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Beyond the fruit: the economic impact of hass avocado on international transactions in Peru (2005-2024)

Más allá de la fruta: el impacto económico de la palta hass en las transacciones internacionales de Perú (2005-2024)

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Resumen

Durante las dos últimas décadas, la palta Hass se ha convertido en una de las principales protagonistas del comercio exterior peruano. Esta investigación tiene como propósito examinar cómo su desempeño exportador ha influido en la economía nacional entre los años 2005 y 2024. Este estudio examina, basándose en datos estadísticos consolidados, la dinámica de las exportaciones peruanas de palta Hass durante el periodo comprendido entre 2005 y 2024, y su repercusión en variables económicas esenciales. Se recurrió a un método descriptivo-correlacional, fundamentado en registros oficiales secundarios, el propósito central fue explorar cómo la evolución de este producto —emblemático en la canasta agroexportadora no tradicional— se ha articulado con el desempeño de las exportaciones totales, las ventas no tradicionales, el Producto Bruto Interno (PBI) del país y, de manera particular, el PBI del sector agropecuario. Los análisis descubren vínculos de relevancia notoriamente significativa. Subraya la correlación con el Producto Interno Bruto agropecuario, en el que el coeficiente de determinación (R2) se aproxima al 0.92, y con las exportaciones no tradicionales, en las que el coeficiente de determinación (R2) excede el 0.86. En los demás indicadores, las correlaciones también son elevadas, lo cual pone de manifiesto la relevancia económica del cultivo. En el año 2024, Perú realizó embarques que ascendieron a más de 1,246 millones de dólares, consolidándose como el segundo mayor exportador global de este fruto. Pese a los retos afrontados como efecto de la pandemia o variaciones en los precios globales el sector ha demostrado un rendimiento sólido y duradero a lo largo del tiempo. En ese entender, la palta Hass no solo ha impulsado las exportaciones de productos agropecuarios, sino que se ha consolidado en la estrategia de diversificación exportadora del país como elemento esencial.

Palabras clave: Palta Hass, exportación peruana, impacto económico, sector agropecuario, producto interno bruto (PIB), crecimiento económico, agroexportaciones.

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Abstract

Over the past two decades, Hass avocado has emerged as one of the leading drivers of Peru's foreign trade. This study aims to examine how its export performance has influenced the national economy during the period from 2005 to 2024. Based on consolidated statistical data, the research analyzes the dynamics of Peru's Hass avocado exports and their impact on key economic variables. A descriptive-correlational methodology was employed, relying on secondary data from official sources. The main objective was to explore how the trajectory of this emblematic product —central to the country's non-traditional agro-export basket— aligns with the performance of total exports, non-traditional exports, the national Gross Domestic Product (GDP), and, more specifically, the agricultural GDP. The analysis reveals statistically significant associations. Notably, there is a strong correlation with the agricultural GDP, where the coefficient of determination (R^2) approaches 0.92, and with non-traditional exports, with an R^2 exceeding 0.86. High correlations were also found with other indicators, highlighting the crop's considerable economic relevance. In 2024, Peru shipped over USD 1.246 billion in Hass avocado exports, securing its position as the world's second-largest exporter of the fruit. Despite challenges such as the pandemic and global price volatility, the sector has shown a steady and resilient performance over time. In this context, Hass avocado has not only boosted agricultural exports but has also become a cornerstone in Peru's export diversification strategy.

Keywords: Hass Avocado, Peruvian Export, Economic Impact, Agricultural Sector, Gross Domestic Product (GDP), Economic Growth, Agro-exports.

Introduction

The Hass avocado has established itself as a strategic component in the global market, driven by its growing demand and recognized nutritional properties (Pérez & Gómez, 2022). In 2024, Peru positioned itself as the world's second-largest exporter of Hass avocados, surpassing the Netherlands and behind only Mexico, according to data from the International Trade Centre (2024), based on statistics from UN COMTRADE. This crop has become a strategic pillar of the country's non-traditional agri-food exports.

This study analyzes the economic impact of Hass avocado exports on Peru's international operations and economy over the 20-year period, from 2005 to 2024. This length of time is essential to portray the full journey of the Hass avocado as an "emblematic product" in agricultural exports.

The 2005-2024 period is not simply a magnification of numbers, but a mosaic that encompasses the beginning of the boom (2005-2010), the astonishing expansion driven by market liberalization and technology (2011-2020), and a robust resilience in the face of contemporary challenges such as inflation and climate change (2021-2024).

This cross-sectional perspective offers a robust historical narrative of its lasting impact.

Despite its economic significance, a rigorous analysis is required to quantify its impact over this extended period. Understanding this dynamic is essential for designing public policies and business strategies that enhance the competitive advantages of the agricultural export sector.

Objectives and Hypotheses

General Objective

To assess the economic impact of Hass avocado exports on international transactions and Peru's Gross Domestic Product (GDP) during the period 2005-2024.

Specific objectives

1. Analyze the relationship between Hass avocado exports and Peru's non-traditional exports.
2. Determine the influence of Hass avocado exports on Peru's national Gross Domestic Product (GDP) and agricultural GDP.
3. Identify trends and variations in Hass avocado exports and their correlation with the country's total exports.

Research Hypothesis

1. Hass avocado exports have a positive influence on the growth of Peru's non-traditional exports.
2. Hass avocado exports have a significant impact on the growth of Peru's National Gross Domestic Product (GDP) and Agricultural GDP.
3. There is a positive correlation between Hass avocado exports and the country's total exports during the period analyzed.

Background and Theoretical Basis of Export-Led Economic Growth and Agro-Exports

In the context of economic growth, the export-led growth (ELG) hypothesis, presented by Balassa in 1978, suggests that international trade helps increase total demand, fosters economies of scale, improves efficiency through external competition, and favors technology transfer (Oliva, 2020). This theory is particularly relevant in developing countries, given that it contributes to capital accumulation, foreign exchange generation, and integration into global value chains.

When the agricultural sector is structurally sound, agricultural exports become a key instrument of economic development. A strengthened agricultural export sector can promote rural development, attract investment, generate employment, and reduce dependence on commodities characterized by high price volatility (Pérez & Gómez, 2022). For example, in Colombia, increased avocado exports have led to the creation of more than 54,000 direct jobs, proving its multiplier effect.

One of the most valued characteristics of the agri-food sector is its ability to maintain its economic functioning during adverse periods. In the first year of the COVID-19 pandemic, agri-food exports from Latin America and the Caribbean increased by 2.7%, demonstrating their resilience (IICA, 2021). This type of performance is associated with economies with a capacity for productive diversification. Diversification enables a more efficient allocation of resources. Diversification enables more efficient resource allocation during periods of crisis, contributing to stability and sustained growth (Acemoglu & Robinson, 2019, as cited in Ruiz-Zambrano et al., 2022). In this regard, the case of Peru

is notable: the growth of Hass avocados as an export product has significantly contributed to diversifying the unconventional supply.

At the international level, several recent studies have confirmed the importance of agricultural exports in economies dependent on the agricultural sector. Sanjuán-López and Dawson (2010) conducted a study in 42 developing countries and found a long-term positive relationship between agricultural exports and GDP growth, supporting the agro-export version of the ELG. This finding highlights the need for export support policies tailored to each country's income and production characteristics.

Mamba and Ali (2022) studied how agricultural exports affect ECOWAS countries. They found that these exports contribute to both overall economic growth and agricultural growth, although no direct effects were found between the two. This highlights the need to establish economic policy frameworks tailored to the particular structural conditions of each country.

Gafsi and Bakari (2024), in their analysis for the Asia-Pacific region, conclude that agricultural exports, along with financial development and capital investment, are key factors for economic growth. However, they warn that agricultural activities with a high environmental footprint—such as CO_2 emissions—can reduce these benefits if not accompanied by sustainability policies.

The Indian experience offers another complementary perspective: Kaur, Sandhu, and Atwal (2022) demonstrated that foreign direct investment in agriculture improves export competitiveness and boosts economic development, demonstrating a positive link between trade openness, productivity, and capital flows.

The experience in North Sumatra, Indonesia, shows that agro-industrial exports can contribute to the region's development: they represent 40% of total exports and have contributed to job creation, increased income, and poverty reduction in rural areas (Tampubolon, 2018). Studies in Nigeria and Nepal suggest that an export-focused approach, coupled with public and private investment, can bring about significant structural changes.

However, the effects of agro-exports are not felt immediately. In Pakistan, Mahmood and Munir (2017) observed that exports of basic and low-quality agricultural products failed to significantly impact economic growth due to problems in competitiveness, standardization, and value addition. This highlights the importance of incorporating changes in production to ensure lasting benefits.

Based on the evidence reviewed, we can affirm that agricultural exports, when combined with sound policies and sustainable production models, can become important drivers of economic growth in agricultural economies. Factors such as the nature of the product, its degree of industrialization, its place in global supply chains, investment, and institutional support are very important. In this context, the continued increase in Hass avocado exports to Peru between 2005 and 2024 coincides with successful routes recognized worldwide. This represents a great opportunity to boost the region's economic growth and strengthen the country's agricultural export model.

Contextualizing the Peruvian Case within the Regional and International Panorama of Hass Avocados

Peru has established itself as the second-largest global exporter of Hass avocados by 2024, surpassing the Netherlands and behind Mexico. This position demonstrates the sustained growth of its agricultural exports, according to data provided by the International Trade Center (2024), based on UN COMTRADE statistics. It stands out in a global market that is projected to grow by 5.30% annually until 2030, reaching $26.17 billion (Diario Frutícola, 2025). This approach by Peru is part of a regional trend, in which Mexico leads global exports and its trade with the United States has generated a considerable economic impact (CIEN - ADEX, 2023; Diario Frutícola, 2025; FreshPlaza.es, 2025). Colombia has demonstrated accelerated growth, with a significant increase in its avocado exports between 2013 and 2020, as reported by Pérez & Gómez in 2022. Therefore, Peru's success is not an isolated event, but rather part of a regional dynamic that benefits from the growing global demand for healthy products, facing common challenges in areas such as logistics, sanitation, and market access.

Materials and Methods

This study employed a mixed methodological approach for comprehensive research. The deductive method was used for the literature review and the establishment of the theoretical framework and hypotheses. The inductive method was applied to analyze the characteristics of the problem based on observed data. The synthesis method was used to integrate the information and establish a theoretical foundation. Explanatory and correlational methods were used to determine the relationships between variables, and the analytical approach allowed for the identification of key dimensions and indicators.

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Type of Research

According to Nicomedes' (2018) classification, this work is classified as applied research. Its main objective is the resolution of practical problems and focuses on the formulation and testing of working hypotheses related to the economic impact of Hass avocado exports.

Research Level

This study, framed within a correlational and descriptive approach according to Hernández, Fernández, and Baptista (2014), seeks to establish and characterize the relationships between Hass avocado exports and various economic and social indicators in Peru. The evolution of these exports and their relationship with the country's economic performance between 2005 and 2024 will be analyzed, using scientific research principles to determine statistical connections between variables.

Population and Sample

A retrospective descriptive-correlational analysis was conducted for the period 2005-2024. The study population included all available data from Peru on Hass avocado exports, total exports, non-traditional exports, and national and agricultural GDP for that period. The sample consisted of all of these secondary data, collected from official and reliable sources.

Data Collection Techniques

Data was collected using pre-established forms from secondary sources. Eviews version 13 software was used to analyze and organize the information. This program facilitated statistical calculations, such as the coefficient of determination (R^2), and the visual presentation of the results in tables and graphs, ensuring rigor in data management.

Results

Characterization of Peruvian Avocado

The Peruvian avocado ("palta") is highly valued globally, with production concentrated in La Libertad, Lambayeque, Lima, Ica, and Junín, which accounted for 77.17% in 2022 (Ministry of Agrarian Development and Irrigation, 2022). Its export is classified under tariff item 08.04.40.00.00 (Customs Tariff, 2025).

The phytosanitary certification process is rigorous, including inspections of production, packaging, and final product areas, coordinated with SENASA (Waldir, 2021). Avocados must have more than 21.5% dry matter, and the phytosanitary certificate is crucial to avoid quarantine pests.

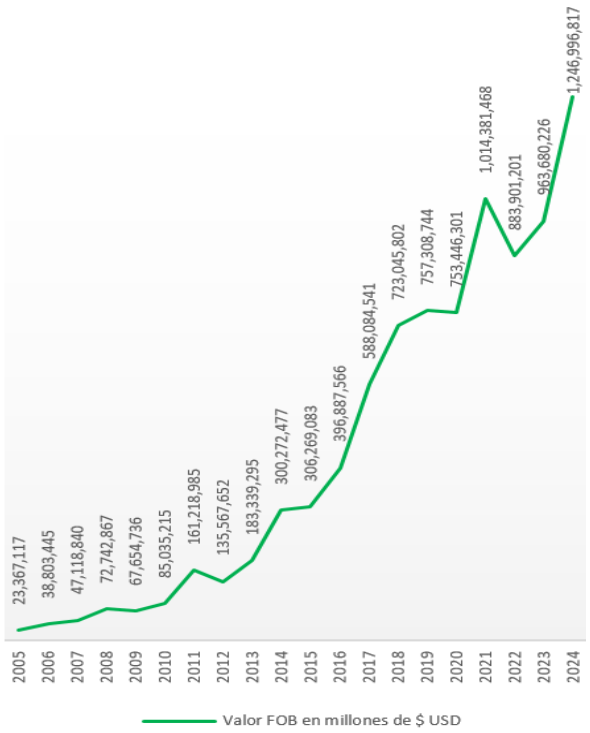
Main production occurs from April to July, although it is annual. The Hass variety accounts for 95% of exports, while the Fuerte variety is for the domestic market. Production has grown steadily since 2018, reaching 905,814 tons in 2024 (Ministry of Agrarian Development and Irrigation, 2024), driven by government policies in key regions that foster development and employment.

Study of Hass Avocado Export Performance (2005-2024)

Peruvian Hass avocado exports (item 080440) showed dynamic growth between 2005 and 2024. Starting at $23.4 million FOB in 2005, the value skyrocketed since 2011, exceeding $160 million. This increase is due to market openings, phytosanitary improvements, and trade agreements with key destinations such as the US, China, and the EU, consolidating the avocado as an iconic Peruvian agricultural export.

Figure 1

Evolution of Peruvian Hass Avocado Exports from 2005 to 2024



Note: Prepared by the authors using data from subheading 080440 – Hass Avocado, years 2005-2024.

Source: SUNAT – Table G9: Final Exports by National Subheading.Available at: https://www.sunat.gob.pe/estadisticasestudios/exportaciones.html

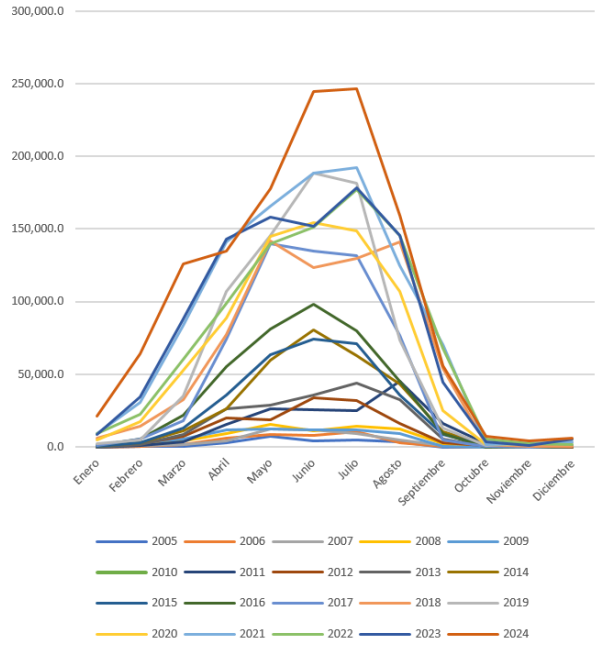
Peruvian Hass avocado exports grew steadily between 2017 and 2024, tripling their FOB value and reaching $1.246 billion in 2024. This increase is attributed to agricultural expansion, logistics improvements, and greater market access.

Despite the positive trend, there were atypical years. In 2020, the COVID-19 pandemic disrupted logistics and affected demand (FAO, 2020). In 2012, revenues did not grow proportionally to volume due to a drop in international prices caused by European oversupply (especially from South Africa) and quality issues (Agraria.pe, 2012a, 2012b). These events highlight the vulnerability of agricultural trade. Hass avocados are consolidating their position as a strategic product in Peruvian agricultural exports.

The monthly analysis reveals seasonality, with shipments concentrated from April to August, especially between May and July, coinciding with harvest and demand. Since 2014, the export volume during peak months has exceeded 200,000 tons (2021-2024), demonstrating greater production capacity. The lowest levels occur from October to January.

Figure 2

Monthly exports of Peruvian avocado 080440, period 2005-2024



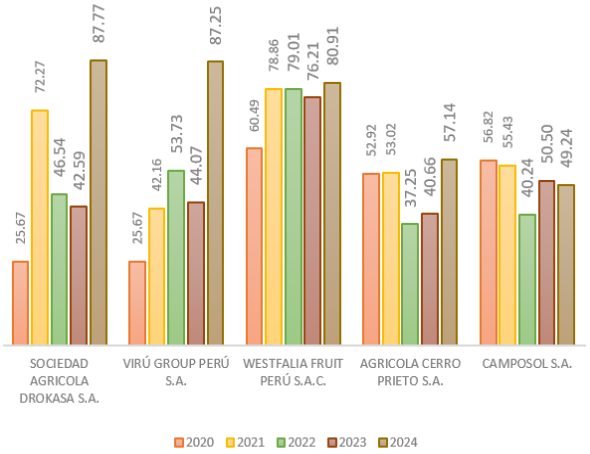
Note: Prepared by the authors using data from subheading 080440 – Hass Avocado, years 2005-2024.

Source: SUNAT – Table G7: Final Exports, main national subheadings. Available at: https://www.sunat.gob.pe/estadisticasestudios/exportaciones.html

According to PROMPERÚ (2024), between 2020 and 2024, the five main Hass avocado exporting companies in Peru, including Westfalia Fruit Perú S.A.C., DROKASA, VIRÚ GROUP, and CAMPOSOL, maintained their dominance in the international market. These companies, located on the north coast, benefit from an optimal climate, good agricultural infrastructure, and proximity to ports.

Figure 3

Main Peruvian avocado exporting companies 080440, period 2020-2024 (In millions of soles)



Note: Prepared by the authors with data from Exportemos.pe, "Companies" section under tariff item 080440. Source: https://exportemos.pe

The export boom of Peruvian Hass avocados is based on their consolidation in international markets. The Netherlands acts as a key logistics hub for Europe, while the United States is a high-value market, driven by demand for healthy products. In 2022, the Netherlands, the United States, Spain, Chile, and the United Kingdom accounted for more than 70% of exports, indicating strong trade relations but also vulnerability due to high dependence. To mitigate this, the last decade has seen strategic diversification toward emerging markets in Asia (China, Japan, South Korea) and Latin America (Chile, Colombia), seeking to build the sector's resilience.

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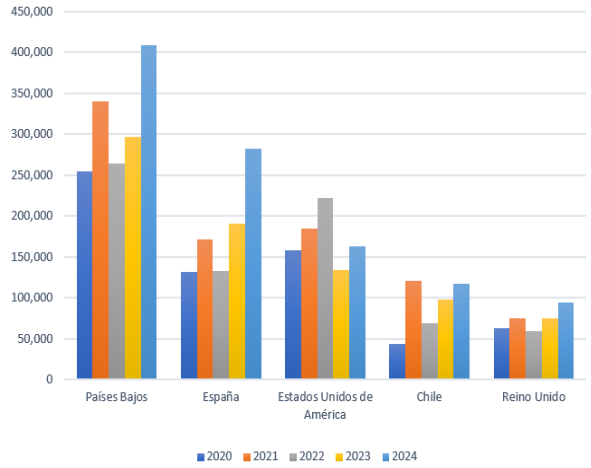
Figure 4

List of the top 5 importing markets for avocados exported by Peru, period 2005-2024 (in millions of USD)



Note: Prepared by the authors using Trademap data through a search of Peru's PA 080440 and major importing countries, 2020-2024 period, available at; https://www.trademap.org/

Study of foreign trade performance from 2005-2024

Peruvian foreign trade has transformed over the last two decades, driven by policies such as the National Strategic Export Plans (PENX). The 2003-2013 PENX initiated diversification, laying the foundation for products such as Hass avocados (MINCETUR, 2003).

According to the Peruvian Exporters Association (ADEX, 2024), the 2015-2025 National Strategic Export Plan (PENX) consolidated a long-term vision, prioritizing infrastructure, technology, and sustainability. By 2023, this plan had achieved 82% progress in the implementation of its programs, and the continued cooperation has maintained Peru as a leader in agricultural exports.

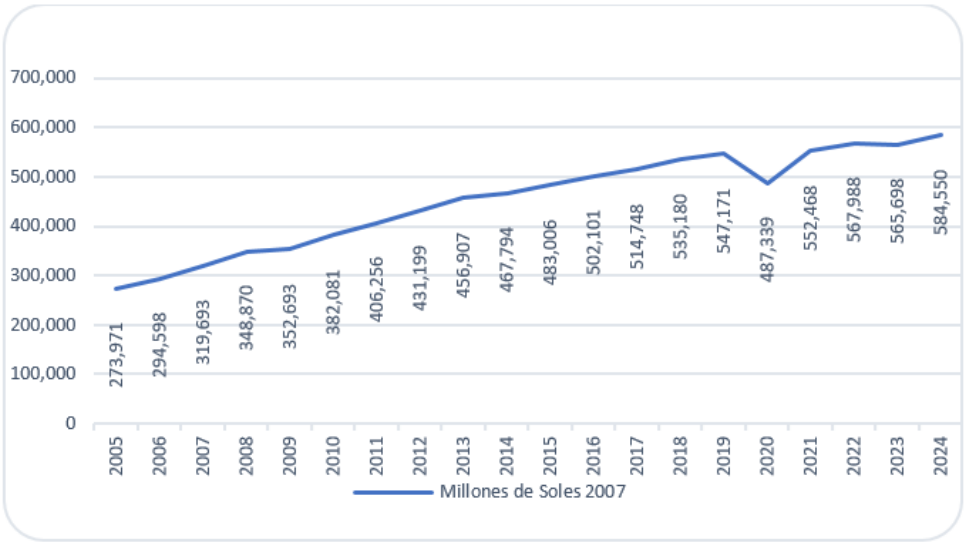
The 2005-2024 period shows the evolution of the Hass avocado industry. The initial years (2005-2010) focused on planting and consolidation. From 2011 to 2020, there was expansion and modernization with market openings. Recently (2021-2024), the sector has demonstrated resilience in the face of challenges such as inflation and climate, highlighting the importance of diversification.

Study of the performance of the Peruvian economy from 2005 to 2024

Peruvian foreign trade transformed and expanded between 2005 and 2024, thanks to National Strategic Export Plans (PENX 2003-2013 and 2015-2025). These plans promoted diversification and high-value products such as Hass avocados. Key to this was public-private synergy (MINCETUR, ADEX, PROHASS, SENASA), which established phytosanitary protocols and promoted exports, highlighting the opening of the US market in 2011.

Figure 5

Evolution of Peru's Gross Domestic Product (GDP) from 2005 to 2024 (in millions of soles)

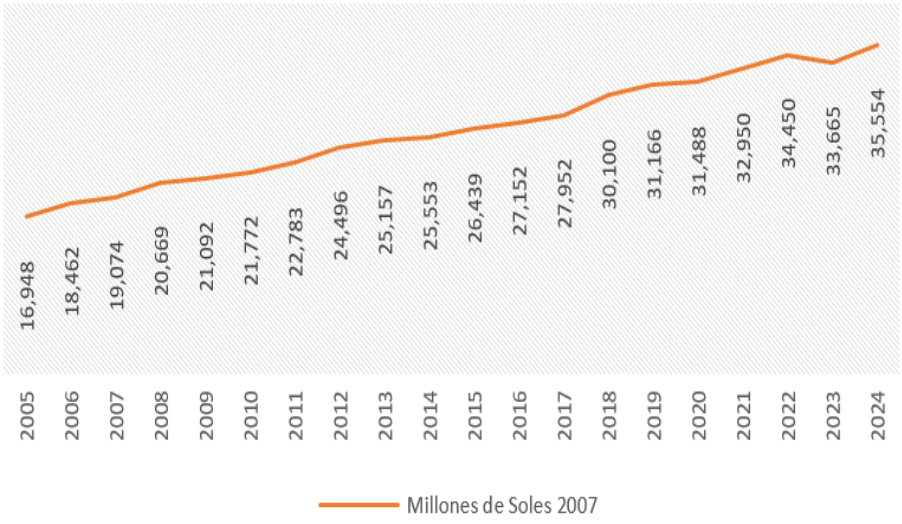


Note: Prepared by the authors using data from the BCRP, series "Gross Domestic Product by Productive Sector (2007 S/ millions)". Available at: https://estadisticas.bcrp.gob.pe

The Peruvian economy experienced consolidated growth between 2005 and 2024, with an expanding GDP driven by sound macroeconomic policies and global integration. Although mining and fishing maintained their importance, export-oriented agriculture stood out, with agricultural GDP doubling in real value. This sector, led by high-value crops such as Hass avocados, demonstrated great resilience in the face of external shocks, such as the pandemic, where Latin American agricultural exports exceeded total exports (IICA, 2021). The diversification of the export basket, led by Hass avocados, has been key to reducing dependence on commodities and strengthening the national economy.

Figure 6

Evolution of the gross domestic product of the agricultural sector in Peru (2005–2024), in millions of constant 2007 soles



Note: Prepared by the authors based on data from the Central Reserve Bank of Peru (BCRP, 2024), series "Gross Domestic Product by Productive Sector (S/ millions of 2007) – Agriculture." Available at: https://estadisticas.bcrp.gob.pe/estadisticas/series/anuales/resultados/PM04986AA/html

The evolution of Peru's agricultural Gross Domestic Product (GDP) between 2005 and 2024 reveals sustained growth, rising from S/ 16,948 million to S/ 35,554 million, doubling its value in real terms. This performance is due to the boost from agricultural exports—particularly avocado, blueberries, and coffee—and the expansion of the country's agricultural frontier (Central Reserve Bank of Peru [BCRP], 2024).

Study of the Relationship between Hass Avocado Exports, Foreign Trade, and the Peruvian Economy (2005-2024)

This study analyzed the correlation between Peruvian Hass avocado exports and foreign trade, specifically total and non-traditional exports, along with the evolution of the national economy measured by the National and Agricultural GDP. Hypothesis testing was performed using the coefficient of determination (R^2) as a statistical model to explain the relationship between the variables studied.

Avocado Exports vs. Total Exports

The positive correlation ($R^2 = 0.7401$) indicates a strong and positive relationship between Hass avocado exports and Peru's total exports. This suggests that 74% of the variability in total Peruvian exports can be explained by the performance of Hass avocado exports. Although other sectors also contribute, the sustained growth of this product has considerably influenced the country's overall export dynamics.

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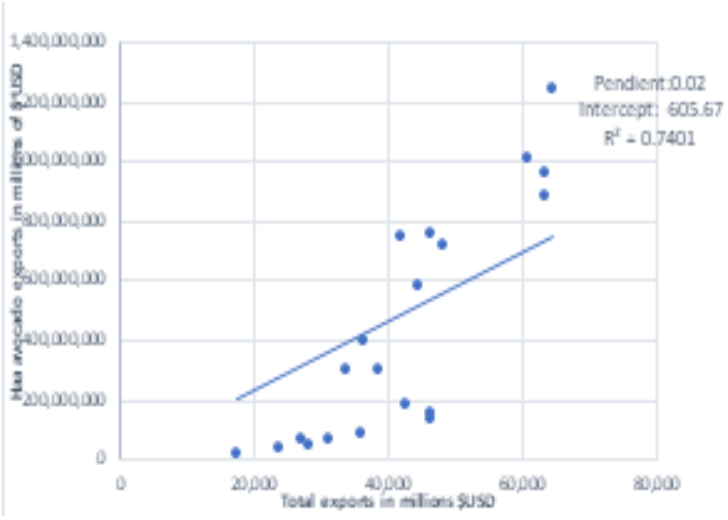
Figure 7

Relationship between Hass avocado exports and national GDP (millions of USD, 2005-2024)



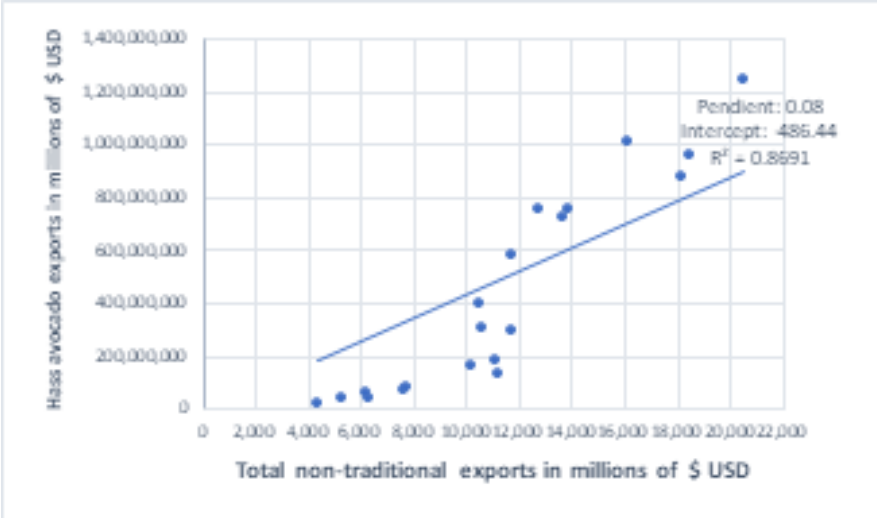
Note: Prepared by the authors using data from the BCRP, "Gross Domestic Product by Productive Sector" series

Avocado Exports vs. Non-Traditional Exports

The high coefficient of determination ($R^2 = 0.8691$) reveals a very strong relationship, reflecting that almost 87% of the variability in non-traditional exports is associated with the performance of Hass avocados. This confirms their role as one of the main drivers of the non-traditional sector, highlighting their impact on the shift in Peru's export structure toward higher value-added products and international demand.

Figure 8

Share of Hass avocados in Peruvian non-traditional exports (% of total, 2005-2024)



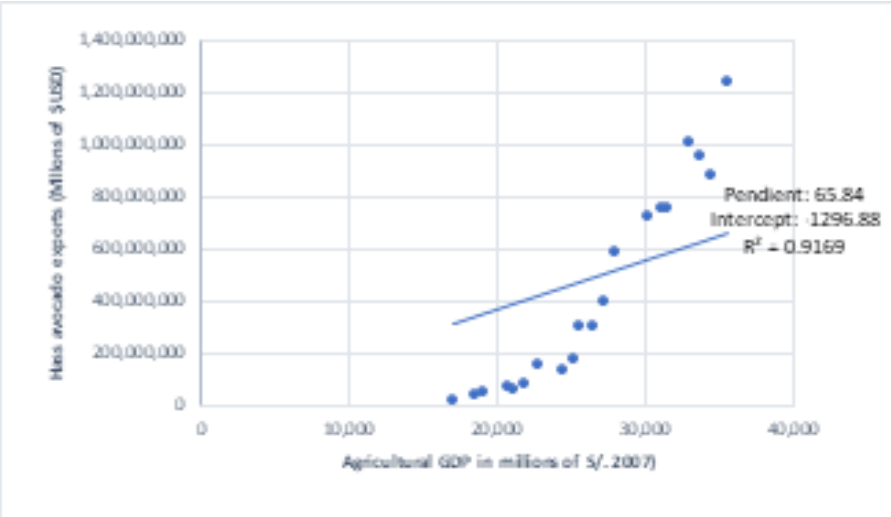
Note: ADEX (2024). Prepared by the authors

Avocado Exports vs. Agricultural GDP

An exceptionally strong relationship ($R^2 = 0.9168$) is observed between Hass avocado exports and agricultural GDP. More than 91% of the variation in agricultural GDP growth can be attributed to the performance of avocado exports, demonstrating their central role in driving agricultural dynamism in the country. Avocados, along with other star products, have contributed to modernizing and making this sector profitable.

Figure 9

Comparative impact of leading agricultural exports on agricultural GDP (Hass avocado vs. blueberries vs. grapes, 2020-2024)



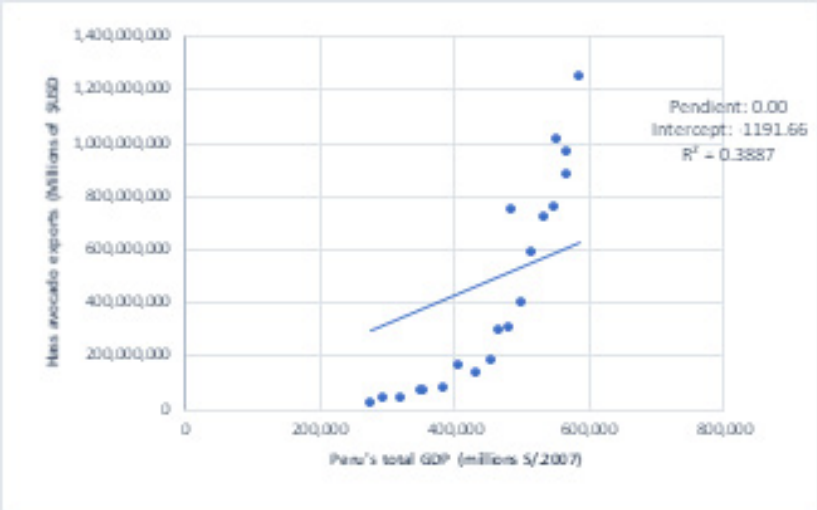
Note: MIDAGRI (2024). Prepared by the authors

Avocado exports vs. Peru's total GDP

The value (R^2 = 0.7974) indicates a strong association between Hass avocado exports and Peru's total GDP, indicating that nearly 80% of the variability in total GDP is related to the growth of avocado exports. Although GDP is influenced by multiple sectors. This result suggests that the agricultural export boom, led by avocados, has structural effects on the national economy, whether through job creation, foreign exchange, or investment.

Figura 10

Structural model of the economic impact of Hass avocados on the Peruvian economy



Note: Theoretical elaboration based on results

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Discussion

Interpretation and Critical Comparison of Results

The study reveals a strong and positive correlation between Peruvian Hass avocado exports and economic growth (2005–2024), with high R^2 coefficients: 0.7401 for total exports, 0.8691 for non-traditional exports, 0.9168 for agricultural GDP, and 0.7974 for total GDP. These results empirically support the theory of export-led growth (ELG) formulated by Balassa (1978), which postulates that trade liberalization generates multiplier effects in developing economies by stimulating production, investment, and innovation (Oliva, 2020).

The high correlation with agricultural GDP (R^2 = 0.9168) reinforces the central role of this sector in the Peruvian economic structure, in line with the regional trend where agro-export dynamism has been key to growth (IICA, 2020). Products such as Hass avocados, along with blueberries and grapes (Infobae, 2025), have played a key role in the modernization of agriculture, generating rural employment, technological sophistication, and global connectivity.

The impact of avocados as a driver of non-traditional exports (R^2 = 0.8691) also confirms their strategic role in the country's export diversification since the 1990s (BCRP, 2021). This diversification has been essential to strengthen national economic resilience to external shocks (Ruiz-Zambrano et al., 2022), in line with international literature that maintains that more diversified economies manage to redistribute resources better during crises (Acemoglu & Robinson, 2019, as cited in Ruiz-Zambrano et al., 2022).

International comparisons reinforce these findings. Mexico, the global leader in avocado exports, has achieved similar economic results (CIEN - ADEX, 2023; Diario Frutícola, 2025; FreshPlaza.es, 2025), while Colombia has seen sustained growth thanks to efficient public-private partnerships (Pérez & Gómez, 2022). In Asia and Africa, studies such as those by Gafsi and Bakari (2024) and Mamba and Ali (2022) conclude that agricultural exports, when accompanied by investment and sectoral policies, promote economic growth and territorial development.

Atypical years, such as 2012 (a fall due to oversupply) and 2020 (the COVID-19 pandemic), showed differentiated impacts. While total international trade declined, the agro-export sector showed greater resilience (IICA, 2021), demonstrating its ability to adapt to external fluctuations. This behavior is in line with cases such as North Sumatra in Indonesia (Tampubolon, 2018) and Nigeria (Osabohien et al., 2019), where agro-exports contributed to sustaining the local economy even in adverse contexts.

Finally, the high coefficients of determination obtained not only confirm the quantitative weight of Hass avocados in the Peruvian economy but also reflect a process of structural transformation that supports the ELG hypothesis in its agro-export version (Sanjuán-López & Dawson, 2010). This positions Peru as a solid empirical case of success in export diversification based on high-demand, international-quality agricultural products.

Theoretical and Practical Contributions of the Study

This study makes a relevant contribution to the analysis of the link between international agricultural trade and economic growth in developing countries, using the Peruvian Hass avocado case for the period 2005–2024. The evidence presented strengthens the validity of agro-export-driven growth models, particularly in contexts with trade promotion policies, market access, irrigation infrastructure, and phytosanitary certification.

One of the most relevant theoretical contributions is the verification of the strategic role of public-private partnerships (MINCETUR, PROMPERÚ, ADEX, PRO HASS, SENASA), which, through instruments such as the PENX, have sustained a favorable environment for agro-exports. This institutional model of export governance can be replicated in other agricultural economies seeking to consolidate flagship value-added products.

Furthermore, the study reinforces the importance of market diversification as a sustainability strategy. The geographic expansion of Peruvian Hass avocado exports, from traditional markets (US, Europe) to emerging destinations in Asia (China, Japan, South Korea) and South America (Chile, Colombia) (fxcperu.com, 2024), has reduced concentration risks and improved the sector's commercial stability.

From a practical perspective, the findings demonstrate that when private investment, coherent state policies, and a global market orientation are combined, it is possible to transform a traditional crop into a pillar of economic growth. This pattern of success has also been observed

in contexts such as India (Kaur et al., 2022), where foreign direct investment boosted agricultural exports, and in West Africa (Mamba & Ali, 2022), where these boosted both agricultural and overall GDP.

Overall, the Peruvian Hass avocado case offers valuable lessons on how to articulate microeconomic factors (productivity, partnerships, standards) and macroeconomic factors (trade policy, market access, sector resilience) to consolidate a sustainable export-led growth model, replicable in other middle-income countries with agricultural potential.

Conclusions

Hass avocado exports have proven to be a significant driver of economic growth and the diversification of Peruvian foreign trade during the 2005-2024 period. The analyses explain 91.7% of the variation in agricultural GDP, contribute to 86.9% of the growth in non-traditional exports, and impact 79.7% of the dynamics of national GDP.

These findings empirically validate the theory of export-led growth (Balassa, 1978) in agro-industrial contexts.

The results show a significant correlation between the growth of Hass avocado exports and three key macroeconomic variables: national Gross Domestic Product (GDP), agricultural GDP, and non-traditional exports. In particular, the correlation with agricultural GDP was strong (r = 0.91), confirming the structural impact of this agricultural export on the development of the agricultural sector.

From a territorial perspective, a significant expansion of the crop has been observed in new high Andean regions, which presents opportunities for regional development and productive inclusion, provided that technical support and market access policies are implemented.

However, significant challenges have also been identified. These include water sustainability, international price volatility, dependence on specific markets, and the need to strengthen value-added in the export chain. In this regard, a comprehensive strategy is recommended that combines technological innovation, environmental sustainability, and public policies aimed at strengthening small producers.

Finally, the case of the Hass avocado demonstrates that agricultural exports can become a real driver of economic growth in developing countries, provided they are coordinated with solid institutional frameworks, territorial governance, and a sustainable approach.

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