilize the Czech Republic's significant participation in the V4 trade network, underpinned by its diversified industrial base, to enhance regional integration. This can be achieved through developing stronger economic linkages and infrastructure projects that tap into the Czech Republic's extensive relationships with both EU and non-EU nations.

- Diversifying energy sources will reduce the dependence on one supplier and investment in alternative energy sources will greatly reduce the dependence on traditional energy supplies by promoting sustainable development.

Traditional energy sources that are usually imported and vulnerable to geopolitical influences become the risky factor in terms of national economy's stability and sustainability. These risk can be addressed by the V4 through investment on alternative sources like renewable energy including solar, wind and biomass as well as new technologies in energy storage and distribution. Hence, the move to diverse energy source is not just for the sake of security, but reflects global trend towards environmental sustainability that reduces carbon emission level. With the shift in the world towards healthier sources of energy, V4's investment in various green initiatives will make them a forerunner in sustainability. Besides, it presents opportunities for the economy in terms of new industries and tech developments. Thus, diversification will in the future provide a stable and more independent energy supply while contributing on a global scale to fighting of climate change. Therefore, the move to a mixed energy model would be inevitable for the V4 countries not only as an initial measure of energy security, but also in order to fulfil

the objectives set during long term sustainable development efforts.

- Investing in sustainable practices alongside with the Middle Corridor including V4 region will serve to the global environmental goals and the long-term sustainable economic development

Such an investment conforms to international environmental objectives as well as guarantees economic and ecological durability for the area in the future. This brings V4 to meaningful participation in the sustainability of the Middle Corridor, thereby strengthening the green and innovative character of this transit route. However, they have made an international commitment to sustainability that will only strengthen this corridor's reputation while supporting the efforts to maintain the viability of the corridor as a safe environmental passageway from Asia to Europe.

- Bolstering digital connectivity in V4 region will position V4 countries as the drivers on the Middle Corridor considering the rising competitive advantage in the digital era.

Improved connectivity between V4 and Asia and Europe as well as increased competitiveness of the region on the global market due to enhanced digital infrastructure. Enhancement in digital infrastructure entails more than the physical development of broadband and 5G networks; it includes digital literacy among the human resource and digitalization of the services and industries. Investments in digital infrastructure as digital technologies drive global economic growth can help attract investors, enhance innovations for the V4 sectors to be competitive in the world economy.

- Promotion of multilateral cooperation beyond the EU will increase V4's global influence and foster international partnerships.

The core idea of this strategy lies in cultural, economic, and political communication with the Middle Corridor states as well as other countries. The V4 should enter into multilateral partnerships so as to take advantage of each other's strengths, pool resources and knowledge, and collectively tackle similar problems. Through this approach, they are able to take stronger positions within the international arenas, thereby enhancing economic and diplomatic diversification for a more inclusive and broad based international appearance. Hence, Slovakia's key role in regional trade, particularly in automotive and electronics, should be leveraged. Efforts should focus on integrating Slovakia's industrial policies and FDI attraction methods into broader V4 initiatives to enhance high-value manufacturing and export-oriented growth. Meanwhile, Poland's considerable trade network and diverse economic structure present opportunities for broader regional trade enhancement. Efforts should be made to diversify the V4 's trade portfolio by building on Poland's strengths in machinery, food products, and textiles. Despite Hungary's lower centrality in the trade network compared to its V4 counterparts, its active participation in regional trade and fo cus on sectors such as pharmaceuticals, automotive, and electronics should be bolstered. Hungary should work on further development and cooperation, integrating its strategic trade initiatives within the V4 framework.

6.5. FACILITATING EQUAL ACCESS FOR LOCAL SMES ALONG THE MIDDLE CORRIDOR: A GOVERNANCE PERSPECTIVE

Gulshat Raissova, *ADB*
Hans Holzhacker, *CAREC Institute*

6.5.1. Introduction

The Middle Corridor, a vital trade route connecting Asia to Europe, holds immense potential for economic growth and development. However, ensuring that the benefits of this corridor are distributed equitably among all stakeholders, particularly local Small and Medium Enterprises (SMEs), is crucial for sustainable and inclusive growth[79]. This chapter delves into the significance of facilitating equal access for local SMEs along the Middle Corridor from a governance perspective with a specific focus on the CAREC countries[80], positioned strategically between major economies. The CAREC region offers unique opportunities for economic growth; however, SMEs in this region often encounter substantial obstacles, including limited access to finance, complex regulations, and inadequate infrastructure. Existing governance models also typically favor large corporations, putting smaller local businesses at a competitive disadvantage[81].

[79] World Bank Presents Key Findings of Latest Study on Middle Corridor in Tbilisi - The Astana Times; OECD (2024), "Improving the Middle Corridor's attractiveness requires investing in port and rail infrastructure, with a focus on multimodality", in Realising the Potential of the Middle Corridor, OECD Publishing, Paris, https://doi.org/10.1787/91bae97d-en.

[80] The Central Asia Regional Economic Cooperation (CAREC) Program is a partnership of 11 countries and development partners working together to promote development through cooperation; the 11 countries are Afghanistan, Azerbaijan, People's Republic of China, Georgia, Kazakhstan, Kyrgyz Republic, Mongolia, Pakistan, Tajikistan, Turkmenistan, Uzbekistan. (https://www.carecprogram.org/)

[81] CI-policy-brief-MSME-July-2021.pdf (carecinstitute.org)

6.5.2. The Importance of Middle Corridor Logistics and SME Participation in Regional Trade

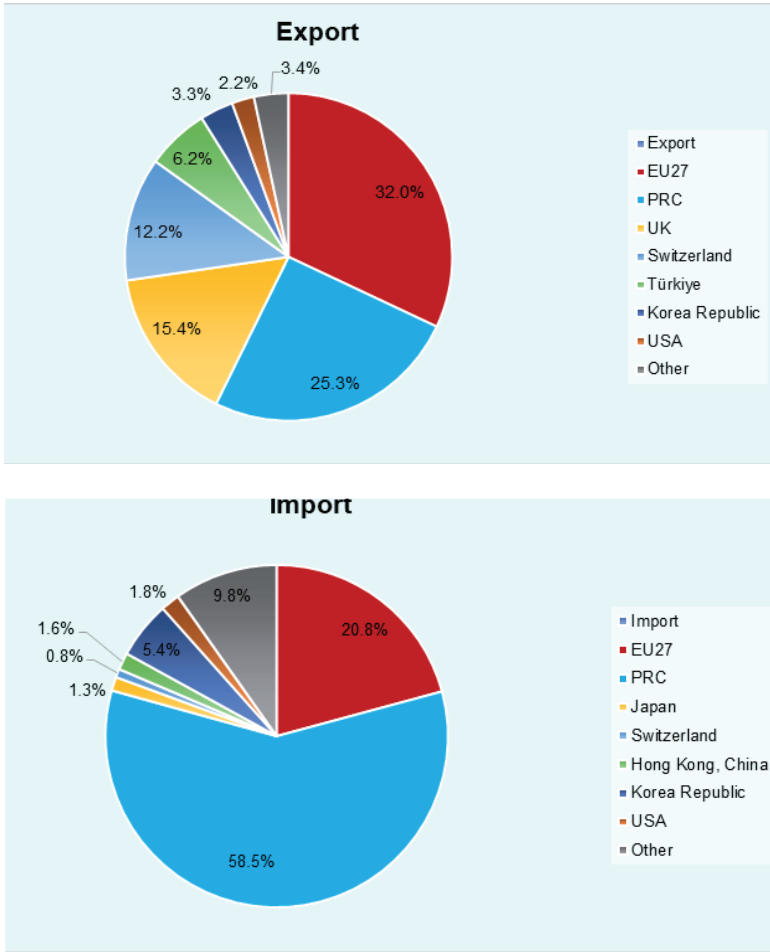
The Middle Corridor logistics network serves as a vital artery for regional trade, connecting various regions and facilitating the movement of goods[82]. Stretching across several countries, including those in the CAREC region, and Europe, this corridor plays a crucial role in enhancing economic integration and fostering cooperation among participating nations. By providing seamless connectivity between regions, it encourages cross-border trade and investment, leading to increased economic cooperation and collaboration. The corridor offers alternative trade routes that diversify transportation options for goods moving between Asia and Europe[83]. This diversification not only reduces dependence on traditional routes but also enhances resilience to disruptions and geopolitical uncertainties[84].

As a geopolitical bridge between Asia and Europe the Middle Corridor serves and offers countries along its route strategic access to global markets. Countries such as Azerbaijan, Georgia, and Turkey leverage their positions as key transit hubs along the Middle Corridor to enhance their geopolitical influence and strengthen their ties with neighboring states and international partners[85]. Thus, the Middle Corridor, considering recent global disruptions emerges as a resilient and reliable alternative for trade between Asia and Europe offering businesses greater flexibility

[82] Middle Corridor – Policy Development and Trade Potential of the Trans-Caspian International Transport Route | Asian Development Bank (adb.org)
[83] Why should Europe/China trade use the Middle Corridor route? | World Economic Forum (weforum.org)
[84] The Middle Trade and Transport Corridor: Policies and Investments to Triple Freight Volumes and Halve Travel Time by 2030 (worldbank.org)
[85] The Middle Corridor through Central Asia: Trade and Influence Ambitions - Foreign Policy Research Institute (fpri.org); Vasa, L., & Barkanyi, P. (2023). Geopolitical and Geo-Economic Importance of the Middle Corridor: A Comprehensive Overview. Eurasian Journal of Economic and Business Studies, 67(2), 20–32. https://doi.org/10.47703/ejebs.v2i67.295; Challenges and considerations: a realistic look at the Middle Corridor's potential | ODI: Think change

and agility in adapting to changing market conditions[86].

Figure 6.5.2.1. Central Asian exports and imports by region, 2023



Source: TradeMap, authors' calculations

[86] The Middle Trade and Transport Corridor: Policies and Investments to Triple Freight Volumes and Halve Travel Time by 2030 (worldbank.org); The Middle Corridor: A Renaissance in Global Commerce | RAND March 2024

This strategic connectivity is particularly vital for the landlocked Central Asian countries, for whom Europe is the largest export market[87]. Therefore, shipping goods via the Middle corridor is of crucial importance for them. As much as 32% of Central Asian exports went to Europe in 2023 and 21% of imports came from there (Figure 6.5.2.1).

The Middle Corridor fosters cross-border cooperation, transcending geopolitical boundaries. Multilateral initiatives such as the Trans-Caspian International Transport Route (TITR) and the TRACECA (Transport Corridor Europe-Caucasus-Asia) Program promote collaboration in infrastructure development, customs facilitation, and trade facilitation, laying the groundwork for deeper economic integration and regional connectivity.

Building on these foundational efforts, Azerbaijan, Kazakhstan, Turkey, and Georgia signed a Roadmap for the development of the Middle Corridor for 2022-27 on 25 November 2022. The elimination of bottlenecks and the development of the corridor shall increase its capacity to 10 million tons per year by 2025. The Ministry of Economy and Sustainable Development of Georgia announced on 20 Feb 2023 that it has launched a call for expressions of interest to attract a private partner for a 49% stake in the Anaklia Deep Sea Port project. Kazakhstan and Georgia intend to jointly build a new container terminal at the Port of Poti. The transport ministers of Turkey, Bulgaria, Serbia, and Hungary established a coordination council and a rail transport working group further highlighting the corridor's growing strategic importance[88].

[87] Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan

[88] New Silkroad Discovery. "Kazakhstan, Azerbaijan, Georgia, and Turkey signed a Roadmap for the development of the Middle Corridor for 2022-2027." Accessed from New Silkroad Discovery; Civil.ge. "Govern-

These developments not only enhance the corridor's infrastructure but also significantly contribute to the economies of the CAREC countries through increased transportation earnings. For some of the CAREC economies such earnings, including the export of transportation services, are significant contributors to GDP (Table 6.5.2.1.). While only a part of this is earnings from the Middle Corridor, the export of transportation services via the Middle Corridor is important.

Table 6.5.2.1. CAREC (excl. PRC) exports of transport services, USD million and percentage

Exporters	2017	2018	2019	2020	2021	2022	in % of GDP	GDP USDbn
Uzbekistan	1,190	1,254	1,252	1,000	1,276	4,105	5.1	*80.4*
Georgia	960	974	1,007	698	823	1,202	4.9	*24.6*
Kyrgyz Rep.	207	214	270	153	209	431	3.9	*10.9*
Turkmenistan			2,338	1,473	1,781		3.9	*45.6*
Mongolia	320	382	389	384	483	596	3.5	*16.8*
Kazakhstan	3,458	4,012	3,974	3,359	3,976	4,674	2.1	*221.0*
Azerbaijan	971	1,224	1,108	1,645	2,396	1,490	1.9	*78.7*
CAREC excl. PRC	*8,308*	*9,317*	*11,528*	*9,509*	*11,668*	*13,463*	*1.5*	*880.1*
Tajikistan	185	181	192	105	113	100	1.0	*10.5*
Afghanistan	103	181	107	87			0.6	*14.6*
Pakistan	914	895	891	605	611	866	0.2	*377.0*

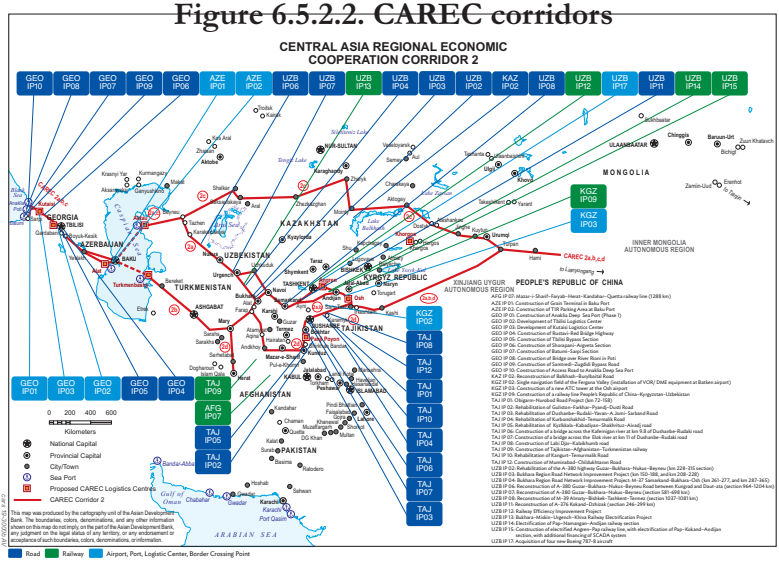
Source: TradeMap, authors' calculations

The Middle corridor must be seen as part of the wider East-West corridor system transiting the CAREC region (Figure 6.5.2.2). The Middle corridor is part of the CAREC corridor

ment Announces Call for Expression of Interest for Anaklia Deep Sea Port." Accessed from Civil.ge; New Silkroad Discovery. "Kazakhstan and Georgia to jointly build a new container terminal at the port of Poti; construction work started." Accessed from New Silkroad Discovery; RailFreight.com. "New four-country partnership brings the Middle Corridor to Europe." Accessed from RailFreight.

number 2 (Figure 3). That there is a whole logistics ecosystem has governance implications: there should be some balance between competition among the various corridors while at the same time there should also be some cooperation to allow for efficiency of the corridor ecosystem as a whole, and to avoid throat-cut competition. Neither monopolistic prices nor a price race to the bottom are desirable.

Figure 6.5.2.2. CAREC corridors



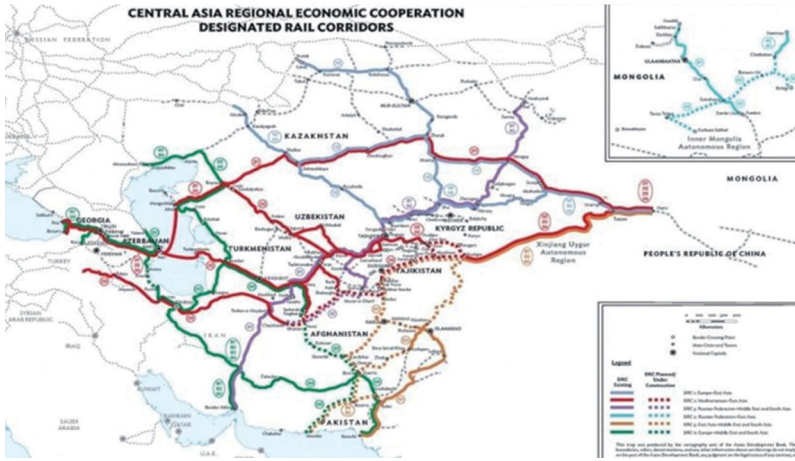
Source: CAREC Corridors

Governance and soft infrastructure are as important as hard infrastructure. The average speed traveling CAREC corridors "without delay" (SWOD) has improved quite significantly, especially for rail, but "speed with delay" not so much, according to CAREC corridor performance and monitoring and measurement (CPMM) data (Figure 6.5.2.4). "Speed with delay" reflects move-

ment interrupted by events such as border closures, intensified controls, traffic jam, etc.

Thus, by investing in transportation networks, logistics facilities, and trade-related infrastructure, countries along the Middle Corridor contribute to sustainable development outcomes, including poverty reduction, job creation, and environmental sustainability. Moreover, initiatives such as the Belt and Road Initiative (BRI) emphasize the importance of infrastructure connectivity in achieving the SDGs and promoting inclusive and sustainable development along the Middle Corridor[89].

Figure 6.5.2.3. CAREC corridor 2



Source: CAREC Priority Investment Projects for Corridor 2

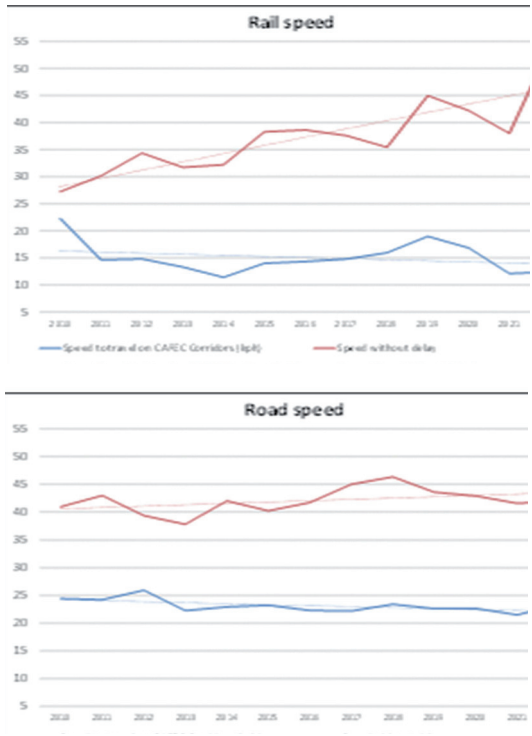
SMEs enhance logistics by bringing innovation, flexibility, and localized expertise, bolstering sector resilience[90]. Governments

[89] Greater consensus on improving the Middle Corridor (iiss.org)

[90] Roux, M., Chowdhury, S., Kumar Dey, P. et al. Small and medium-sized enterprises as technology

can foster this by creating policies that encourage SME growth and competitiveness in the Middle Corridor network[91].

Figure 6.5.2.4. Speed on CAREC corridors



Source: Central Asia Regional Economic Cooperation (CAREC) Program Corridor Performance Measurement and Monitoring | ADB Data Library, authors' calculations

In logistics, SMEs drive innovation, creating solutions like last-mile delivery, supply chain visibility, and sustainable packaging.

innovation intermediaries in sustainable business ecosystem: interplay between AI adoption, low carbon management and resilience. Ann Oper Res (2023). https://doi.org/10.1007/s10479-023-05760-1

[91] Policy_Highlights_2024 Financing SMEs Scoreboard FOR WEB FINAL.pdf (oecd.org)

Their agility is crucial for the dynamics of the Middle Corridor, as they can swiftly adapt to market changes[92]. With deep knowledge of local markets and regulations, SMEs navigate complexities effectively, diversifying services and addressing regional needs. Supporting them through policies promoting entrepreneurship and access to finance boosts their role in logistics growth and competitiveness[93].

6.5.3. Challenges and Opportunities of SMEs

Despite the importance of SMEs in the Middle Corridor they encounter various challenges that hinder their growth and competitiveness. These challenges include:

Challenge	Description
Scale	Larger companies may prefer to work with bigger suppliers or partners due to economies of scale, leaving SMEs struggling to compete in terms of pricing and capacity.
Financial Constraints	Access to finance is one of the most significant barriers for SMEs. Banks are often hesitant to extend credit to smaller businesses due to perceived risks. This challenge is exacerbated by a lack of suitable alternative financing options in many parts of the CAREC region.
Technological Barriers	Advanced technologies such as warehouse management systems, transportation management systems, or RFID tracking may be costly for SMEs to implement.
Access to Information	SMEs may struggle to access information about market demands, transportation routes, or regulatory requirements, making it difficult to plan and execute logistics operations.

[92] Roux, M., Chowdhury, S., Kumar Dey, P. et al. Small and medium-sized enterprises as technology innovation intermediaries in sustainable business ecosystem: interplay between AI adoption, low carbon management and resilience. Ann Oper Res (2023). https://doi.org/10.1007/s10479-023-05760-1

[93] The "The Middle Corridor: A Renaissance in Global Commerce" report by RAND discusses the increasing importance of the Middle Corridor in strengthening the region's economic resilience and promoting trade diversification.

Regulatory Compliance	Compliance with various regulations related to transportation, customs, safety, and environmental standards can be complex and costly for SMEs.
Infrastructure	Inadequate transportation infrastructure, especially in rural or underdeveloped regions, can limit SMEs' ability to efficiently transport goods and integrate into logistic chains.
Certifications	Providing required certifications can be challenging for SMEs.
Tracking	It might be difficult for SMEs to track inventory, monitor shipments, or anticipate disruptions, leading to inefficiencies and delays.
Negotiating Power	SMEs often have less bargaining power compared to larger companies when negotiating contracts, pricing, or terms with logistics service providers or customers.
Coordination among Stakeholders	Effective governance requires coordination among various stakeholders involved in the Middle Corridor, including governments and logistics providers.
Regulatory Framework	A clear and harmonized regulatory framework is essential for facilitating cross-border trade along the Middle Corridor. Inconsistent regulations can increase transaction costs.
Dispute Resolution Mechanisms	Effective governance requires mechanisms for resolving disputes that may arise among stakeholders, such as disagreements over tariffs or regulatory compliance.
Capacity Building and Training	Governance issues may arise due to the lack of capacity and expertise among stakeholders involved in the Middle Corridor. Training programs are essential for sustainable development.

Source: Authors

By addressing these challenges and fostering an enabling environment for SMEs to thrive, policymakers, stakeholders, and development partners can unlock the full potential of SMEs as drivers of economic growth, innovation, and diversification along the Middle Corridor. This, in turn, will contribute to inclusive and sustainable development, job creation, and poverty reduction in the region.

6.5.4. Governance Measures for SME Inclusion

Governance mechanisms encompass policies, regulations, institutions, and processes that shape the interactions between various stakeholders and influence the distribution of benefits from trade and infrastructure development. Effective governance plays a pivotal role in creating an enabling environment for SMEs to thrive along the Middle Corridor.

Governments can implement targeted policies and programs to support SMEs in accessing logistics opportunities along the Middle Corridor[94]. This may include providing financial incentives, grants, and subsidies for SMEs engaged in logistics-related activities, as well as offering capacity-building initiatives and technical assistance to enhance their competitiveness.

Thus, streamlining regulatory processes and reducing bureaucratic barriers can facilitate SME participation in Middle Corridor logistics[95]. Simplifying customs procedures, harmonizing trade regulations, and improving the business environment can lower the entry barriers for SMEs and encourage their active involvement in cross-border trade. Establishing dedicated institutions or support mechanisms that cater to the needs of SMEs in the logistics sector can provide them with access to information, advisory services, and networking opportunities[96]. Public-private partnerships and industry collaborations can

[94] Baah, C., Agyabeng-Mensah, Y., Afum, E., Acquah, I.S.K. and Essel, D. (2023), "Government influence on logistics and supply chain innovations: assessing implications for firm performance and societal impact in an emerging economy", International Journal of Emerging Markets, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJOEM-09-2021-1348

[95] Zhou, Bo, Abu Bakkar Siddik, Guang-Wen Zheng, and Mohammad Masukujjaman. 2023. "Unveiling the Role of Green Logistics Management in Improving SMEs' Sustainability Performance: Do Circular Economy Practices and Supply Chain Traceability Matter?" Systems 11, no. 4: 198. https://doi.org/10.3390/systems11040198

96 Alshahrani, Mohammed Awad, and Mohammad Asif Salam. 2022. "The Role of Supply Chain Resilience on SMEs' Performance: The Case of an Emerging Economy" Logistics 6, no. 3: 47. https://doi.org/10.3390/logistics6030047

also play a crucial role in enhancing SME access to logistics opportunities and promoting their integration into regional supply chains.

Measure	Description
Streamlining Regulations	Simplifies administrative processes, harmonizes trade regulations, and reduces bureaucratic barriers. This facilitates SME operations, reduces compliance costs, and promotes business growth, creating a conducive environment for innovation and expansion.
Enhancing Financial Inclusion	Develops a robust financial ecosystem including microfinance, credit guarantees, venture capital, and grants. Innovative financing models like crowdfunding, fintech solutions, and impact investment provide SMEs with capital for growth.
Promoting Digital Literacy and Infrastructure	Invests in digital infrastructure and skills training programs to bridge the digital divide. This empowers SMEs to leverage technology for growth through digital literacy initiatives, cybersecurity measures, and data protection regulations.
Facilitating Market Access	Initiates trade facilitation, export promotion, and market intelligence services to help SMEs access new markets and navigate trade barriers. Public-private partnerships and business matchmaking events enhance networking and collaboration.
Supporting Innovation and Entrepreneurship	Creates incubation centers, innovation hubs, and technology parks to foster innovation and entrepreneurship. Provides R&D grants, intellectual property protection, and innovation incentives for new technologies and products.
Strengthening Business Support Services	Offers business advisory services, mentorship programs, and capacity-building workshops to enhance management capabilities and market competitiveness. Services include legal, accounting, marketing, and export assistance.

Source: Authors

Successful governance reforms for SMEs along the Middle Corridor have been implemented by some CAREC member countries including Azerbaijan, Georgia, and Kazakhstan. In Azerbaijan, the establishment of the Small and Medium Business

Development Agency (SMBDA) provides comprehensive support services to SMEs, including access to finance, business advisory, training, and market facilitation. The "ASAN Service" centers offer one-stop solutions for business registration, licensing, tax compliance, and customs clearance, reducing bureaucratic hurdles and enhancing ease of doing business for SMEs. The introduction of e-government platforms, digital payment systems, and online business portals streamlines administrative processes, improves transparency, and reduces corruption risks. These governance measures have contributed to Azerbaijan's ranking as a leading destination for SME investment and entrepreneurship in the region[97].

Georgia has prioritized governance reforms to promote SME inclusion and innovation along the Middle Corridor. The "Produce in Georgia" program offers financial incentives, grants, and capacity-building support to SMEs in priority sectors, such as agriculture, manufacturing, tourism, and technology. The Georgian Innovation and Technology Agency (GITA) provides funding for R&D projects, technology startups, and innovation clusters, fostering a culture of entrepreneurship and creativity among SMEs. The introduction of simplified tax regimes, business-friendly regulations, and investor protection measures attracts domestic and foreign investment, spurring SME growth and job creation. These governance measures have positioned Georgia as a regional hub for SMEs, innovation, and investment in the Middle Corridor[98].

[97] Azerbaijan: Small Business Act country profile | SME Policy Index: Eastern Partner Countries 2024 : Building Resilience in Challenging Times | OECD iLibrary (oecd-ilibrary.org)

[98] Small and medium-sized enterprise policy in Georgia | Access to Green Finance for SMEs in Georgia | OECD iLibrary (oecd-ilibrary.org)

Kazakhstan has implemented governance reforms to enhance SME competitiveness and export orientation along the Middle Corridor. The "Business Road Map 2025" initiative provides financial support, technical assistance, and export promotion services to SMEs seeking to expand their market reach and internationalize their operations[99]. Special economic zones (SEZs), industrial parks, and logistics hubs offer SMEs preferential tax treatment, infrastructure access, and customs facilitation, encouraging investment and export-oriented production. The Digital Kazakhstan program promotes digitalization, e-commerce adoption, and cybersecurity measures among SMEs, enabling them to access global markets and compete effectively in the digital economy. These governance measures have positioned Kazakhstan as a key player in promoting SME integration and competitiveness along the Middle Corridor[100].

These innovative governance reforms in parts of the CAREC region show promising results.

6.6. CONCLUSION: GOVERNANCE PERSPECTIVE

Facilitating equal access for local SMEs along the Middle Corridor requires a multi-faceted approach that addresses their specific needs, challenges, and opportunities. Effective governance measures, including streamlined regulations, enhanced financial inclusion, digital empowerment, market facilitation, innovation

[99] «Business Roadmap 2025» State Program for Entrepreneurs Support (baiterek.gov.kz)
[100] OECD (2022), "Trends in SME and entrepreneurship finance in Kazakhstan", in Financing SMEs and Entrepreneurs 2022: An OECD Scoreboard, OECD Publishing, Paris, https://doi.org/10.1787/50f17746-en

support, and business services, create an enabling environment for SMEs to thrive, innovate, and contribute to sustainable development. Case studies from the CAREC region demonstrate successful governance reforms that promote SME inclusion, entrepreneurship, and export orientation along the Middle Corridor. By adopting targeted governance reforms, governments can create a more equitable business environment that supports the growth and sustainability of SMEs. These efforts will strengthen the economic fabric of the CAREC countries and contribute to more inclusive and effective participation and success in regional and global markets.

CHAPTER 7

A hinge in Eurasia: regional infrastructure and geopolitical changes

7.1. INTRODUCTION

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Throughout history all peoples and nations have been determined by their physical surroundings. They had access to resources present in their territory. The general encircling environment has often defined how peoples and nations act in the domestic, regional and global scenes.

In Eurasia and, particularly in the Caspian Sea region, we see simultaneous interaction between geography, political will and possibilities, technology, and infrastructure, all vying to make

resources reach markets efficiently and opportunely. Domestic development, regional interaction and international presence are all based on the nation's geographical factors and how it fosters and expands its technological capabilities to erect infrastructure to pursue its national, regional and international goals, affecting economic development, international incidence and relevance. In other words, "Economic, social and demographic change, all linked to rapid technological change, have global implications which may mark out the times we live in now from those that went before" (Scarlett, 2015, p. vi).

Geopolitics becomes a synonym of "power politics", trying to convey that it is power what defines regional and international relations. Geopolitics "is the study of how geography interacts with technology and the ceaseless struggle for global power" (Brands, 2023). Clearly this would mean that when "geography doesn't have infrastructure, it's just a place on the map" (Aliyev, 2023).

Since the XX century, several infrastructure projects have been battling to connect East (China) to West (Europe). The Caspian Sea and Central Asia rise to the front. Such projects are clashing in order to link energy sources and goods to the markets. Contemporary pipelines and transport corridors are presented as more cost-efficient[101] and faster,[102] while being profitable and thus

[101] Trucking costs escalate sharply with distance, becoming the most expensive of petroleum transport. While ubiquitous, it is limited to short haul where alternatives are unavailable. Railroad tank car costs do not rise as sharply with distances, but costs remain a multiple of pipeline and waterborne alternatives and are not universally available. Waterborne shipments can be competitive with pipelines but limited by geography. To replace a 150,000-barrel per day, 1,000-mile pipeline with: a) trucks, each holding 200 barrels (8,400 gallons) and travelling 500 miles per day, would require a fleet of 3,000 trucks, one truck unloading every 2 minutes; b) with trains, each with 75-cars holding 2000-barrels, would require one unloading daily returning empty to the source —along separate tracks— to be refilled; c) with ships, where rivers and coasts allow, tank barges and tank vessels compete aggressively against pipelines. (Trench, 2001, pp. 2 - 3)

[102] Goods travelling by sea between China and Europe take 60 days, by land they will take 12-15 days (Lee, 2016) (Shahbazov, 2018).

considering them as sound economical alternatives[103] to traditional hauling via the oceans.[104]

7.2. GEOPOLITICS AND THE CASPIAN SEA: EURASIA AND THE CASPIAN SEA REGION

Geographical factors underlie international relations and guide political interactions (Cohen, 2015). States are a product of their geography, naturally linked to their neighborhood, and their territory clearly orients their possible international projection. States strive to avoid the "territorial trap" by not envisioning that territory is a defining factor, but to consider it historically (Agnew, 1994)[105] and full of opportunities to develop.

Europe and Asia are located in the same landmass yet they are perceived as two very different continents.[106] Mainlands that are simultaneously connected and divided by the Caspian Sea.

For millenia, Europe and Asia have been considered two separate continents. Reasons include their vast size and great distances between them, the wide variety of languages and cultures. "Eurasia" was first used by Eduard Suess, an Austrian

[103] In the U.S., oil pipeline shipments account for more than 17% of the freight moved nationally, but less than 2% of the national freight cost (Wilson, 2007)

[104] In the U.S., some pipelines – such as Big Inch and Little Big Inch – were built to counter the threat of German submarine attacks on coastal tankers; Colonial Pipeline to counter the strike of the maritime union; and Trans-Alaska Pipeline to meet the challenge posed by the1973 Arab oil embargo (Liu, 2020)

[105] While territory is an essential part of a state, the territorial state is not an unchanging entity and must be understood in different historical-geographical circumstances. "The end of the Cold War, the increased velocity and volatility of the world economy, and the emergence of political movements outside the framework of territorial states, suggest the need to consider the territoriality of states in historical context. Conventional thinking relies on three geographical assumptions - states as fixed units of sovereign space, the domestic/foreign polarity, and states as 'containers' of societies - that have led into the 'territorial trap'." (Agnew, 1994, p. 53)

[106] Europe, Asia and Africa integrate the Afro-Eurasian landmass. For current purposes, I refer only to Europe and Asia – comments on numerous issues, such as distance, culture, geopolitics, and infrastructure equally apply.

geologist (Bassin, 1991). It was also used by Halford Mackinder for the first time with a geopolitical vision, calling it the world's "heartland" or the globe's "pivot region" (Mackinder, 1904, p. 434). The region has been alluded to as the non-Russian former Soviet republics (Grant, 2012), "post-Mongol space" (Kotkin, 2008), "Post-Soviet Space" (Samokhvalov, 2016), "Former Soviet Union", or "Commonwealth of Independent States" (Hutchings, 2016) or the "Greater Turco-Caucasia" (Cutler, 2020). The region on occassions comprises the Caucasus and Central Asia – or the "Greater Central Asia" (Starr, 2008, p. 8) (Cutler, 2012) – and sometimes it includes Afghanistan, Belarus, Mongolia, Moldova, and Ukraine (OECD, 2020). The region may include Anatolia – portraying Türkiye as a bridge between two civilizations (Ersen, 2013), even including Azerbaijan (Englefield, 1994). Such links between proximal and distal regions is evidenced by the laying of gas pipelines connecting Caspian Sea resources to European markets (Frappi, 2014). Thus, Eurasia extends from "Lisbon to Vladivostok" (Brzezinski, 1997, p. 35) or even referred as the Silk Road region[107] trying to remember its long historical origins mixed with present day.[108] Nontheless, I will generally use the term alluding to the Caucasus and Caspian Sea, with extensions into Central Asia.

The relevance of the region is evident. It represents 30% of the world's gross domestic product, 30% of the world's territory,

[107] Considered as "a single geopolitical theater with multiple stages" would comprise "that part of the world that looks west past Anatolia to the warm seas beyond, north across the Caspian towards the Great Steppe, east to the peaks of the Altai and the arid sands of the Taklamakan, and south towards the Hindu Kush and the Indus valley, looping around down to the Persian Gulf and back up across the Fertile Crescent and onward to the Black Sea littoral" (Baku Dialogues - Editorial Staff, 2020).

[108] An advantage of the Silk Road region term is that "it does not define the region in terms of any external power or national ideology. Instead, it focuses discussion where it should be focused: namely on the character of the region itself; [on] its distinctive geographical, cultural, and economic features; and [on] the question of whether those features may be the keys to its future" (Starr, 2008).

and 50% of the world's population.[109] Eurasia acquires great relevance as the land link between East Asia's commodities and products trying to reach Western Europe's markets, thus linking the "Eastern Eurasia meta-region" developed through economics but mostly technological revolutions in military affairs causing a revolution in strategic perspectives (Walton, 2007).[110]

Landlockedness is a feature faced by the vast majority of countries in Eurasia. Out of the world's 44 landlocked countries, seven of them (16%) are in the area: two in the Caucasus (Azerbaijan and Armenia) and all five countries of Central Asia 0 plus Afghanistan – including the largest landlocked country in the world (Kazakhstan) (UNCTAD, 2023). One of the seven – Uzbekistan – is double-landlocked, i.e., to reach the oceans it has cross two countries.[111]

Landlocked countries face numerous disadvantages that will constrain national income and development, including lack of seaports, coastal trading points, and a large-scale fishing industry (Costa, 2023). They confront considerable transport costs for merchandise to and from overseas markets. This general situation of circumstances discourages investment, decreases any competitive edge they may have, and isolates them from international trade.[112]

[109] GDP: 29.73%; territory; 30%; population: 49.82%. In these calculations I included the following countries: Caucasus (Armenia, Azerbaijan and Georgia), Caspian Sea (Iran and Russia), Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan; plus Afghanistan), to which I added countries bordering said regions, from the Black Sea (Bulgaria, Greece, Moldova, Romania, and Ukraine), from Anatolia and Middle East (Bahrain, Djibouti, Israel, Jordan, Lebanon, Kuwait, Palestine, Qatar, Saudi Arabia, Syria, Türkiye, United Arab Emirates, and Yemen), from East Asia (China and Mongolia), and from the Himalayas (Bangladesh, India, Nepal, and Pakistan). Population data from UN Population Division; GDP information form the World Bank (2023) with data for 2022 (save Afghanistan, Lebanon and Syria [data from 2021]).
[110] This meta-region would include both the Asia-Pacific and South Asia, with a western border running from Pakistan to China's border with Kazakhstan, dividing the Central Siberian Plateau from the Western Siberian Plain to the 180°E longitudinal line, thus including Japan, Indonesia, Australia, and New Zealand (Walton, 2007).
[111] The only other double landlocked country in the world is Liechtenstein, yet in a very different context.
[112] Obstacles provided by neighbours are exemplified by Burundi's trade in the early 1990s. Limitations in Tanzania's transportation infrastructure, strained diplomatic relations with Kenya, and a civil war in Bu-

Eurasia, mainly comprised of land-locked countries, has been ab initio dependent on their neighbors to reach the oceans and the world markets. All instances and circumstances they face represent a veritable challenge to surmount in order to promote their domestic economic, industrial, educational, and national development and growth. Eurasia has to trounce not just normal trials faced by all countries, but also requiring to transcend and prevail over additional difficulties, including geographical remoteness and difficulties to participate in wealth-generating international trade. (Faye, McArthur, Sachs, & Snow, 2004, p. 31). Landlocked countries – by definition – are dependent on transit states and vulnerable to their manoeuvres (Idan & Shaffer, 2011). As a result, there are high possibilities that politicisation may occur in regional goods and services, including energy (Elliot, 2020), pipelines (Moradi, 2006) and transport (LRT, 2020). This is further compounded by the use of sanctions with regional effects – namely the cases of Russia (Valori, 2017) and Iran (Jaffe, 2018) – and often dealing with opposing economic and political interests. Use of sanctions may inadvertently open opportunities for the sanctioned country, such as in 2017 when the U.S. and EU put sanctions on Russia for supporting "separatists" of the Eastern areas of Donetsk and Lugansk, Russia favored a rapprochement with China (Valori, 2017) and in 2023 with Iran regarding the North-South Transport Corridor. (Labardini, 2023c)

The Caspian Sea is the world's largest inland body of water

rundi itself led the country to consider Durban, South Africa, to export merchandise. Uganda's exports, heavily reliant on cargo passing through Mombasa, Kenya, were significantly affected by political tension between the two countries in the 2000s. Neighbours become essential trade partners for landlocked developing countries. Bhutan, whose products are primarily acquired by India and Mongolia, mainly exports to China. (Costa, 2023).

(Encyclopedia Britannica, 2022). It is an endorheic basin, i.e., without outflows, with an elongated shape that sprawls nearly 1,200 kms. from north to south, an average width of 320 km. (maximum 435 kms., minimum 124 kms.) and a coastline of 6,500 kms.[113] (Heydar Aliyev Foundation, 2011).

The Caspian Sea has an area of about 386,400 square kms. with some 78,360 cubic kilometers of water or approximately 40% (Szalay, 2017) to 44% (Coffey, 2015, p. 2) of the world's lacustrine water. It is larger than Japan or Germany, yet smaller than California. It is five times the size of Lake Superior, and 1½ times the surface area of all the Great Lakes combined, and larger than the combined surface of the world's following seven largest lakes.[114]

The Caspian Sea is not connected per natura to the world's oceans. Since 1952, with the Volga-Don Canal,[115] the Caspian Sea connected to the world's oceans via the Black Sea, the Baltic Sea and the White Sea by hooking it up with the Volga-Baltic Waterway (1960)[116] and the White Sea-Baltic Canal,[117] and using the Volga, Don, Neva, and Svir rivers. Nonetheless, these canals are subject to seasonally freezing waters. The Caspian Sea's salinity is approximately a third of seawater. The salinity is in large part a residue of the sea's origin, with the Northern part sweeter

[113] Azerbaijan 800 kms., Iran 900 kms., Kazakhstan 2,000 kms., Russia 1,100 kms., and Turkmenistan 1,700 kms.
[114] Superior (Canada and USA), Victoria (Kenya, Tanzania, Uganda), Huron (Canada and USA), Michigan (USA), Tanganyika (Burundi, Dem. Rep. of Congo), Baikal (Russia), and Great Bear (Canada).
[115] For its construction, up to 100,00 gulag and other prisoners worked daily. A day spent on construction counted as three days in prison, encouraging prisoners to work. Some convicts were awarded the Order of the Red Banner of Labor after their release. After completion, the Volga-Don canal became an important communication route of the heavy waterway transport system in the European part of the Soviet Union.
[116] The Мариинская водная система (credit to Empress Maria Feodorovna, second wife of Emperor Paul I of Russia) was originally constructed in the early 19th century, the system was rebuilt for larger vessels in the 1960s, becoming a part of the Unified Deep Water System of European Russia.
[117] Ship canal opened on 2 August 1933. It connects the White Sea, in the Arctic Ocean, with Lake Onega, which is further connected to the Baltic Sea. Until 1961, it was called by its original name: the Stalin White Sea–Baltic Canal (Беломорско–Балтийский канал имени Сталина).

than the Southern Caspian, due to the inflow of waters from the Volga River.

The Caspian Sea straddles several cultural, ethnic, religious, and civilizational axes. It involves Persian, Slavic, and Turkic peoples; two religious cosmovisions: Christianity and Islam; and withing the latter it refers to two divergent interpretations: Sunnism in Kazakhstan, Turkmenistan, and the Dagestani (Russia's) shores, while Shiism is prevalent in Iran and Azerbaijan (Pheiffer, 2018).

The Caspian Sea is a water divider/connector[118] between five states (Azerbaijan, Iran, Kazahkstan, Russia, and Turkmenistan), and the regions yonder (East [China] and West [Europe]). On the north, Russia borders on the east with Kazakhstan and on the west with Azerbaijan. The latter borders with Iran on the Caspian's west-south. Iran borders with Turkmenistan on the southeast of the Caspian. Turkmenistan's northern borders are with Kazakhstan at the Caspian's east (Ramazanova, 2012, pp. 5-6). "In some ways it connects several countries that share no land border and in other ways it serves as a buffer between states of different politics and ideologies" (Szalay, 2017).

In recent decades - essentially, since the demise of the USSR – tattention to the Caspian Sea has sharply risen due to its vast hydrocarbons resources. Some have estimated that the Caspian basin contains 48 billion barrels of proven oil reserves, while natural gas reserves are estimated at 8.76 trillion cubic meters (Indeo, 2018), 10% of the world's gas and oil reserves (Penkova, 2014, p. 113), 15% of the world's oil

[118] The boundary between Europe and Asia is a historical and cultural construct. Following Philip Johan Von Strahlenberg the border is generally defined to follow the Aegean Sea, the Turkish Strait, the Black Sea, the Greater Caucasus, the Caspian Sea, the Ural River, and the Ural Mountains. The division is cultural and tends to be biased towards the European side. The following countries are considered transcontinental: Türkiye, Russia, Kazakhstan, Georgia, and Azerbaijan (Misachi, 2017).

reserves, albeit producing 2% of the world's oil output in 2011 (O'Neil, Hawkins, & Zilhaver, 2011, p. 10). Others consider it contains 16% of the world's oil (Hays, 2016) (Fenvesi, 1998).[119] Hence, it is to no surprise that the Caspian has been referred to as "another Persian Gulf" (Altunisik, 1999).

Its strategic geographical location between Europe and Asia, its vast hydrocarbon potential, along with contemporary commercial dynamics – the East-West and the North-South transport corridors, including the Belt and Road Initiative (Labardini, 2023c) – and expectant regional infrastructure energetic and transport projects, make the practical linking of Europe and Asia seem quite natural, business-prone and necessary. Most had been averted – or, in the better case, postponed – due to the Caspian Sea's legal indefinition and subsequent legal uncertitude for governments and trans regional corporations. On August 12, 2018 the Convention on the Legal Status of the Caspian Sea was adopted improving such legal definition yet seemingly as an interim solution. (Karataeva, 2020)

The Caucasus and the Caspian Sea possess a unique geographical twofold location between East (China) and West (Europe) as well as between North (Russia and the Baltic Sea) and South (Iran, the Persian Gulf and India) (Labardini, 2023). Their location places them in a strategically important crossroads and one of key geopolitical interest to Russia, Iran, Türkiye, USA, and the EU (Kochlazade, 2016), China and other powers.[120]

[119] Some opinions assert that Armenia was the country most willing to diminish the potential of a fact: whether the Caspian Sea had or not hydrocarbon reserves, in order to diminish the potential for investments in Azerbaijan (Rauf, 2001).

[120] The First (1994-1996) and Second Chechen (1999-2009) Wars, the 2008 Russo-Georgian War, the 1988-1994 Azerbaijan-Armenia War and the ensuing thirty-year conflict regarding the Azerbaijani territory of Nagorno-Karabakh and seven additional Azerbaijani provinces that were under Armenian occupation and that ended in 2023 when Azerbaijan resumed full sovereignty of its territory.

The Caspian Sea lies at the center of Eurasia serving as a divider and as a connector. We tend to not truly appreciate the large distances involved, civilizational differences enmeshed, and vast divergences in numerous issues, including culture, society, geography, language, religion, and nature.

Humanity has learnt that Asia is very distant from the West – two worlds apart. With the Silk road, humanity constantly lived, grew accustomed and assumed as an existential fact that travel between East and West was very time consuming – except until recent times with long-distance transcontinental flight changing ways of life. Between Beijing and Madrid there are more than 13,100 kilometers – using the land route China-Central Asia-Azerbaijan-Georgia-Türkiye-Greece-France-Spain route – which would have taken between eleven and fifteen months traveling on camel at the exhausting daily pace of 30-40 kms. via the Silk Road heretofore known.[121] In contrast, little do we appreciate that the orthodromic distance[122] between Beijing and Madrid is 9,221 kms., while Baku-Seoul is 6,449 kms., and Mexico City-Baku is 12,631 kms., Mexico City-Beijing is 12,458 kms. and Mexico City-Sydney is 12,973 kms. This helps understand why Europe and Asia are perceived as two distinct continents in the same landmass.

The Silk Road flourished from ancient times until the XV century when the resurgence of military hostilities in Central Asia and instability made the merchants try the oceans with the subsequent shift in trade routes. This was also due to the

[121] Caravanserai were roadside inns placed some 32-40 kms. apart – "about a day's journey" – along major trade routes in the Silk Road. They doubled as hubs for the exchange of goods, ideas, and culture, as well as providing security to travellers (National Geographic, 2023

[122] Shortest distance between two points on the surface of a sphere – the Earth.

conquest by leading Western European powers of much of the Asian rimland (Labardini, 2023). This further helps explain the growth – and today's dominant position – of worldwide East-West maritime trade. While the old network of Silk Roads originating in China and India and moving to the Middle East and Europe ran north and south of – and, to a lesser degree, across – the Caspian Sea, "since 1500, maritime transport has dominated trade between Europe and East Asia" (Kalyuzhnova & Pomfret, 2021, p. 1).

Throughout history, all land routes between East and West have always had to journey through one of three possibilities: its northern and southern shores or the body of water itself; i.e., current Russia and Iran, or the Caspian Sea and the Caucasus, respectively. We must recall that all through history the northern and southern shores have always been controlled by two distinct political entities – save for some decades during the Mongol period. The Caspian Sea remained an option, yet it only became a veritable alternative when technology allowed speedy linking and transportation.

By using different trade, energy, commercial, and infrastructure routes, geopolitical competition arises by engaging or not some neighbors in preference of others. Originally named as the One Belt, One Road and later rebranded as the Belt and Road Initiative (BRI) (Tiezzi, 2023), China designed it as its new and guiding economic and foreign policy framework with a focus on its direct neighborhood at its southern and western borders, yet reaching out to the Persian Gulf, Africa and Europe. However, by involving 84 countries and 15 Chinese provinces[123] (Umbach,

[123] Out of 193 members in the UN; and 23 provinces, 5 autonomous regions, 4 municipalities, and 2 Special

2019), the purpose and orientation seems to simulate to engage with any possible country in the Eurasian landmass irrespective of routes and means of engagement, without considering neither the intended objective nor the goal of any given project within BRI, thus provoking competition between possible partners (Jacimovic, 2023). Thus, it becomes more of a public relations theme than a veritable large regional cooperation project, yet seemingly still capable of fostering some degree of collaboration. Nonetheless, this situation evinces the constant risks landlocked countries face in their immediate surroundings: any cooperation project simultaneously involves competition to reach the same markets confirming their utter reliance on neighbors with access to the oceans.

7.3. RESHAPING LEGAL INFRASTRUCTURE IN THE CASPIAN SEA

Any infrastructure project requires numerous elements to come alive. When these projects are conceived, designed, built, financed, and operated, they will nevertheless be subject to the world markets, bilateral and multilateral tensions, regional or global geopolitics, which "can render them uneconomic or inoperable", and they will all "require strong and reliable transit states that have the strategic and commercial interests in keeping them in operation" (Bowlus, 2017, p. 17) An essential factor in place is to have a minimal legal regime. Where the project is constrained to one country, it only requires its constitution and several secondary laws the legal norms to back up the project. Whenever the project

Administrative Regions in China.

becomes international, it will require a complex legal regime encompassing legislation of parties involved and international agreements backed up with treaties and a consistent view to apply the applicable norms, including intergovernemtnal agreements, some common norms (legislation) and regulations applicable to all participating entities, including the countries themselves, companies, corporations, international financial institutions, and other stakeholders.

While projects affect and reshape the geopolitical face of a region, having individual and a shared legal regime become pivotal to assure stakeholders the project may become operational and with a functioning legal system. Hence, a major component to develop Eurasian infrastructure was to revamp the legal regime of the Caspian Sea. Absent an agreed upon regime would further complicate any technological groundwork, hamper financial support, dissuade business feasibility, stunt market development, and shake political agreements.

In the 30 years after the fall of the Soviet Union, the Presidents of all Caspian Sea littoral countries met on five occassions to deal with legal issues of this body of water, and have met for a sixth time to broaden views and agreements.[124] Evidently, individual Summits were unable to achieve the desired result. Yet they set stepping stones to finally approve a mutually agreed treaty: the Convention on the Legal Status of the Caspian Sea (CLSCS),[125] adopted in Aktau in 2018 – not yet in force due

[124] 23-24 April 2002 (Ashgbat), 16 October 2007 (Tehran), 18 November 2010 (Baku), 29 September 2014 (Astrakhan), 12 August 2018 (Aktau), and 29 June 2022 (Ashgabat).
[125] Convention on the Legal Status of the Caspian Sea, signed at Aktau, Kazakhstan, 12 August 2018. Official texts in Azerbaijani, Farsi, Kazakh, Russian, Turkmen, and English available at http://en.kremlin.ru/supplement/5328. In case of disagreement, English prevails (art. 24).

to lack of Iran's ratification.[126] CLSCS opened up the possibility to explore and exploit the Caspian's potential resources and enhance their individual and joint economic development. Each Summit represented a consolidation of principles developed and recognized in several declarations. CLSCS embodies these commitments into (regional) conventional international law.[127] CLSCS reflects past political agreements, established new parameters, and set some paths for further expansion.

The evolution apparently was to try and avoid the definition of a sea or a lake,[128] enabling to adopt the legal regime the Caspian-5 desired, and to assure (one/all) countries to have and use common space as they will, ensuring security and other issues, while allowing bordering states to exploit transboundary resources and laying pipelines only with the aquiescence of the countries whose territories are involved; all without clear rules for border maritime rules. (Labardini, 2020) CLSCS has also

[126] Kazakhstan's Parliament approved CLSCS on December 26, 2018, and sent it to the Senate, which approved it on January 31, 2019, Мажилиса Парламента Республики Казахстан, Dec. 26, 2018, available at http://www.parlam.kz/ru/mazhilis/sent-to-the-senate. On February 8, 2019, the President of Kazakshtan approved the law for the ratification of CLSCS. "Главой государства подписан Закон Республики Казахстан «О ратификации Конвенции о правовом статусе Каспийского моря».", Президента Республики Казахстан, Feb. 8, 2019, available at http://www.akorda.kz/ru/legal_acts/laws/glavoi-gosudarstva-podpisan-zakon-respubliki-kazahstan-o-ratifikacii-konvencii-o-pravovom-statuse-kaspiiskogo-morya On January 12, 2019, Turkmenistan's parliament approved the ratification of CLSCS. "Парламент Туркменистана ратифицировал Конвенцию о правовом статусе Каспийского моря", Информационный портал Туркменстана, Jan. 12, 2019, available at https://turkmenportal.com/blog/16642/parlament-turkmenistana-ratificiroval-konvenciyu-o-pravovom-statuse-kaspiiskogo-morya.

[127] One can identify the following periods in the evolution of the legal situation in the Caspian Sea in the post-Soviet era: Pre-summit period (and subphases: 1991-1993 with a period of uncertainty of cooperation in legal fluidity, 1993-1995 with a polarization of positions, 1995-1998 with a proliferation of border disputes), CLSCS adoption during the first five summits (1998-1999 with the first agreement and further polarization of attitudes (Raczka, 2000), 1998-2002 with the adoption of the so-called North Caspian Treaties (Janusz-Pawletta, 2015) [others organize the first years as: 1) 1992-1994, in search of a legal regime, 2) 1995-1997, second phase, 3) 1998-2003, Momentum for a Russian-tailored game (Granmayeh, 2004).], 2003-2010 with a development of regional agreements, in view of the North Caspian Treaties, 2010-2014 with security issues preempting other areas, and 2014-2018, a coming together of positions allowing to explore and exploit seabed resources, even without a demarcated boundary), and post-CLSCS with the sixth Summit (Ashgabat, 2022).

[128] Seemingly vying to avoid application of the United Nations Convention on the Law of the Sea (UNCLOS) and lacustrine international rules. However by drawing heavily from such sources, numerous times verbatim, the CLSCS sometimes reflects an ocean or a lake. (Labardini, 2020)

been considered an interim solution, including on delimitation principles between the opposite and adjacent Caspian States, which per CLSCS shall be bilaterally determined. (Karataeva, 2020) The convention's approach regarding seabed delimitation has been deemed "evasive" but "expected" (O'Byrne, 2018) or having "kicked the can down the road". (Dudley, 2018). The CLSCS has several window opportunities for improvement. (Gudev, 2022)

Yet the CLSCS opened the way for littoral states to develop the Caspian Sea's subsoil resources. In 2017 and 2018 they had agreed to jointly develop offshore Caspian hydrocarbon resources: Azerbaijan and Iran (Rahimov, 2018), Iran and Turkmenistan, Azerbaijan and Turkmenistan (O'Byrne, 2018), or even trilaterally (Azerbaijan, Iran and Russia) to create a joint energy corridor (AzerNews, 2018). These agreements announced the adoption of CLSCS and propelled arrangements for Azerbaijan-Kazakhstan to jointly develop the Caspian Sea in oil and gas matters (AzerNews, 2018b), Azerbaijan-Russia to develop gas fields in northern Caspian (AzerNews, 2018c), as well as Azerbaijan-Russia in marine research (Mammadova, 2018).

This is just another way to remember that to talk about international law is to talk about international politics, and thus reshaping geopolitics. Yet, by adopting CLSCS, the Caspian Sea riparian states have moved forward. The convention is a hiatus; a very important achievement. It evidences the will to move beyond past disputes and jointly develop the caspian sea. Pragmatism hoping to develop this stipulated at minus 28 meters below median sea level non-lake/non-sea endorheic basin (Labardini, 2020).

7.4. ENERGY AND GEOPOLITICS

Energy is essential to life and all living organisms, including society and the international arena. Energy is a necessity for mankind, communities, cities, and countries. Whomever controls energy–and any of the processes to produce it and reach markets–has important social and international leverage. Energy resources have a unique natural double characteristic: they are both a commercial good and a strategic good; with such features used as foreign policy tools (Crane, et al., 2009). "Energy can be viewed as an issue in which geography is highly intertwined with power politics" (Ersen & Celikpala, 2019, p. 584). Hence, energy resources are of great interest for economic sciences as well as political disciplines (Dieke & Schröder, 2017, p. 23), which explains "The political nature of energy security policies" (Frappi, 2013, p. 44).

Actors that meaningfully participate in any phase of the energy flow and dynamics, have increased weight and power in international fora and politics. Great benefits and substantial concomitant influence (and power) are offered to whomever has partial or total control over any of the processes and mechanisms required to deliver energy to the final consumer: 1) source possession, 2) exploitation, 3) production, 4) transport, 5) storage, 6) market distribution, and 7) price-setting capabilities. All these subjects fall under energy security defined as "the uninterrupted availability of energy sources at an affordable price" (International Energy Agency, 2019), the ability to "guarantee a sufficient amount of resources at affordable prices whenever and however the demand arises" (Bilgin, 2015, p. 68) or predictability "achieved

only in a regulatory framework that aggregates the interests of all stakeholders and ensures a fair distribution of risks, obligations and revenues" (Kaveshnikov, 2010, p. 602).

Leadership needs to be aware of its country's strategic signifycance current and potential and manage different perspectives, sometimes apparently opposed. For years they–and their successors–must design and implement consistent and successful domestic economic and development policies while pursuing a proactive and multi-vector foreign policy, all in conjunction with a visionary policy in order to achieve tangible results. The more actors–domestic, regional and international; public and private–that participate, the more complicated it becomes to attain results in any project, let alone a large regional one. For any infrastructure project–particularly a large regional one–to become a reality, multiple and all issues must be resolved; amongst them, numerous technical questions, variable domestic priorities, economic considerations, strong and resolute international financing, legal misunderstandings, and political waves. This is further complicated because this requires unswerving commitment and constant attention to complicated political balances[129] – all in spite of governmental changes in all countries involved, evolving domestic and international priorities, and even changes in seemingly evolving historical periods, ex.gr., the Fall of the Wall of Berlin.

In classical geopolitics, it is geography and surroundings that impact upon foreign policy and action. In other words,

[129] "Transnational oilpipelines require enormous capital expenditure and complicated legal agreements between participating countries. Once built, changes in the global oil market or geopolitics can render them uneconomic or inoperable. Geopolitics can constrain routes for pipelines. Yet, above all, they require strong and reliable transit states that have the strategic and commercial interests in keeping them in operation." (Bowlus, 2017, p. 17)

geography matters. Yet, in a critical perspective, "it is not the geography that determines a state's position and thus its foreing policy, but it is the construction of certain images and language, which shapes the geopolitical space of interaction" (Schröder & Wessels, 2017, p. 46). Political actors and leadership may use a narrative – hub, centre, corridor, … – "in a strategic way to shape policy discourse from the perspective of their own interests … the narratives are … not only influenced by domestic politics but also by the changing dynamics of [international, regional and bilateral relations] together with political and economic developments in the regional context" (Dieke & Schröder, 2017a, p. 242). All will require investing into infrastructure to take a place from the map into the world's vision.

7.4.1 Oil pipelines

Eurasia and the Silk Road region is of interest on multiple accounts with geopolitical interests due to – initially – important energetic motivations and – currently – trade, logistics and digital insterests. (Labardini, 2023) Today, the world is much aware as to its regional relevance and potential hydrocarbon resources,[130] sometimes named as the New Persian Gulf (Manning, 2000) (Altunisik, 1999) for it may contain 16% of the world's oil (Hays, 2016) (Fenvesi, 1998) or that its natural gas and oil reserves,

[130] "EIA estimates 48 billion barrels of oil and 292 trillion cubic feet of natural gas in proved and probable reserves in the Caspian basins. Almost 75 percent of oil and 67 percent of natural gas reserves are located within 100 miles of the coast." (U.S. Energy Information Agency, 2013, p. 8) Others estimated the Caspian region held 10% of the world's gas and oil reserves (Penkova, 2014, p. 113), 4% of the world's oil and gas reserves and responsible for 3.29% of world's oil production and 3.6% of global gas output (Karataeva, 2014, p. 424), 15% of the world's oil reserves, albeit producing 2% of the world's oil output in 2011 (O'Neil, Hawkins, & Zilhaver, 2011, p. 10), with its natural gas reserves at 8.76 trillion cubic meters (Indeo, 2018). Oil and gas production was predicted to continue driven by rising energy demands of the European Union, China and India –all eager to cash in (Caspian Environment Programme, 2010, p. 13). Some opined Armenia was the country most willing to diminish the region's potential in order to diminish potential investments in Azerbaijan (Rauf, 2001).

together with Central Asia's, "dwarf those of Kuwait, the Gulf of Mexico, or the North Sea." (Brzezinski, 1997, p. 124), making it a "centre of a global energy focus" (Nick, 2005). It is worthwhile remembering that in 1991, during the demise of the USSR and before the world became more attentive to the region,[131] the Caspian Sea countries – excluding Russia – represented 0.68% and 2.11% of the world's oil and gas proven reserves, respectively. In less than three decades, in 2019 – again excluding Russia – they represented 2.22% and 13.20%, respectively[132] (BP, 2020).

While containing considerable energy resources, the Caspian region faces challenges to extract[133] and transport them in order to reach the markets, as well as financing for any project.[134] Caspian hydrocarbon fields are far from the export markets and initially had to rely on old Soviet pipelines.[135] But the Caspian countries could use their geographic position as a bargaining chip for export routes. Ex.gr., Kazakhstan agreed in 1997 to build the Chinese-financed Kazakhstan-China Oil Pipeline (KCOP), the first

[131] Current BNP operations (South-North [Baku-Novorossiysk]) began in 1997, BSP in 1998, CPC was commissioned in 2001 and BTC was completed in 2005.
[132] If Russia (including Siberia and other regions) were added, the proportions would become 11.27% (1991) and 8.40% (2019) of oil proven reserves, and 31.79% (1991) and 32.29% (2019) of gas proven reserves (BP, 2020). Yet for some, foreseeing a contribution of 3% of global oil supply and never being a strategic alternative to the Arab Gulf, destined to play a supporting non-decisive role in the supply world market, an effort into the Caspian Sea basin was not warranted in view of its reserves' "limited size" and oil "very costly to find, develop, produce and transport to world markets" due to the landlocked area and other economic and geopolitical problems arising (Salameh, 2002, p. 12).
[133] The Caspian Sea's periodically freezing northern waters increase offshore costs and companies use Russian canals from the Black Sea to move drilling and maintenance equipment (U.S. Energy Information Agency, 2013).
[134] Natiq Aliyev, former SOCAR president, stated that Azerbaijan in the early independent years "had a base of highly qualified specialists who were replaced by amateurs, domestic equipment and technologies, Soviet standards and oil fields that are being developed with old methods. We had all this, but we did not have the main thing - finance" [«Однако давайте вспомним, чем располагал Азербайджан в те годы. Мы имели базу, высококвалифицированных специалистов, которые были заменены на дилетантов, отечественную технику и технологию, советские стандарты и нефтяные месторождения, которые разрабатывались старыми методами. Все это у нас было, но не было главного – финансов».] (Алиев, 2003, стр. 69).
[135] Distance affects costs in order to reach the markets. In 1999, pumping one ton of Persian Gulf oil cost an average of $2-$5, North Sea oil $10, while Azerbaijani oil $17. Nonetheless, Caspian oil was half the cost of getting oil out of Siberia ($35-$45) (Thomas & Shull, 1999).

pipeline to directly send Caspian oil to China;[136] and Azerbaijan signed the Contract of the Century with eleven multinationals from eight countries[137] to exploit its Caspian oil reserves in order to eventually deliver them to Europe.[138] The legal status of the Caspian Sea was still pending, and progressed very much with the Convention on the Legal Status of the Caspian Sea (CLSCS) (Aktau, Aug. 12, 2018) but is not yet settled where trans-Caspian pipelines require approval of all Caspian Sea states, of which Russia and Iran apparently oppose them on environmental concerns.[139] (Labardini, 2020)

The desire to reach the markets can foster international relations in energy flows. Countries and transnationals jointly build regional infrastructure, and garner specialized know-how and assistance from international finance institutions. Developing energy resources is "driven by markets, but also heavily influenced by domestic and regional politics, which will continue to shape the map" (Koranyi, 2016, p. 1). Eurasian regional infrastructure developments will continue as the Caspian Sea's oil and gas – and from Central Asia as well – become a growing reality in European households and markets.[140] Examples to transport Caspian hydrocarbons to Europe include the Caspian Pipeline Consortium

[136] The 2,228 kms. pipeline from Atyrau to Alashankou, Xinjiang, was completed 2009, with nominal capacity of 20 million tons per year.
[137] SOCAR (Azerbaijan), British Petroleum and Ramco (UK), LukOil (Russia), Amoco, Pennzoil, Unocal, and McDermott International (U.S.), Statoil (Norway), Turkish State Oil Company [TPAO] (Türkiye), and Delta-Nimir (Saudi Arabia) (Sagheb & Javadi, 1994).
[138] It is important to remember that after signing the Contract of the Century, for some time there was no definite plan for transporting oil from Azerbaijan to Western markets (Sagheb & Javadi, 1994).
[139] Just a month after the Convention was adopted, Russia recalled that, while it did not have plans to lay pipelines on the basin's seabed, "the laying of pipelines along the Caspian Sea bottom is ruled out in case of objections on the part of Caspian states" (AzerNews, 2018a), and less than a year later it stated opposition to a TCP due to environmental issues (Хроника Туркменстана, 2019).
[140] "The geographical collocation of the basin, right in the heart of the Eurasian landmass at a critical crossroads of influence projection from the main regional actors, coupled with the presence of relevant and largely unexplored energy resources, were the main features providing the Caspian with a relevant place in US strategic thinking and on its foreign policy agenda" (Frappi, 2014, p. 181).

(CPC) and Baku-Novorossiysk oil pipelines, or trilateral schemes as those between Azerbaijan, Georgia[141] and Türkiye, such as the BTE gas pipeline and the BTC oil pipeline.[142]

Tensions between countries and partners may occur due to copious issues – mainly political and economic[143] – in all the processes involved in delivering energy and commodities from the sources to the markets and fueling global conflicts (Klare, 2014). Recent Eurasian examples include the Russia-Ukraine gas crises of 2006, 2009 and 2014 (Sullivan, Kamensky, & Makholm, 2018), the 2009 Turkmen-Russia gas dispute (Gorst, 2009), the Belarus-Russia 2007 (Crane, et al., 2009) and 2020 energy disputes over gas (Abbasova, 2020) and oil (Kudrytski, 2020), or the 2017 and 2020 Belarus-Lithuania transport disagreeements (Jegelevičius, 2017) (Kubiak, 2020).

Eurasia is a region surrounded by turbulence where geopolitical models are competing with one another and thus represent challenges for the EU and the states in the Eurasia and Middle East regions (Dieke & Schröder, 2017a, p. 241). A geopolitical role "as a safe route to access energy resources in the Middle East, SEM [South East Mediterranean] and Caucasus is important for the EU's strategy to diversify supplier countries and routes", as in the case of Türkiye (Eralp & Öner, 2017, p. 233), Azerbaijan, the Caucasus and the Middle East region. It is an area where countries, producers, transporters, price-setters and consumers are involved in a game competing with each other to reach the markets.

[141] "With Georgia serving as its main transit state, Azerbaijan has viewed Georgia's stability as part of its own national security interests" (Shaffer, 2012, p. 78).

[142] Respectively, the gas pipeline Baku-Tbilisi-Erzurum (BTE) or South Caucasus Pipeline (SCP), and the Baku-Tbilisi-Ceyhan (BTC) oil pipeline.

[143] In the oil and gas industry, disputes may occur between participating governments, oil and gas companies, service providers, and equipment providers in any combination (Bowman, 2019).

To attain the same goal – increased revenue, energy security and economic independence – countries follow varied paths, some parallel or joint, when they are involved in cooperation and coordination, and sometimes diverse and opposed, amidst competition and confrontation. Projects crisscross avoiding collission. Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan, all former soviet republics endowed with rich hydrocarbon resources, inherited from the former USSR diverse pipeline networks. They followed their own and separate strategies, first trying to increase oil and gas production, establish transport routes to the world markets, and later on building petrochemical industrial complexes to increase effective use of energy resources and their revenues (Ibrahimov, 2018). Being close to Eurasia, "Türkiye … has been trying to foster relations with Russia, Iran, the EU and the U.S. concurrently" (Schröder & Wessels, 2017, p. 37) in order to enable "the successful operation of natural gas and oil pipelines that run in various directions through the Turkish territory" (Davutoglu, 2008, p. 92). Energy strategy arises from geopolitics, foreign policy priorities and market characteristics (Bilgin, 2015, p. 68). In view of the mentioned "choke-points", this represents opportunities for the countries in the Eastern and Western Gaps (Azerbaijan, Georgia and Türkiye) since Caspian oil has to traverse the Caucasus to reach the Black Sea or Anatolia and the Mediterranean Sea.

Hydrocarbon reserves are unevenly distributed in the Caspian Sea, with all five littoral states' economies largely dependent on the oil and gas industries.[144] Kazakhstan's sector in the Caspian

[144] Of total exports: in Azerbaijan, oil, gas and oil-refining products accounted for 89% (2017); in Iran, fuels and mining products for 44.7% (2015); in Kazakhstan, for 75.1% (2016); in Turkmenistan for 60% (2014) (Tehran Convention, 2019, p. 23). Exports of crude oil and petroleum products were nearly 70% of total Russian petroleum liquids production (Eurostat, 2020).

has the most substantial proven oil reserves, Azerbaijan was a pioneer in offshore oil production, Turkmenistan is a leader in proven natural gas reserves in the Caspian (Shaffer, 2010). Yet, whereas for Azerbaijan, Kazakhstan and Turkmenistan the Caspian Sea is the main source of energy reserves, Russia and Iran have other energy resources as well. In 2019, of the total global oil reserves Kazakhstan held 1.7% and Azerbaijan 0.4%; while of the total global gas reserves Kazakhstan held 1.3%, Azerbaijan 1.4%, Turkmenistan 9.8%, and Uzbekistan 0.6% (BP, 2020). Thus, in terms of natural gas Turkmenistan is a leader in Eurasia while the Russian and Iranian shares is quite reduced (Karataeva, 2014, p. 425).

Today, the Caucasus/Caspian Sea region has significant transit infrastructure architecture, hosting major oil trans-caucasian pipelines: Caspian Pipeline Consortium (CPC), Baku-Novorossiysk pipeline (BNP), Baku-Supsa pipeline (BSP), Baku-Tbilisi-Ceyhan pipeline (BTC) and, inasmuch as it reaches the same destination point and thus becomes a competitor, Kirkuk-Ceyhan Pipeline (KCP). This exemplifies that for the US and EU the region matters as a transit route for energy goods from the Caspian Sea (Lynch, 2006) as well as energy source diversification for the EU (Bayramov, 2015).

Caspian oil moves through pipelines, ports, ships, and railways. Two pipelines – CPC and BTC – dominate the network, with over 50% of available capacity. Smaller pipelines together with Russian pipelines available to Caspian production provide another 25%. This is supplemented by smaller, but significant, routes involving railways, swaps with Iran and other transport options (World Bank, 2008, p. 7).

To build oil pipelines from Asian (Caspian Sea) sources to European markets–or for that matter between any source and its markets–countries through time evidence economical and political motivations, preferring the easiest and more economical routes, subjected to political considerations. This is confirmed by analyzing the timeline of when and where major international pipelines[145] were built in Eurasia, as well as to the intended purpose for their construction. (Labardini, 2021b)

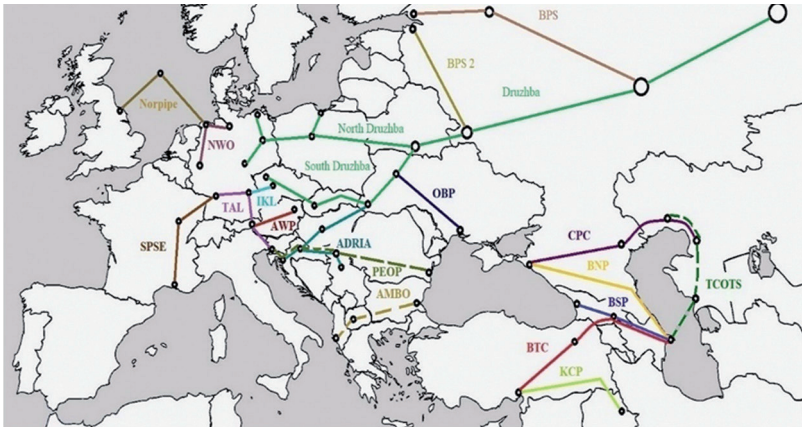
After analyzing the attached map depicting some of the major Caspian Sea sources' international pipelines linking to European markets, some points readily stand out also taking into account each source's location, transit routes and destinations. (Labardini, 2021) Pipelines serve dissimilar regions with varying consuming patterns, derived from different refineries, consumption patterns of large consumers, and even seasonal consumption patterns, as well as storage capacities. They are principally directed to the major demand centers in Germany,[146] France[147] and markets along the way. Pipelines complement each other and are at competition with each other and other modes of transportation in filling these needs. One can also observe long-haul versus short-haul pipelines. From the layout of these oil pipelines, several distinctive purposes may be contemplated for building them.[148]

[146] Germany has the eurozone's largest economy, accounting for more than a quarter of the bloc's output. When it reported 0.1% shrink in its economy in the second quarter of 2019, it sent shock waves that rippled through the world's stock markets (Ewing, 2019).

[147] As the second European economic powerhouse, France was outpacing Germany in 2019, offsetting the latter's woes (Horobin, 2019).

[148] Pipeline transport is highly linked to logistics hubs, which serve as gateways for regional supply. They are characterized by interconnections among many pipelines and, often, other modes of transportation - such as tankers and barges, rail, and usually trucks, especially for local transport - that allow supply to move from system-to-system across countries and regions in a hub-to-hub progression, characterized by substantial storage capacity. Availability of storage and transportation enhances supply opportunities and increases supply flexibility, both essential ingredients for an efficient market. (Trench, 2001, p.7)

Figure 7.4.1. Major Eurasian oil pipelines[149]



1. NWO – 1958	6. AWP – 1970	11. BNP – 1998	16. AMBO – 2004
2. Druzhba – 1964	7. KCP – 1970	12. BSP – 1999	17. IKL – 2005
3. North Druzhba – 1964	8. SPSE – 1972	13. BPS – 2001	18. BTC – 2006
4. South Druzhba – 1964	9. Norpipe – 1977	14. CPC – 2003	19. TCOTS – 2006
5. TAL – 1967	10. ADRIA – 1990	15. OBP – 2004	20. PEOP – 2008
			21. BPS2 – 2012

1) To directly reach the European markets from the sources. Taken to markets in Germany, France, traversing Italy and Central Europe directly from sources in Asia/Eastern Europe.

[149] NWO: North-West Oelleitung GmbH; Druzhba: Druzhba Pipeline, including the northern and southern branches; TAL: Trans-Alpine Pipeline; AWP: Adria-Wien Pipeline; SPSE: Société du Sud-Européen Pipeline; Norpipe: Norpipe; KCP: Kirkuk-Ceyhan Pipeline; ADRIA: ADRIA/JANAF Pipeline; BNP: Baku-Novorossyisk Pipeline; BSP: Baku-Supsa Pipeline; BPS: Baltic Pipeline System; CPC: Caspian Pipeline Consortium; OBP: Odessa-Brody Pipeline; IKL: Ingolstadt-Kralupy-Litvinov Pipeline; BTC: Baku-Tbilisi-Ceyhan Pipeline; BPS2: Baltic Pipeline System 2. (Labardini, 2021b)

Druzhba and Norpipe are prime examples. They respectively directly reach the markets from sources in Central Russia and Siberia, and the Northern Sea.

2) To reach the world's oil markets through the oceans. While highly relevant for the international economy, the oil market is not only European but is global in nature. Pipelines that do not directly reach the markets are destined to the oceans. This also evidences the liquid nature of oil and the relative ease for its handling. Seveal pipelins exemplify this point (BPS, BPS2, OBP, CPC, BSP, BNP, BTC, and KCP). The Caspian Sea hydrocarbon countries (Azerbaijan and Kazakhstan) reused old pipelines (BNP) or built new pipelines to reach the Black Sea (CPC, BSP) or the Mediterranean (BTC).

3) To reach the consumption centers from the oceans. Mirroring pipelines from the sources to the oceans, these pipelines connect to the consumption regions from a coast – receiving oil from the world's sources. Evidently, this does not signify that oil coming into European consumption centers is necessarily originating from Eurasian production centers. TAL, SPSE and ADRIA evidence the need to haul oil from the oceans to the consumption centers. Furthermore, while it is good to have access to the seas, there are differences associated with each particular sea. Thus, while an option may be to reach the Black Sea, it is better to reach the Mediterranean Sea because it reaches faster the whole world market and avoids dense traffic in the Bosphorus and Dardanelles bottlenecks (Petroleum Economist, 2004

4) Interconnector pipelines. With ocean-to-consumption pipelines in place, smaller but necessary efforts must be taken to haul oil to additional consumption centers. IKL and AWP

exemplify this point. They carry oil from main lines (TAL) to consumption centers not as large as the main line destination point.

5) A geopolitical vision. Oil pipelines – as any other large regional infrastructure project – are rift with geopolitical battles. To conclude any project requires vast amounts of financial resources – from the countries, international financial institutions, and oil companies – , cooperation between builders to overcome complex technical issues, and a constant and unswerving political commitment to accomplish the final result. Such cooperation and understanding must continue after becoming operational, or they may become unused. Geopolitics had a more significant role in achieving results, and business orientation maintaining them. Druzhba, one of the greatest geopolitical instruments for USSR, with 5,500 kms. it originally supplied Soviet oil to its "fraternal socialist allies" in the former Soviet bloc. BNP, Azerbaijan had to accept to mix its high quality oil with Russian lower grade and sell it as Urals blend, $4-$5 p/b less than the Azerbaijani grade (Today.Az, 2014) or 10% less in 2020.[150]

6) Once in operation, pipelines become more business and may disregard ideologies. Intent for regional pipelines may vary substantially during any of its pre-operational phases, including design, financing, and construction, in which case the projects may stall and never come to fruition.[151] On the other hand, once operational the pipeline may survive its original political impetus,

[150] Azeri Light sold at USD$ 43.97 p/b, and Urals blend at USD$ 39.60 Oct. 13, 2020 (OilPrice.com, 2020).
[151] There are many reasons why an energy project could be delayed or canceled. Common reasons include: financial issues, lack of permits, severe public backlash and catastrophic failure, in addition to political and legal reasons. Rerouting may be an option or simply wait out for better times (Engie, 2016). Ex. gr., the Romania-Serbia-Russia PEOP proposal to connect the Black Sea to the Northern Adriatic with Central and Eastern Europe was effectively abandoned after Italy, Slovenia and Croatia withdrew their support, with Romania and Serbia stressing the need to create a new concept (Serbia Energy, 2016).

as in Druzhba, built to take Eastern Soviet oil to hungry-energy Western Soviet republics and countries in the Soviet bloc, yet after the USSR's demise continuing to function as an important source of revenue[152] apparently independent of ideology – in spite of important technical problems, including oil contamination.[153] A pipeline, due to political or economic[154] reasons or instability, may become unsound or renew its interest.

Two different regions emerged between Asia and Europe: Northern and Mediterranean Europe. The vast majority of oil pipelines link consumption centers in Northern Europe, both in direct source-to-consumption pipelines and in ocean-to-consumption-center pipelines. Major oil sources for Northern Europe are Russia and the Northern Sea. By building – in the Soviet era – one pipeline – Druzhba – with two branches to former Soviet republics and allies in the Soviet bloc, Russia became dominant in the north. Decades later came the development of pipelines in the Mediterranean.

In the Southern region, one set of pipelines were developed to reach the oceans and another set to reach the consumer markets from the coasts. By doing so, these pipelines seek for the shortest/quickest possible route to reach the oceans and the world markets. The major sources for these pipelines is Russia, but they also include Caspian Sea states (Kazakhstan and Azerbaijan), and Irak.

Another distinct feature is the timeline for the Mediterranean

[152] In 1985, oil represented 39% of USSR's total hard currency revenues, and Druzhba was the largest (2000) and second largest (2009) exporting oil route for Russia's Transneft (Vatansever, 2010, p. 4 and 7).
[153] After heavy oil contamination with organic chlorides, European refiners and oil firms cut 10% of Russian oil imports (Yagova, Gorodyankin, & Zhdannikov, 2019)
[154] In 2020, supplies via Druzhba lost efficiency in comparison to the Urals supplies via BSP, BSP2 and BNP due to sharp freight rates decline since summer (Yagova & Gorodyankin, 2020).

(or Caucasus) pipelines. Northern pipelines linking the Asian sources with Northern Europe were built first, with NWO in 1956 and Druzhba in 1964, followed by ocean-to-consumption centers pipelines (AWP and ADRIA) as new European consumption centers developed. The southern pipelines (BNP [1998], BSP [1999], CPC [2003], and BTC [2006]) were built in less than one decade, yet some 3 to 5 decades after the northern pipelines – save for KCP (1970).

This evidences geopolitical developments as well. After the demise of the USSR, the newly independent countries from Central Asia and the Caucasus had to develop large infrastructure regional projects in order to overcome their landlockedness (Alisgandarli, 2017). This process required very important and prolonged negotiations between governments and companies, to overcome complex technical issues but particularly to cement agreement (Garibov, 2017a) amidst coordination and cooperation between competing and confronting interests of governments, with crisscrossing interesting in possible collission. The Caucasus pipelines could only be developed after the demise of the USSR, once the rich resource newly independent countries – subjected to very difficult post-independence economic conditions – could act by themselves in order to receive international revenue that was previously received by USSR. In Eurasia out of 10 countries only Russia, Iran and Georgia were sea-abutters, wherefore they further acquired important geopolitical relevance to reach the world markets – with only the latter non-subject to international sanctions.

There is no major international oil pipeline from Asia to Southeastern Europe. One can surmise this is due to the large distance

involved, because oil producers prefer the cheapest option to reach the oceans and the world markets. Hence, there were insufficient compelling commercial interests warranting building a pipeline thereto. As the region grows economically this would represent an option for development.

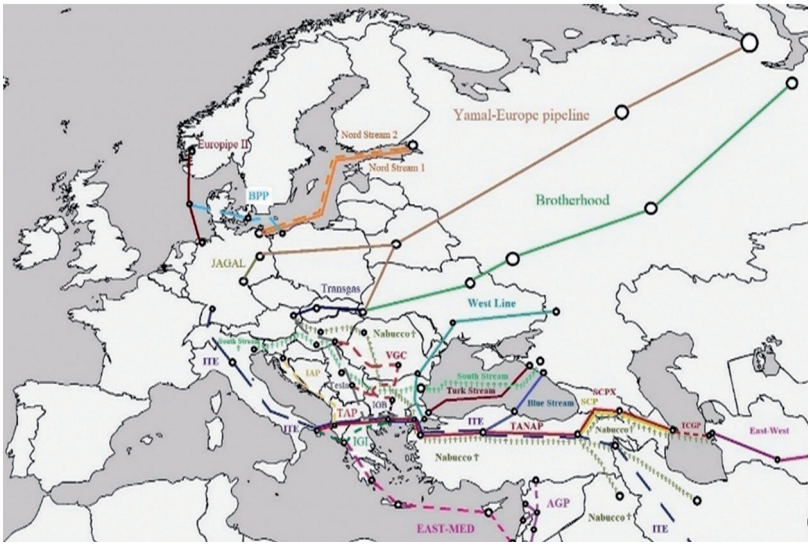
7.4.2. Gas pipelines

The Caspian Sea is rich in gas resources (EIA, 2013, p. 9).[155] Several of its littoral States are major world gas actors and producers. Turkmenistan has the world's 4th largest proven reserves of natural gas, with Galkynysh, the second largest gas field in the world and is China's main gas supplier (EnerData, 2022). Iran is the world's 3rd natural gas producer with supergiant South Pars/North Dome, the world's largest (IEA, 2008) natural gas/condensate field–by far–, shared with Qatar. Russia alternates with the U.S. as the world's largest gas producer (Encyclopedia Britannica, 2022). Azerbaijan is key in energy source diversification for several European states (Brenda, 2021). Kazakhstan is a major fossil fuel producer, 12th natural gas exporter (IEA, 2022), delivering important amounts of gas and oil to Europe and China.

Searching for routes – reliable, non-politicized and sanctions-free–to deliver natural gas to European markets became a priority, with the USA wanting a "multiple pipeline strategy or east-west energy corridor". (Kardas, 2011, p. 85) In this context, geography commands.

[155] U.S. Energy Information Agency (EIA) estimated in 2013 that there were 48 billion barrels of oil and 292 trillion cubic feet of natural gas in proved and probable reserves in the Caspian Sea basins. Almost 75 percent of oil and 67 percent of natural gas reserves are located within 100 miles of the coast. (EIA, 2013, p. 9)

Figure 7.4.2. Major Eurasian gas pipelines[156]



We can identify two major choke-points between Asia and Europe. One is located at the Caspian Sea, with Russia to the north and Iran to the south. The second one is at the Black Sea,

[156] *Brotherhood* (Urengoy–Pomary–Uzhhorod) pipeline; *Transgas*: Trans Austria Gas (TAG); *Yamal-Europe Pipeline*: 4,107 km. long connecting Russian gas from Yamal Peninsula and Western Siberia with Poland and Germany through Belarus. Polish portion ceased operating in 2022; *JAGAL*: Jamal-Gas-Anbindungsleitung is a German section of Yamal-Europe; *NSI*: Nord Stream I; *Europipe II*: from Kårstø, Stavanger, to Dornu, Germany; *BPP*: Baltic Pipe Project; *NSII*: Nord Stream II; *West Line*: Trans-Balkan pipeline (Russia-Ukraine-Moldova-Romania-Bulgaria-Türkiye with branches to Greece and North Macedonia); *Blue Stream*: major trans-Black Sea pipeline carrying Russian gas to Türkiye, *SCP*: South Caucasus Pipeline; *AGP*: Arab Gas Pipeline; *Nabucco*: failed natural gas pipeline project from Erzurum, Turkey to Baumgarten an der March, Austria, to diversify natural gas suppliers and delivery routes for Europe; *TAP*: Trans-Adriatic Pipeline; *SGC*: Southern Gas Corridor; *IGI Poseidon*: proposed gas connector Turkey-Greece-Italy; *South Stream*: canceled pipeline to transport Russian gas through the Black Sea to Bulgaria, Serbia, Hungary and Slovenia to Austria; *East-West pipeline*: to carry gas from eastern Turkmenistan to the Caspian Sea; *IAP*: Ionian-Adriatic Pipeline, *ITE*: Iran–Turkey-Europe pipeline was a proposed natural gas pipeline, presumed cancelled since 2016; *IGB*: Interconnector Greece-Bulgaria; *TANAP*: Trans Anatolia Pipeline which later became part of SGC; *SCPX*: South Caucasus Expansion Pipeline, later part of SGC; *EastMed*: Eastern Mediterranean Pipeline, proposed gas pipeline in Cyprus, Israel, and Greece; *VGC*: includes different pipelines, such as TAP, IGB, IBR (Interconnector Bulgaria-Romania), IBS (Interconnector Bulgaria Serbia), Poseidon, and TurkStream; *TurkStream I*: natural gas trans-Black Sea pipeline running from Russia to Türkiye; *Tesla*: Tesla Gas Pipeline was a proposed natural gas pipeline, presumed cancelled since 2015.

again with Russia in the north but with Türkiye[157] in the south. (Labardini, 2023)

Northern Europe:	Southern Europe:	
1. "Brotherhood" – 1978-1984	9. East-West Line – 1984-1987	19. IAP – 2007-…
2. Transgas – 1988-1988	10. TCP – 1996-…	20. ITE – 2011-?
3. Yamal-Europe – 1992-1997	11. Blue Stream – 1997-2005	21. IGB – 2009-2020
4. JAGAL – 1992-1997	12. SCP – 1998-2006	22. TANAP/SGC – 2011-2018
5. Nord Stream I – 1997-2011	13. AGP – 2001-2003	23. SCPX/SGC – 2011-2018
6. Europipe II – 1999	14. Nabucco – 2002-2013 (†)	24. SGC – 2013-2020 (SCPX/TANAP/TAP)
7. Baltic Pipe Project–2001-…	15. TAP/SGC – 2003-2020	25. EastMed – 2013-?
8. Nord Stream II–2011-2023?	16. IGI Poseidon – 2003-? (†?)	26. VGC – 2014-?
	17. South Stream – 2007-2013 (†)	27. TurkStream I – 2014-2019
	18. East-West – 2007-2015	28. Tesla – 2015-2017 (†)

This provides the general setting for Eurasian gas to reach European markets, with said regions and countries having a distinctive geopolitical role. Azerbaijan has been changing the regional energy map, first by breaking – together with Kazakhstan – the regional Russian oil monopoly with the

[157] "As an energy transit country, Türkiye's central location plays a vital role in European and global energy security." (Republic of Türkiye, MFA, 2022)

following pipelines: Caspian Pipeline Consortium (CPC), Baku-Novorossyisk (BNP), Baku-Supsa (BSP), and Baku-Tbilisi-Ceyhan (BTC). This was augmented when Azerbaijan – together with Türkiye and Georgia – commissioned the Southern Gas Corridor (SGC) gas pipeline benefitting Europe, particularly Southeastern Europe (O'Byrne, 2022).

The situation has become increasingly evident as a growing number of countries want Azerbaijani gas.[158] As well, this further contributes to the ambitions of Türkiye – which is in proximity to 60% of the world's proven oil and natural gas reserves (Republic of Türkiye, MFA, 2022)[159] – to become a regional gas hub and transportation corridor (Rzayeva, 2018), for which it has assumed and embarked on various initiatives. (Roberts, 2010)

International infrastructure projects promote international relations as energy flows from producers to consumers. Hydrocarbons from the Caspian Sea have become a growing reality in European households (Mehdiyev, 2021). Examples to transport Caspian hydrocarbons to Europe include the Caspian Pipeline Consortium (CPC) and Baku-Novorossiysk (BNP) oil pipelines, as well as trilateral (Azerbaijan-Georgia-Türkiye) arrangements, such as the Baku-Tbilisi-Erzurum (BTE) gas pipeline and the Baku-Tbilisi-Ceyhan (BTC) oil pipeline – the latter two becoming operational in 2006.[160] Their relevance is

[158] Ten countries have requested Azerbaijan to increase or commence gas supplies (Hellenic Shipping News, 2022). They presumably are Bulgaria, Romania, Hungary, Slovakia (Reuter News, 2022), Czech Republic (Azernews, 2022), Albania, Bosnia-Herzegovina, Croatia, Montenegro, and North Macedonia (Zeynalova, 2021) via the Ionian-Adriatic Pipeline (IAP), Romania, Moldova and Ukraine via the Interconnector Greece-Bulgaria (IGB), and Serbia via the Bulgaria-Serbia Interconnector (BSI) (Huseynov, 2022).

[159] Nonetheless, the strategy stated in 2009 that it was adjacent to 72% of the world's proven gas reserves and 73% of oil reserves (Republic of Türkiye, MFA, 2009).

[160] First significant success for Azerbaijan was the Baku-Tbilisi-Ceyhan (BTC) connecting the extensive offshore Azeri-Chirga-Guneshli fields with the port of Ceyhan on Türkiye's Mediterranean coast. It is operating since 2006 and has transported crude oil from Azerbaijan, Turkmenistan and Kazakhstan. (Howard & Mammadov, 2015)

highlighted when we consider that the Southern Gas Corridor (SGC) was initially developed by six countries (Azerbaijan, Georgia, Türkiye, Greece, Albania, and Italy), and is further developing into the Balkans and South Eastern Europe: via the Ionian-Adriatic Pipeline (IAP) to Albania, Montenegro, Bosnia-Herzegovina, Croatia, and North Macedonia (Zeynalova, 2021), and via the Interconnector Greece-Bulgaria (IGB) to Greece and Bulgaria).

The game-changer pipeline Southern Gas Corridor (SGC) (Mammadova, 2019) became fully operational on December 31, 2020. Its geopolitical importance, by offering alternative and extended routes for delivery of Eurasian gas, is highlighted as it may further develop to the East – to Turkmenistan via a Trans-Caspian Pipeline (TCP). This is additionally confirmed as Russia may even join SGC and provide gas[161] – as exploitation and export of its Caspian Sea resources are an externality of its efforts to restore its global political might (Thomas & Shull, 1999).

The development of these mega-projects also show on-going competition between regional infrastructure. CPC and BTC, in addition to BSP and Baku-Novossyisk Pipeline (BNP), are seen as a challenge to Russian energy dominance (Zolotova, 2022). We must also remember that TAP/SGC was the first non-Russian gas pipeline to supply Europe since the Medgaz link, which in 2011 started deliveries from Algeria to Spain. (Mammadova, 2019).

Large regional infrastructure projects evidence not only competition but also tensions, confirming that delivering energy

[161] After Brendan Devlin, Advisor in the Directorate General for Energy, European Commission, confirmed Mar. 5, 2015, that Russia (Gazprom) could use TAP/SGC to move gas if it built Turkish Stream providing gas to Greece, there have been numerous comments to this effect (Gurbanov, 2017). As of January 2020 Russia had not officially proposed to use TAP (Garibov, 2020).

and commodities from sources to markets may fuel global conflicts (Klare, 2014), on occasions on account of technical issues but mainly due to political and somewhat economic reasons. Recent Eurasian examples due to gas include the 2006, 2009 and 2014 disputes between Russia and Ukraine (Sullivan, Kamensky, & Makholm, 2018), the 2009 Turkmenistan-Russia (Gorst, 2009), and the Russia-Belarus gas disputes in 2007 (Crane, et al., 2009) and 2020 (Abbasova, 2020) (as well as the 2020 oil dispute (Kudrytski, 2020)).[162]

In Eurasia – including the Caspian Sea, Caucasus and Central Asia regions–, due to its potential hydrocarbon resources or a "HEC" (hydrocarbon energy complex) (Cutler, 2020), geopolitical interests have been evident for decades, particularly after the demise of the Soviet Union. Once new countries emerged, they became relevant regional actors, with the Caspian question evolving into a geopolitical issue, with economics being replaced by political considerations. (Andrianopoulos, 2003) Today, with the war in Ukraine, the world has given it an even more enhanced relevance, as an alternative to Russian gas (Daily Sabah, 2022).

7.5. CONCLUSIONS

The development in Eurasia of large regional infrastructure projects has dramatically changed the concept of the region and its presence and relevance, weight and germaneness for the world scene. This has been the result of several complementary factors.

While Asia and Europe lie in the same landmass, due to

[162] On transport issues we can mention the 2017 and 2020 Belarus-Lithuania disagreeements (Jegelevičius, 2017) (Kubiak, 2020).

numerous factors, including the vast distance between them and multiple cultural and political elements, the regions were considered two separate continents. The land link between East (China) and West (Europe) – the Silk Road – worked well until the XV century when military hostilities resurfaced in Central Asia, diverting trade to the oceans. Since then, the maritime route has been dominant (Kalyuzhnova & Pomfret, 2021, p. 1) – more than 95% of containers East-West traverse the oceans.

Throughout history, all East-West land routes had only three choices: the Caspian Sea and the Caucasus, or its northern shores or its southern shores. Interestingly, with 1,200 kms. between the northern and southern shores, the environment and nature were very different (one cold and the other hot) and, save for some decades under the Mongols, both were always under control of two different political entities. In today's global world vying to reach the markets, the land route has increasingly grown to start challenging – albeit distantly and with only 5% of the market – the maritime route dominance. And in today's world with sanctions applied to both northern and southern shores, plus wars and political tensions arising, have enabled the surge of the so-called Middle Corridor, i.e., the Caspian Sea/Caucasus vs. the northern and southern land routes.

This would still have been insufficient. Geography imposes itself. But to seize it and develop it changes a dot in the map to make it of interest to regional and world powers. Infrastructure – legal, oil, gas, and currently transport and logistic – had to be built for geography to acquire any global relevance. Large regional infrastructure projects are very complicated and face great challenges and difficulties to come to fruition. They are very complicated

projects (technical, financial, social, political), very expensive for all involved (governments, corporations, international financial institutions, technicians), and quite unstable from their conception and development, followed during construction with great endurance and resilience. Regional infrastructure has to survive numerous issues, both domestic (employment, investment priorities, national economy and development, political views from right and left, changes in leaders with changes in governments and elections) and international (needing to survive global crises, domestic crises, regional and global geopolitics, changes in political eras. After decades and becoming operational they likely evidence a regional constant: national interest and country and region as a shared destiny.

The world first paid attention to the Caspian Sea due to the perception on vast hydrocarbon resources – even naming it the New Persian Gulf. (Manning, 2000) (Altunisik, 1999) This was followed with gas, and attention is currently drawn based on logistics and trade: the transport corridors, namely the so-called Middle Corridor. Such attention required infrastructure to consolidate the view.

Oil pipelines were modernized or built to reach the oceans. Baku-Novorossyisk, Baku-Supsa, Baku-Tbilisi-Ceyhan, and Caspian Pipe-line Consortium pipelines broke the Russian monopoly on Caspian Sea oil. Later on, gas pipelines evidenced a veritable geopolitical game, with projects counteroffered to stall opponents' proposals.

Intricacies showing the dimensions of economic and political interests involved become quite evident when we consider that

SGC (with its components SD2, SCPX, TANAP and TAP)[163] was initially developed by six countries (Azerbaijan, Georgia, Türkiye, Greece, Albania, and Italy), yet it may further develop to the East – with Turkmenistan,[164] via a Trans-Caspian Pipeline (TCP) [hopeful yet somewhat doubtful (O'Keefe, 2021)] – and into Europe – with the Balkans and South Eastern Europe via the Ionian-Adriatic Pipeline (IAP) and the Interconnector Greece-Bulgaria (IGB) pipelines.[165]

Southern Gas Corridor (SGC) arose from the ashes of Nabucco, which failed due to its overarching goals, including five possible gas sources, some 4,000 kms. in length, and serving a minimum 16 European countries. (Global Energy Monitor, 2021) Nabucco's virtue was its curse. Nabucco failed. Since 2020, SGC is operational wth 3,500 kms. and has attracted attention of fourteen countries,[166] which have committed and built or are constructing "add-on" pipelines to connect to SGC. As SGC continues, more countries will join – probably even Russia.[167] Today, SGC resembles the paths outlined by Nabucco. SGC and the "add-on" pipelines broke the Russian gas monopoly on Caspian gas.

[163] Respectively, the Southern Gas Corridor (SGC) gas pipeline, including Shah Deniz II (SD2), Southern Caspian Pipeline Expansion (SCPX), Trans-Anatolia Pipeline (TANAP) and Trans-Adriatic Pipeline (TAP) (Southern Gas Corridor, 2020) (Trans Adriatic Pipeline, 2016).

[164] While in the Soviet Union, Turkmenistan accounted for 70% of the known natural gas deposits in Central Asia (Ibrahimov, 2018, p. 70).

[165] Respectively, TCP joining with Turkmenistan, IAP with Albania, Montenegro, Bosnia-Herzegovina, and Croatia, and IGB with Greece and Bulgaria.

[166] Albania will be the ninth buyer of Azerbaijani natural gas after Italy, Greece, Bulgaria, Romania, Georgia, Türkiye, Hungary and Serbia. Other countries are also interested in Azerbaijanin gas: Bosnia and Herzegovina, Montenegro, Croatia, Slovakia and North Macedonia. (Xalq Qazeti, 2024)

[167] Alexander Medvedev, Gazprom's Deputy CEO, stated on Jan. 24, 2017, that Russia has sufficient installed capacity upstream to deliver more than 100 billion cubic meters per year of extra gas to Europe but that due to an infrastructure problem, they were working with European partners – NordStream 2 and Turkish Stream –, which would nonetheless still be insufficient and were talking to use available capacity on the Poseidon project or TAP (Roberts, 2017). After Brendan Devlin, Advisor in the Directorate General for Energy, European Commission, confirmed Mar. 5, 2015, that Russia (Gazprom) could use TAP to move gas if it built Turkish Stream providing gas to Greece (Gotev, 2015), there has been numerous comments (Gurbanov, 2017). Nonetheless, as of Jan. 2020 Russia had not officially proposed to use TAP (Garibov, 2020). Countries that may eventually join include Romania, Hungary, Poland, and Austria.

Infrastructure projects, trade agreements, and cultural interactions are different forms of connections between states and regions. (Flint & Zhu, 2019) Analysis of interaction between geographical settings and perspectives and political processess (Cohen, 2015) may be seen as a relational form of power (Allen, 2003), embracing models of assemblages (Dittmer, 2014), with a world-systems approach (Taylor, 1992), or identifying geopolitical concepts as outcome of structure and agency (Flint, 2016). In this sense: "Economic, social and demographic change, all linked to rapid technological change, have global implications which may mark out the times we live in now from those that went before" (Scarlett, 2015, p. vi).

Like any region in the world, the Silk Road region changed its face – even more drastically after the Azerbaijani victory in Karabakh in 2020 and confirmed in 2023 with the so-called "anti-terrorist" operation. The region has a total new face.

Energy is a constant factor feeding the large industrial centers. The Eurasian region has adapted to the circumstances, centering on the Caspian Sea and the Caucasus. Taking energy to Europe, from the Caspian Sea and nearby sources, has been a strategic foreign policy priority for different countries.

Between East and West lies a door in the Caspian Sea between jambs in its northern and southern shores allowing geopolitical, commercial and cultural flows between both continents via the Caucasus/Azerbaijan. Functioning as its lubricant, infrastructure in Eurasia has transformed a dot in a map into a living reality and is reshaping geopolitics – regionally and globally.

CHAPTER 8

The role of the middle corridor in higher education cooperation and R&D projects: past achievements and strategic roadmap for the future

8.1. INTRODUCTION

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The Belt and Road Initiative, which aims to reach Europe from Asia in the fastest and most comfortable way, which the People's Republic of China is striving to realise within the framework of

its struggle to have a say in the global economy, has brought along significant opportunities for the development of the countries in the region. In this Initiative, which aims to modernise the old Silk Road, Türkiye is a significant country due to its strategic location on the Asia-Europe axis. Due to this strategic position, Türkiye has reinterpreted the emerging opportunity in a micro-framework and put forward the Middle Corridor Initiative, which it leads, and with this Initiative, Azerbaijan, Uzbekistan, Turkmenistan, Kyrgyzstan, Turkmenistan, Kyrgyzstan and Kazakhstan have become even more critical in China's Belt and Road Initiative. In addition, Hungary, which constitutes one of the pillars of the Initiative, is also essential to be located at the European end of the Initiative.

The implementation of the Middle Corridor Initiative provides meaningful opportunities not only for economic cooperation but also for taking essential steps in terms of regional development. The most important of these opportunities are trade relations and many fields, such as health, education, science and technology. However, regarding the healthy realisation of the Middle Corridor Initiative, it will be mentioned that there are a series of problems, such as infrastructure deficiencies, climatic conditions, delays in border crossings and political instability. On the other hand, the Middle Corridor Initiative will pave the way for the emergence of essential cooperations in terms of transport and improving the relations of the countries in the region. These cooperations may create essential opportunities to eliminate the current problems the Initiative is experiencing. At the same time, they will be an important tool for regional development. Higher education and R&D (Research and Development) projects are at the centre of

international cooperation and strategic partnerships in today's global economy. Any work to be carried out in the context of higher education and R&D projects can be the most effective solution to the problems currently facing the Middle Corridor Initiative. At the same time, it will be important in terms of the tools it has in terms of regional development. This study will emphasise the opportunities that the Middle Corridor Initiative will create in the context of higher education and R&D projects and the current studies. For this purpose, the Middle Corridor will be discussed in the context of the Turkic World, higher education and R&D projects in the Turkic World will be mentioned, and suggestions will be made regarding future opportunities.

8.2. THE MIDDLE CORRIDOR AND ITS IMPORTANCE FOR THE TURKIC WORLD

The Middle Corridor is a transport initiative to strengthen trade and economic relations between Türkiye, the Caucasus, and Central Asia. These initiatives are based on the strong will of the Turkic States. The Turkic States provide access to China by following the Kazakhstan or Turkmenistan-Uzbekistan-Kyrgyzstan route and using railway and road connections through Azerbaijan and the Caspian Sea within the Middle Corridor. At the same time, Türkiye, as a bridge between Asia and Europe, is an indispensable part of the corridor from Asia to the interior of Europe. In addition to their strategic importance, the Turkic states face challenges such as a lack of infrastructure, delays in border crossings, and political instability. The revitalization of the Silk Road aims to strengthen economic cooperation, promote cultural

exchange, and preserve historical heritage. In order to achieve these goals, R&D projects, especially education, are significant.

The Belt and Road Initiative, announced by Chinese President Xi Jinping in 2013, was "an intercontinental long-term policy and investment programme aimed at accelerating the economic integration of the states along the historic Silk Road route and developing their infrastructure". Until 2016, the Belt and Road Initiative, called the "1 Belt- 1 Road Initiative", brought together two separate initiatives, the "Silk Road Economic Belt" and the 21st Century Maritime Silk Road, consisting of six land-based development corridors. In this context, the Silk Road Economic Belt, the 21st Century Maritime Silk Road and the Polar Silk Road projects are considered to complement each other within the scope of the Belt and Road Initiative (Koyutürk, 2023: 41-42). This Initiative is considered a strategy against the Eurasian Economic Union project of Russia and the New Silk Road project of the USA (Kamalova, 2023: 146). The Initiative has five main priorities: coordination of policies to be implemented by the countries in the region, linking infrastructure across countries, unimpeded trade, financial integration, and connecting people (European Bank, 2024[a]). The Initiative's priorities include

- transitioning to an open market economy,
- promoting the highest environmental, social and compliance standards in projects and
- creating a level and competitive playing field.

Environmental protection and improvement are essential features of a modern, well-functioning market economy (European Bank, 2024[a]). The proposed Initiative is planned as "a free trade zone that will cover 3 billion people, have rich

mineral and energy resources, and provide access to Europe and the Middle East" (European Bank, 2024[b]).

Another project associated with the Belt and Road Initiative is Türkiye's "Middle Corridor" project. This project of China aims to create an extensive transport network covering 69 countries. Türkiye is also an essential part of this "Middle Corridor" Project (Kundak et al., 2022: 911-912). With this initiative, Türkiye aims to increase prosperity in the region, promote relations between the peoples of the region, develop regional ownership, connect Europe to Asia through the Caucasus, Central Asia, East Asia and South Asia, establish a link between the East-West Corridor and the North-South Corridor, expand the market area and increase the scale of the economy and develop regional cooperation in Eurasia (Çolakoğlu, 2019). Türkiye's primary objective in this project is to establish a regional railway network (Toprak, 2020: 24). In this context, one of Türkiye's main objectives is the Caspian Trans-Caspian East-West Middle Corridor (Middle Corridor) project, which starts from Türkiye, crosses the Caucasus region, crosses the Caspian Sea to Turkmenistan and Kazakhstan and extends to Central Asia and the People's Republic of China (Republic of Türkiye Ministry of Foreign Affairs, 2024[a]). The project aims to revitalise the historic Silk Road, considered one of Türkiye's focal policy elements for almost two decades (Chang, 2024). The Middle Corridor project parallels China's Belt and Road Initiative and is known as the China-Central Asia-West Corridor (Republic of Türkiye Ministry of Foreign Affairs, 2024[a]). This corridor connects the East Asian market to Georgia, Türkiye, and Europe. The main pillars of the project are the Trans-Caspian East-West-Middle Corridor Initiative, the

Trans-Caspian International Transport Route, and the Trans-Caucasus Trade and Transit Corridor (Chang, 2024).

The Middle Corridor has a faster route than Northern Europe and other transport corridors and offers significant advantages in transport operations. For example, cargoes from China can reach the Caspian Sea via Kazakhstan to Azerbaijan and then to Europe via Georgia and Türkiye, and this process can be completed within 10 to 15 days. This is one of the significant advantages of the Middle Corridor, as overland transport for the same destinations via the Northern Corridor through Russia takes 15 to 20 days. Current efforts are aimed at further reducing the transit time of commercial goods through the Middle Corridor to 10 days. In line with its geographical location and historical trade history, Türkiye focuses on the Middle Corridor project to promote regional integration and economic growth. This project is one of the efforts to ensure that Türkiye acts as a bridge between Asia and Europe and is in line with China's Belt and Road Initiative. It also aims to strengthen logistics infrastructure and promote regional cooperation by developing international transport routes. In this context, the Middle Corridor project serves Türkiye's economic growth and development objectives, enabling the country to play a more active role in international trade.

The Middle Corridor project is strategically vital for the Turkestan region as it also uses Central Asian countries as a route. Regarding global trade, its transport must be faster than alternative routes. However, while the Russian-Ukrainian war has destabilised the Northern Corridor, the Yemen Crisis in the Red Sea region and the anticipated Somalia-Ethiopia Crisis have

reduced the use of the Suez Canal, the need to use alternative routes has increased the importance of the project and made the countries in the region more critical actors. One of these countries is Türkiye, which is seen as a secure bridge between Asia and Europe due to its geopolitical position and being a regional power (Ekonomim, 2024). This situation has increased Türkiye's competitiveness in foreign trade and transit transport and enabled Türkiye to become an essential player in regional trade (Aras, 2024).

During the Xi Jinping era, relations with Türkiye rose to a strategic partnership. Large-scale projects were signed in the nuclear energy and railway sectors during this period (Çolakoğlu, 2024[a]). In this context, the Ankara-Istanbul high-speed train project by China Railway Construction Corporation, Kazan trona deposit project by China Tianchen Engineering Corporation, and China South Railway Corporation's sending trains for Ankara metro have improved commercial and economic relations (Koyutürk, 2023: 41-42). After the announcement of the Belt and Road Initiative in 2013, Kazakhstan's Nurlu Road Initiative was announced in 2014, aiming to develop bilateral relations with China through energy, infrastructure and logistics projects while at the same time working on the creation of infrastructure within the Belt and Road Initiative (Development of Kazakhstan, 2024). The Mirziyoyev era has seen Uzbekistan cooperate with the Belt and Road Initiative. In this context, while strengthening regional ties with China by creating a network of land ports, logistics and wholesale distribution centres, the essential component of cooperation in this direction was adopting the China-Kyrgyzstan and Uzbekistan railway

project. Mirziyoyev stated that "the development of multilateral relations with China has been and will continue to be one of the main priorities of Uzbekistan's foreign policy"(Miziyoyev, 2024). China-Azerbaijan relations are mainly within the scope of the Belt and Road Initiative, which overlaps with Azerbaijani President Ilham Aliyev's "National Project for the Revitalisation of the Great Silk Road". Within the scope of the project known as the Middle Corridor, the distance between China and Türkiye has shortened considerably (Veliyev, 2020: 350). In this context, establishing the Baku-Tbilisi-Kars railway line in 2017, the new Baku port in Alat, and rehabilitating the E-60 road, essential in Azerbaijan-Georgia transport, are important Works (Argalı, 2023: 76-77). Turkmenistan has not chosen to participate in the Belt and Road Initiative in line with its neutrality policy. However, Turkmenistan sees this Initiative as an opportunity for cooperation on issues such as "natural gas, clean energy, production capacity and transport infrastructure". It prefers to support the Initiative within this framework (Omonkuluv, 2020: 85). Being a neighbouring country to China and having a flatter geography compared to the other neighbouring countries, Tajikistan makes Kyrgyzstan an essential participant of the Belt and Road Initiative in terms of both land and railway transportation (Goldstein, 2021: 21-23). In this framework, China has signed three highways and one railway project in Kyrgyzstan, while the project to improve the road between Bishkek- Naryn and Torugart, Osh-Batken and Isfana, Bishkek-Osh Road is one of them (Erendor, 2023: 192-203). Using these routes will facilitate the access of transit traffic from the South of China to the North directly to Kazakhstan, as well as facilitating the access of other Central

Asian countries to Kyrgyzstan and thus to China (Akmoldoev, 2022: 5). Another project is the railway, which connects China, Kyrgyzstan, and Uzbekistan to Central and Eastern Europe via Türkiye (Saparov at al., 2024).

Developed as a component of China's Belt and Road Initiative, this project could increase the Turkic world's economic integration and independent trade capacity (Ceylan, 2024). All these opportunities can be an essential key to accelerating the integration process of Türkiye and other independent Turkic Republics in the region and to the goal of the Turkic Century in world politics and economy. The middle corridor includes rail and road links through Georgia, Azerbaijan and the Caspian Sea. Likewise, the Kazakhstan or Turkmenistan-Uzbekistan-Kyrgyzstan route can be followed to reach China. The ports of Baku/Alat (Azerbaijan), Aktau/Kuryk (Kazakhstan) and Turkmenbashi are the leading centres of multimodal transport on the Caspian transit corridor. However, this infrastructure offers significant opportunities for Asian cargo traffic to reach the Middle East, North Africa and the Mediterranean regions through Türkiye's port connections (Bağcı at al., 2021: 143). However, the Baku-Tbilisi-Kars railway line is an essential element of the Middle Corridor, and Türkiye is an important transit hub through which the Silk Road passes (Frankopan, 2018: 340-347). The Middle Corridor is an important initiative as part of the regional transport infrastructure aimed at developing trade and economic relations between Türkiye and the countries of the Caucasus and Central Asia (Republic of Türkiye Ministry of Foreign Affairs, 2024[a]).

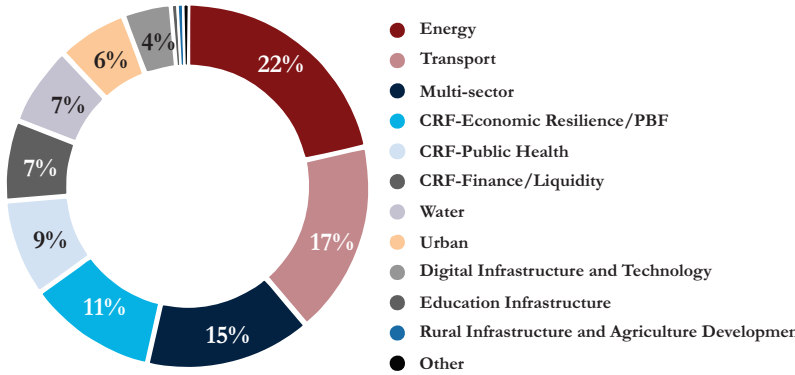
The Middle Corridor has a time advantage over the Southern and Northern Corridors. Various studies are being

carried out to develop this advantage further and solve the freight transport problems along the Corridor. This Corridor could potentially transform Eurasian trade and power centres. However, to realise this potential, the countries along the Corridor have to overcome several challenges. Türkiye sees the Middle Corridor as a way to strengthen its economic ties and improve its strategic position. To this end, Türkiye has made Central Asia the focal point of its foreign policy, building on its common linguistic roots in the region and offering Türkiye an alternative trade gateway to Iran and Russia. Once the main components of the Middle Corridor are completed, a favourable ground for increased trade will be created. However, several challenges remain, such as infrastructure deficiencies, climatic conditions, delays in border crossings and political instability. There are also bureaucratic challenges, such as border delays due to customs and tariff collections, as it passes through more than one country (Chang, 2024). Solution-orientated discussions and efforts are underway between countries to address these challenges, but a complete solution requires time.

The Middle Corridor initiative aims to increase cooperation between the countries (Republic of Türkiye Ministry of Foreign Affairs, 2024[a]). Cooperation in education and R&D within the framework of cooperation objectives is also essential for the integration and development of the countries in the region. Initiatives to be taken in these areas will be important in eliminating a series of problems such as infrastructure deficiencies, climatic conditions, delays in border crossings and political instability, which constitute an obstacle to the region's development. In this context, in addition to the national efforts and bilateral

cooperation of the countries in the region, the Asian Infrastructure Investment Bank (AIIB), in which China has the largest share, was established to support the Belt and Road Initiative. As of 2023, there are 151 member countries in the project in order to finance this Initiative, which is expanding to create cooperation not only in the field of trade relations but also in many fields such as health, education, science and technology (Nedopil, 2024), It was established to provide loans to countries for cooperation and investments to be made within the scope of BRI. Since its inception in 2016, the AIIB has invested $51.31 billion in 261 projects as of 2024 (AIIB, 2024[a]). Figure 8.2.1 below shows that the Belt and Road Initiative is not only a trade project but also an economic development-based project.

Figure 8.2.1. Types of Projects Supported by the Asian Infrastructure Investment Bank (AIIB)



Source: AIIB, 2024[a]

As can be seen from Figure 8.2.1., the Belt and Road Initiative, and thus the Middle Corridor Initiative, does not only have an economic purpose but is supported by projects in many

sectors, from education to health, from urbanism to agricultural development, which will support the economic development of the countries on the route. This shows that the revitalisation of the historic Silk Road will not only have economic consequences but will also bring about many social welfare-based developments, such as promoting cultural exchange, strengthening relations between different nations and preserving historical heritage, education, agriculture, economy, water, politics, technology and agriculture. As can be seen, these projects aim to keep the cultural richness and historical heritage of the historic Silk Road alive today (Kundak at. al., 2022: 912).

The Middle Corridor Initiative The fact that the Middle Corridor, in addition to the railway and road connections through Georgia, Azerbaijan and the Caspian Sea, is about access to China by following the Kazakhstan or Turkmenistan-Uzbekistan-Kyrgyzstan route, can constitute an important pillar of economic development for the Turkic World, and at the same time, it will be an essential turning point in the success of the "Century of Turkic States" by accelerating the integration of Turkic States. In this regard, the Western synthesised experiences of Türkiye and Hungary, the Eastern synthesised experiences of other Turkic States, the advantages of language and cultural unity, and advantages such as ethnic unity are important factors that strengthen the hand of Turkic States. However, there are difficulties, such as infrastructure deficiencies, delays in border crossings and political instability. The revitalisation of the Silk Road aims to strengthen economic cooperation, promote cultural exchange, and preserve historical heritage. International cooperation and projects are essential to achieve these goals.

On the other hand, international cooperation and projects would be essential in redesigning society with a focus on education, primarily through a solid and joint Higher Education programme and conducting R&D studies to eliminate the current problems and improve relations.

8.3. THE ROLE OF THE MIDDLE CORRIDOR IN INCREASING ECONOMIC COOPERATION WITHIN THE FRAMEWORK OF THE ORGANIZATION OF TURKIC STATES

8.3.1. The impact of the Middle Corridor on the growth of trade policies and economic relations

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The Middle Corridor, which connects most of the member states of the Organization of Turkic States, is rapidly gaining popularity as an alternative trade route, especially against the background of geopolitical processes. The currently successfully developing trade corridor offers an alternative to the other route, the Northern Corridor (the transport corridor connecting Europe and Asia via Russia), notably shorter distance, access to untapped markets and offers growth potential. However, addressing infrastructure challenges and securing investment will be key to ensuring the Middle Corridor's long-term success and

competitiveness in the world of international trade. The corridor is an opportunity for participating countries, especially members of the Organization of Turkic States, as it has great potential to increase the limited number of major export partners and reduce dependence on commodity exports.

By shortening distances, the Middle Corridor is a multimodal land and sea transport corridor that facilitates the movement of products by using a combination of both rail and sea transport. It represents the shortest route for goods traded from China to Europe through Central Asia, through the Caspian Sea, to the South Caucasus and Turkey before reaching Europe. One of the most important advantages of the Middle Corridor is that its total length is about 3,000 km less than Russia's Northern Corridor. This route not only reduces transit times, but also avoids sanctions compliance issues by bypassing Russia, making it an attractive option for businesses looking for new trade routes and markets.

The Middle Corridor has shown a significant increase in cargo transit volume, with 1.9 million tons in the first nine months of 2023 (an 89% year-on-year increase compared to the same period in 2022). This has set a record for the volume of freight traffic on the corridor and its growth potential to meet the growing demands of global trade. One of the examples of the use of the corridor was the introduction of a new route from China to Europe by Finnish transport company Nurminen Logistics in May 2022, which was met with strong demand. Currently, the capacity of the Middle Corridor at 5.8 million tons per year is much less than the Northern Corridor, but if the right measures are implemented, its potential will increase.

According to the estimates of the World Bank in the economic analysis of the development potential of the Middle Corridor in the next decade, by 2030, the travel time between China and the western border of Europe will be halved, and the volume of cargo transportation will increase three times to 11 million tons.

Despite significant progress in the corridor's development, operational inefficiencies and high costs are limiting the realization of its full potential, forcing operators to revert to sea routes. The corridor is subject to unpredictable delays, which can range from 14 to 45 days, but can take up to 60 days depending on circumstances. Practical challenges include ports operating below capacity as well as lack of operational efficiency due to poor rail infrastructure. Although the lack of coordination between operators along the route is the most mentioned problem, the issue will be solved with the introduction of a single operator. The main concern is the lack of necessary infrastructure for oil and gas transportation, especially in the Caspian and Trans-Caspian regions.

The most obvious example of this difficulty is the transportation of oil from Kazakhstan to Azerbaijan through the Middle Corridor, which involves several stages of transportation. The oil is first transported by rail to the port of Kurik or Aktau in Kazakhstan, where it is unloaded and loaded onto a ship and transferred to Baku. From Baku, it is again loaded onto the train and transported to the pipeline for further distribution. This complex process results in significant delays and technical difficulties, in contrast to the ease of routes through Russia via the Caspian Pipeline Consortium (CPC).

8.3.2. Investment imperatives for the development of the Middle Corridor

To unlock the full potential of the Middle Corridor, significant investments in infrastructure are essential. It is important to improve the Caspian and Trans-Caspian infrastructure for the transportation of oil and gas, as well as to increase the overall efficiency of the corridor. With the promise of shorter transit times, access to new markets and increased business opportunities, the Middle Corridor presents an attractive option for investors and OTS member states seeking to boost trade and economic growth in the region.

According to a recent study by the EBRD, the investment required to improve the infrastructure of the Middle Corridor is estimated to be in the region of 18.5 billion euros. The priority areas for investment are: rehabilitation and modernization of the railway and road network; expansion of carriages; increasing port capacity; and improving border crossing points, multimodal logistics hubs and ancillary network connections between participating countries. The investment should take into account the needs, priorities, capabilities and special conditions of the participating countries.

Although the Middle Corridor is not expected to completely replace the Northern Corridor due to limited opportunities for economic development, it provides a wide opportunity for trade diversification for the countries located along the route, especially the OTS member countries. Although the impetus for using the Middle Corridor is currently driven by geopolitics (ie the desire to avoid the Northern Corridor), the development of

the Corridor offers opportunities for economic development in participating countries. If we look at the industrial structure of the participating countries, most of them are exporters of raw materials (for example, oil-producing Kazakhstan and Azerbaijan). For these countries, it is of strategic importance to promote the industrial development of domestic enterprises to increase the export competitiveness of value-added goods and to compete with potential increases in import flows. To take full advantage of the increased connectivity created by the corridor, governments of participating countries should use export promotion strategies and global value chain linkages to link their local SMEs with larger corporations.

As the Middle Corridor gains traction as a geopolitical answer to bypassing traditional routes, its economic potential is increasingly apparent. Shorter distances, access to untapped markets and the promise of growth make it an attractive prospect for businesses and governments alike. However, success depends on addressing infrastructure challenges and securing the necessary investments. The geo-economic importance of the Middle Corridor is a major opportunity for the development of international trade, allowing participating countries to reshape their trade dependencies and support sustainable economic Development

8.3.3. Trans-Caspian International Transport Route (TITR) perspectives of the multimodal corridor connecting China and Europe for the Turkish world

The Trans-Caspian International Transport Route (TITR), also known as the Middle Corridor, is a multi-modal corridor connecting China and Europe. It passes through Dostyk or

Khorgos/Altinkol by rail from Kazakhstan, then by rail to the port of Aktau, stretches across the Caspian Sea to the port of Baku, passes through Azerbaijan and Georgia to Europe. The development of the route is attracting increasing attention, becoming increasingly vital to strengthening the economic resilience of the region and promoting trade diversification. The development of TITR also coincides with the goal of becoming the transport and logistics center of Kazakhstan.

According to TITR International Association, the volume of transportation along this corridor increased by 86% from 1.5 million in 2022 to 2.8 million tons. This is a significant increase from the 2021 total of 586,000. In November 2022, Azerbaijan, Georgia, Kazakhstan, and Turkey signed a road map that reflects the priority directions of investments and measures needed to improve the TITR. In June 2023, Azerbaijan, Georgia and Kazakhstan agreed on the creation of a single logistics operator. In 2023, according to the contract signed between Kazakhstan "KazMunayGaz" and Azerbaijan's SOCAR oil and gas company, oil was injected into the Baku-Tbilisi-Ceyhan pipeline for the first time through TITR. About one million tons of Kazakh oil was transported on this route.

The corridor could triple trade volumes to 11 million tonnes by 2030 compared to 2021 levels and halve travel times. In addition to its usefulness as an Asia-Europe land bridge for containerized cargo and an access route to international markets for all types of cargo, the importance of the Middle Corridor lies in its potential for regional countries as an intra-regional trade corridor.

The first step is to reimagine the Middle Corridor as an

economic corridor rather than a transport corridor. The main demand of the corridor is endogenously formed within the corridor countries. Thus, the Middle Corridor has a great potential to develop as an economic corridor with synergy between improved connectivity and unique economic potential in the zones the corridor passes through. However, effectively developing and optimizing the use of this corridor as a single trade route and economic zone requires the creation of an equipped cross-border institutional framework. Without improvements to the corridor, transport demand is projected to fall 35% w expected growth.

It is important to reform and simplify procedures, especially border procedures. Harness the potential of digital data flow. Digitization is key and has many elements. There should be transparency and visibility to enable able to track and follow. Digitization also means that paperwork must become a thing of the past, giving way to greater complexity and economy, connecting smaller trucks to larger and more efficient train loads. Bringing this big idea to reality requires the active participation of multiple actors, including the private sector and other development partners. The Turkic world in particular needs to mobilize private capital and expertise to bridge the infrastructure gap and improve service provision.

There are also some problems in the middle corridor, so the pricing issues need to be resolved. Corridor users believe that prices can be high and volatile as transparency is not fully ensured. The time to cross the corridor can also be very variable. It can go very fast in some cases, but for shippers transit times are also critical to have predictability and reliability.

Another problem is not a lack of infrastructure, but rather a lack of rolling stock and problems in moving between railways and ports. As many of the challenges are not related to infrastructure or the construction of new railways, there is great potential to overcome these obstacles by focusing on the operational efficiency of the corridor.

One of the critical areas identified for improvement is the coordination of the corridors, which are "more complex" due to the involvement of several railways, ports, shipping lines and customs authorities from each country. This complexity highlights the urgent need for enhanced coordination between the various stakeholders involved.

8.3.4. Digitization and trade circulation of the Middle Corridor

Another important area is the digitization of the Middle Corridor. A big challenge in the corridor is that the level of digital development varies along the corridor. In some cases, some operators use paper. Others use the latest platform. Efforts must be made to truly benefit from information technology to promote the end-to-end flow of information. In addition to focusing on operational efficiency, significant investments are needed. According to a recent study by the European Bank for Reconstruction and Development (EBRD), about 18.5 billion euros (20 billion US dollars) of investment are needed to develop TITR.

It allows us to see how the improvement of the trade corridor will affect the local economy and how it will diversify the trade dynamics of the countries. This is why trade is important because it enables regional development in addition to transportation.

According to a World Bank study, trade along the corridor increased by 10% in volume from 2021 to 2022, driven mainly by changes in regional and intercontinental trade patterns.

In 2021, trade from Kazakhstan, Georgia and Azerbaijan accounted for about two-thirds of the volume on the Middle Corridor. This trade volume doubled in 2022 due to the war in Ukraine, which resulted in increased trade flows, especially in energy and technology goods, as sanctions against Russia led to the diversification of some of this trade. Compared to 2019-2021, the trade turnover in 2022 increased by approximately 45% in Kazakhstan and Georgia, and by 72% in Azerbaijan. More than half of the increase in exports from the region fell to the EU.

8.3.5. The development strategy of the Middle Corridor and the role of the Turkic world in increasing trade

8.3.5.1. Shusha Decleration

The Shusha Declaration on alliance relations signed between the Republic of Azerbaijan and the Republic of Turkey on June 15, 2021 is a manifestation of the emergence of a new regional power in the region, aims to unite efforts in advancing mutual activities aimed at the sustainable development of the Turkic world at the regional and international levels, and is important for the entire Turkic world. is important.

This was also a statement addressed to the world community and formalized on the legal basis of the philosophy of "One nation, two states" in terms of the reconstruction of the territory after the liberation of Karabakh and ensuring its security as an

investment location. According to Article 51 of the UN Charter, every state has the right to self-defense individually and collectively. In the Shusha Declaration, there are articles that include creating a mechanism for the economy and free movement of goods, which envisages creating common security. In the declaration, it is specially mentioned that the Parties will support activities towards the normalization of life in the regions freed from Armenian occupation, based on the clearing of mined areas.

At the same time, the signing of the Shusha Declaration in 1921 and the signing of the Kars Treaty, which was an important milestone in the history of Azerbaijan's statehood by establishing the autonomous status of Nakhchivan, is of particular importance and is a sign that the alliance relations with Turkey will be eternal. In the declaration, the parties note that the opening of the Zangezur corridor between the western regions of the Republic of Azerbaijan, which connects Azerbaijan and Turkey, and the Nakhchivan Autonomous Republic of the Republic of Azerbaijan, and the construction of the Nakhchivan-Kars railway as a continuation of that corridor will make an important contribution to the intensification of transport and communication relations between the two countries.

The Shusha Declaration emphasizes that the Parties will make continuous efforts to strengthen stability and security in the Caucasus region and restore all economic and transport relations. Along with starting a new era of bilateral relations, it calls for the acceleration of economic integration initiatives in the Turkish world and the implementation of practical measures to increase the competitiveness of the Middle Corridor, being the driving force of the processes of alliance and solidarity between

the Turkish States.

It is no coincidence that, five months after the signing of the Shusha Declaration and on the eve of the anniversary of Azerbaijan's historic victory in the Second Karabakh War, the name of the Cooperation Council of Turkic States (TCSC) was changed to the Organization of Turkic States (OTS) on November 12, 2021, during the 8th Summit of the Organization of Turkic States held in Istanbul. At the same time, the "Turkish World View-2040" program, which reflects the medium and long-term goals and objectives of OTS, was also approved at this summit and the issue of establishing the Turkish Investment Fund was discussed.

At the 9th Summit of the Organization of Turkic States held in Samarkand on November 11, 2022, the city of Shusha was chosen as the Cultural Capital of the Turkic World for 2023, and as a rule, OTS member states hold Business Forums dedicated to the restoration and development of the Karabakh region of Azerbaijan, which was liberated from occupation. Trips to Aghdam city are organized. Companies from Turkey are closely involved in the process of restoration and reconstruction of Shusha and Eastern Zangazur and Karabakh in general. Due to this necessity, at the 9th Summit meeting, the presidents of the Turkish states signed a special decision on the establishment of the Turkish Investment Fund. With a total initial charter capital of 500 million US dollars, this fund is the first and main joint financial institution established by the Turkish states and aims to implement trade and economic cooperation and joint projects between the OTS member states in order to strengthen the economic potential of the member states of the Organization of Turkic States.

8.3.5.2. Zangezur corridor

At the time when the importance of the Middle Corridor is increasing, the two brotherly countries, which are the most decisive countries of both energy and transit corridors between Asia and Europe and at the same time have high potential, expressed their support for the acceleration of regional integration and the opening of all communication lines, including the Zangezur Corridor, by acting as a guarantor of stability in the region. .

By demonstrating the position of "we will always be together" at the international level, Turkey and Azerbaijan once again proved that they are reliable partners in internationally important issues such as energy security and the Southern Gas Corridor.

The declaration has a symbolic meaning that the Great Leader Heydar Aliyev returned to the leadership of our republic at the call of the people and was signed on National Liberation Day, the day of victory that changed the fate of Azerbaijan. Internationally important regional projects such as the Baku-Tbilisi Ceyhan oil pipeline, the Baku-Tbilisi-Erzurum gas pipeline, the Baku-Tbilisi Kars railway, which were laid by the Great Leader and ensure the transportation of the oil and gas resources of the Caspian Sea to European markets, are the foundation of the current alliance relations between the two countries. laid the foundation.

This political line has been successfully continued by President Ilham Aliyev and has been moved to a higher position and international scale. The Southern Gas Corridor project, which aims to increase Europe's energy supply and has a total length of nearly 3,500 km, will join the existing 11 projects as a result of the successful implementation of the South Caucasus Pipeline (SGP),

Trans-Anatolian Pipeline (TANAP) and Trans-Adriatic Pipeline (TAP) projects. 16 billion cubic meters of natural gas production capacity was added to the billion cubic meters of natural gas production capacity. Turkiye Petrollari and other Turkish companies are the leading investors in Azerbaijan and SOCAR in the investment oil and gas sector in Turkey.

The Shusha Declaration "Agreement on the development of friendship and comprehensive cooperation between the Republic of Azerbaijan and the Republic of Turkey" and the "Protocol on cooperation and mutual assistance between the Republic of Azerbaijan and the Republic of Turkey" signed on February 9, 1994, as well as on August 16, 2010 As a continuation of the "Agreement on strategic partnership and mutual assistance between the Republic of Azerbaijan and the Republic of Turkey" signed on 2016, the relations between the two countries are being raised to a qualitatively new stage, to the level of alliance, and serve to accelerate cooperation in economic, commercial and other fields. The declaration emphasizes the importance of combining the capabilities and potentials of both countries, especially in the field of defense industry, in order to protect the common interests of both countries.

Within the framework of the High Level Strategic Cooperation Council between the Republic of Azerbaijan and the Republic of Turkey, the Parties carry out coordination and regular bilateral political consultations in the field of foreign policy. Measures to facilitate and increase the volume of trade between Turkey and Azerbaijan are being implemented rapidly. On February 25, 2020, the "Preferential Trade Agreement between the Government of the Republic of Azerbaijan and the Government of the

Republic of Turkey" was signed in Baku, within the framework of the agreement, concessions will be applied to 15 goods (agricultural and processed products) and annual tariff quotas for these goods agreed upon. The Preferential Trade Agreement, which provides for the reduction of import customs duties on the specified products to 0% within the annual tariff quotas, entered into force on March 1, 2021. Due to Turkey's entry into the customs union with the European Union, it is applied only to agricultural products and processing (15 products are defined in the appendix of the Agreement) and not to industrial products.

8.3.6. The role of the Organization of Turkic States in increasing the potential of the Middle Corridor

Within the scope of OTS multilateral "Free Trade Agreement on Services and Investments", "Partnership Agreement on Digital Economy" expansion of cooperation between investment promotion agencies of TTT Member States and potential investment for the development of cooperation in the field of trade and economy defined in the OTS Strategy for 2022-2026 the preparation of the joint OTS catalog and concrete measures, consisting of projects, is being carried out.

At the same time, the creation of the "Unit Economic Space" and the prioritization of trade facilitation measures, including the creation of the Trade Facilitation Committee and the signing of the "Partnership Agreement on Digital Economy (e-commerce)", regional trade issues are the subject of discussion of the meetings held within the OTS. The parties agreed to strengthen further cooperation in the areas of "Free Trade Agreement on Services and Investment (FTA)" in the OTS region, including increasing

the capacity of transport connectivity, promoting the Middle Corridor and simplifying customs work and harmonizing standards and regulations.

The concept of the "TURAN Free Economic Zone - TURANSEZ" project to be established in the Turkestan region of Kazakhstan has been approved, and negotiations are underway on the concept of establishing the "Turkish Green Financial Council". At the 10th Summit meeting of OTS held in Astana on November 3, 2023, "Protocol of cooperation in the field of metrology between the relevant institutions of OTS member states" as well as specific proposals for facilitating trade, wide application of electronic commerce, increasing the volume of exports and imports and In order to develop a joint action plan, the concept of establishing a "Research Center for Trade Cooperation in Turkish Countries" was adopted.

The Organization of Turkic States aims to create an online platform that will practically eliminate physical, bureaucratic and linguistic barriers to trade between Small and Medium Enterprises (SMEs) of our member states. This platform will enable instant communication between SMEs without any intermediaries and gather information by presenting trade potential and gathering activities currently scattered across different forums under a single web portal. The Organization of Turkic States aims to greatly assist in increasing the speed and volume of commercial relations by facilitating communication and centralizing relevant information.

In order to create favorable conditions for increasing non-oil exports, Azerbaijan implements an active policy related to the development of trade relations with foreign countries. In the

direction of trade liberalization, Azerbaijan has signed agreements regulating free trade with 10 countries, as well as bilateral trade or trade-economic cooperation with many countries. In this regard, the signing and entry into force of the preferential trade agreement with the Republic of Turkey, one of Azerbaijan's main trade partners, was of particular importance.

8.3.7. Comparison of economic integration processes in the Turkish world with the European Union integration process

If we draw parallels, the Shusha Declaration can be compared with the Schuman Declaration, which is the first and decisive step in the process of creating European integration today. The Schuman Declaration was presented by French Foreign Minister Robert Schuman on May 9, 1950, proposing the creation of the European Coal and Steel Community (ECSC), whose members would unite coal and steel production, and the founding members of which were France, West Germany , with the approval of Italy, the Netherlands, Belgium and Luxembourg, the first supranational institution was created, which would ultimately become today's "European Union", and was established in 1951 by the Paris Agreement.

According to the Treaty of Rome signed in 1957, the six founding countries created the European Economic Community (ECC) or "the common market and the European Atomic Energy Community (Euroatom)" and expanded cooperation to other economic sectors. Under the agreement, the common market was extended to agriculture and trade in agricultural products, creating an agricultural market of 200 million

consumers, making it a particularly vital issue for Europe.

As an important event in the history of European integration, with the Merger Treaty signed in 1965, an agreement was signed to merge the executive bodies of three institutions (ECSC, ECC and Euratom) and establish a single Council and a single Commission. In 1968, with the establishment of the Customs Union, customs duties on industrial goods between the member states were completely canceled 18 months before the deadline and a common foreign tariff was applied. After that, the Single European Act of 1986 was signed, the main element of which was to create a single market within the European Union until 1992.

The Treaty on European Union was signed in Maastricht in February 1992, creating a new organization based on three pillars: i) European Union, ii) Common Foreign and Security Policy (CFSP) and iii) Cooperation in the field of Justice and Home Affairs.

The name of the European Economic Community (EEC) was changed to the European Community (Eurpean Community), but after the establishment of the European Union (EU) in 1993, the name of the European Economic Community (EEC) was changed to the European Community (EC) as a result of structural changes. (In 2009, the European Community (EC) institutions were incorporated into the wider framework of the EU and ceased to exist)

Economic and monetary union was created, new policies (education, culture, cooperation and development) were added, the powers of the European Parliament were increased and finally in 1993 the Single Market was created. In 2007, Bulgaria

and Romania joined the EU. The number of member countries of the European Union reached 27, and the integration processes were completed with the Treaty of Lisbon held in the same year.

The European Union integration process started in 1950 and lasted for 43 years until the creation of the single market in 1993 and was completed for an additional 14 years until 2007. Although the process of integration in economic, customs, trade, fiscal and monetary policies has been completed, each of the 27 member states with different ethnic origins have the right to conduct independent policy in foreign policy matters.

The Turkish states of the same ethnicity share the idea that "Azerbaijan's joy is our joy, Azerbaijan's sorrow is our sorrow" in the words of Gazi Mustafa Kemal Atatürk, and they showed solidarity with Azerbaijan and provided moral and political support both during the occupation and throughout the Karabakh War. The existence of mutual trust and shared values and interests means that the process of economic integration will be shorter and more advanced for one nation and eight Turkish states. Since the Turkish-Azerbaijani union and the Turkic world brought into action by this union are important not only for the region, but for the entire Eurasian continent, international partners are expected to support this process.

In terms of the unification and strengthening of the Turkic world, the informal summit meeting to be held in Shusha on the topic of transport and climate in July of the current year at the initiative of the President of the Republic of Azerbaijan plays a special role. It will be an important step in the direction of strengthening the economic and strategic relations of the countries of the world, ensuring stability and development in the

region.

Countries emphasize the importance of reducing delivery times along the corridor by creating a unified service, strengthening digital technologies and establishing stable tariffs. According to the information of the Ministry of Transport of Kazakhstan, the processing and transportation times along the route have been reduced from 38-53 days to 19-23 days. The goal is to reduce the delivery time to 14-18 days, which is planned to reduce the transit time on the territory of Kazakhstan to five days. The researchers proposed the development of the Middle Corridor strategy until 2040.

In Kazakhstan, five-year plans have been determined based on the requirements and problems of the market at the state level. Considering the high transport potential connecting Central Asia and the Black Sea countries through the Caucasus region with access to Europe, countries should take simultaneous and interconnected measures between countries.

Researchers emphasize that transport corridors are an important factor in global competitiveness. It is required to develop TITR standards that will serve as a quality guarantee for all users of the corridor. These standards can focus on fixed transit times for the movement of goods from the territory of each country along the corridor, ensure the safety and security of cargo, uniform service and competitive tariffs. Only during the first two months of 2024, 13 block trains were sent from China on the TITR line, and according to the measures taken by Azerbaijan, it took only 12 days for these containers to reach Georgian ports. Previously, this period was about 45 days.

8.3.8. Trade dynamics between OTS countries

Trade policy plays an important role in the formation of economic relations between OTS members. An examination of the trade policies adopted by member countries, including tariff barriers, non-tariff measures and preferential trade agreements, shows that despite progress in trade liberalization efforts, challenges such as regulatory disputes and customs procedures continue to impede uninterrupted trade in the region. Efforts to harmonize trade policies and simplify customs procedures are essential to unlocking the full potential of intra-TTD trade.

The calculation, based on official data submitted to the IMF, shows that the international trade of the OTS economy group expanded during the period 2015-2025, reflecting the increasing integration of these countries into the global economy. The total export of goods and services of OTS countries exceeded 700 billion dollars in 2022 from 420.4 billion dollars in 2015. However, the ratio of these countries' exports of goods and services to global exports indicates an almost stable trend in the recent period. Taking its highest share in 2022 at 2.3%. In 2022, the export of goods of the countries of the OTS group amounted to 556.7 billion dollars (an increase of about 17.4% from 2021). Service exports amounted to 143.5 billion dollars (an increase of about 38.7% from 2021).

As global economic power shifts to Asia, changes will occur in global supply chains and provide new economic opportunities for the TDC group of countries. The tendency of Turkish countries to import goods and services closely follows their export direction. The value of the total import of goods and services of Turkish

countries reached 728.8 billion dollars in 2022 from 580.3 billion dollars in 2021. The volume of imports of goods and services in the OTS group of economies increased from 21 percent in 2021 to about 26 percent in 2022.). ("Annual Report on Intra-OTS Trade 2023:30)

The total value of Foreign Direct Investment (FDI) inflows decreased from $136.6 billion in 2010-2014 to $105.9 billion in 2015-2019. A similar picture was observed in FDI outflows, which decreased from 45.7 billion dollars in 2010-2014 to 22.2 billion dollars in 2015-2019. In 2019, LDC economies attracted a total of 0.9% of world FDI inflows and hosted 1% of world FDI stocks. In 2019, the ratio of inward FDI to GDP was 65.5% in Azerbaijan, 84.1% in Kazakhstan, and 66.3% in Kyrgyzstan. In that year, this value was the lowest in Turkey (21.6%), which may be due to its relatively larger GDP compared to the rest of the GCC economies.

Multilateral economic cooperation initiatives under OTS have played an important role in promoting economic development and regional integration. The role of multilateral platforms such as OTS is important to facilitate economic cooperation, knowledge sharing and capacity building among member states. Key initiatives in this regard include the TDR Development Fund, which provides financial assistance to support infrastructure projects and economic development initiatives among member states. Joint projects in areas such as energy, transport and tourism have yielded tangible benefits by promoting economic growth and strengthening regional connectivity.

Regarding Bilateral Economic Relations, bilateral economic

relations between OTS members constitute an important component of economic cooperation within the region. Adoption of bilateral trade agreements, investment agreements and cooperation frameworks between member countries. OTS requires examples of successful bilateral projects and partnerships to demonstrate the potential for further expansion of economic ties between member states. Bilateral trade missions, business forums and joint investment projects serve as a valuable platform for strengthening economic cooperation and promoting trade diversification.

The Middle Corridor, which includes transport routes connecting OTS members with Europe and Asia, plays an important role in facilitating trade, energy transit and security cooperation in the region. Examining the importance of the Middle Corridor as a transit corridor for goods, energy resources and people supports the identification of infrastructure projects, including railways, roads and ports, aimed at enhancing connectivity and reducing transport costs along the Middle Corridor. In addition, the book highlights the great need to analyze the potential for cooperation in the field of energy transit and security, using the strategic location of OTS member states to promote regional stability and prosperity.

Result:

In conclusion, let us note that the expansion of economic cooperation within the framework of the Organization of Turkic States has a great potential for promoting general prosperity and sustainable development in the region. By strengthening trade ties, harmonizing trade policies and leveraging the strategic advantages of the Middle Corridor, OTS members can open new

opportunities for economic growth and integration. The lecture emphasizes the importance of cooperation, innovation and inclusive development to harness the economic potential of the Turkic world and advance the collective interests of member states. The economic future of the Turkic world depends on joint efforts to solve structural problems, promote economic cooperation, and use the potential of entrepreneurship and innovation. By leveraging regional synergies, strengthening connectivity, and promoting an environment conducive to entrepreneurship and economic empowerment, Turkic-speaking countries can achieve their economic goals and aspirations by 2040.

8.4. EVALUATION OF THE MIDDLE CORRIDOR INITIATIVE IN THE CONTEXT OF TÜRKIYE

In the ever-evolving environment of global trade and geopolitics, the emergence of new transport corridors has the potential to reshape economic dynamics and redefine the balance of power. One of the game-changing initiatives that is attracting a great deal of attention is the Middle Corridor, a vast network of rail, road, and maritime routes stretching from China to Europe and passing through the strategic heart of Eurasia.

At the epicenter of this transformative trade artery is Türkiye, a country whose unique geographical location and rich historical heritage as a bridge between East and West position it as a key player in shaping the future trajectory of global trade and connectivity. The Middle Corridor, also known as the Trans-Caspian International Transport Route, represents a tremendous opportunity for Türkiye to capitalize on its strategic position and

establish itself as a leading transit hub, facilitating the seamless movement of goods, resources, and capital across multiple continents.

This paragraph aims to provide an assessment of the Middle Corridor initiative in the context of Türkiye 's multifaceted geopolitical ambitions, evolving economic goals, and concerted efforts to advance regional cooperation and integration. By rigorously analyzing the potential benefits, challenges, and far-reaching implications of the corridor, we will explore Türkiye's role as the driving force behind this transformative project and its broader impact on the rapidly evolving global trade and connectivity landscape.

By delving deep into the rich historical context underpinning the Middle Corridor, this paper will also trace its roots back to the legendary Silk Road, an ancient network of trade routes that facilitated cultural exchange and economic prosperity across vast areas of Asia, Africa, and Europe. We shed light on the contemporary revival of this historic trade artery. It will also examine the complex web of regional dynamics, geopolitical tensions, and conflicting interests that Türkiye must navigate to realize the full potential of the Middle Corridor.

The economic dimensions of this ambitious initiative will also be critically analyzed in assessing the numerous opportunities and challenges the corridor presents for Türkiye's emerging industries, export competitiveness, and efforts to establish itself as a manufacturing and logistics powerhouse. From supporting the country's transport and logistics sectors to facilitating access to new markets and promoting economic diversification, the potential of the Middle Corridor to catalyze economic growth

and development will be rigorously assessed.

Furthermore, this paragraph will explore the importance of Türkiye ‘s involvement in the Middle Corridor to promote regional integration, strengthen strategic partnerships, and assert its influence as a key player in the heart of Eurasia. By examining the bilateral and multilateral agreements, collaborative initiatives, and infrastructure projects supporting the development of the corridor, we will gain valuable insights into Türkiye ‘s capacity to use this transformative trade artery as a catalyst for increased geopolitical influence and enhanced regional cooperation.

As the global economic landscape continues to evolve and trade patterns undergo jarring shifts, initiatives such as the Middle Corridor have the potential to redefine the rules of the game, reshape geopolitical alliances, and change the balance of power on a grand scale. This paper will provide a comprehensive and nuanced analysis of Türkiye ‘s strategic position within this paradigm-shifting initiative and shed light on the country’s ability to navigate the complex interplay of economic, political, and regional dynamics to secure its place as a game-changer.

8.4.1. The Middle Corridor Initiative: Implications for Türkiye Türkiye’s Pivotal Role

The Middle Corridor Initiative, also known as the Middle Corridor or the Trans-Caspian International Transport Route, is an ambitious multinational transport network that promises to reshape global trade dynamics. Connecting China to Europe via Central Asia, the Caucasus region, and Türkiye, it offers a viable alternative to the traditional maritime routes via the Suez Canal and the Strait of Malacca. For Türkiye, the Mid-Corridor

Initiative has profound implications, offering both significant opportunities and formidable challenges that need to be carefully managed.

Türkiye is strategically located due to its unique geographical position and strong transport infrastructure. As a transcontinental country linking Europe and Asia, Türkiye acts as an important link between East and West, bridging the gap between the Caucasus region and European markets. Road and rail links are well developed and continuously being improved, including the Marmaray tunnel under the Bosphorus, which offers seamless connectivity across the country. In addition, Türkiye 's major ports on the Black Sea (including Samsun, Trabzon, etc.) and the Mediterranean (including Mersin and Iskenderun) make it an attractive transit point for medium-haul transport. Furthermore, Türkiye 's membership in various regional organizations, such as the Organization of the Black Sea Economic Cooperation (BSEC) and the Organization for Economic Cooperation (ECO), facilitates regional cooperation and increases the viability of the initiative.

Economic Opportunities

The Middle Corridor Initiative offers significant economic opportunities for Türkiye, particularly in the transport and logistics sectors. As a transit country, Türkiye will benefit from increased trade flows and associated revenue streams from transit fees, port services, and value-added activities. At the same time, the Corridor has the potential to boost Türkiye's logistics sector by encouraging infrastructure investments such as modern transport hubs, intermodal terminals, and storage facilities.

The Turkish government has already announced plans

to invest $28 billion to improve transport infrastructure, including the expansion of major ports such as Mersin Port and the development of new logistics centers. This investment is expected to create employment opportunities and increase Türkiye's competitiveness as a regional logistics hub. The Turkish Exporters Assembly estimates that the Middle Corridor Initiative could create over 200,000 new jobs in the country's logistics and transport sectors.

The Middle Corridor Initiative is also seen to be in line with Türkiye's broader economic goals of diversifying its trading partners and reducing its dependence on traditional markets. By facilitating trade with Central Asian and Chinese markets, Türkiye can access new sources of raw materials, consumer goods, and investment opportunities, thereby strengthening its economic resilience and competitiveness.

Geopolitical Importance

Beyond economic considerations, the Middle Corridor Initiative has profound geopolitical implications for Türkiye. Türkiye has skillfully positioned itself as an important link in the East-West trade corridor. It can capitalize on its strategic geographical position to significantly increase its regional influence and strengthen its ties with key partners in many regions. This initiative has reinforced Türkiye's role as a bridge between Europe and Asia, cementing its position as an indispensable quarterback in regional cooperation and integration efforts. This has significantly increased Türkiye's soft power and diplomatic clout, enabling it to play a more assertive and effective role in shaping regional dynamics and addressing critical challenges such as energy security, conflict resolution, economic development, and

environmental sustainability.

Moreover, the Middle Corridor Initiative dovetails seamlessly with Türkiye's long-standing goal of becoming a leading energy transit hub, as the corridor potentially facilitates the efficient transport of energy resources from the resource-rich regions of Central Asia, Turkestan, and the Caspian basin to the energy-hungry markets of Europe. This strategic positioning is in line with Türkiye's efforts to diversify its energy sources, reduce its dependence on Russian gas, and enhance its energy security.

To capitalize on these multifaceted opportunities, Türkiye is proactively engaging in bilateral and multilateral agreements with key partners along the Middle Corridor route. Some of the most important agreements and partnerships include the following:

1. Baku-Tbilisi-Kars Railway Project: In 2007, Türkiye, Azerbaijan, and Georgia signed an agreement on the construction of the Baku-Tbilisi-Kars Railway, a critical component of the Middle Corridor Initiative. This 826-kilometer railway line connects Kars, Türkiye, to Baku, Azerbaijan, providing a direct rail link between Türkiye and the Caspian region.

2. Türkiye-Kazakhstan Transport Cooperation: In 2013, Türkiye and Kazakhstan signed a memorandum of understanding to enhance cooperation in the transport sector, including the development of the Middle Corridor Initiative. This agreement paved the way for the establishment of direct railway links between the two countries, facilitating trade and transit operations.

3. Quadrilateral Cooperation: In 2017, Türkiye, Azerbaijan, Georgia, and Kazakhstan signed the Baku Declaration, committing to strengthen cooperation in transport, energy, and trade. This

quadrilateral partnership aims to increase the competitiveness of the Middle Corridor and promote its development as a viable trade route.

4. Türkiye-China Cooperation: In 2019, Türkiye and China signed a memorandum of understanding to enhance cooperation in the transport and logistics sectors, with a particular emphasis on the Middle Corridor Initiative. This agreement aims to facilitate the movement of goods between the two countries and encourage investment in transport infrastructure along the corridor.

8.4.2. Türkiye Against Challenges and Risks

While the Middle Corridor Initiative offers significant opportunities for Türkiye, it also brings with it various challenges and risks that need to be carefully managed.

Infrastructure Gaps: Despite Türkiye's existing transport infrastructure, significant investments are required to upgrade and expand facilities to accommodate the expected increase in trade volumes. This includes increasing port capacities, improving rail and road networks, and developing efficient intermodal transfer systems.

According to a report by the Ministry of Transport and Infrastructure, an estimated $35 billion of infrastructure investment is needed to take full advantage of the Middle Corridor Initiative. These include projects such as the modernization of the Samsun-Kalın railway line, the construction of new logistics centers, and the expansion of the Mersin Port.

Geopolitical Tensions: The Middle Corridor Initiative passes through regions with complex geopolitical dynamics and potential

flashpoints. Instability or conflict in countries along the route could disrupt trade flows and undermine the viability of the initiative. Türkiye should skillfully manage these tensions and encourage conflict resolution through various diplomatic instruments.

The imminent resolution of the Nagorno-Karabakh conflict between Azerbaijan and Armenia will be a lifeline for the Zangezur Corridor, the Middle Corridor, and the countries in the region and a breaking point for geopolitical tensions.

Competition from Alternative Routes: The Middle Corridor Initiative faces competition from other emerging trade routes, such as the Northern Sea Route and the Arctic Silk Road, which aim to capitalize on melting Arctic ice and offer shorter transport routes between Asia and Europe. Türkiye should ensure that the Middle Corridor remains competitive and attractive for global trade participants by providing efficient and cost-effective transport solutions.Regulatory Harmonization: Facilitating seamless trade along the Middle Corridor Initiative requires the harmonization of regulations, customs procedures, and transport standards among participating countries. Achieving this level of coordination and cooperation can be challenging, especially given the various legal and regulatory frameworks involved.

To address this challenge, Türkiye is actively participating in multilateral efforts to facilitate cross-border procedures and harmonize transport regulations. In 2018, Türkiye ratified the international convention on Harmonization of Border Controls on Goods, which aims to facilitate the movement of goods across national borders.

Environmental Concerns: Increased transport of goods along

the Middle Corridor could potentially exacerbate environmental issues such as air pollution, greenhouse gas emissions, and habitat fragmentation. Türkiye should prioritize sustainable transport practices and promote green logistics solutions to reduce these impacts.

In response to environmental concerns, Türkiye has taken steps to promote environmental sustainability in the transport sector. The government has announced plans to invest in renewable energy sources such as solar and wind power to provide clean energy for transport infrastructure along the Middle Corridor. Türkiye is also working to promote the use of alternative fuels, such as biofuels and electric vehicles, to reduce the carbon footprint of the logistics sector.

The Ministry of Environment and Urbanization has also introduced regulations and incentives to encourage the adoption of green logistics practices. These include financial incentives for companies investing in environmentally friendly transport technologies and stricter emission standards for vehicles operating on the Middle Corridor route.

Security Challenges: Safe and secure transport of goods along the Middle Corridor is crucial, as any disruption or security threat could undermine the viability of the initiative. Türkiye should cooperate with its regional partners against potential risks such as terrorism, organized crime, and cyberattacks.

To mitigate these risks, Türkiye has taken measures to enhance security along the Middle Corridor route. This includes deploying additional border security personnel, implementing enhanced surveillance and monitoring systems,

and strengthening cyber security measures to protect transport and logistics systems from cyber threats.

Türkiye has also concluded security cooperation agreements with regional partners, such as the 2018 agreement on joint border security operations with Azerbaijan and Georgia. These agreements facilitate information sharing, joint training exercises, and coordinated efforts to counter transnational threats along the Middle Corridor.

Financing and Investment: Successful implementation of the Middle Corridor Initiative requires significant investments in infrastructure, logistics facilities, and transport systems. Adequate financing from both public and private sources is crucial for Türkiye to fully realize the potential of the initiative.

The Turkish government has allocated significant funds for infrastructure development along the Middle Corridor route through its national budget and various development programs. However, private sector investment and international financing will also play an important role in bridging the financing gap.

To attract private investment, Türkiye is implementing incentive programs and public-private partnership frameworks to encourage the participation of domestic and international companies in transport and logistics projects. The government has also cooperated with international financial institutions such as the World Bank and the Asian Infrastructure Investment Bank to finance major infrastructure projects along the Middle Corridor.

Shortage of Skilled Labor: The successful operation and management of the Middle Corridor Initiative require a skilled

workforce with expertise in logistics, transport, and supply chain management. Türkiye needs to address potential labor shortages and invest in workforce development to meet the growing demand for skilled professionals in these fields.

The Turkish government has recognized this challenge and has implemented several initiatives to support workforce development in the transport and logistics sectors. These include:

1. Vocational Training Programmes: In cooperation with industry partners, Türkiye has established vocational training programs that provide hands-on training and certification in areas such as logistics management, transport operations, and supply chain management.

2. University Partnerships: Turkish universities have established partnerships with logistics and transport companies to offer specialized degree programs and internship opportunities. These partnerships aim to equip students with the knowledge and skills necessary for successful careers in the industry.

3. Talent Attraction Strategies: Türkiye is implementing strategies to attract skilled professionals from abroad, including streamlined visa processes and incentives for foreign workers in critical sectors.

4. Reskilling and Skills Development Programmes: In order to meet the evolving skills needs of the sector, Türkiye has initiated reskilling and skills development programs for existing workers, allowing them to acquire new skills and adapt to emerging technologies and trends in the transport and logistics sectors.

Through these efforts, Türkiye aims to train a highly skilled and adaptable workforce that can support the efficient and

sustainable functioning of the Middle Corridor Initiative.

Appendix

Some relevant data and statistics are provided below to provide additional context and support the report's findings:

Trade Volume Projections: According to estimates by the Ministry of Transport and Infrastructure, the Middle Corridor Initiative is expected to facilitate the transit of around 6.5 million tons of cargo annually by 2030. This represents a significant increase from current levels.

Transit Revenue Estimates: The Turkish Exporters Assembly estimates that the Mid-Corridor Initiative could generate up to $10 billion in annual transit revenues for Türkiye by 2030, highlighting the economic potential of the initiative.

Employment Opportunities: The Turkish Exporters Assembly estimates that the Mid-Corridor Initiative will create around 200,000 new jobs in Türkiye's logistics and transportation sectors.

Infrastructure Investment: The Turkish government has committed to investing $28 billion to improve the country's transport infrastructure, including the expansion of major ports such as Mersin Port and the development of new logistics hubs.

Overall Investment Needs: A report by Türkiye's Ministry of Transport and Infrastructure estimates that an additional $35 billion in infrastructure investment is needed to take full advantage of the Middle Corridor Initiative, highlighting the significant financial requirements.

Regional Trade Growth: According to data from the Turkish Statistical Institute, Türkiye's trade with Middle Asian countries

along the Middle Corridor has increased by an average of 8% annually over the last five years.

Modal Split: Current estimates suggest that around 70% of the cargo transported along the Middle Corridor Initiative will be carried by rail, with the remaining 30% split between road and maritime modes.

These data points and statistics provide quantitative evidence of the potential impact of the Middle Corridor Initiative on the Turkish economy, trade flows, and transport sector, as well as the challenges and investment requirements for its successful implementation.

Conclusion

The Middle Corridor Initiative represents a transformative development in global trade routes, and Turkey is positioned as a key quarterback in its implementation and success. This study examines the multifaceted implications of Türkiye's participation in this ambitious project, highlighting the opportunities and challenges ahead.

Türkiye's strategic geographical location, linking Europe and Asia, places it at the heart of the Middle Corridor. Its well-developed transport infrastructure, including an extensive road, rail, and port network, provides a solid foundation for its role as an important transit hub. The country's ongoing investments in projects such as the Baku-Tbilisi-Kars railway and various logistics hubs further underline its commitment to increasing its capabilities to support the initiative.

Moreover, Türkiye's active participation in regional organizations such as BSEC and ECO reinforces its position as

a facilitator of cross-border cooperation, a key element for the smooth functioning of the corridor. The country's unique cultural and economic position as a bridge between East and West adds a valuable dimension to its role, potentially facilitating the flow of not only goods but also ideas and services along the route.

At the same time, however, throughout the study we have also discussed the key challenges that Türkiye has to overcome, including balancing complex geopolitical relationships, addressing domestic infrastructure bottlenecks, complying with international standards and regulations, and ensuring road safety in a region marked by various instabilities.

Looking ahead, the success of Türkiye's participation in the Middle Corridor Initiative will depend to a large extent on how effectively it can leverage its strengths while mitigating these challenges. This will be possible through a coordinated approach that includes continuous infrastructure development, diplomatic ingenuity, regulatory harmonization, and security improvements.

The consequences of Türkiye's role extend beyond its borders. A successful Middle Corridor, with Türkiye as a key link, has the potential to reshape global trade patterns by offering a viable alternative to traditional sea routes. This will lead to reduced transportation times and costs, benefiting not only the countries directly involved but also the wider global economy.

In conclusion, while the Middle Corridor Initiative offers Türkiye significant opportunities to enhance its geostrategic importance and economic potential, realizing these benefits will require careful management of both domestic and international factors. As the project continues to evolve, it will be crucial to

conduct more comprehensive studies and diplomacy to fully understand its long-term implications for Türkiye, the region, and global trade dynamics.

8.5. MIDDLE CORRIDOR IN THE CONTEXT OF HIGHER EDUCATION COOPERATION AND R&D PROJECTS

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The Middle Corridor refers to a region geographically located between Asia and Europe. This region offers opportunities for cooperation between higher education institutions, research centres and industry stakeholders in order to seize and strongly preserve the historical opportunity. In this text, the role of the Middle Corridor in the field of higher education and its contribution to research and development projects will be discussed. The Middle Corridor promotes knowledge sharing and cooperation among higher education institutions. It also enables student and academic exchange programmes. Universities in this region can contribute to scientific and technological development through joint research projects. The Middle Corridor provides a fertile ground for research and development projects. The region

has potential for joint projects in energy, environment, health, agriculture and other fields. Universities, industrial organisations and non-governmental organisations can cooperate in these projects and produce innovative solutions. The Middle Corridor has great potential for higher education cooperation and research and development projects. This region should make more efforts to increase knowledge and technology transfer. Universities will be able to contribute to regional development by utilising these opportunities.

8.5.1. Fulfilled Joint Higher Education and R&D projects

The current higher education and R&D project studies, which are essential tools for realising the objectives planned to be achieved within the scope of the Middle Corridor initiative, have been carried out for years through various organisations. In this context, it will be seen that the Organization of Turkic States Turkic Universities Union (TURKUNIB) and the Caucasus Universities Association (KUNIB) have been carrying out essential studies on higher education projects. In terms of R&D, it will be seen that there are projects supported by many national and international institutions and organisations, as well as the Organisation of Turkic States.

8.5.2. Higher Education Projects Fulfilled

Regarding higher education projects, two main unions play an essential role in developing the countries in the region. The first of these is the Organization of Turkic States Turkic Universities Union (TURKUNIB), and the other is the Caucasian Universities

Association (KUNIB). In addition, various institutions and organisations, especially the Ministry of National Education (MoNE) and the Presidency for Turks Abroad and Related Communities (YTB), have various activities

8.5.3. Organization of Turkic States Turkic Universities Union

Organization of Turkic States Turkic Universities Union (TURKUNIB) was established by preparing a directive upon the decision taken within the framework of the preparatory meeting held in Istanbul on 28-29 March 2013 in order to realise various cooperation in the field of higher education among the member countries of the Organisation of Turkic States (TURKUNIB, 2024[a]). The founding members of the Union were Azerbaijan, Kazakhstan, Kyrgyzstan and some universities from Türkiye[168], while many universities from member and observer countries later became members of the Union (TURKUNIB Directive, Art. 7);

– It aims to ensure cooperation between higher education institutions of common historical, cultural, and linguistic heritage and to equip future generations with a sense of shared identity by implementing educational standards based on contemporary and scientific standards.

– Harmonisation of programmes in member universities aims to increase student mobility and international competitiveness by

[168] The universities are Azerbaijan University of Architecture and Construction, Azerbaijan Medical University and Baku State University from Azerbaijan, Ahmet Yesevi International Kazakh Turkish University, Al-Farabi Kazakh National University, L.N Gumilyev Eurasian National University and Nazarbayev University from Kazakhstan, Hussein Karasayev Bishkek University of Sciences, Kyrgyzstan Turkey Manas University, International Kyrgyz University and Yusuf Balasagun Kyrgyz National University from Kyrgyzstan, and Atatürk University, Ege University, Eskişehir Osmangazi University and Istanbul University from Türkiye.

increasing consistency in the education system.

– Implementing a standard credit transfer system aims to ensure that students can transfer their courses between different universities and continue their education uninterruptedly.

– Promoting academic staff training programmes aims to improve the quality of education by increasing the quality of academic staff.

– Implementing student and academic staff exchange programmes aims to increase academic exchange by enabling students and academics from different cultures to benefit from each other's experiences.

– Creating a suitable ground for member universities to recognise each other's diploma equivalence aims to expand students' career opportunities after graduation by increasing international cooperation.

– It aims to benefit from the superiority of universities in specific fields and to increase academic excellence by supporting research and innovation activities.

– It aims to carry out practical joint teaching and research programmes and projects, continue scientific research, and develop innovative solutions.

– Organising symposiums, academic events and cultural events among member universities aim to support sharing knowledge and experience by increasing academic cooperation.

– Providing special scholarships to students who carry out studies on the Turkic world aims to strengthen the educational and cultural ties between the Turkic World and to invest in human resources.

– It aims to provide common history, civilisation, and literature courses in all member countries' universities, preserve the Turkic world's cultural accumulation, and transfer it to future generations.

The Union stands out with the Student Council and the Orkhon process. Secretary General of the Turkic Council Ömer Kocaman said about the Student Council: "The Turkic Council process launched in Nakhchivan in 2009 is very important for the Turkic youth meeting in Azerbaijan and Nakhchivan and the Turkic world. Kocaman said that the Nakhchivan Youth Policy Forum of the Turkic Council is valuable in identifying cooperation opportunities and discussing new developments. It is also an important business opportunity platform shared among the youth of the Turkic-speaking countries, and the organisation and activities held here for young people will lead to the Turkic Council Young Leaders Forum to be held more effectively and more frequently" (TURKUNIB, 2024[b]). Various activities are organised through the Students' Council to integrate young people from the member states of the Union.

The Union of Turkic Universities has carried out many activities in line with its aims and objectives. The most important of these is to strengthen the communication between the students of the Turkic World and to reveal the students' share in the Turkic World's socio-economic transformation. This Council prepares the grounds for the cohesion of the students of the Turkic World by carrying out various activities in which the students are involved. On 15 February 2016, the Student Council organised a Friendship Tournament, including the Mangala and Toguz Korgol games at the Kyrgyz National University with the member universities of the Union of Turkic Universities (TURKUNIB, 2024[c]).

Under the umbrella of the Union, which also organises activities in the field of sports, the I. Association of Turkic Universities (TURKUNIB) Sports Games were held at Kyrgyzstan-Türkiye Manas University (KTMU) (TURKUNIB, 2024[d]). Common Citizenship Education Project in the Turkic World, Turkic World Tourism Guide and Media Manas Project were discussed at the event. Regarding the Orkhon Exchange Programme, it was stated that the applications were satisfactory, and the principles of pilot implementation were discussed. Regarding the Common Citizenship Education Project in the Turkic World, the issue of announcing this project to the relevant bureaucrats of the Turkic Council member countries was discussed (TURKUNIB, 2024[e]). Within the framework of TURKUNIB activities, the books titled "Turkic World Tourism Guide", 'Common Relations and Cooperation in the Countries of the Turkic Council after 25 Years of Experience', 'Common Citizenship Education in the Turkic World' published as a result of the realisation of three major projects by the academic units of KTMU were presented to the Turkic Council (TURKUNIB, 2024[f]).

In addition to the activities carried out by the Union of Turkish Universities, the Turkic Council and the Union of Turkish Universities delegation participated in the opening ceremony of the Second EURIE Eurasian Higher Education Summit held in Istanbul on 22 March 2017. More than 2000 representatives from prestigious universities, academics and higher education circles attend the summit. Approximately 200 universities worldwide participated in the event by opening exhibitions at the stands where universities introduced themselves. Azerbaijan University of Architecture and Construction, Ahmet Yesevi International

Turkish-Kazakh University, Kyrgyz-Turkish Manas University and Kyrgyzstan International University from the member states of the Union opened exhibitions to introduce themselves and established various contacts with other universities. On the other hand, Kyrgyzstan-Türkiye Manas University (KTMU) hosted the meeting of the Central Asian Universities Union (MAUB) and the issues of new members joining the Union, revision of the Union Directive, preparation of the Directive in Turkish, Kyrgyz, English and Russian, and development of the website were also discussed. The Central Asian Universities Union aims to increase cooperation among universities, higher education institutions and organisations cooperating with them, to support internationalisation, to ensure the mobility of teaching staff and students, to develop joint diploma programmes, to ensure unity on programme development and credit transfer systems, to create a quality assurance system and to work on accreditation mechanisms, and to put forward projects that will contribute to regional development by taking into account the strengths of the member universities (TURKUNIB, 2024[g]).

The Orkhon Process is a programme that enables the exchange of students and faculty members among higher education institutions that are members of the Union of Turkic Universities of the Organisation of Turkic States. Orkhon Exchange Programme is divided into two main branches: the student exchange programme and the faculty exchange programme. Within the programme's scope, students and academicians can experience different education systems, dialects, and cultures of the Turkic World and contribute to establishing new relations and the development of international cooperation. Academics and students

can stay at host universities for one or two semesters. Students and academics can attend courses and experience local cultures during this time (TURKUNIB, 2024[h]). All these interactions will provide essential interaction for higher education and R&D cooperation between the countries in the region within the scope of the Middle Corridor.

Since its establishment, the TURKUNIB has endeavoured to achieve important goals such as preserving the common historical, cultural and linguistic heritage and ensuring cooperation among member universities. This framework prioritises issues such as raising educational standards, harmonising programmes, implementing the credit transfer system and increasing student mobility. In addition, academic cooperation has been supported through activities such as increasing the quality of academic staff, implementing student and academic staff exchange programmes and conducting joint research projects. The activities of the Union of Turkic Universities and the international summits in which it participated have made significant contributions to the strengthening of educational and cultural relations in the Turkic world. These efforts have yielded positive results in areas such as increasing communication among the youth of the Turkic world, implementing joint citizenship education projects and organising cultural events. The activities carried out in line with the aim of the Union of Turkic Universities have helped strengthen the Turkic world's educational and cultural ties and create projects that will contribute to regional development. The Union of Turkic Universities has set a series of goals aiming to collaborate in higher education. These objectives include raising future generations with a sense of shared identity through implementing

common educational standards, harmonising programmes and implementing credit transfer systems. In addition, issues such as the training of academic staff, the implementation of student and academic staff exchange programmes, and the mutual recognition of diplomas are also among the priority objectives of this union. The Union of Turkic Universities aims to contribute to future generations' upbringing by strengthening the Turkic world's cooperation in the fields of education and culture through joint studies and activities.

8.5.4. Caucasus Universities Association

Caucasus Universities Association (KUNIB) was established with the invitation of Ardahan University Rectorate with the participation of Ardahan, Artvin Çoruh, Atatürk, Kars Kafkas and Iğdır Universities from Türkiye, Akhaltsikhe State University from Georgia and Nakhchivan State University from Nakhchivan Autonomous Republic of Azerbaijan with the slogan 'A Future Projection...' with the protocol signed on 11 November 2009. Today, as an international academic co-operation with 175 universities from 15 countries, KUNIB aims to produce solutions to regional problems and support regional development through global connections. The 1st Ordinary Congress of the Caucasus Universities Union (KUNIB) was held between 8-13 May 2011 with the contributions of the then President of the Council of Higher Education (YÖK) and Yunus Emre Institute, and the scope of the preliminary memorandum of understanding was expanded (KUNIB, 2024[a]).

The Caucasus Universities Association (KUNIB) plans to create a vision that will shed light on the future of their children

through the common heritage of the stakeholder countries of this geography. It aims to carry out joint scientific studies in fields such as language, culture, art, history, economy and education. The following objectives have been determined for the purpose of KUNIB (KUNIB, 2024[b]). Cultural Dialogue: Due to the region's geopolitical importance, developing an intercultural dialogue is one of the primary objectives. Joint Scientific Symposiums and Workshops: Information sharing and common sharing will be ensured through scientific activities. In addition, the world of science will be brought to the region through international symposiums, and the region will be brought to the attention of the world of science. Mixed Culture, Art and Sports Events: The aim is to increase the interaction between cultures through cultural events. Student and Faculty Member Exchanges: Exchanging students and faculty members through the Mevlana Exchange Programme aims to promote the cohesion and cooperation of students and faculty members between member countries under the roof of education. Mutual Translation of Scientific and Literary Works: Information sharing and intercultural interaction will be accelerated by translating works written in different languages, compilation and Publication of Folk Culture, Language and Ethnographic Products. Joint projects are carried out to protect the disappearing cultural heritage. Mutual Accreditation Studies: Mutual accreditation studies aim to determine and recognise quality standards in the region. Launching Joint Diploma Programmes: One main objective is to offer students a broader perspective through joint education programmes. Opening Language Schools: Opening language schools encourages the learning of regional languages

and improves cultural interaction. Joint Research on the Material and Spiritual Riches of the Region: Another critical goal is to research and understand the region's natural, historical, and cultural richness. These objectives indicate that the Caucasus Universities Association is vital to regional cooperation and development.

The Caucasian Universities Association performs essential services in education by organising the Turkish Universities Fair in some member countries regularly every year (KUNIB, 2024[c]). In addition to organising symposiums (KUNIB, 2024[d]) and congresses (KUNIB, 2024[e]) on Turkish and regional culture every year, it encourages the strengthening of the member countries in the field of education by making a bilateral agreement with the University of the Incarnate Word in the United States of America and providing a master's programme in the field of "Business Management" with online participation. On the other hand, the Caucasian Universities Association performs essential services in the field of education by organising the Turkish Universities Fair in some of the member countries regularly every year (KUNIB, 2024[c]).

In line with the objectives of the Caucasus Universities Union, a student symposium entitled "Young Perspectives on the Caucasus" was organised by Nakhchivan State University on 14-15 November 2011. In this symposium, 70 students from 29 universities in Türkiye, Azerbaijan, Georgia, Iran, Kazakhstan, Kyrgyzstan, Nakhchivan, Turkmenistan and Ukraine presented papers on the Caucasus geography in the fields of history, language, culture, literature, art, economics and social structure. The second symposium was held at the University of Tabriz

between 15-17 September 2015. In this symposium, the Union contributed to preparing the Mevlana Exchange Programme Protocol, which will ensure the functioning of student and faculty exchange programmes between universities under the leadership of the Presidency of Higher Education Council (KUNIB, 2024[b]). With the Regulation published in the Official Gazette dated 23 August 2011 and numbered 28034, the Mevlana Exchange Programme enables the exchange of students and academic staff between higher education institutions abroad and higher education institutions in our country (KUNIB, 2024[f]). In this context, the Caucasian Universities Association has opened the Mevlana Exchange Programme to member universities through cooperation agreements and encouraged the countries in the Middle Corridor to participate in the programme (KUNIB, 2024[g]).

"KUNIB Turkology Department Heads Meeting" was organised by KUNIB in Eskişehir in 2013, and Turkologists made evaluations and suggestions on the field of Turkology. At the meeting, problems of Turkology, suggestions for solutions to these problems and various ideas within the framework of Turkish language, Turkish culture and Turkish literature were brought to the agenda. At the 'International Conference on Endangered Languages' held on 14 October 2014 by the Caucasus Universities Association (KUNIB), hosted by Ardahan University in cooperation with the Turkish Language Association, Harvard University, Smithsonian National Museum of Natural History, Foundation for Endangered Languages, Rice University, Kyrgyzstan-Türkiye Manas University and UNESCO, measures to be taken for thousands of languages, dialects and accents that

are in danger of extinction in the next 100 years were discussed, a long-term road map was determined and it was decided to establish a language institute. "Faces of the Caucasus" project, which was initiated after the III Ordinary Congress and whose general aim is "to make visible the history, culture, language, customs and traditions, various values of the people living in the same region and to bring these values together with future generations through the living witnesses of history", has been another essential work of KUNIB in the international arena. The project was initiated with an interview with 106-year-old Fadime Granny from Ardahan (KUNIB, 2024[h]). Answering the questions directed to her as a living witness of history, Grandma Fadime shared valuable information that can be noted in history. The project aims to revitalise the common cultural heritage of the region's people by continuing to visit the surrounding provinces and other countrie. In addition, at the IV Ordinary Congress organised by the KUNIB in Ankara, "The Role of Energy in the Future of the Caucasus: Solidarity of the Countries in the Region" in the IV. Ordinary Congress was organised by the KÜNIB in Ankara, and "Accreditation Problems and Solution Proposals of the Universities in the Caucasus Region" was presented in the V. Ordinary Congress (KUNIB, 2024[a]).

The Caucasus Universities Association (KUNIB) has emerged as an essential regional cooperation and development element. Founded in 2009 with a protocol signed in 2009, the union has 175 universities from 15 countries and operates in cultural dialogue, scientific activities, and student and faculty exchanges. Students and faculty members are encouraged to fuse and cooperate under the education umbrella through initiatives such as the Mevlana

Exchange Programme. It also aims to understand and protect the material and spiritual richness of the region by conducting joint scientific studies in fields such as language, culture, art, history, economy and education. Through symposiums and congresses organised by KUNIB, cooperation and information sharing between universities in the region is ensured and essential services are provided in the field of education. In this framework, it is foreseen that KUNIB will make significant contributions to regional development.

8.5.5. Other Higher Education Projects

It is possible to see that the activities carried out in the region regarding higher education are not limited to the activities of TURKUNIB and KUNIB but also the activities of various institutions and organisations such as the Ministry of National Education (MEB) Presidency for Turks Abroad and Related Communities (YTB), Turkish World Research Foundation. In this context, the activities of educational institutions affiliated with the Ministry of National Education (MoNE) in the Middle Corridor countries under the coordination of education abroad within the scope of the General Directorate of Higher Education and Education Abroad, various scholarship programmes and educational materials for Turkish and Turkish Culture courses have an important place in terms of regional development (MEB, 2024). Another institution, the Presidency for Turks Abroad and Related Communities (YTB) has undertaken many higher education activities as an institution aiming to provide education and scholarship opportunities in Türkiye's most prestigious universities to citizens of the Republic of Türkiye abroad,

countries, regions and societies with deep-rooted relations and deep ties with our country due to their historical, religious, political, geographical and cultural characteristics, and other international students (YTB, 2024[a]). In addition to this mission, YTB 2024 carries out essential projects that serve regional development, such as the Digital Culture Platform (YTB, 2024[b]), which includes news, culture and arts content, videos, infographics, particular files and important portraits about Türkiye and the geography where Türkiye has a heart connection; Turkish Hour Project Support Programme (YTB, 2024[c]); Youth Support Programme (YTB, 2024[d]); Turks Abroad Youth Camps and Turks Abroad Cultural Trips within the scope of Evliya Çelebi Mobility Programme supported by the Ministry of Youth and Sports (YTB, 2024[e]).

Within the scope of the cooperation protocol signed on 5 April 2024 between the Council of Higher Education (YÖK), the Presidency for Turks Abroad and Related Communities (YTB) and the Maarif Foundation of Türkiye (TMV), it is aimed to dynamise the interest in the field of education from abroad to Türkiye and to increase capacity by joining forces in the fields of education and training, research and development and university fair organisations. The protocol reveals a common will in line with the objectives, such as supporting educational activities, promoting Turkish culture and the language, and sharing experience and knowledge. In addition, within the scope of the protocol, planning fairs that will contribute to promoting and internationalising universities and developing cooperation to promote Turkish scholarships more actively are among the other objectives. The protocol also envisages cooperation on

the Turkish Foreign Student Admission Examination (TR-YOS). This protocol aims to create a joint synergy for the management and healthier functioning of international student mobility. In this context, the TR-YÖS exam will be conducted in 6 languages, and the number of countries where the exam will be applied will be increased from 52 to 78 (YÖK, 2024).

The International Organisation of Turkic Culture (TURKSOY), the first cooperation organisation established in the Turkic World and founded in 1993, aims to ensure that Turkic peoples act together, preserve their shared culture, transmit it to future generations and promote it worldwide (TURKSOY, 2024[a]). TURKSOY organises events that have become traditional and are regularly repeated. These include Nowruz celebrations, meetings of painters, photographers and sculptors, and opera days. The themes of the events are announced within the framework of the commemorative years determined by the Permanent Council of TURKSOY. These events allow scientists and artists of the Turkic World to exchange experiences (TURKSOY, 2024[b]). The Turkic Academy, the Turkic Culture and Heritage Foundation and the Parliamentary Assembly of Turkic States (TURKPA), which are affiliated with the Organisation of Turkic States (OST), also carry out various activities. The Turkic Academy, established in 2012 by Azerbaijan, Kazakhstan, Kyrgyzstan and Türkiye to provide joint scientific activities in the fields of language, literature, culture and history and to research the history of Turkic civilisation, carries out research and scientific activities by providing cooperation in the fields of science and education among the member countries. As a result of its successful work, the Turkic Academy has finalised the Common Textbook of Turkic History and continues

to work on Common Geography and Literature Textbooks. It has also carried out crucial archaeological research in Mongolia, which resulted in the discovery of ancient artefacts related to the Turkic period (Archaeological Excavations of the Ancient Turkic Monument Complex "Shiveet Ulaan" (Bulgyn Region, Mongolia - Archaeological Excavations in the period 2015-2019 (Turkic Academy, 2024[a])) (Turkic Academy, 2024[b]). On the other hand, he carried out a project on the sociological measurement of the perception of the public opinion of the Turkic countries regarding the Turkish integration process between 2017 and 2018 (Turkic Academy, 2024[c]), and in the period 2016-2019, the "Great Steppe" Humanities Forum:"Turkish Civilisation: From the Beginning to the Present" in order to examine and discuss the role and importance of the cultural values of the Turkic world in the development of human civilisation and to exchange views with world-renowned experts and to evaluate proposals for solving urgent problems of global and regional importance (Turkic Academy, 2024[d]).

The Turkic Culture and Heritage Foundation is an organisation working for the protection of Turkic heritage and cooperation with third countries. On 11 September 2015, with the appointment of the President of the Foundation at the Astana Summit, it aims to protect, study and promote the culture and heritage of the rights of the Turkic States. The Foundation supports activities in culture, education, science, human rights, tourism, information and communication through international cooperation (Türk Mədəniyyəti və İrsi Fondu, 2024[a]). Another active institution is the Parliamentary Assembly of Turkic States (TURKPA), established on 21 November 2008 (Parliamentary

Assembly of Turkic States, 2024). TURKPA aims to strengthen the member states in legal and economic terms, strengthen welfare through efficient utilisation of natural resources, and develop socio-cultural relations among the member states. This framework serves four commissions, particularly the Commission on Education, Culture, Social and Humanitarian Issues, the Commission on Economic Cooperation and the Commission on Environment, Natural Resources and Health Protection, which are working to serve the Middle Corridor initiative. While the Commission has held many meetings, the tenth meeting of the Commission on Social, Cultural and Humanitarian Affairs held on 2 March 2023 discussed the situation of post-pandemic education to achieve the UN Sustainable Development Goal of Quality Education. It stressed the need for member states to increase cooperation in education and the inclusion of civil defence courses in education. In addition to the Report and Recommendations, the Commission approved the draft Model Law on "Cross-Border Higher Education" to be presented at the Twelfth Session of the General Assembly in Türkiye. At its tenth meeting on 20 April 2023, the Economic Cooperation Committee discussed the integration of trade and economic potential of TURKPA member countries for sustainable growth and economic development. In this context, they approved the draft Model Law "On Digital Financial Assets" to be submitted to the Twelfth General Assembly, as well as reports and recommendations on the main item. It was also decided to develop a draft Model Law "On the fundamentals of safety and quality of products put into circulation" for the next meeting in 2024. At the meeting of the Committee on

Environment, Natural Resources and Health Protection held on 6 March 2023, the issue of "Biodiversity Protection in TURKPA Member States" was raised, and the importance of developing legislation and cooperation in the field of protection of biodiversity and ecosystems among the member states was emphasized. In addition to the Committees, the Young Parliamentarians Group and the Women Parliamentarians Group are also active.

8.5.6. R&D Projects Realised

The other projects that will contribute to the development of the Middle Corridor countries are projects supported by the European Union, the Council of Europe, Horizon 2020, the World Bank and International Bilateral Cooperation Programmes, as well as projects supported by various private organisations, the Turkish Academy of Sciences (TUBA), the Ministry of Development, other official institutions and organisations, the Ministry of Industry (SAN-TEZ) Projects, scientific research projects supported by Higher Education Institutions and other international projects (YÖKAKADEMİK, 2024[a]).

The Health Institutes of Tütkiye (TUSEB) was established to serve our country and humanity in health sciences and technologies and support planned and sustainable development (TUSEB, 2024). Within the scope of TUSEB, TUSEB Group A Emergency R&D Projects, TUSEB Group B R&D Projects, TUSEB Group C Priority R&D Projects, TUSEB Group D Strategic R&D Projects, TUSEB Strategic R&D Projects, TUSEB Projects for Non-Clinical Studies, TUSEB Clinical Research Projects are carried out. In this context, a series of

projects that can affect the social development of the middle corridor have been realised (YÖKAKADEMİK, 2024[b]). COST (European Cooperation in Science and Technology) is an organisation established to ensure the coordination of nationally-funded research projects at the European level and to support the joint work of European scientists (TUBITAK, 2024). Within the scope of COST projects, Tübitak 1512, Tübitak 3001, Tübitak 3005, Tübitak 3501 and Industry Innovation Network Mechanism (SAYEM) projects, which is a technology ecosystem to develop high value-added products or product groups, which are the targets of the top policy documents for the industrial sector, by creating innovation platforms in cooperation with the private sector, universities and public sector (YÖKAKADEMİK, 2024[c]). Within the scope of the projects, especially the 1704 Industrial Innovation Network Mechanism (SAYEM) Green Transformation Call can be considered a recent important project for developing the middle corridor region (TUBITAK, 2023).

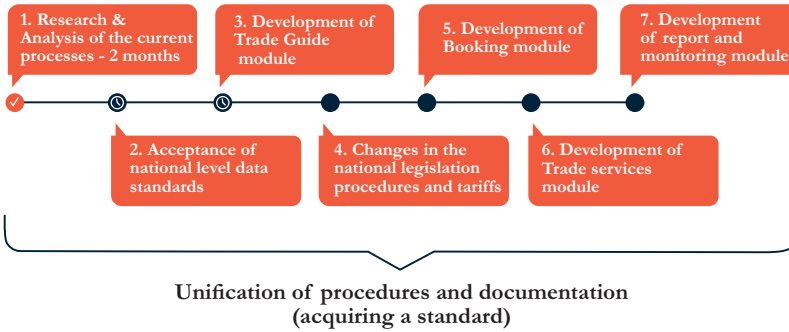
Horizon 2020 Framework Programmes are carried out to strengthen Europe's research and technology development capacity, promote university-industry cooperation, and develop cooperation with EU Member States, Programme Accession Countries and other countries with which the EU cooperates in various fields within the scope of EU policies. TUBITAK carries out National Coordination of the Horizon 2020 Programme. It consists of three components, namely the new R&D and Innovation Programme of the European Union and Horizon 2020. The Horizon 2020 project aims to produce scientific excellence, industrial competitiveness, leadership, and solutions to social problems (TUBITAK, 2020). Within the scope of Horizon

2020, many projects and important studies are carried out for regional development, especially in Türkiye (YÖKAKADEMİK, 2024[d]). The World Bank supports sustainability projects (YÖKAKADEMİK, 2024[e]), essential projects in areas such as socio-economic and renewable energy are supported by the Council of Europe (YÖKAKADEMİK, 2024[f]) and European Union projects (YÖKAKADEMİK, 2024[g]), the Ministry of Development (YÖKAKADEMİK, 2024[h]) supports projects targeting development and within the scope of the Ministry of Industry (SAN-TEZ) Project (YÖKAKADEMİK, 2024[j]), projects related to R&D and industrial development are supported and development is supported. Various regional education, health, environment, culture and sustainability projects are carried out through International Bilateral Cooperation Programmes (YÖKAKADEMİK, 2024[k]). In the coming period, within the framework of the implementation of the strategic directions and objectives of Strategy 2026 and Vision 2040, the Organisation of Turkic States (OTS) needs to explore new ways of working together, promote intelligent, sustainable and inclusive economic development of Turkic countries and provide a framework for increased growth, employment and competitiveness based on the rule of law. In this context, the recently established Turkic Official Network of Economic Policy Research Centres (ERCNET) will be supported in developing a solid platform promoting economic relations, further economic integration, and long-term growth engines for Turkic economies (Turkic Academy and OTS, 2023: 44).

In the field of transport, which is one of the critical projects that will serve the development of the Middle Corridor in the

Turkic States, experts and officials from the Ministries of Transport of the Member States of the Organization of Turkic States held a meeting of the Subgroup on Digitalisation on 14 March 2024 on the latest developments regarding the expansion of the "ePermit" project in the Turkic region by the Transport Connectivity Programme and Action Plan 2023-2026. Within the framework of this meeting, the parties discussed introducing the "ePermit" project between Türkiye and Uzbekistan in the context of the digitalisation of transport and transit procedures of the Heads of State in the Astana Declaration. Subsequently, they defined a roadmap for the implementation of the project between Azerbaijan and Türkiye, Azerbaijan and Uzbekistan, Kazakhstan and Uzbekistan, Kyrgyzstan and Uzbekistan, as well as between Azerbaijan and Türkiye, Azerbaijan and Uzbekistan, Kazakhstan and Uzbekistan (TDT, 2024[a]). Each student in the programme will develop a broad understanding of how the elements and processes of business organisations relate to each other and the external environment (KUNIB, 2024[j]).

Figure 8.5.6.1. Development Stages of Digital Trading Platform



Source: TDT, 2024[a]

The development of the Digital Trade platform within the scope of the ePermit project will start with a two-month process consisting of examining the electronic analysis of the existing processes in the first phase, as seen in Figure 8.3.6.1. The second phase will start with the adoption of data standards at national level, the development of the trade guide module in the third phase, the changes in national legislative procedures and tariffs in the fourth phase, the development of the reservation module in the fifth phase, the development of the trade services module in the sixth phase and the development of the reporting and monitoring module in the seventh and final phase, and it is aimed to facilitate trade by completing the stage of unifying the procedures and documentation of the member countries in a standardised manner.

Another initiative taken by the Turkic States to support the development of commercial activities in the business circles between the Turkic States and to promote development in the region along with trade is the establishment of the Joint Turkic Chamber of Commerce and Industry (OTTSO) with a permanent Secretariat in Istanbul in 2019. OTTSO aims to support the business circles among the Turkic States and encourage their development, thus ensuring economic integration in the region and further economic and social development with economic integration. In this context, OTTSO aims to facilitate the processes by coming together with the business environment of the Turkic States, as well as supporting the women entrepreneurs in the Turkic States with the women entrepreneurs committee shortly (TDT, 2024[b]).

Another essential tool for developing the Middle Corridor

is the Asian Infrastructure Investment Bank (AIIB), of which Turkmenistan is a member, and Turkmen states are also a member. The AIIB supports the economic development of member countries by cooperating with its partners, unlocking new capital and investing in green, technology-enabled infrastructure that supports regional connectivity (AIIB, 2024[b]). In this context, if we assess in terms of Turkic States, Azerbaijan has two projects approved between 2016 and 2021, and in 2016, Azerbaijan: Trans Anatolian Natural Gas Pipeline Project (TANAP) received support. On the other hand, Hungary benefited from Emergency Aid for Health Expenditures in 2021. Kazakhstan received support for two projects in 2023 and one in 2020 and 2019. In this context, Kazakhstan received support for the Financial Governance and Financial Sector Reforms Programme and the Shokpar 100MW Wind Power Project in 2023 and the Zhanatas 100 MW Wind Power Plant in 2019. It also proposed the Kokshetau PPP Hospital Project this year. In 2020, Kyrgyzstan received support for the Kyrgyz Emergency Support to the Private and Financial Sector Project. The Turkish State that received the most critical support from the AIIB was Türkiye. In this context, Türkiye received support for 25 projects in total, including the Smart Solar Power Generation Project, Akbank Sustainable Energy Facility in 2024, TSKB Sustainable Energy and Infrastructure Lending Facility - Phase 2, Aklease Multi-Sector Facility in 2022, Istanbul Waste to Energy Project in 2021, Efeler 97. 6 MWE Geothermal Power Plant Expansion Project in 2019, TKYB Renewable Energy and Energy Efficiency Lending Facility, TSKB Sustainable Energy and Infrastructure Lending Facility, and Tuz Gölü Türkiye Gas Storage Expansion Projects in 2018 (AIIB, 2024[c]).

Private organisations and institutions such as the European Union, the Council of Europe, the World Bank and International Bilateral Cooperation Programmes support the development projects of the Middle Corridor countries. It is observed that Türkiye also plays an active role in these projects. In particular, projects in health sciences and technologies carried out under the Health Institutes of Türkiye (TUSEB) aim to support planned and sustainable development. On the other hand, organisations providing coordination at the European level, such as COST and programmes such as Horizon 2020, strengthen Türkiye's research and technology development capacity in the international arena. Within the Organisation of Turkic States, it is observed that efforts are being made to support economic development in line with common strategic goals. In this context, especially the realisation of the Digital Trade platform within the scope of the ePermit project and, thus, the unification of the procedures and documentation of the member countries to achieve a standard will be a significant achievement. The Joint Turkic Chamber of Commerce and Industry (OTTSO) is a significant initiative supporting the Turkic States' business circles, encouraging their development, and ensuring economic development. On the other hand, developing infrastructure projects by utilising the resources of the AIIB contributes significantly to regional economic development. The support received by Türkiye in this framework enables essential steps to be taken, especially in areas such as renewable energy, health infrastructure and R&D projects. In this context, implementing and coordinating various projects for developing countries in the Middle Corridor region can significantly contribute to regional development.

8.6. CONCLUSION

In today's world of economic transformation, the Belt and Road Initiative of the People's Republic of China and Türkiye's Middle Corridor Initiative have significant potential for regional and global development. Firstly, the Belt and Road Initiative promotes economic integration by supporting trade and infrastructure projects between Asia, Africa and Europe. New cooperation and funding opportunities for higher education and R&D projects are emerging in this context. Türkiye's Middle Corridor Initiative aims to strengthen the links between Central Asia, the Caucasus and the Middle East. This initiative promotes cooperation in many areas, especially in education and economy. China's Belt and Road Initiative offers the Middle Corridor Initiative an economic and trade integration opportunity.

On the other hand, Türkiye's Middle Corridor Initiative offers a strategic opportunity to balance China's influence in Asia and enhance regional security. In conclusion, the Belt and Road Initiative of the People's Republic of China and Türkiye's Middle Corridor Initiative play an essential role in higher education and R&D projects. These initiatives have significant potential to promote regional cooperation and contribute to global development. However, more efforts and cooperation are needed to realise this potential fully.

One of the essential collaborations that can be made in higher education will be the arrangements to be made regarding the existing student, academic staff and researcher exchange programmes and the addition of new ones to these programmes. In this context, student, academic staff and

researcher exchange programmes carried out within the scope of KUNIB and TURKUNIB should be made more qualified. In this context, the Orkhun Programme, carried out within TURKUNIB, should be restructured to be equivalent to the Erasmus Plus programme. A unique programme for the Middle Corridor countries can be prepared within the scope of this programme, or some special sub-programmes should be added to this programme. A particular area should be created with the Middle Corridor countries.

Similarly, programmes should be developed within KUNIB, MEB, TURKSOY and YTB, and vital programmes with adequate financing should be established. On the other hand, a special quota should be recognised by the universities in the relevant country to ensure academic mobility. In addition, an application called "Academic Passport" should be introduced to ensure academic mobility. These passports will be provided to academics who meet specific criteria in academic research and should have the right to work in the universities of the relevant country without needing a visa, work permit or residence permit.

The Scientific and Technological Research Council of Türkiye (TUBITAK) should be able to work more effectively with bilateral and multilateral agreements established with the same mandate in the countries of the region for joint higher education projects with the region. Joint research projects should be implemented between universities and researchers from Middle Corridor countries. These projects can encourage interdisciplinary cooperation and contribute to regional development. A special fund should be organised for these projects. Some other projects that will contribute to the development of the Middle Corridor

countries are projects supported by various private organisations, such as the European Union, the Council of Europe, Horizon 2020, the World Bank, and the International Bilateral Cooperation Programmes. Regional studies should be carried out to benefit more from the financial support of these projects, and academic and various socio-economic institutions and organisations in the region should develop projects. Scientific research projects supported by the Turkish Academy of Sciences (TUBA), Ministry of Development, other official institutions and organisations, Ministry of Industry (SAN-TEZ) Projects, and Higher Education Institutions should create platforms for joint studies with the countries in the region. They should cooperate in many areas such as health, education, science and technology due to the existence of a series of problems such as infrastructure, climate conditions, delays in border crossings and political instability, establish joint industrial zones, establish joint technology development zones and establish joint universities and realise regional development together. At the same time, in order to support the Belt and Road Initiative in the realisation of these projects, the Asian Infrastructure Investment Bank (AIIB), in which China has the largest share, should be applied more frequently and financial support should be obtained. AIIB provides financial support in many fields, such as health, education, science and technology.

Another area that needs to be developed among the Middle Corridor countries is language and cultural programmes. Language and cultural programmes should be organised to encourage students to learn local languages and cultures. Such programmes deepen students' cultural understanding and help them become global citizens. As is well known, one of the most

critical problems in the Orkhon Programme is the common language of communication. In particular, although students from Central Asia know Russian well in addition to their local languages, students from Türkiye need a better command of the Russian language.

For this reason, Turkish students are not interested enough in exchange programmes with other Turkic Republics where Russian is dominant, except Azerbaijan. Cooperation Agreements: Cooperation agreements between educational institutions in the Middle Corridor countries should be signed. These agreements facilitate student and staff exchanges, encourage joint research projects, and allow the sharing of academic resources. Technology Transfer and Innovation: Cooperation in the field of technology transfer and innovation between the countries of the Middle Corridor is feasible. This aims to develop joint innovative solutions and support regional development by sharing scientific and technical knowledge. These areas of cooperation have significant potential to strengthen the education systems of the Middle Corridor countries and enhance regional cooperation. Such cooperation can contribute to the development of both individuals and societies.

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