

**Annotation to the dissertation of the doctoral student of the educational program
“8D04101 – World Economy” on the topic
“Economic Cooperation of Kazakhstan with the Central Asian Countries.”**

1. Relevance of the research topic and its connection to general scientific and government programs

Over the past decade, economic cooperation between Kazakhstan and the countries of Central Asia has become an important area for ensuring regional stability, strengthening mutual economic dependence, and diversifying the national economy. Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan occupy a special place in the regional economic system as Kazakhstan's traditional and strategic trading partners. Currently, the structure of mutual trade, transport and logistics links, industrial cooperation, and investment interaction are undergoing significant transformations. These processes require new formats of regional cooperation in the context of global economic uncertainty, restructuring of supply chains, and volatility in energy markets.

In recent years, Central Asian countries have been implementing systematic initiatives aimed at deepening economic cooperation. A regional cooperation roadmap for 2025–2027 has been adopted, and specific projects are being implemented to develop transport corridors, expand industrial cooperation, and simplify trade procedures. Furthermore, economic growth in the region is expected to average 5–6% in 2025, demonstrating their potential for sustainable development.

In the context of the transformation of the modern system of international economic relations, the study of economic ties between Kazakhstan and the countries of Central Asia is of particular scientific importance. The intensification of structural changes in the geoeconomic space, the restructuring of global production and supply chains, and the growing role of regional integration are elevating Central Asia to the forefront as a region of strategic importance. A comprehensive scientific analysis of economic interactions between Kazakhstan and the countries of Central Asia allows us to clarify the theoretical foundations of regional integration, identify effective economic policy instruments, and develop sustainable development strategies. Therefore, the topic of this research currently has high scientific and practical significance.

2. Research Results within the Framework of Dissertation Requirements

1. The theories of regional economic cooperation, international trade, and investment interaction are systematized, and their applicability to explaining economic relations between Central Asian countries is determined. The specific features of regional economic relations are theoretically substantiated, and their institutional and structural characteristics are clarified.

2. Based on a comprehensive analysis, bilateral trade turnover, export and import volumes, and the commodity structure between Kazakhstan and the Central Asian countries are studied, identifying development trends, the complementary nature, and structural features of intraregional trade.

3. For the first time, a comprehensive methodological approach was used to assess the dynamics of Central Asian countries' export development, combining the average annual growth rate (CAGR), the coefficient of variation (CV), and the shock sensitivity coefficient. This approach allowed for a comprehensive quantitative assessment of countries' export stability, their ability to adapt to external economic shocks, and trade volatility.

4. To assess trade flows between Kazakhstan and the Central Asian countries, a gravity model was used, quantifying the key factors influencing trade volume: economic scale (GDP), geographic and economic distance, population size, and infrastructure. The modeling results showed that the intensity of regional trade relations is determined not only by geographic proximity but also by the level of development of transport and logistics infrastructure and institutional factors.

5. Using a fixed-effects econometric model based on panel data, we assessed the role of export structure in the share of countries' gross domestic product, and empirically substantiated

the impact of structural factors on economic growth. This result demonstrates that the effectiveness of regional economic cooperation is determined not only by the volume of trade, but also by its qualitative structure;

6. To analyze the dynamics of Kazakhstan's foreign trade relations with Central Asian countries, time series models (ARIMA, ARMA) were used to assess the development trajectory and short-term trends of trade flows with the region's countries. The modeling results allowed us to forecast the level of stability of regional trade relations and possible development directions.

7. Based on a systematic analysis, the current state of Kazakhstan's investment cooperation with Central Asian countries was studied, and the structure and directions of investment flows, as well as their impact on the development of regional economic cooperation, were determined.

Integration processes within the framework of institutional and infrastructural mechanisms for regional convergence are analyzed, and their role in deepening economic ties between Central Asian countries is determined. Based on these initiatives, development trends and promising areas for regional economic cooperation are scientifically substantiated.

3. Validity and reliability of each scientific result (rule), findings, and conclusions formulated in the dissertation

General characteristics. The results of this dissertation are valid and reliable due to the use of a combination of general scientific, specific economic, and spatial methods, ensuring the integrity and multidimensionality of the analysis. Among the general scientific methods, the systems method, statistical control, scientific abstraction, and comparative analysis were used, which allowed us to identify trade turnover and investment ties between Kazakhstan and the countries of Central Asia.

Econometric modeling, correlation-regression and parametric analysis, and economic methods were used for the quantitative analysis. These methods allowed us to identify statistically significant relationships between macroeconomic and institutional factors.

The validity and reliability of the first scientific result are scientifically substantiated by the fact that the development of economic cooperation between Kazakhstan and the Central Asian countries (Uzbekistan, Kyrgyzstan, Tajikistan, and Turkmenistan) is based on the interaction of theories of international trade, investment cooperation, and regional integration. The study's results demonstrated that the formation of regional economic ties is not limited by geographic factors, but is determined by the institutional environment, market mechanisms, and the level of infrastructure development.

The second scientific result is quite reliable and robust. It is based on a comprehensive analysis of bilateral trade relations between Kazakhstan and the Central Asian countries, as well as on identifying development trends and structural features of intraregional trade. The study's findings revealed a pattern of stable growth in trade turnover, a concentration of exports on certain product groups, and specific import structures. Furthermore, it was demonstrated that, although the complementary nature of trade relations between the countries remains, their raw materials orientation still predominates to a certain extent.

The third scientific result is substantiated and reliable, as the dynamics of Central Asian countries' export growth were assessed using quantitative methods, revealing heterogeneity in growth rates and a high dependence on external economic shocks. By combining the average annual growth rate, the coefficient of variation, and the «shock sensitivity coefficient» the level of export stability and adaptation of the region's countries to changes in the global market were comprehensively characterized.

The fourth scientific result possesses the necessary degree of reliability, as Kazakhstan's export dynamics were analyzed using econometric modeling methods (ARIMA, ARMA), demonstrating the presence of clear cyclical patterns in its development and the possibility of forecasting it for the period up to 2030. Time series modeling revealed that foreign trade indicators are subject to certain patterns, which, in turn, forms an important analytical basis for economic policy planning.

The fifth scientific result is based on an analysis of trade flows between Kazakhstan and Central Asian countries using a gravity model. It quantifies the key factors influencing trade volume: economic scale (GDP), population size, geographic and economic distance, and infrastructure quality. The modeling results show that the intensity of regional trade relations is directly dependent on the development of transport and logistics infrastructure and the reduction of transaction costs.

The sixth research result is based on an analysis of econometric data. It assesses the impact of export structure (the ratio of goods to services) on countries' gross domestic product and empirically demonstrates its impact on economic growth. The results, obtained using a fixed-effects model, demonstrate that the effectiveness of regional economic cooperation is closely linked not only to trade volume but also to its qualitative structure.

The seventh research result is based on a systematic analysis of investment cooperation between Kazakhstan and Central Asian countries, identifying the structure and direction of investment flows and their role in deepening regional economic ties. The study's findings demonstrate that investment relations are an important factor in strengthening regional economic integration.

The eighth scientific result is substantiated and reliable. Integration processes within the framework of institutional and infrastructural mechanisms for regional convergence are analyzed, and their role in deepening economic ties between Central Asian countries is determined. It is scientifically substantiated that these initiatives contribute to accelerating regional integration by improving transport and logistics infrastructure, reducing trade barriers, and expanding investment cooperation.

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4. Practical and Theoretical Significance of the Research Results

The study of economic cooperation between Kazakhstan and its Central Asian neighbors contributes to a broader understanding of regional processes. New knowledge has been gained about economic cooperation among Central Asian countries in the context of global transformations. The results of this dissertation are useful for formulating new research questions.

The main findings of the study have practical significance for determining strategic priorities in Kazakhstan's regional trade policy and substantiating effective areas of economic cooperation. Furthermore, the findings enable the development of proposals for diversifying export structures, improving transport and logistics infrastructure, and enhancing the competitiveness of the manufacturing industry. The results of the parametric analysis can serve as a scientific basis for assessing the economic effectiveness of regional cooperation and formulating a strategy for economic cooperation between Kazakhstan and the countries of Central Asia.

The dissertation identifies areas for developing specific proposals and conclusions aimed at improving economic cooperation between Kazakhstan and Central Asian states. The results of the economic analysis allow the data obtained to be used to improve mechanisms for implementing foreign economic policy, expand interregional trade relations, and strengthen investment cooperation.

The trends and problematic aspects identified in the study can serve as a practical basis for decision-making aimed at effectively managing regional economic cooperation processes, developing logistics links, and increasing export potential. Furthermore, the findings are applicable to government agencies, expert bodies, and economic entities.

The study materials can be used as an additional theoretical and analytical resource in the teaching of economic disciplines in higher education institutions.

5. The author's personal involvement in obtaining the scientific results presented in the dissertation.

The author of this dissertation independently completed all research tasks, while the setting of goals and the determination of the main research directions were provided by her domestic academic supervisor, PhD in Economics, Lyazipa Alikonova Medukhanova, and her international academic consultant, Giancarlo Coro, Professor of Applied Economics at Ca' Foscari University (Venice, Italy).

6. Evaluation of the Internal Integrity of the Results

The study demonstrates a high degree of internal integrity and systemic consistency in the scientific results obtained. All elements of the work are logically interconnected and form a coherent conceptual chain aimed at solving the main scientific problem.

The conceptual integrity of the study is ensured by the consistent application of a systems approach, where each subsequent result develops and complements the previous ones.

The internal integrity of the research ensures its holistic effect: a comprehensive solution to a scientific problem, where the theoretical basis, methodological apparatus, and applied tools are not only combined but also mutually reinforce each other, forming a holistic and effective system.

7. Name of the specialty to which the dissertation pertains

Seriyeva Zhanar's dissertation on «Economic Cooperation of Kazakhstan with the Countries of Central Asia» is submitted for the degree of Doctor of Philosophy (PhD) in the educational program «8D04101 – World Economy». Compliance with the main substantive components of the specialty's description has been determined: the study of economic cooperation between Kazakhstan and Central Asian countries falls under the section «International Economic Relations» the analysis of regional trade and investment flows corresponds to the area of «International Capital Movement» and the development of mechanisms for the development and regulation of economic interaction covers the area of «International Economic Integration».

The dissertation's methodological framework fully complies with modern requirements for research in the global economy, including the use of spatial econometric tools, statistical analysis, and parametric modeling methods. The resulting scientific results and practical recommendations, aimed at developing and improving economic cooperation, are designed to address current issues in international economic relations, confirming the dissertation's full compliance with the requirements of the educational program «8D04101 – World Economy».