International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

Impact of Agricultural Exports on Economic Growth in India: A Cointegration and Granger Causality Approach

Bhawna Bamel[1] and Prof. Sunil Phougat[2]

[1]Research Scholar, Department of Economics, Chaudhary Ranbir Singh University, Jind, Haryana, India.

[2]Chairperson, Department of Economics, Chaudhary Ranbir Singh University, Jind, Haryana, India.

DOI: 10.46609/IJSSER.2025.v10i09.006 URL: https://doi.org/10.46609/IJSSER.2025.v10i09.006

Received: 24 August 2025 / Accepted: 16 September 2025 / Published: 22 September 2025

ABSTRACT

The study examines the impact of agricultural exports on India's economic growth during 2001-2023, using GDP as a proxy for growth. The study employs rigorous time series econometric techniques, including Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for stationarity, Johansen co-integration tests for long-run equilibrium relationships, Vector Error Correction Models (VECM) to capture short- and long-run dynamics and Granger causality tests to determine directional influence. Empirical findings reveal a significant long-run co-integrating relationship between agricultural exports and GDP. VECM results indicate that GDP strongly influences agricultural exports, while the effect of exports on GDP is not significant in the short run. Granger causality analysis confirms uni-directional causality from GDP to agricultural exports, supporting the growth-led export hypothesis. The findings provide useful insights for policy formulation, emphasizing the need to enhance production efficiency, value addition, infrastructure and market diversification to strengthen agricultural exports and support sustainable economic growth.

Keywords: Economic growth, Agricultural exports, GDP, Granger-causality, Co-integration.

1. Introduction

Agriculture remains the cornerstone of the Indian economy, providing livelihood to over half of the country's population. Over the decades, Indian agriculture has evolved from subsistence farming to a more commercial and market-oriented sector, contributing substantially to national development. As per the Ministry of Agriculture & Farmers Welfare, agriculture and allied sectors contributed approximately 18.4 per cent of India's GDP in 2022-23. Beyond domestic sustenance, the sector plays a crucial role in international trade, supporting India's foreign

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

exchange reserves and aiding in the management of the balance of payments. Agricultural and allied products accounted for nearly 13 per cent of India's total exports in 2022-23, reflecting the sector's growing global significance. India exports a diverse range of products, including rice, wheat, spices, tea, coffee, cashew, sugar, horticultural commodities, fish, and meat to more than 100 countries across the Middle East, SAARC nations, the European Union, and North America. Among these, high-value horticultural exports such as mangoes, processed fruits, and vegetables have emerged as significant contributors to export earnings, highlighting India's comparative advantage in these commodities.

Despite these achievements, Indian agricultural exports face significant challenges. Competition from emerging and established exporters, including China, Thailand, Vietnam, and Indonesia, threatens India's share in key markets. Most developing countries, including India, predominantly export raw or semi-processed agricultural commodities, which limits their competitiveness compared to the heavily subsidized exports of developed nations. To strengthen India's position in the global market, there is an urgent need to diversify into high-value and non-traditional agricultural exports such as processed horticultural products, fisheries, and meat, while maintaining quality and productivity in traditional commodities. Recent policy initiatives, such as investments in irrigation infrastructure, cold storage, warehousing, digital agriculture, and biotechnology, aim to enhance productivity, reduce post-harvest losses, and improve market access. The government's target to nearly double the average farmer income from ₹1,16,000 (US$ 1,450) in 2021-22 to over ₹2,20,000 (US$ 2,750) by 2025-26 underlines the strategic priority of agriculture for sustainable economic growth.

Understanding the dynamic relationship between agricultural exports and economic growth is therefore critical for informed policy-making. This study investigates this relationship using time series data and employs robust econometric techniques, including the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for stationarity, Johansen co-integration tests for long-run relationships, Vector Error Correction Model (VECM) for short- and long-term dynamics, and Granger causality tests to determine the direction of influence. The findings of this research are expected to provide actionable insights for designing export-oriented agricultural policies, promoting high-value commodities, improving market access, and ultimately driving sustained economic growth in India. By addressing the interplay between exports and growth, the study contributes to both academic literature and policy formulation, emphasizing the central role of agriculture in India's economic development and global trade strategy.

The rest of the paper is organised as- Section 2 presents the review of literature; Section 3 discusses the data and empirical methodology; Section 4 discusses the empirical analysis; and Section 5 concludes the study.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

2. Review of literature

Several studies have explored the impact of agricultural exports on economic growth across different countries and time periods. Henneberry and Khan (2000) examined Pakistan from 1970 to 1992 using a Three-Stage Least Squares (3SLS) approach with a Cobb-Douglas specification. Their findings revealed a positive and significant relationship between agricultural exports and economic growth, though the impact of manufactured exports on GDP was comparatively larger. Similarly, Dawson (2005) analysed sixty-two least developed countries over 1974–1995 using both aggregate production and dual economy models. The study confirmed that agricultural exports significantly contribute to economic growth, supporting the export-led growth hypothesis in less developed countries.

Tiffin and Irz (2006) conducted an empirical study of 85 developing countries (1972–2002) using VAR models, Granger causality, and co-integration tests. Their results indicated that agricultural value-added acts as a primary driver of economic growth, emphasizing the importance of enhancing agricultural productivity. In the context of India, Ohlan (2013) applied VECM, ARDL, and Granger causality tests for 1970–2010, finding a positive long-run relationship between agricultural GDP and exports, with causality running from exports to agricultural GDP, thus confirming the export-led hypothesis. In Nigeria, Gbaiye et al. (2013) showed that agricultural exports have a consistent long-term impact on GDP growth using unit root and Johansen co-integration tests over 1980–2010.

Focusing on specific commodities, Kang (2015) examined rice exports in Thailand, Vietnam, India, and Pakistan (1980–2010), employing VECM, ADF, co-integration, and Granger causality tests. The study revealed that rice exports significantly influenced long-run economic growth, even if short-term effects were minimal. In Tanzania, Myovella et al. (2015) used VAR, PP unit root, and co-integration tests (1980–2013) and found no evidence supporting the export-led growth hypothesis for agricultural exports. Conversely, Bakari and Mabrouki (2017) identified a strong positive correlation between agricultural exports and GDP in South Eastern European countries (2006–2016), while Liang (2018) reported a significant unidirectional causality from agricultural exports to economic growth in China (1970–2010).

Further, studies focusing on India and other developing nations highlighted the significant role of agricultural exports. Bashir et al. (2019) found one-way long-term causality from agricultural exports to GDP in Indonesia (1985–2017) using VECM and 2SLS models. Murugesan (2019) confirmed similar patterns for India (1990–2017), showing both agricultural and non-agricultural exports stimulate economic growth. In developed countries, Seok and Moon (2021) observed that agricultural exports positively impacted economic growth primarily in EU nations with well-integrated markets. Finally, Bakari and Tiba (2022) analysed China (1984–2017) and found that

ISSN: 2455-8834
Volume:10, Issue:09 "September 2025"

agricultural exports and domestic investment positively influenced long-run economic growth, whereas agricultural imports had a negative effect.

Overall, these studies underscore the critical importance of agricultural exports in promoting economic growth, though the magnitude and direction of impact vary across countries and periods. The evidence suggests that agricultural export-led strategies, supported by domestic investment and improved productivity, can serve as an effective tool for sustainable economic development.

3. Research Methodology

This section outlines the data sources, study period, variables and econometric techniques employed to analyse the relationship between agricultural exports and economic growth in India.

3.1 Data Sources

The study is based entirely on secondary data collected from reliable government and international sources, including the Directorate General of Commercial Intelligence and Statistics (DGCI&S), Department of Agriculture Cooperation and Farmers Welfare, Economic Survey of India (Ministry of Finance), Reserve Bank of India, FAO and the World Bank. The analysis uses annual time series data on agricultural exports and GDP as a proxy for economic growth, covering the period from 2001 to 2023.

3.2 Methods of Analysis

To examine the dynamic relationship between agricultural exports and economic growth, the study employed several econometric techniques, including unit root tests, co-integration tests, Vector Error Correction Models (VECM) and Granger causality analysis.

3.2.1 Unit root tests

Unit root tests were conducted to assess the stationarity of the time series data. A stationary series is one whose mean and variance do not change over time. Both the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test were applied. The ADF test improves upon the standard Dickey-Fuller test by accounting for autocorrelation in the error terms through the inclusion of lagged dependent variables.

$$\Delta x_t = \alpha_0 + \theta x_{t-1} + \sum_{i=1}^{n} \gamma_i \Delta x_{t-1} + u_t$$

In contrast, the PP test is a non-parametric approach that does not include lagged differences and assumes the errors may be serially correlated.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

3.2.2 Co-integration Test

Co-integration analysis was performed to determine whether agricultural exports and GDP share a long-term equilibrium relationship. The Johansen co-integration test, which utilizes trace and maximum eigenvalue statistics, was applied. This test is appropriate when the variables are integrated at the same order and allows for the identification of one or more long-run relationships among the variables.

3.2.3 Vector Error Correction Model (VECM)

Once co-integration was established, a Vector Error Correction Model (VECM) was applied to examine both long-run and short-run dynamics. The VECM is a restricted form of Vector Autoregression (VAR) that incorporates an error correction term, which measures the speed at which deviations from the long-run equilibrium are corrected. The general form of the VECM captures the short-term adjustments while maintaining the long-run equilibrium relationship between agricultural exports and GDP.

$$\Delta x_t = \alpha_0 + \lambda_1 EC_{t-1}^1 + \sum_{i=1}^{n} \alpha_1 \Delta x_{t-1} + \sum_{i=1}^{n} \alpha_j \Delta y_{t-j} + u_t$$

$$\Delta y_t = \beta_0 + \lambda_2 EC_{t-1}^2 + \sum_{i=1}^{n} \beta_1 \Delta y_{t-1} + \sum_{i=1}^{n} \beta_j \Delta x_{t-j} + e_t$$

3.2.4 Granger Causality Test

To analyse the direction of causality between the variables, the study employed the Granger causality test. According to this test, a variable X_t is said to Granger-cause another variable Y_t if past values of X_t significantly improve the prediction of Y_t, holding all other factors constant. Bivariate regressions were estimated to determine whether GDP influences agricultural exports, whether agricultural exports influence GDP, or if a bidirectional relationship exists.

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \cdots \ldots\ldots + \alpha_n y_{t-n} + \beta_1 x_{t-1} + \cdots \ldots + \beta_n x_{t-n} + u_t$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \cdots \ldots\ldots + \alpha_n x_{t-n} + \beta_1 y_{t-1} + \cdots \ldots + \beta_n y_{t-n} + e_t$$

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

4. Causal relationship between agricultural and allied products exports and economics growth

4.1. Descriptive statistics

To examine the underlying properties of the data series, descriptive statistics were employed. Table 1 reports the descriptive statistics of the study variables, namely agricultural exports and Gross Domestic Product (GDP). The table includes measures of central tendency, dispersion, and distribution, providing an overview of the data structure.

Table 1. Descriptive statistics

Statistics	Agricultural Export	GDP
Mean	33842.07	1832769
Median	39232.03	1704596
Maximum	59880.62	3215973
Minimum	9024.824	839152
Std. Dev.	17508.16	732646
Skewness	-.1091325	.2921356
Kurtosis	1.570962	1.821045
Jarque-Bera	7.12	4.01
Probability	0.0284	0.1345
Sum	778367.57	42153694
Sum Sq. Dev.	207570.95	19300496
Observations	23	23

The descriptive statistics show that India's agricultural exports averaged ₹33,842 million during 2001–2023, while GDP averaged ₹18,32,769 million, highlighting the relatively smaller but growing role of exports in the economy. Both series exhibit moderate fluctuations, with agricultural exports showing a slight negative skewness and GDP a mild positive skewness, while kurtosis values below 3 indicate flatter-than-normal distributions. The Jarque-Bera test confirms that GDP follows a normal distribution (p=0.13), whereas agricultural exports deviate from normality (p=0.028), reflecting volatility due to trade and policy shocks. Overall, the data indicate steady GDP growth with more variability in agricultural exports, justifying further analysis of their impact on economic growth.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

4.2. Testing the stationarity of the data

Stationarity in a time series implies that its statistical properties remain constant over time. Many econometric models and tests are based on this assumption. If non-stationary data are used, it may result in spurious regression and misleading relationships, particularly when employing the Ordinary Least Squares (OLS) method. Hence, before analyzing the causal relationship between agricultural exports and Gross Domestic Product (GDP), it is essential to test whether the data series are stationary. To examine stationarity, unit root tests are applied. A time series is considered stationary when its mean, variance, and standard deviation remain constant over time.

4.2.1. Unit root test

The unit root test is conducted to identify the order of integration of a time series. If a series is stationary at its level form, it is considered integrated of order zero, denoted as I(0), meaning no differencing is required. However, if the series is non-stationary at level, it must be differenced once to achieve stationarity, in which case it is classified as integrated of order one, I(1). Similarly, if differencing is required twice, the series is said to be integrated of order two, I(2). To assess the stationarity of the variables in this study, both the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test have been applied.

4.2.2. Unit root test for agricultural exports and GDP

To ensure reliable econometric estimation, it is necessary to examine the stationarity properties of the series. Both the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were employed for agricultural exports and GDP.

Table 2. Augmented Dickey-Fuller test

Variables	At Level (I_0)		First Difference (I_1)		Order of Integration
	Test statistics	P-value	Test statistics	P-value	
Agricultural Export	-0.893 [a*]	0.1912	-3.301 [a*]	0.0019	I(1)
GDP	-1.709 [b*]	0.7470	-4.386 [b*]	0.0023	I(1)

[a*] represents without constant and trend

[b*] represents models with constant and trend

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

Table 3. Phillips-Perron test

Variables	At Level (I_0)		First Difference (I_1)		Second Difference (I_2)		Order of Integrat-ion
	Test statistics	P-value	Test statistics	P-value	Test statistics	P-value	
Agricultural Export	-2.107 ^{a*}	0.5422	-3.128 ^{a*}	0.0997	-4.654 ^{a*}	0.0008	I(2)
GDP	-1.672 ^{a*}	0.7629	-4.374 ^{a*}	0.0024	-	-	I(1)

^{a*} represents models with constant and trend

The results of the ADF test (Table 1) reveal that neither agricultural exports nor GDP are stationary at levels, as their test statistics are insignificant. However, after taking the first difference, both series become stationary at the 1% level of significance. This indicates that agricultural exports and GDP are integrated of order one, I(1), under the ADF framework.

The Phillips-Perron test (Table 2) provides additional confirmation, though with a slight variation. For GDP, the PP test indicates non-stationarity at levels but clear stationarity at the first difference, thus confirming it as an I(1) process. However, for agricultural exports, the PP test suggests that the series attains stationarity only after the second difference, implying an I(2) process. This divergence between the ADF and PP test results highlights potential structural breaks or volatility in agricultural export data, which may have affected the order of integration.

Overall, the results suggest that while GDP consistently behaves as an I(1) series across both tests, agricultural exports show mixed results. Since the ADF test, which incorporates dynamics through lagged terms, indicates I(1) integration, and considering the limited sample size, the study proceeds under the assumption that both variables are I(1).

4.3. Order Selection Criteria

Table 4. Order Selection Criteria

Lag	Criteria			P-value
	AIC	HQIC	SBIC	
0	50.6877	50.7045	50.7871	-
1	46.1203	46.1708	46.4185*	0.000

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

2	46.1298	46.2139	46.6268	0.098
3	46.4435	46.5613	47.1394	0.729
4	45.8908*	46.0422*	46.7855	0.001

4.4. Co-integration

Co-integration refers to the presence of a long-run equilibrium relationship among two or more variables. To examine whether such a long-run association exists between agricultural exports and Gross Domestic Product (GDP), the Johansen co-integration test has been employed. The outcomes of the Johansen test, based on both the trace statistic and the maximum eigenvalue statistic, are reported in Table 5.

Table 5. Unrestricted co-integration rank test (trace and maximum eigenvalue)

Hypothesized No. of CE(s)	Eigen Value	Trace Statistics	5 per cent critical Value	Max-Eigen Statistics	5 per cent critical Value
0	.	19.8598	15.41	19.6475	14.07
1	0.64445	0.2123*	3.76	0.2123	3.76
2	0.01111				

The results reveal that both the trace statistic (19.85 > 15.41) and the maximum eigenvalue statistic (19.64 > 14.07) reject the null hypothesis of no cointegration at the 5% significance level. This confirms the existence of at least one cointegrating vector, indicating that agricultural exports and GDP share a long-term equilibrium relationship despite short-term fluctuations.

At the next rank, the test does not reject the null of at most one cointegration equation, confirming that there is exactly one long-run relationship between the two variables. This finding validates the export-led growth hypothesis in the agricultural context, implying that agricultural exports play a significant role in driving India's economic growth.

Overall, the results conclude that agricultural exports and GDP are cointegrated, suggesting that agricultural trade contributes to India's long-run economic growth.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

4.5. Vector Error-Correction Model (VECM): short run and long run causality

The Johansen co-integration test results confirm the existence of a long-run relationship between agricultural exports and Gross Domestic Product (GDP). When variables are co-integrated, an Error Correction Model (ECM) framework is appropriate, as it captures both the short-run dynamics and the long-run equilibrium adjustments. Specifically, the Vector Error Correction Model (VECM) is employed when co-integration is established, whereas in the absence of co-integration, the Vector Auto-Regression (VAR) model is more suitable. The results of the VECM are presented in Table 6. In this framework, long-run causality is inferred if the coefficient of the error correction term is negative and statistically significant. If the coefficient is negative but insignificant, or positive regardless of significance, long-run causality does not exist. The equations were estimated using the Ordinary Least Squares (OLS) method, and the corresponding VECM results are reported in Table 7.

Table 6. Vector Error Correction Model

Cointegrating Eq:	CointEq1
Agricultural exports(-1):	1.0000 (normalized)
GDP(-1):	–0.0158
Constant (C):	28515.34

The estimated Vector Error Correction Model (VECM) provides evidence of a significant long-run relationship between agricultural exports and GDP in India. The normalized cointegrating equation shows that agricultural exports are positively associated with GDP, with the coefficient of –0.0158 for GDP indicating that a one-unit increase in GDP reduces disequilibrium in agricultural exports by about 1.58%. The constant term (28,515.34) further highlights the baseline level of agricultural exports when GDP is zero. The negative sign of GDP in the cointegrating vector confirms the adjustment mechanism, meaning that any deviation from the long-run equilibrium is corrected over time.

Overall, the VECM results suggest that agricultural exports and GDP are strongly linked, with agricultural exports adjusting to restore long-run equilibrium in response to changes in economic growth.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

Table 7. VECM using ordinary least square

Dependent Variable	Coefficient	Std. Error	t-Statistic	Probability
D_AgriExport				
_ce1 (L1)	-0.1539	0.2410	-0.64	0.523
AgriExport_LD1	0.3765	0.3432	1.10	0.273
AgriExport_LD2	-0.2667	0.3049	-0.87	0.382
AgriExport_LD3	-0.0795	0.3658	-0.22	0.828
GDP_LD1	-0.0318	0.0208	-1.53	0.127
GDP_LD2	-0.0052	0.0228	-0.23	0.819
GDP_LD3	-0.0025	0.0250	-0.10	0.920
Constant	11683.69	6970.35	1.68	0.094
D_GDP				
_ce1 (L1)	10.6194	2.4418	4.35	0.000
AgriExport_LD1	-9.8784	3.4769	-2.84	0.004
AgriExport_LD2	-4.9163	3.0892	-1.59	0.112
AgriExport_LD3	-13.4151	3.7057	-3.62	0.000
GDP_LD1	-0.5341	0.2108	-2.53	0.011
GDP_LD2	-0.5530	0.2306	-2.40	0.016
GDP_LD3	-0.8789	0.2535	-3.47	0.001
Constant	169.3393	70613.86	0.00	0.998

The VECM results highlight important short-run dynamics between agricultural exports and GDP in India. For the agricultural export equation, the error correction term (_ce1) is negative (–0.1539) but statistically insignificant, suggesting that agricultural exports do not adjust significantly to restore equilibrium in the short run. Similarly, the lagged differences of agricultural exports and GDP variables are also statistically insignificant, implying that short-run fluctuations in GDP have limited immediate influence on agricultural exports. This reflects the fact that India's agricultural exports are often influenced by long-term structural factors such as

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

global demand, trade policies, and domestic production capacity, rather than by short-run changes in GDP.

In contrast, the GDP equation shows strong evidence of short-run adjustment to disequilibrium. The error correction term (_ce1) is positive and highly significant (10.6194, p<0.01), indicating that GDP responds strongly to deviations from long-run equilibrium. Moreover, the lagged values of both agricultural exports and GDP are significant in explaining short-run changes in GDP. Specifically, negative and significant coefficients of agricultural export lags (e.g., –9.8784, –13.4151) suggest that past fluctuations in agricultural exports have an immediate negative impact on GDP growth in the short run. At the same time, lagged GDP terms also exert a significant negative influence, implying inertia or self-correcting behavior in output growth.

Overall, the VECM results indicate that while agricultural exports do not adjust to correct disequilibrium in the short run, GDP strongly responds to both its own past dynamics and variations in agricultural exports, thereby establishing agricultural trade as a key driver of India's economic growth in the long-run adjustment process.

4.6. Diagnostic Check of the model

Diagnostic test results for model are presented in Table 8.

Table 8. Diagnostic Check

Tests	F test statistic	p-value
Jarque-Bera	1.761	0.141
Ramsey-Reset	2.833	0.108
Heteroskedasticity ARCH	2.505	0.122
Breusch-Godfrey LM Test	0.643	0.431
CUSUM	stable	
CUSUMSQ	stable	

The Jarque-Bera test (p = 0.141) indicates that the residuals are approximately normally distributed. The Ramsey-RESET test (p = 0.108) suggests no evidence of model misspecification. The ARCH test (p = 0.122) shows that heteroskedasticity is not present. The Breusch-Godfrey LM test (p = 0.431) indicates no autocorrelation in the residuals. Both CUSUM

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

and CUSUMSQ tests confirm parameter stability. Overall, the model is well-specified, stable, and reliable for inference.

4.7. Granger causality test

The Granger causality test is used to determine whether changes in agricultural exports cause changes in Gross Domestic Product (GDP) or vice versa, with the results presented in Table 9.

Table 9. Results of Granger causality test

Null Hypothesis	F- Test	df	P- Value	Decision	Direction
GDP does not granger cause Agricultural Export	28.366	4	0.000	Reject	Uni-directional causality GDP → Agri Export
Agricultural Export does not granger cause GDP	6.0807	4	0.193	Accept	

he results indicate uni-directional causality from GDP to Agricultural Export. The null hypothesis that "GDP does not Granger cause Agricultural Export" is rejected (F = 28.366, p = 0.000), showing that changes in GDP significantly predict agricultural exports. Conversely, the null hypothesis that "Agricultural Export does not Granger cause GDP" is accepted (F = 6.0807, p = 0.193), indicating that agricultural exports do not significantly predict GDP.

Overall, this implies that economic growth (GDP) drives agricultural export performance in India, but agricultural exports do not have a feedback effect on GDP.

5. Conclusion

The present study aimed to examine the impact of agricultural exports on the economic growth of India over the period 2001–2023. Using secondary data from reliable government sources, the study employed a range of econometric techniques, including unit root tests, cointegration analysis, Vector Error Correction Models (VECM), and Granger causality tests, to investigate the dynamic relationship between agricultural exports and GDP. The descriptive statistics highlighted the substantial variation in agricultural exports and GDP over the study period, while stationarity and cointegration tests confirmed a long-run relationship between the two variables. The VECM results further revealed that GDP significantly influences agricultural exports,

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

whereas agricultural exports do not exert a significant effect on GDP. The Granger causality test supported these findings, indicating a uni-directional causality from GDP to agricultural exports, consistent with the growth-led exports hypothesis.

The findings underscore that economic growth in India drives the expansion of agricultural exports, suggesting that improvements in domestic production capacity, infrastructure, and technology are key determinants of export performance. Despite this, the growth rate of agricultural exports has shown fluctuations over the years, highlighting challenges such as competitiveness, value addition, and global market access. These results have important policy implications. The government should formulate targeted agricultural export policies that enhance production efficiency, promote value-added exports, and strengthen supply chain infrastructure. Additionally, measures such as market diversification, trade facilitation, and investment in modern agricultural practices can further enable the sector to respond effectively to global demand. Given that agriculture employs nearly half of India’s population and remains geographically widespread, strengthening the agricultural export sector is not only vital for trade performance but also for inclusive economic growth and rural development.

In conclusion, the study establishes that India’s economic growth is a key driver of agricultural exports. Strategic interventions and policy support aimed at enhancing competitiveness, value addition, and market access are essential to sustain and expand India’s agricultural export performance, thereby contributing to broader economic development.

References

Bakari, S., & Mabrouki, M. (2017). The Effect of Agricultural Exports on Economic Growth in South-Eastern Europe: An Empirical Investigation using Panel Data. *Journal of Smart Economic Growth*, *2*(4), 49-64.

Bakari, S., & Tiba, S. (2022). Agricultural Exports, Agricultural Imports and Economic Growth in China. *Journal of Smart Economic Growth*, *7*(3), 35-61.

Bashir, A., Suhel, A., Azwardi, A., Atiyatna, D. P., Hamidi, I., & Adnan, N. (2019). The Causality Between Agriculture, Industry, and Economic Growth: Evidence from Indonesia. *Etikonomi*, *18*(2), 155-168.

Dawson, P. J. (2005). Agricultural Exports and Economic Growth in Less Developed Countries. *Agricultural economics*, *33*(2), 145-152.

ISSN: 2455-8834

Volume:10, Issue:09 "September 2025"

Gbaiye, O. G., Ogundipe, A., Osabuohien, E., Olugbire, O. O., Adeniran, O. A., Bolaji-Olutunji, K. A., Awodele, O. D., & Aduradola, O. (2013). Agricultural Exports and Economic Growth in Nigeria (1980–2010). *Journal of Economics and Sustainable Development*, 4(16), 1–4.

Henneberry, S. R., & Khan, M. E. (2000). An Analysis of the Linkage Between Agricultural Exports and Economic Growth in Pakistan. *Journal of International Food & Agribusiness Marketing*, *10*(4), 13-29.

Kang, H. (2015). Agricultural Exports and Economic Growth: Empirical Evidence from the Major Rice Exporting Countries. *Agricultural economics*, *61*(2), 81-87.

Liang, D. (2018). Empirical Analysis on the Influence of Agricultural Products Export on Economic Growth in China. *Asian Agricultural Research*, 10(10), 20-26.

Murugesan, B. (2019). An Empirical Analysis of Agricultural Exports on Economic Growth in India. *Economic Affairs*, *64*(3), 481-486.

Myovella, G. A., Paul, F., & Rwakalaza, R. T. (2015). Export-Led Growth Hypothesis: Evidence from Agricultural Exports in Tanzania. *African Journal of Economic Review*, *3*(2), 74-84.

Ohlan, R. (2013). Agricultural Exports and the Growth of Agriculture in India. *Agricultural Economics*, 59(5), 211-218.

Seok, J. H., & Moon, H. (2021). Agricultural Exports and Agricultural Economic Growth in Developed Countries: Evidence from OECD Countries. *The Journal of International Trade & Economic Development*, *30*(7), 1004-1019.

Tiffin, R., & Irz, X. (2006). Is Agriculture the Engine of Growth? *Agricultural Economics*, *35(1)*, 79-89.

