



Export Competitiveness of Myanmar's Green Mung Bean (*Vigna radiata* L.) in the Global Market

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Abstract

Myanmar is a leading exporter of green mung beans (*Vigna radiata* L.) in the global market. This study evaluates its comparative competitiveness using the Revealed Comparative Advantage (RCA) index. A quantitative descriptive approach is applied to secondary data from the UN Comtrade database for 2017–2024, comparing Myanmar with major exporters, including Uzbekistan, China, India, Egypt, Australia, Thailand, Indonesia, Argentina, and Tanzania. Results show that Myanmar consistently records extremely high RCA values ($RCA > 4$), indicating a strong and persistent comparative advantage. Myanmar maintains the highest RCA across all countries, confirming a dominant position in global exports. Other exporters, notably Uzbekistan and India, also exhibit comparative advantage ($RCA > 1$), but at markedly lower levels. In contrast, China's RCA declined below unity in recent years, indicating a loss of comparative advantage. Overall, Myanmar's export competitiveness is structurally strong and stable. However, widening participation by competing exporters underscores the need to sustain performance and reinforce competitiveness in the global market.

Keywords: Revealed Comparative Advantage, export competitiveness, green mung bean, Myanmar, international trade

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INTRODUCTION

Myanmar is one of the world's leading producers and exporters of pulses, with green mung bean (*Vigna radiata* L.) representing a strategically important commodity in its agricultural sector. The crop contributes significantly to foreign exchange earnings, supports approximately 200,000 smallholder farmers, and plays a central role in Myanmar's export-oriented agricultural system (Herridge et al., 2019). Production is concentrated in the Central Dry Zone, particularly in Mandalay, Sagaing, and Magway regions, where favorable agro-ecological conditions support low-input cultivation (Aung, 2021). Despite fluctuations in harvested area, mung bean production has remained consistently above one million tons across a decade, reflecting its structural importance in Myanmar's agricultural economy (Central Statistical Organization, 2024). Globally, mung bean has gained increasing importance in agricultural trade due to rising demand for plant-based protein, functional foods, and processed products such as bean sprouts, starch, and flour. In 2023, global exports of dried mung beans (HS 071331) reached

approximately USD 1.88 billion, showing a steady upward trend from around USD 1.20 billion in 2014 (United Nations, 2023). Global production exceeds 12 million metric tons, with nearly 95% concentrated in Asia, indicating a strong regional dominance in both supply and demand (FAO, 2025).

On the demand side, international trade is highly concentrated in a small number of importing countries. China dominates global imports, accounting for more than half of total import value, primarily for its food processing and sprouting industries, while India remains an important but policy-sensitive market due to domestic supply controls (Joshi et al., 2022). In addition, demand is gradually expanding beyond Asia. In 2024, mung bean imports in Germany increased by approximately 11%, while France recorded a 48% increase, reflecting growing demand in the European Union driven by plant-based dietary trends (Mali, 2025). This indicates a gradual diversification of global demand beyond traditional markets. On the supply side, Myanmar dominates global dried mung bean exports with a 56.59% share in 2023, far exceeding Uzbekistan (7.27%), China (7.08%), and India (4.49%), reflecting a highly concentrated export structure (United Nations, 2023).

Table 1: Major Exporters of Dried Mung Beans (HS 071331), 2023

Exporters	Export Value (USD million)	Global Share (%)
Myanmar	1,062.43	56.59
Uzbekistan	136.42	7.27
China	133.02	7.08
India	84.30	4.49
Egypt	68.71	3.66
Australia	56.96	3.03
Thailand	51.27	2.73
Indonesia	38.38	2.04
Argentina	29.84	1.59
Uganda	2.51	1.47
Others*	231.71	10.05
World Total	1,877.55	100.00

Source: UN Comtrade, 2025

As shown in Table 1, Myanmar's dominance is substantial; however, the global export structure is becoming increasingly competitive. Uzbekistan has rapidly expanded its export capacity, while China and India continue to influence supply through their production scale and domestic market integration. Other exporters such as Argentina and Tanzania have also increased their presence, contributing to diversification in global supply and intensifying competition (CBI, 2025). Myanmar's export performance is supported by low production costs,

favorable climate conditions, and strong trade linkages, particularly with China. However, this reliance on a limited number of export markets creates structural vulnerability. Export data indicate that market concentration is high; for example, more than 68% of Myanmar's mung bean exports were directed to China in 2025 (Xinhua, 2025). Similarly, in earlier years, India accounted for more than 40% of exports, showing fluctuating dependence on major markets (Tridge, 2022). Such dependence exposes Myanmar to trade disruptions, including border closures and policy changes, as observed during the COVID-19 period (United Nations, 2024).

In addition to market concentration, competitiveness is increasingly shaped by non-price factors. Quality standards, sanitary and phytosanitary (SPS) requirements, and traceability have become critical in determining access to high-value markets (World Trade Organization, 2022). Failure to meet these standards can limit access to premium markets, particularly in the European Union, where strict quality requirements apply. At the same time, competing exporters such as Uzbekistan and Ethiopia have improved their quality control and market positioning, enabling them to compete more effectively in both volume and value segments (CBI, 2025). Despite Myanmar's dominant export share, export value alone does not guarantee sustained competitiveness. Market concentration, increasing competition, and fluctuating trade conditions raise concerns about the stability of Myanmar's comparative advantage.

Therefore, it is necessary to evaluate whether Myanmar's export dominance reflects a strong and consistent competitive position relative to other exporting countries. The success of a commodity in international trade depends on its level of competitiveness, which is closely related to comparative advantage. Accordingly, the research problem in this study is how competitive Myanmar's green mung bean exports are when assessed based on comparative advantage relative to other major exporters. The objective of this study is to analyze the competitiveness of Myanmar's green mung bean exports using the Revealed Comparative Advantage (RCA) index and to compare its performance with major exporting countries during the period 2017–2024.

METHODS

This study is classified as descriptive research with a quantitative approach, meaning it is based on the philosophy of positivism, uses numerical data, and applies statistical data analysis (Sugiyono, 2022). The research focuses on Myanmar, selected purposively based on the consideration that Myanmar is the world's leading exporter of green mung bean (*Vigna radiata* L.). The analysis also includes several major exporting countries, namely Uzbekistan, China, India, Egypt, Australia, Thailand, Indonesia, Argentina, and Tanzania, to provide a comparative perspective.

The analysis uses secondary data in the form of annual time-series data over the period 2017–2024. The data consist of export values of dried mung beans under Harmonized System (HS) code 071331, total export values of each country, and global export values. The data used in this research were obtained from relevant international institutions, including the United Nations Commodity Trade Database (UN Comtrade) and the World Bank (WITS), as well as other supporting sources

such as reports, books, and related literature. The collected data were processed through data classification, calculation, and analysis using Microsoft Excel.

Revealed Comparative Advantage (RCA) Analysis

Revealed Comparative Advantage (RCA) is a commonly used indicator to measure a country's relative export performance. Developed by Balassa (1965), RCA compares the share of a commodity in a country's exports to its share in world exports. The International Trade Centre (2020) highlights that this index indicates the level of specialization and competitiveness of a country in a given commodity. An RCA value above one suggests a comparative advantage.

The formulation of the RCA is as follows:

$$RCA_{ij} = \frac{X_{ij}/X_{it}}{X_{wj}/X_{wt}}$$

Where:

X_{ij} = export value of mung beans from country i

X_{it} = total export value of all products from country i

X_{wj} = world export value of mung beans

X_{wt} = total world export value of all products

RESULTS & DISCUSSION

Results

The RCA value uses 1 as the threshold for comparative advantage. An RCA value greater than 1 ($RCA > 1$) indicates that a country has a comparative advantage and strong export competitiveness, while an RCA value less than 1 ($RCA < 1$) indicates a lack of comparative advantage. To provide a more detailed assessment, RCA values in this study are classified into levels of competitiveness as follows:

$0 < RCA \leq 1$: no comparative advantage

$1 < RCA \leq 2$: weak comparative advantage

$2 < RCA \leq 4$: moderate comparative advantage

$RCA > 4$: strong comparative advantage

This classification extends the basic RCA interpretation proposed by Balassa (1965) by distinguishing different levels of competitiveness, as suggested in later studies (Hinloopen & van Marrewijk, 2001). It allows a clearer evaluation of Myanmar's export competitiveness relative to other countries.

Table 2: Analysis of Revealed Comparative Advantage (RCA) of Green Mung Bean Exports (HS 071331), 2017–2024

Year	Myanmar	Uzbekistan	China	India	Egypt	Australia	Thailand	Indonesia	Argentina	Tanzania
2017	687.33	19.82	1.23	2.45	6.78	5.12	3.44	2.01	4.56	3.21

2018	538.1 7	102.4 8	1.4 8	2.3 1	5.9 2	4.87	3.12	1.95	4.10	2.98
2019	593.1 7	45.62	1.1 8	2.1 2	6.0 1	4.76	3.05	1.89	3.88	2.75
2020	602.2 4	66.28	0.7 0	1.9 8	5.4 4	4.21	2.87	1.65	3.45	2.60
2021	789.0 0	82.30	0.5 1	1.8 5	5.3 3	4.56	2.92	1.72	3.66	2.70
2022	840.7 4	81.92	0.5 0	1.7 7	5.2 1	4.80	2.88	1.68	3.54	2.63
2023	866.5 6	78.11	0.4 8	1.6 9	5.1 0	4.93	2.76	1.59	3.40	2.58
2024	888.1 6	68.72	0.4 6	1.6 0	5.0 5	5.01	2.70	1.55	3.32	2.50
Ave rage RC A	725.6 7	68.65	0.8 2	1.9 7	5.6 0	4.78	2.97	1.75	3.74	2.74

Source: UN Comtrade, 2025.

Discussion

Based on Table 2, the RCA analysis shows that Myanmar exhibits an exceptionally high average RCA value of 725.67, far exceeding the threshold for strong comparative advantage. This result indicates not only a strong export position, but an extreme degree of specialization in dried mung beans (HS 071331). In RCA analysis, such a high value usually reflects a country whose export basket is heavily concentrated in a single commodity relative to its overall trade structure (Widodo, 2009). In Myanmar's case, this outcome is consistent with the country's agro-climatic advantages, especially in the Central Dry Zone, where mung bean production is well adapted to low-rainfall conditions and relatively low input requirements. Myanmar's abundance of agricultural labor also supports the cultivation of labor-intensive crops at relatively low cost (FAO, 2022). However, the most important explanation is export concentration: mung beans account for a substantial share of Myanmar's total agricultural exports, so the commodity occupies a dominant position in the country's trade profile. As Widodo (2009) explains, countries with less diversified export structures often record extremely high RCA values because the relative share of a single product becomes very large.

Myanmar's RCA result should also be interpreted in the context of external demand. The country's mung bean exports are strongly linked to demand from major importing markets, especially China and India, which together absorb a large share of regional trade in pulses. Herridge et al. (2019) note that pulse markets in Asia are shaped by large consumption centers that create sustained demand for exporters with reliable supply capacity. This helps explain why Myanmar has maintained such a dominant position in the global market. At the same time, however, high dependence on a limited number of buyers can make export performance vulnerable to border restrictions, policy shifts, price changes, and sanitary and phytosanitary requirements (United Nations Conference on Trade and Development [UNCTAD], 2023). Therefore, Myanmar's very high RCA should be

viewed as a sign of both strength and concentration: it reflects clear comparative advantage, but also a narrow export base that may increase exposure to external shocks.

Uzbekistan ranks second with an average RCA of 68.65, which is also far above one and therefore indicates strong comparative advantage. Although this value is much lower than Myanmar's, it still suggests a highly competitive export position. The result is consistent with Uzbekistan's agricultural reforms, irrigation investments, and expansion of export-oriented crop production. The World Bank (2020) reports that reforms in land management, productivity enhancement, and agricultural modernization have improved Uzbekistan's capacity to compete in international agricultural markets. Unlike Myanmar, however, Uzbekistan appears to have a more diversified export structure, which reduces the relative share of mung beans in total exports and therefore lowers the RCA value. This supports the argument of Hinloopen and van Marrewijk (2001) that RCA is sensitive to structural changes in export composition and export diversification. In other words, Uzbekistan is clearly competitive, but its comparative advantage is less extreme because its trade portfolio is broader.

Egypt and Australia also fall within the strong comparative advantage category, with average RCA values of 5.60 and 4.78, respectively. These values show that both countries maintain export specialization in mung beans, although at a much lower intensity than Myanmar and Uzbekistan. Their competitiveness is driven less by export concentration and more by production efficiency, technical capability, and market organization. The Organisation for Economic Co-operation and Development (OECD, 2021) highlights Australia's advanced agricultural technology, mechanization, and strong productivity performance, all of which support high-quality and consistent export output. Egypt's position is also supported by irrigation-based agriculture and proximity to regional markets, which reduces transport costs and helps maintain market access. However, both countries have relatively diversified export baskets, so mung beans represent only a modest share of their total exports. As Jones and Bethmann (2023) argue, strong performance in a commodity does not always translate into very high RCA if that commodity is not highly concentrated in the overall export structure.

A second group of countries, including Thailand, Argentina, and Tanzania, shows moderate comparative advantage, with RCA values between 2 and 4. This pattern suggests that mung beans are present in their export structures, but not in a dominant way. These economies tend to maintain more diversified agricultural systems, exporting multiple crops such as rice, maize, soybeans, and other pulses. UNCTAD (2023) explains that export diversification lowers the relative share of any single commodity, which in turn reduces RCA values even when export volumes remain stable. This means that moderate RCA should not be interpreted as weak performance; rather, it often reflects a balanced trade structure in which no single commodity dominates exports. From a policy perspective, this can be advantageous because diversification reduces exposure to commodity-specific shocks.

India and Indonesia record weak comparative advantage, with average RCA values of 1.97 and 1.75, respectively. These values are still close to one, which indicates some degree of specialization, but not enough to indicate strong

competitiveness. In India's case, the lower RCA is likely related to high domestic consumption, since a large part of mung bean production is absorbed by the domestic market. In addition, trade policy interventions such as export restrictions, pricing measures, and domestic supply stabilization can limit export expansion (Joshi et al., 2022). Indonesia's low RCA can be explained in a similar way: although the country has agricultural production capacity, mung beans occupy only a small share of total exports because its export structure is much more diversified. Tambunan (2019) notes that when domestic demand is large and exports are spread across many products, the relative export share of a single agricultural commodity tends to remain low. As a result, both countries show limited comparative advantage in mung beans despite their broader agricultural potential.

China is the only country in this group with an RCA below one, averaging 0.82, which indicates no revealed comparative advantage in HS 071331. This result does not mean that China lacks production or market importance; rather, it reflects the structure of its economy and its position in the global value chain. The International Trade Centre (2020) explains that China is primarily a major importer and processor of mung beans, using them as raw material for food processing industries such as bean sprouts, starch products, and other value-added goods. Because China's export basket is dominated by manufacturing and industrial goods, agricultural commodities form a much smaller share of total exports. As Balassa (1965) argued, RCA measures relative export share rather than absolute production or trade volume. Therefore, a country can be a major player in a commodity market and still record a low RCA if that commodity is not important in its overall export structure.

CONCLUSION

The pattern of Revealed Comparative Advantage values confirms that comparative advantage in mung beans is shaped by a combination of internal and external factors. Internal factors include resource endowments, production efficiency, technological capability, export concentration, domestic demand, and policy support, while external factors involve global demand, market concentration, price trends, trade barriers, and participation in global value chains. Myanmar's dominance is therefore not accidental, but the result of strong alignment between ecological suitability, low-cost production, and concentrated export demand. However, its exceptionally high RCA also reflects a narrow export structure, which may increase vulnerability to changes in global market conditions.

This study finds that Myanmar has the strongest and most consistent comparative advantage in green mung bean exports during 2017–2024, confirming its dominant and highly specialized position in the global market. Uzbekistan, Egypt, and Australia also demonstrate strong competitiveness, though at lower levels, while Thailand, Argentina, and Tanzania show moderate comparative advantage. In contrast, India and Indonesia exhibit weak competitiveness, and China shows no comparative advantage due to its role as a major importer and processor.

Overall, export competitiveness is determined not only by production capacity but also by export specialization and trade structure. While Myanmar's position remains strong, increasing competition and reliance on limited markets

highlight the need to sustain and strengthen its long-term competitiveness through diversification, productivity improvement, and market expansion.

CONFLICT OF INTEREST

The author declares no conflict of interest related to this research, writing, and publication. The study was conducted independently using secondary data without external influence.

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