Economic Perspectives and Trends, 2025, 2(1), 44-46
https://www.hillpublisher.com/Journals/ept/
ISSN Online: 3066-3180

Study on the Impact of Green Trade Barriers in RCEP Member Countries on Agricultural Product Exports from Henan Province

Zhendi Song

Southeast University, Nanjing, 214135, Jiangsu, China.

How to cite this paper: Zhendi Song. (2025) Study on the Impact of Green Trade Barriers in RCEP Member Countries on Agricultural Product Exports from Henan Province. *Economic Perspectives and Trends*, 2(1), 44-46.
DOI: 10.26855/ept.2025.06.008

Received: August 12, 2025
Accepted: September 3, 2025
Published: October 16, 2025

***Corresponding author:** Zhendi Song Southeast University, Nanjing, 214135, Jiangsu, China.

Abstract

Henan Province, as one of China's major agricultural provinces, has demonstrated robust growth in agrarian exports in recent years despite intensifying international trade frictions and declining market demand. However, both in terms of export value and share of national exports, Henan's agricultural products still lag significantly behind other major agrarian provinces in China. This disparity stems from multiple factors, with green trade barriers emerging as a significant constraint on its agricultural foreign trade. This paper first summarizes the current state of agricultural trade between Henan Province and RCEP member countries, analyzing the green trade barriers encountered. The empirical section employs a gravity model to explain the export volume of Henan's agricultural products to each RCEP member country. The findings reveal that Henan's agricultural exports are positively correlated with its own GDP, the GDP of importing countries, and official exchange rates, while negatively correlated with the number of SPS notifications issued. Each 1% increase in SPS notifications reduces Henan's export value by 0.189%.

Keywords

Green trade barriers; Agricultural foreign trade; Gravity model

1. Introduction

Green trade barriers are a series of trade protection systems established by countries to safeguard ecological resources, protect the environment, and preserve human health. These barriers restrict chemical substances in imported products and impose energy efficiency standards (Zhao & Dai, 2021). While green trade barriers aim to protect the environment and consumer interests, they may also adversely affect the export trade of other countries, particularly developing nations constrained by technological limitations that prevent them from meeting importing countries' requirements. However, it has also established reasonable restriction standards for existing issues in agricultural production, such as residual fertilizers and pesticides, as well as radioactive substances, thereby indicating the future direction for the development of agricultural production (Sun, 2022).

Henan Province has historically maintained frequent agricultural trade with the Regional Comprehensive Economic Partnership (RCEP) member countries. How Henan can better collaborate with RCEP members is a question of practical significance. This paper conducts a study of Henan's agricultural foreign trade, analyzing the impact of green trade barriers on the province's exports. Finally, it proposes recommendations for optimizing the development of Henan's agricultural foreign trade, thereby promoting the sustainable growth of the province's agricultural trade.

2. Empirical analysis

2.1 Variable explanations

This study covers the period from 2017 to 2022 and focuses on ten RCEP member countries; Cambodia, Laos, Brunei, and Myanmar were excluded from the empirical analysis due to significant data gaps. It selects Henan Province's agricultural product exports to RCEP member countries as the dependent variable, measured in trillions of yuan. When this indicator shows a significant decline, it is reasonable to infer that green trade barriers exert a counterproductive effect on Henan's agricultural foreign trade.

Building upon prior research (Wood et al., 2017), this paper proposes that green trade barriers can be measured by the number of SPS measures submitted by countries to the World Trade Organization. A country with a higher number of notified SPS measures tends to impose stricter green trade barriers. Given the characteristics of agricultural products, such as long production cycles and trade contracts typically signed one year before production, this study employs the number of SPS notifications from the previous period as the core explanatory variable.

2.2 Model calculation and result analysis

This study employs STATA 17 software for data analysis. The mean value of agricultural product exports from Henan Province to RCEP member countries is 11,758.29, with a maximum of 81,666.63 and a minimum of 74.9139, indicating noticeable volatility in the sample data. The average annual number of SPS notifications per member state was 34.98, with a maximum of 174 and a minimum of 1. This indicates that the distribution of SPS notifications across member states within the sample data exhibits dispersion.

This study employs panel data for empirical testing. First, model specification tests confirm the presence of individual effects. Next, the Hausman test yields a p-value of 0.8471, leading to the rejection of the null hypothesis. Therefore, this study adopts a random effects model.

Robustness testing of the model was conducted using the methodology proposed by Ouyang et al. (2021). The quadratic term of the lagged SPS notification count was substituted for the lagged SPS notification count itself. The regression results calculated using the linear and quadratic terms of the SPS notification count are essentially identical. Therefore, using the quadratic term of the lagged SPS notification count as a substitute variable for measuring green trade barriers still holds the model valid, proving the reliability of the research findings.

Empirical analysis reveals that the higher the intensity of green trade barriers faced by Henan Province, the greater the resistance to its agricultural exports. The estimated coefficient for SPS notifications is -0.189, indicating that a 1% increase in green trade barrier intensity reduces Henan's agricultural export value by 0.189%. This phenomenon stems from two primary causes. On one hand, countries worldwide have heightened their focus on food safety and environmental protection, imposing stricter quality inspection and quarantine requirements on agricultural products. On the other hand, the persistent global economic downturn since the outbreak of the COVID-19 pandemic has prompted some nations to intensify trade protectionist measures (Liu, 2019).

Exporting region GDP, as an indicator of a country's supply capacity, exerts a positive influence on Henan Province's agricultural exports. Empirical results show that a 1% increase in Henan's GDP leads to a 1.158% rise in the province's agricultural export value. Henan's own economic development can, to a certain extent, drive corresponding infrastructure construction, enhance the promotion of its agricultural products abroad, and improve its adaptability to international trade rules, thereby boosting the province's agricultural export volume. In contrast, the growth of importing-country GDP exerts a relatively minor influence on promoting agricultural exports compared to exporting-country GDP, with a coefficient of 0.597. This indicates that the economic scale of importing countries has a limited impact on Henan's agricultural exports. This phenomenon arises because, guided by policies such as the Regional Comprehensive Economic Partnership (RCEP), Henan actively exports agricultural products to ASEAN countries with relatively lower levels of development (Zhang & Li, 2023).

The official exchange rate, as another significant influencing factor, is positively correlated with Henan Province's agricultural product export value, with an estimated coefficient of 0.333. Fluctuations in the official exchange rate directly impact the pricing of agricultural exports, ultimately affecting corporate profits.

Geographical distance is inversely proportional to the export value of agricultural products from Henan Province, but the empirical results for this variable are not statistically significant. This phenomenon may arise because most of the selected sample countries are geographically close to Henan Province. Additionally, since this study represents the geographical distance variable by multiplying the distance from Henan Province to each country's capital by the

WTI international crude oil price, and given the significant fluctuations in international crude oil prices in recent years, this may have exerted a certain influence on the model.

3. Conclusions

This study draws the following conclusions: Henan's agricultural exports to RCEP member countries are positively correlated with Henan's economic development level, the economic development level of member countries, and exchange rates, while being negatively correlated with the number of SPS notifications issued by those countries. Following China's accession to the RCEP, agricultural tariffs between China and RCEP member states have been significantly reduced. However, non-tariff technical barriers to trade for agricultural products have become increasingly stringent, posing substantial challenges to Henan Province's agricultural exports. Therefore, recognizing the role of green trade barriers in agricultural foreign trade is crucial for Henan's agricultural development (Sun, 2022).

As for policy recommendations, the government should strengthen support for technological innovation among agricultural export enterprises in Henan Province to enhance product quality and production efficiency. Through policy guidance, it should promote the green development of agricultural products, making them more competitive in markets. Meanwhile, the government will vigorously advance the Belt and Road Initiative, strengthen connectivity with countries along the routes, and complement the RCEP to promote interregional economic cooperation. This will facilitate smoother agricultural trade among member states, achieving a win-win outcome (Xie, 2017). Agricultural industry associations should closely monitor the latest developments in agricultural export markets and issue corresponding early warning notifications based on this information. This enables export enterprises to respond promptly and avoid unnecessary losses. All industry associations should proactively participate in refining risk warning mechanisms by comprehensively collecting and organizing relevant technical standards of RCEP member countries.

References

Liu, J. X. (2019). Trade barriers in agricultural products amid trade liberalization: Evolution and development. *Rural Economy*, *442*(08), 111-118.

Ouyang, Q., Deng, Y., & Li, Z. P. (2021). Impact of environmental regulations on China's export trade: Evidence from a provincial panel quantile model. *Journal of Changsha University of Science and Technology (Social Sciences Edition)*, *36*(01), 70-80.

Sun, X. Y. (2022). Analysis of green trade barriers' impact on Fujian's agricultural product exports and countermeasures. *Modern Agriculture*, *520*(11), 57-61.

Sun, Y. A. (2022). Impact of green barriers on China's agricultural trade and countermeasures: A review of "research on China's agricultural export trade from the perspective of green trade barriers". *Ecological Economics*, *38*(06), 230-231.

Wood, J., Wu, J., Li, Y., & Kim, J. (2017). TBT and SPS impacts on Korean exports to China: Empirical analysis using the PPML method. *Asian-Pacific Economic Literature*, *31*(02), 96-114.

Xie, T. (2017). Factors influencing agricultural export trade between China and Belt and Road countries. *World Agriculture*, *455*(03), 132-138.

Zhang, Y. J., & Li, J. Y. (2023). Analysis of Henan Province's agricultural trade in 2021-2022. *Henan Agriculture*, *636*(04), 8-9.

Zhao, C., & Dai, Y. C. (2021). Do Green trade barriers suppress industrial security in developing countries? — A perspective from China's manufacturing sector. *Exploration of Economic Issues*, *473*(12), 83-103.