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| RESEARCH ARTICLE

Research on Enhancing the Competitiveness and Implementation Pathways of Russian Soybean Exports to China

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| ABSTRACT

As the world's largest importer of soybeans, China plays a central role in shaping global soybean trade dynamics. Domestic demand for soybeans has increased significantly in recent decades, driven by rapid industrialization, population growth, and changes in dietary patterns, particularly the increased consumption of animal-based products and edible oils. However, due to constraints such as limited arable land, environmental restrictions, and relatively low domestic yields, China has become highly dependent on external sources to meet its consumption needs. Currently, more than 90 percent of China's soybean demand is met through imports, making the country particularly vulnerable to fluctuations in international markets and disruptions in global supply chains.

| KEYWORDS

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|ARTICLE INFORMATION

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China's soybean imports have traditionally been dominated by a small number of major exporters, especially the United States, Brazil, and Argentina. These countries benefit from large-scale production, advanced agricultural technologies, and well-developed export infrastructure, enabling them to maintain competitive advantages in both price and volume. However, recent global developments, including trade tensions, geopolitical shifts, and supply chain disruptions, have highlighted the risks associated with overdependence on a limited group of suppliers. As a result, China has increasingly sought to diversify its import sources to strengthen food security and reduce vulnerability.

In this evolving context, Russia has emerged as a potential alternative supplier of growing strategic importance. Russia's geographical proximity to China, particularly through its Far Eastern regions, provides significant logistical advantages, including lower transportation costs and shorter delivery times. In addition, strengthening bilateral economic cooperation between the two countries has further facilitated the expansion of agricultural trade. China's rising demand for high-quality and safe agricultural products also aligns with Russia's production of predominantly non-genetically modified (non-GMO) soybeans, which can serve niche market segments.

Despite these advantages, Russia's share in China's soybean import market remains relatively small compared to established global exporters. This indicates the presence of structural, economic, and institutional constraints that limit its export competitiveness. Factors such as limited production scale, infrastructure challenges, and weaker integration into global supply chains continue to hinder its performance in comparison to leading suppliers.

Against this background, this dissertation aims to analyze how Russia can enhance its competitiveness in exporting soybeans to China. The study focuses on key determinants of competitiveness, including transportation costs, policy stability, production capacity, quality assurance, and seasonal advantages. Furthermore, it seeks to develop practical and implementable strategies that can strengthen Russia's position in China's soybean import market and enable it to compete more effectively with traditional exporters such as the United States, Brazil, and Argentina. By integrating both analytical and strategic perspectives, the study contributes to bridging the gap between micro-level comparative analyses and broader macro-level assessments of China–Russia agricultural trade cooperation.

Background and Research Problem

Soybean trade constitutes a fundamental component of global agricultural commerce, both in terms of trade volume and economic value. In recent years, global soybean trade has exceeded 170 million metric tons (MMT) annually, underscoring its critical role in supporting livestock industries and edible oil consumption worldwide. At the center of this global system is China, which accounts for approximately 60 percent of total soybean imports. This dominant position has resulted in a highly concentrated and strategically significant market, valued at over USD 60 billion each year. Consequently, any changes in China's import patterns have far-reaching implications for global trade flows, pricing mechanisms, and the strategic positioning of exporting countries.

Historically, China's soybean imports have been dominated by a small group of major suppliers, particularly Brazil, the United States, and Argentina. Brazil leads with an estimated share of around 70 percent, followed by the United States at approximately 20 percent, while Argentina occupies a comparatively smaller but still relevant position. These countries benefit from economies of scale, advanced agricultural technologies, and well-established export infrastructure, enabling them to sustain high production levels and maintain competitive pricing. However, the dominance of these traditional suppliers is increasingly being challenged by various vulnerabilities, including trade disputes, logistical constraints, and climate-related risks such as droughts and extreme weather conditions. These challenges have reinforced the need for China to diversify its sources of soybean imports in order to enhance supply security and reduce reliance on a limited number of exporters.

Within this evolving global context, Russia has emerged as a potential alternative supplier with considerable untapped potential. Although Russia's annual soybean production remains relatively modest at approximately 6 MMT, its Far Eastern regions present

significant opportunities for expansion due to their geographical proximity to China and the availability of arable land. Following the imposition of Western sanctions in 2014, Russia has increasingly redirected its economic and trade orientation toward Asian markets, particularly China. This strategic shift has been accompanied by investments in infrastructure and logistics, including the development of initiatives such as the New Land Grain Corridor, aimed at facilitating agricultural exports to neighboring countries.

Despite these developments, Russia's soybean exports to China remain below 1 MMT annually, highlighting a substantial gap between its potential capacity and actual performance. Several factors contribute to this underperformance, including limited production scale, challenges related to quality consistency, and underdeveloped logistics and supply chain systems. Furthermore, Russia faces strong competition from established exporters that benefit from deeper market integration, more advanced production systems, and long-standing trade relationships with China.

Therefore, the central research problem addressed in this dissertation is to understand why Russia, despite possessing clear advantages such as geographical proximity, lower transportation costs, and favorable geopolitical alignment with China, continues to exhibit relatively low competitiveness in the soybean export market. Addressing this issue requires a comprehensive evaluation of Russia's current position in comparison with its major competitors, as well as the identification of practical strategies and implementation pathways that can enhance its competitiveness within China's import market.

A. Research Objectives and Questions

This study aims to provide a comprehensive and systematic understanding of Russia's position in the global soybean export market, with particular emphasis on its trade relationship with China. Given China's rapidly growing demand for soybeans and its strategic efforts to diversify import sources, it becomes increasingly important to assess whether Russia can emerge as a competitive and reliable supplier in this market.

In this context, the research is structured around a set of interrelated objectives that follow a logical progression from assessment to comparison and ultimately to strategic recommendation. This approach ensures that the study not only evaluates Russia's current competitiveness but also identifies key determinants influencing its performance and proposes actionable pathways for improvement.

Research Objectives

Objective 1: Assessment of Russia's Soybean Export Competitiveness

The primary objective of this study is to evaluate the competitiveness of Russia's soybean exports in the Chinese market, particularly in comparison with major global exporters such as the United States, Brazil, and Argentina. Competitiveness in international trade is inherently multidimensional and cannot be assessed through a single indicator. Instead, it is shaped by a combination of economic, logistical, institutional, and strategic factors.

To capture this complexity, the study adopts a multi-criteria evaluation index system that enables a systematic and balanced assessment. This framework incorporates both quantitative indicators such as export prices, production volumes, yield efficiency, and measures like the Revealed Comparative Advantage (RCA) index and qualitative indicators, including policy support, political relations, trade reliability, and perceived product quality.

By integrating these indicators into a unified analytical framework, the study aims to generate a comparative ranking of exporting countries, thereby identifying Russia's relative position within the competitive landscape. This objective is fundamental, as it establishes the empirical foundation for the subsequent analysis. A clear understanding of Russia's current competitiveness is essential for formulating effective strategies for improvement.

Comparative Analysis of Key Determinants of Competitiveness

Building upon the competitiveness assessment, the second objective of this study is to conduct a detailed comparative analysis of the key factors influencing soybean export competitiveness. This involves a deeper examination of the structural and strategic variables that shape trade performance across different exporting countries.

The analysis is structured around five major dimensions:

Transportation Cost Advantage:

Transportation is a critical factor in agricultural trade due to the bulk nature of commodities such as soybeans. Russia's geographic proximity to China, particularly through its Far Eastern regions, provides a potential advantage in terms of lower transportation costs and shorter delivery times. This study evaluates whether this geographic advantage translates into actual cost competitiveness when compared to long-distance maritime shipments from Brazil and the United States.

Strategic Mutual Trust:

International trade is influenced not only by economic factors but also by political relations and strategic alignment. This dimension examines the level of mutual trust and cooperation between China and exporting countries, including the role of bilateral agreements, long-term partnerships, and geopolitical considerations. Stronger trust relationships can reduce uncertainty and enhance trade stability.

Policy Stability and Price Fluctuations:

Government policies, including subsidies, export restrictions, and tariff structures, along with fluctuations in global prices, significantly affect trade competitiveness. This dimension analyzes the stability and predictability of policy environments in each exporting country and assesses how price volatility influences trade flows.

Quality Assurance and Production Capacity:

Maintaining consistent quality and ensuring reliable supply are essential for sustaining long-term trade relationships. This aspect

evaluates differences in production capacity, technological advancement, quality standards such as Russia's non-GMO certification and the scalability of output across competing countries.

Harvest Season and Supply Timing:

Seasonal variations in soybean production can create competitive advantages or disadvantages in meeting China's continuous demand. This dimension examines how Russia's harvest calendar compares with those of Brazil, the United States, and Argentina, and assesses its ability to supply soybeans during periods when other exporters may face constraints.

Through this comparative analysis, the study seeks to identify Russia's relative strengths and weaknesses across these dimensions, thereby providing a comprehensive and nuanced understanding of its competitive position in the Chinese soybean import market.

Development of Enhancement Strategies and Implementation Pathways

The third objective of this study extends beyond analytical evaluation to focus on the formulation of practical and actionable solutions for enhancing Russia's competitiveness in exporting soybeans to China. Drawing on the findings from the competitiveness assessment and comparative analysis, this objective seeks to develop targeted strategies that address existing structural gaps while effectively leveraging Russia's inherent strengths.

These strategies are broadly categorized into short-term and long-term measures. Short-term measures focus on immediate improvements, including enhancing logistics efficiency, strengthening quality certification systems, and improving market communication and coordination with Chinese importers. In contrast, long-term strategies emphasize structural transformation, such as expanding production capacity, adopting advanced agricultural technologies, investing in infrastructure development, and deepening institutional and economic cooperation between Russia and China.

In addition to identifying these strategies, the study places significant emphasis on the formulation of clear implementation pathways. Rather than limiting the analysis to general recommendations, it proposes a phased action plan that outlines how these strategies can be effectively executed over time. This includes the prioritization of key initiatives, identification of relevant stakeholders, and assessment of potential risks and constraints that may influence implementation.

By incorporating well-defined implementation pathways, the study ensures that its findings are not only theoretically grounded but also practically applicable. This enhances the relevance of the research for policymakers, industry stakeholders, and academic audiences, contributing to both strategic planning and policy formulation in the context of China–Russia agricultural trade.

Research Questions

In order to achieve the objectives outlined above, this study is guided by a set of focused research questions designed to provide both analytical depth and practical relevance. These questions follow a logical progression from evaluation and diagnosis to strategy formulation:

1. **What is the current level of competitiveness of Russia's soybean exports in the Chinese market compared to the United States, Brazil, and Argentina?**
   This question establishes the baseline by quantitatively and qualitatively assessing Russia's position relative to major global competitors.
2. **What are the key factors influencing soybean export competitiveness, and how do they vary across major exporting countries?**
   This question focuses on identifying the core determinants of competitiveness and examining their variation across different national contexts.
3. **To what extent does Russia possess advantages or disadvantages in terms of transportation costs, strategic trust, policy stability, production capacity, and seasonal supply?**
   This question provides a detailed evaluation of Russia's relative strengths and weaknesses across critical dimensions of competitiveness.
4. **What structural and operational challenges limit Russia's ability to expand its soybean exports to China?**
   This question aims to identify the key barriers that constrain Russia's export performance and hinder its market expansion.
5. **What strategies can be developed to enhance Russia's competitiveness, and how can these strategies be effectively implemented over time?**
   This question ensures that the study generates actionable outcomes by linking analysis with practical and implementable solutions.

B. Logical Flow of the Study

The overall design of this study follows a clear and systematic progression, structured as follows:

Assessment → Comparison → Strategy → Implementation

Initially, the study evaluates Russia's competitiveness using a structured multi-criteria index system. This is followed by a comparative analysis in which Russia is assessed against its major competitors across key dimensions of export competitiveness. Based on the insights derived from this analysis, the study formulates targeted strategies aimed at addressing identified gaps and leveraging existing strengths. These strategies are subsequently translated into practical implementation pathways, outlining how they can be effectively executed over time.

This step-by-step approach ensures logical coherence, analytical depth, and practical applicability, thereby enhancing the overall robustness and relevance of the research.

Key Research Questions

In order to achieve the objectives outlined in this study, a set of focused research questions is developed to guide the analysis. These questions are designed to progress from evaluation to diagnosis and ultimately to strategy formulation, ensuring both analytical depth and practical relevance.

Research Question 1:

What is Russia's current competitiveness ranking in soybean exports to China, and how does it compare quantitatively and qualitatively with major competitors such as the United States, Brazil, and Argentina?

This question forms the foundation of the study by establishing a clear understanding of Russia's current position within the competitive landscape. The analysis incorporates both quantitative evaluation using indicators such as export volumes, pricing, production efficiency, and comparative advantage indices and qualitative assessment, including policy stability, trade reliability, and market perception.

To ensure a comprehensive comparison, the study develops a multi-criteria competitiveness index that enables the ranking of countries based on aggregated performance across multiple dimensions. This integrated approach ensures that the analysis goes beyond purely numerical measures and incorporates institutional and strategic factors influencing trade competitiveness. The findings are expected to position Russia clearly relative to its competitors and determine whether it functions as a marginal, emerging, or potentially strong player in China's soybean import market.

Research Question 2:

Which factors logistics, policy environment, or production capacity provide Russia with the strongest competitive advantages, and where do critical gaps exist?

This question focuses on identifying the key drivers and constraints of competitiveness. Rather than treating competitiveness as a single outcome, the study disaggregates it into its core components to understand both strengths and limitations.

From a logistics perspective, the study examines transportation costs, infrastructure efficiency, and geographic proximity, particularly in comparison with long-distance exporters. In terms of the policy environment, it evaluates government support mechanisms, trade agreements, price stability, and regulatory frameworks that may either facilitate or hinder exports. Regarding production capacity, the analysis considers yield levels, scalability, technological adoption, and quality standards, including aspects such as non-GMO certification.

Through this comparative evaluation, the study identifies areas of relative strength, such as geographic advantage, as well as critical weaknesses, including limited scale and supply inconsistencies. This diagnostic analysis is essential for understanding not only where Russia stands, but also the underlying reasons for its position.

Research Question 3:

What short-term and long-term pathways can be developed to increase Russia's soybean exports to China to 10 million metric tons (MMT) by 2030?

The final research question shifts the focus from analysis to strategy and implementation. It seeks to determine how Russia can transition from its current export levels currently below 1 MMT to a significantly higher target of 10 MMT by 2030. This objective represents not only a quantitative expansion but also a structural transformation of Russia's soybean export capacity.

To address this, the study distinguishes between short-term and long-term pathways. Short-term pathways include actionable measures that can be implemented relatively quickly, such as improving logistics efficiency, enhancing quality certification systems, strengthening trade coordination, and optimizing existing infrastructure. Long-term pathways involve more structural changes, including expanding cultivation areas, adopting advanced agricultural technologies, improving supply chain integration, and fostering sustained bilateral cooperation between Russia and China.

Furthermore, the study proposes a phased implementation framework that outlines how these strategies can be sequenced over time, while also considering potential risks and constraints. This ensures that the proposed pathways are both ambitious and realistically achievable within the given timeframe.

*C. **Significance of the Study***

This study contributes to the existing literature on global soybean trade by addressing a notable research gap. While a substantial body of research has focused on the dynamics between major exporters in the Americas and China, comparatively limited attention has been given to emerging Eurasian alternatives, particularly Russia. By examining Russia's role as a potential supplier in the Chinese soybean market, this research broadens the geographical and analytical scope of existing studies.

From a practical perspective, the findings of this study provide valuable insights for policymakers and industry stakeholders. For Russia, the research offers strategic guidance for the development of its Far Eastern agricultural regions, particularly in the context of shifting global trade patterns and economic reorientation toward Asian markets. For China, the study highlights opportunities for diversifying soybean import sources, thereby reducing dependence on traditional suppliers and mitigating risks associated with long-distance maritime supply chains.

In addition, the study has important implications for industry practitioners. It provides relevant information for Russian exporters regarding infrastructure development, logistics optimization, and quality certification, while also informing Chinese importers about the potential of non-genetically modified (non-GMO) soybean sourcing from Russia.

From an academic standpoint, this research contributes to the advancement of competitiveness analysis by integrating additional dimensions such as seasonal supply patterns and strategic mutual trust into traditional frameworks like the Revealed Comparative Advantage (RCA) model. By combining quantitative and qualitative perspectives, the study enhances the analytical depth of existing competitiveness models and offers a more comprehensive approach to evaluating international agricultural trade.

D. Scope, Limitations, and Dissertation Structure

Scope of the Study

This study focuses on analyzing the competitiveness of Russia's soybean exports to China within the broader context of global soybean trade. The analysis covers the period from 2015 to 2025, enabling an examination of recent trends and developments, including changes in trade patterns, policy environments, and geopolitical dynamics that influence agricultural trade.

The study specifically concentrates on the trade of whole soybeans, excluding processed derivatives such as soybean oil and soybean meal, in order to maintain analytical clarity and consistency. Furthermore, the comparative analysis is limited to three major exporting countries the United States, Brazil, and Argentina which collectively dominate China's soybean import market and serve as the most relevant benchmarks for evaluating Russia's competitive position.

The study relies on data obtained from reputable international sources, including the Food and Agriculture Organization (FAO), the United States Department of Agriculture (USDA), and global trade databases such as UN Comtrade. In addition to quantitative data, qualitative insights are drawn from policy documents, trade reports, and institutional analyses. This combined approach ensures a comprehensive understanding of both the measurable and structural factors influencing export competitiveness.

Limitations of the Study

Despite its comprehensive approach, this study is subject to several limitations that should be acknowledged.

First, there may be time lags and inconsistencies in the availability of recent trade data, particularly for the most current years. This limitation may affect the accuracy and precision of the analysis, especially in capturing rapidly evolving market dynamics and short-term fluctuations.

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