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ISSUES OF COMPETITIVENESS OF THE TRANSPORT AND LOGISTICS SYSTEM OF KAZAKHSTAN

Numerous Central Asian transport projects supported by global powers like the USA, EU, and China aim to establish alternative routes bypassing Russia. These corridors include North-South, trans-Iranian, and proposed routes connecting various regions. Kazakhstan should view these developments as opportunities and focus on providing reliable, cost-effective logistics solutions. Kazakhstan faces competition from Russian and Belarusian road transport services and sea transport options. The Europe-Kazakhstan-China railway offers economic advantages due to shorter distances and higher speed.

This study examines the logistical and geopolitical aspects of international transport corridors in Kazakhstan, emphasizing modern challenges and Kazakhstan's competitiveness. It explores how Kazakhstan leverages its strategic location amid global efforts to create overland transport corridors. As China seeks alternative sea routes via the Suez Canal, Kazakhstan can serve as a crucial trade bridge between East and West. The research adopts a geopolitical perspective, recognizing the influence of transport and logistics on modern political dynamics. It aims to comprehensively analyze elements shaping Kazakhstan's transport policy and its role in the global transport network.

Key words: Kazakhstan, Transport, Transit, Logistics, Road, Central Asia.

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Қазақстанның көлік-логистикалық жүйесінің бәсекеге қабілеттілік мәселелері

АҚШ, ЕО және Қытай сияқты әлемдік державалар қолдайтын Орталық Азиядағы көптеген көлік жобалары Ресейдің айналасында балама маршруттар құруға бағытталған. Бұл дәліздерге Солтүстік-Оңтүстік, трансиран және әртүрлі аймақтарды байланыстыратын ұсынылған маршруттар кіреді. Қазақстан бұл оқиғаларды мүмкіндік ретінде қарастырып, сенімді, экономикалық тиімді логистикалық шешімдерді ұсынуға назар аударуы керек. Қазақстан Ресейлік және беларусьтік автомобиль тасымалдары мен теңіз көлігінің нұсқалары тарапынан бәсекелестікке тап болады. Еуропа-Қазақстан-Қытай теміржолы қысқа қашықтыққа және жоғары жылдамдыққа байланысты экономикалық артықшылықтар ұсынады.

Бұл зерттеуде Қазақстандағы халықаралық көлік дәліздерінің логистикалық және геосаяси аспектілері қарастырылады, Қазақстанның қазіргі заманғы сын-қатерлері мен бәсекеге қабілеттілігіне ерекше назар аударылады. Онда Қазақстанның құрлықтағы көлік дәліздерін құру жөніндегі жаһандық күш-жігер жағдайында өзінің стратегиялық орналасуын қалай пайдаланатыны зерттеледі. Қытай Суэц каналы арқылы балама теңіз бағыттарын іздейтіндіктен, Қазақстан Шығыс пен Батыс арасындағы маңызды сауда көпірі бола алады. Зерттеу геосаяси тұрғыдан жүргізіліп, көлік пен логистиканың қазіргі саяси динамикаға әсерін мойындайды. Ол Қазақстанның көлік саясатын қалыптастыратын элементтерді және оның жаһандық көлік желісіндегі рөлін жан-жақты талдауға бағытталған.

Түйін сөздер: Қазақстан, көлік, Транзит, Логистика, автожол, Орталық Азия.

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Вопросы конкурентоспособности транспортно-логистической системы Казахстана

Многочисленные транспортные проекты в Центральной Азии, поддерживаемые такими мировыми державами, как США, ЕС и Китай, направлены на создание альтернативных маршрутов в обход России. Эти коридоры включают Север-Юг, трансиранский и предлагаемые маршруты, соединяющие различные регионы. Казахстану следует рассматривать эти события как возможности и сосредоточиться на предоставлении надежных, экономически эффективных логистических решений. Казахстан сталкивается с конкуренцией со стороны российских и белорусских автомобильных перевозок, и вариантов морского транспорта. Железная дорога Европа-Казахстан-Китай предлагает экономические преимущества благодаря более коротким расстояниям и более высокой скорости.

В этом исследовании рассматриваются логистические и геополитические аспекты международных транспортных коридоров в Казахстане, особое внимание уделяется современным вызовам и конкурентоспособности Казахстана. В нем исследуется, как Казахстан использует свое стратегическое расположение в условиях глобальных усилий по созданию сухопутных транспортных коридоров. Поскольку Китай ищет альтернативные морские маршруты через Суэцкий канал, Казахстан может служить важнейшим торговым мостом между Востоком и Западом. Исследование проводится с геополитической точки зрения, признавая влияние транспорта и логистики на современную политическую динамику. Он направлен на всесторонний анализ элементов, формирующих транспортную политику Казахстана, и его роли в глобальной транспортной сети.

Ключевые слова: Казахстан, Транспорт, Транзит, Логистика, Автодорога, Центральная Азия.

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Introduction

Several transport projects are already being implemented in Central Asia, supported by such prominent world players as the USA, the EU, and China. These initiatives are aimed at creating alternative routes bypassing the territory of Russia, including the Trans-Siberian Railway and the BAM. These projects cover various corridors, such as the North-South route (connecting India, Iran, Azerbaijan, Russia and the EU), the trans-Iranian route (connecting India, Iran, Armenia, Georgia and the EU), the China-Kazakhstan-Turkmenistan-Iran route (extending to Turkey, Europe and the Middle East), and also proposed routes such as China-Kyrgyzstan-Uzbekistan and Uzbekistan-Turkmenistan-Azerbaijan-Georgia-Turkey-EU, among others.

It is important for Kazakhstan not to consider the development of these transport corridors as a threat. On the contrary, the competition between transport corridors is not only in the choice of transport routes or modes of transport. It is based on the provision of logistics solutions based on intermodal transport and specialized logistics services adapted to specific supply chains. In these solutions, such characteristics as reliability, flexible pricing policy, and the necessary speed of delivery of various types of goods, covering the entire range of logistics, should be prioritized.

Kazakhstan's main competitors in this context are road transportation services offered by Russian and Belarusian companies, as well as options for sea transportation, which often present more attractive conditions in terms of pricing and logistics. The Europe-Kazakhstan-China railway line offers significant economic advantages due to shorter transportation distances, about 30% less than the Trans-Siberian Railway. Moreover, trains on the Kazakh railway network can reach an average speed of at least 1100 km per day, which is in sharp contrast to the meager 200 km per day on the Trans-Siberian Railway or at best 345 km per hour. In addition, the Trans-Siberian Railway often encounters snow cover during the winter months.

Kazakhstan occupies the 79th position in the Logistics Efficiency Index (LPI), surpassing all other countries of the Commonwealth of Independent States (CIS) in terms of logistics development (Global Ranking, 2023).

The scientific novelty of the study is to study the logistical and geopolitical aspects of international transport corridors crossing the territory of Kazakhstan and extending towards Europe and South-Western Eurasia, including the territories of the

Eurasian Economic Union (EAEU). The study will provide a comprehensive analysis of the importance of international transport corridors, considering them through the prism of logistics and geopolitics. A significant intellectual problem is the need for a comprehensive study of modern problems related to the development of international transport corridors, especially in connection with the emergence of alternative transport routes and the competitiveness of Kazakhstan in this changing landscape.

The scientific hypothesis of the study explores how Kazakhstan effectively used its strategic geographical position against the background of efforts by China, the United States, and the EU to create their respective overland international transport corridors connecting Europe and Asia. The European Union market remains the most attractive in the world, and as China strengthens its leading economic status, competition for the EU market is intensifying. China is seeking to create an alternative sea route through the Suez Canal — a transcontinental transport corridor linking the Asia-Pacific region with the markets of Europe and the Mediterranean — in order to increase the efficiency of the distribution of its goods. These events contribute to the deepening and long-term cooperation in the field of geopolitics and geo-economics. The growing Sino-European trade, China's economic expansion, and its transition to intra-continental cooperation provide Kazakhstan with the opportunity to serve as a key transport and trade bridge between the Western and Eastern Hemispheres. Infrastructure links connecting the two main economic regions of the world give Kazakhstan a unique role in the global economy and open up opportunities for the economic development of the country.

The main research approach advocated by the authors of the study is the adoption of a geopolitical perspective. This approach stems from the recognition that modern political dynamics are significantly influenced by the evolution of transport and logistics capabilities of key participants involved in the construction of international transport corridors passing through Kazakhstan and the Central Asian region.

The objective of this research is to conduct an interdisciplinary examination of the primary elements that influence the formulation of Kazakhstan's transport potential development policy, with due consideration for both foreign and domestic policy factors. This study places significant emphasis on the pivotal roles and significance of infrastructure and transportation, the nation's integration into the global market, and the elevation of Kazakhstan's prominence in the intense global competition for transport networks, effectively incorporating logistics into the realm of the country's political and geopolitical concerns. Logistics, functioning as a tool within the realm of geopolitics, exerts a discernible influence on the holistic advancement of the nation. The management of markets and transportation corridors has emerged as a pivotal determinant in the conduct of various powers within the context of contemporary international relations.

Problem statement

In the era of the Soviet Union, the primary railways and highways in Central Asian republics followed a northward direction, lacking direct connectivity to the global network. Despite the historical significance of the Great Silk Road, which traversed modern-day Central Asia, linking China to the Mediterranean over a vast expanse of more than 6.5 thousand kilometers, the idea of reviving this ancient route gained substantial attention only in the late 20th century. This interest coincided with advancements in technology and transportation capabilities that enabled large-scale transcontinental logistics operations, even in challenging weather conditions, all while maintaining economic viability.

Consequently, in the early 1990s, discussions emerged about creating a comprehensive Trans-Eurasian highway, partially retracing the path of the Great Silk Road. This proposed route would span across China, Kyrgyzstan, Kazakhstan, Uzbekistan, Turkmenistan, Iran, Turkey, and Georgia. On May 3, 1993, during the Conference of Ministers of Trade and Transport in Brussels, a declaration was signed, giving birth to the Transport Corridor Europe – Caucasus – Asia (TRACECA) route. TRACECA's primary objectives, aside from establishing trade routes between the EU and China, included fostering economic and regional cooperation among participating nations and reducing the transport dependency of former USSR republics on Russia.

The increasing political significance of international transport corridors (ITCs) is underscored by the active involvement of global powers such as China, the United States, and the EU in creating their own versions of land-based ITCs connecting Europe and Asia. Notably, as most of the world's major production facilities shift to Asia, the EU remains an immensely appealing market. China, a major player in global shipping, faces challenges in meeting the EU's hydrocarbon emissions tax imposed on sea

vessels since June 2012. This tax directly impacts shipping costs and the pricing of Chinese exports. Furthermore, it poses challenges to the development of China's shipbuilding industry, which ranks fourth globally in terms of shipping capacity.

Consequently, China proposed the revival of the Silk Road and, in 2013, President Xi Jinping introduced the concept of the New Silk Road. This strategic vision cast Kazakhstan in a central role, resurrecting its historical significance as a transit hub in Central Asia. The successful execution of this project is anticipated to result in a substantial increase in transit cargo volumes passing through Kazakhstan.

The New Silk Road strategy seeks to connect Eurasia with major international ports, mitigating the risk of transport isolation for the region. In 2014, Kazakhstan introduced a new economic policy known as "Nurly Zhol – the way to the future" (Nurly Zhol, 2015), closely aligned with China's Silk Road Economic Belt (SREB) initiative. During this period, Kazakhstan has made significant advancements in developing its transport and logistics infrastructure, leading to an improved standing in the Logistics Performance Index.

Literature review

The primary hypothesis of our project posits that the examination of infrastructure and logistics should adopt a multifaceted approach, incorporating functional, institutional, and reproductive theories, along with SWOT analysis. This comprehensive approach is essential to delineate the composition and functions of various infrastructure types, understand their dynamics, and discern their role in the broader economy. Notably, Campbell R. McConnell and Stanley L. Brue describe infrastructure as "organizations for the whole economy" (2005).

Numerous scholars, including George J. Stigler (2012), characterize infrastructure as a network of interconnected organizations or structures servicing various industrial, social, and economic activities within a nation's borders. This holistic perspective on infrastructure development finds representation in Pierre-Richard Agenor's theory of infrastructure development. Agenor (2006), a Professor of International Economics, Macroeconomics, and Development at the University of Manchester, has developed a theory that holds substantial scientific relevance for experts in international relations and global economics. The deficiency of infrastructure remains a significant impediment to growth and development in many low-income countries. For instance, in sub-Saharan Africa, exorbitant transport costs rank as the world's highest and severely limit trade expansion. Farmers in Rwanda, for instance, only receive 20 percent of the price of their coffee as it embarks on its journey to ships in Mombasa, with the remaining 80 percent vanishing due to the expenses incurred by poor road infrastructure (among other factors) between Rwanda and Kenya. In several African capitals, the ports, originally constructed at the terminus of railways designed for the transport of raw materials and labor from the interior during colonial times, continue to serve as the focal points of trade activity. These transport networks, dating from the colonial era, were positioned perpendicular to the coastlines and were never designed for wide-ranging spatial occupation.

Building upon Pierre-Richard Agenor's conceptual framework, our research aligns with a spatial and organizational approach to analyzing global logistics, inspired by the works of O. and D. Andersson (2001) and N.A. Kosolapova (2005). Investments in infrastructure stand as a crucial instrument for creating an environment conducive to economic development and the generation of new employment opportunities. Such investments serve as an effective means of reallocating resources and labor from stagnant sectors of the economy to industries with the potential for sustained economic growth. As per widely accepted calculations by Mark Zandi (2011), the Chief Economist at Moody's Economy Company, public investment in infrastructure serves as a catalyst for private investment, with every dollar spent on infrastructure projects yielding a multiplier effect of $1.59. Additionally, the business community benefits from reduced costs in areas like transportation, communications, energy, and water supply.

The inability of a government to modernize its railway and road systems, inland waterways, port facilities, airports, and other infrastructure components significantly hampers the efficiency of the national economy. According to certain estimates, even in the USA, the actual and indirect economic losses due to escalating logistics costs increased from 8.6% of GDP in 2003 to 10% in 2008 (The right way, 2009). Concurrently, many developing Asian countries, particularly China and India, are allocating substantial investments towards the development of top-tier transport and communication infrastructure.

Inadequate transport infrastructure notably inflates operating costs for transport companies, which are then compelled to explore alternative routes for

goods delivery. Conversely, high-quality infrastructure augments the productivity of other factors of production, including capital, labor, and overall factor productivity.

In numerous instances, insufficient infrastructure renders certain production processes nearly impossible. For instance, international trade is significantly contingent on the density of transport and communication infrastructure. Infrastructure constitutes the bedrock of industrial agglomeration, wherein new industries coalesce around pre-existing industrial clusters (Redding, S. & Venables, 2009).

Governments often employ large infrastructure projects as part of their counter-cyclical (stabilizing) policies or to attain specific objectives within the framework of economic growth. By investing in specific infrastructure projects, governments incentivize private capital participation in these endeavors. For example, the construction of roads in rural areas can stimulate the district's integration into the regional economic landscape, attract private sector investments, and accelerate overall regional economic growth.

Conversely, economic growth can influence decisions regarding infrastructure investments and engender demand for infrastructure expansion. Finally, the relationship between the construction of new infrastructure and the refurbishment of existing networks holds paramount importance.

Every country developing an infrastructure modernization strategy faces four principal challenges: establishing priorities, assessing financial capabilities, selecting the optimal development model, and understanding whether infrastructure should be considered a public or private benefit.

Results

The discrepancies among economists regarding the definition of competition are evident in their various approaches to analyzing the concept of competitiveness. Scholars engaged in the study of enterprise competitiveness encounter the challenge of establishing the criteria and origins of competitiveness. The degree of competitiveness exhibited by an enterprise is contingent upon numerous factors, which can be categorized into two primary domains: the competitive milieu and the foundation.

The competitive milieu encompasses elements linked to the external surroundings and the interaction between the enterprise and other market participants. These elements may encompass market competition levels, consumer preferences, technological advancements, government policies, and other factors that impact the enterprise's capacity to engage in market competition. Conversely, the foundation encompasses factors associated with the internal resources and capabilities of the enterprise. This may encompass production facilities, collaborative production efforts, managerial decision-making, the quality of management, and other elements that influence the efficient utilization of resources. This perspective underscores that the competitiveness of an enterprise is not governed by a single factor but relies on a multitude of external and internal variables. Economists may diverge in their assessments of which factors assume greater significance in specific circumstances, leading them to assign varying degrees of importance to different aspects of enterprise competitiveness.

Kazakhstan has taken significant steps to foster trade and economic relationships by entering into agreements with several countries, including China, Turkey, Iran, India, and Pakistan. Of particular significance is the development of transit sections along continental land routes. Kazakhstan has upgraded the capacity of the Aktau seaport on the Caspian Sea, Iran has connected its railways to Persian Gulf seaports, and China has extensively revamped its railway network bordering Central Asia. The construction of an integrated network of transcontinental, regional, and local railways and highways has provided Central Asian countries with access to both China and Iran, which serve as gateways to the wider world.

Despite Kazakhstan's distance from maritime routes, the country possesses substantial transit potential, acting as a bridge for China to the West and the EU to Central Asia and the Asia-Pacific region. Recognizing this, Kazakhstan has made concerted efforts to enhance its transport infrastructure. Presently, state programs have been implemented to develop the transport sector, aimed at facilitating access to international trade routes. Nevertheless, the realization of these plans may face challenges due to a range of internal and external factors. Insufficiently developed infrastructure and relevant legislation in this domain pose challenges, as do escalating tensions among external actors.

Kazakhstan has adopted a policy of establishing a presence in key logistics centers of other nations, including China, Russia, Iran, the UAE, and others, linked to Kazakhstan via road and rail corridors. Kazakhstan is evolving into an attractive overland transit route for cargo traveling from Chinese ports such as Lianyungang, Qingdao, and Tianjin to desti-

nations like Kyrgyzstan, Uzbekistan, Turkmenistan, Iran, Turkey, and ports in the Mediterranean and the Persian Gulf. Kazakhstan's transport infrastructure is becoming an integral part of the global transportation system, generating significant revenue for the state budget and transport companies while fostering the development of a competitive transport and logistics complex.

In this context, an agreement was reached between Kazakhstan and China in 2006 to connect their railways along the Korgas (Kazakhstan) – Khorgos (China) line. Kazakhstan, with some participation from Uzbekistan and Turkmenistan, anticipates hosting a portion of the immense cargo flow circulating between Asia and Europe, following the establishment of the transcontinental corridor "China – Western Europe," spanning 8,500 kilometers. Despite sea transportation's preference due to its relative cost-effectiveness, overland transportation routes offer a significant advantage by reducing transit time from an average of 56 days by sea to just 11-12 days.

Transport routes from the Pacific ports of China and Japan to Central Asian cities through Chinese territory are notably shorter than traditional routes through Russian territory. For instance, the distance between Almaty and Shanghai is nearly 2.2 thousand kilometers shorter than the distance between these cities and Vladivostok. Furthermore, the distance between Almaty and China's Pacific ports is nearly equivalent to the length of the route from Almaty to the Baltic port of Riga and the Mediterranean port of Mersin.

One particularly noteworthy program is "Silk Wind," involving Turkey, Georgia, Azerbaijan, and Kazakhstan. This initiative aims to establish a unified tariff for cargo transportation and streamline customs and border procedures, which will inevitably enhance delivery speed. In the future, this corridor will connect to the trans-European road, extending from the Black Sea to the Baltic Sea.

Kazakhstan's deeper integration into the Eurasian transport and logistics system will necessitate the harmonization of its legislation with that of the European Union, the Eurasian Economic Union (EAEU), the Commonwealth of Independent States (CIS), and neighboring countries. While European-Asian land transport routes may not compete with the volume of maritime transportation, they can serve as a valuable complement, ensuring the reliable delivery of valuable and time-sensitive goods. The growth of continental trade presents an opportunity for Kazakhstan and its neighbors to develop their economies, strengthen trade ties, and create new domestic markets. Consequently, the unification of remote regions is a central objective of the "Nurly Zhol" state program, which seeks to create a Single Economic Market by integrating the country's macro-regions through the development of efficient infrastructure based on the "hub" principle, ultimately fostering long-term economic growth.

The outcomes of this project will contribute to scholarly discussions with international colleagues, research institutes, and centers specializing in transportation and logistics.

Conclusion

The competitiveness of the transport and logistics sector of Kazakhstan is a multifaceted concept that is based on its ability to provide efficient and reliable logistics solutions for the transportation of goods both domestically and internationally. This most important aspect of the country's economic landscape depends on many interrelated factors and is subject to assessment using a set of clearly defined criteria:

- Infrastructure development. The basis of competitiveness in the field of transport and logistics is the quality of infrastructure. This includes the reliability and sophistication of road networks, railways, seaports, and airports, as well as the efficiency of warehouses and other logistics facilities. The synergy of these elements ensures an uninterrupted and efficient flow of goods, which is fundamental to competitiveness.

-Ensuring unhindered promotion of goods. The key factor determining competitiveness is the ability to guarantee fast delivery of goods. This involves not only minimizing travel delays but also optimizing the choice of delivery routes to achieve maximum efficiency.

- Development of logistics culture and science. The quality and volume of logistics services offered play a primary role in determining competitiveness. This applies to services such as warehousing, customs clearance procedures, inventory management, and many other additional services that optimize the supply chain.

- Security. Ensuring the safety of cargo throughout the journey is of paramount importance for attracting and retaining customers and investors. A safe transportation process with minimal risks is a distinctive feature of a competitive logistics system.

- Constant monitoring of risks. An essential aspect of competitiveness is the reasonable manage-

ment of transport costs. Cost-effective transport solutions not only increase the attractiveness of the country as a logistics center but also make a significant contribution to overall economic competitiveness.

- strengthening international cooperation. Kazakhstan's desire for competitiveness can be significantly strengthened through cooperation with neighboring countries and active participation in international transport initiatives and projects. Such cooperation not only expands the market coverage but also increases the stability of the logistics network.

- Legal support. A reliable and transparent legislative framework, combined with effective regulatory oversight of the transport and logistics sector, serves as the basis for improving competitiveness. This provides the necessary stability and predictability for the business to flourish.

- The introduction and integration of innovative technologies, including, but not limited to, cargo tracking systems and route optimization algorithms, represent a powerful means of significantly increasing competitiveness by increasing the efficiency of logistics operations.

Assessing the competitiveness of Kazakhstan's transport and logistics system requires a comprehensive and holistic study of these constituent elements. A successful increase in competitiveness has the potential not only to stimulate economic development but also to attract investment and strengthen the country's position as a key player in the global arena of trade and transport. This multi-faceted enterprise requires strategic planning, investment, and constant adaptation to the changing dynamics of the market.

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