



## Revealed Comparative Advantage of Selected Agricultural Commodities in Afghanistan

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### Abstract

This study examines the comparative advantage of agricultural products using the Balassa index, which measures the degree of specialization of export products. The study compares the export performance of five agriculture commodities before and after the establishment of the Economic Cooperation Organization (ECO) bloc and the ECO trade agreement. The research found that Afghanistan has a strong comparative advantage among five selected agricultural commodities, but the flour of pulses and other fresh vegetables will have no advantage after 2021. Instead, the country can focus on producing cereals and cotton, as these products display strong index values. The study suggests that Afghanistan should accelerate export promotion policies, increase participation in regional trade fares, and improve product quality to remain competitive in regional and international markets.

**Keywords:** *Balassa index, ECO bloc, RCA, stability.*

### بررسی مزیت نسبی اشکار محصولات منتخب زراعتی در افغانستان

ایازخان ناصری

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### خلاصه

این مطالعه مزیت نسبی اشکار محصولات زراعتی را با استفاده از شاخص بالاسا که درجه تخصصی بودن محصولات صادراتی اندازه گیری می کند تحت بررسی قرار می دهد. در این مطالعه عملکرد صادراتی پنج محصول زراعتی را قبل و بعد از تأسیس بلاک سازمان همکاری اقتصادی (ECO) و توافقنامه تجاری آکو مقایسه شده است. نتایج تحقیق نشان داد که افغانستان در میان پنج محصول زراعتی منتخب دارای مزیت نسبی قوی است، اما آرد حبوبات و سایر سبزیجات تازه پس از سال ۲۰۲۱ هیچ مزیتی نسبی نخواهد داشت. در عوض، این کشور می تواند بر تولید غلات و پنبه تمرکز کند، زیرا این محصولات دارای ارزش های شاخص قوی هستند. این مطالعه پیشنهاد می دهد که افغانستان باید سیاست های ارتقای صادرات را تسریع کند، مشارکت تجارت منطقه ای را افزایش دهد و کیفیت محصولات را برای رقابت در بازارهای منطقه ای و بین المللی بهبود بخشد.

**کلمات کلیدی:** شاخص بالاسا، بلاک سازمان همکاری اقتصادی، مزیت نسبی اشکار، ثبات.

## Introduction

International trade enhances a country's welfare by increasing consumption and investment, positively impacting employment, income allocation, poverty, and foreign exchange resources. Global trade plays a crucial role in economic development, and deepening economic integration is essential for increasing world trade. Intra-regional trade and expansion are direct forms of regional economic cooperation, developed as an alternative to free trade policies. Regional integration is crucial for promoting economic growth and development (1). In 1964, the Islamic Republics of Iran, Pakistan, and Turkey proposed an Economic Cooperation Organization (ECO) for regional cooperation for development (RCD). The ECO expanded to ten members in 1985, including Afghanistan and six new independent countries in 1990. The bloc now comprises nearly 6% of the world population and covers over 8 million square kilometers, connecting regions like Asia, Europe, and the Arab World. The ECO's membership expanded to include Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan (9). In 2013, the trade of ten member countries of the Economic Cooperation Organization (ECO) reached \$827 billion, with exports of \$371 billion and imports of \$456 billion. ECO accounts for 2.2% of global exports, below its potential. Turkey is the top exporter within ECO, accounting for nearly 49% of total exports. Other major exporters include Kazakhstan, Iran, Pakistan, and Azerbaijan, which together make up 94% of ECO's total exports (5). Studies indicate that despite some limited efforts to reduce trade barriers for certain commodities, such as preferential tariff arrangements, no significant concerted efforts have been made (9). Therefore, a preferential trading arrangement was concluded in 2003 in the region. Agreement ECOTA [1] was contracted between five states of the bloc, namely Afghanistan, Iran, Pakistan, Turkey, and Tajikistan. ECOTA noted that up to a 15 percent tariff is reduced on 80 percent of the traded goods over eight years. The implementation of ECOTA will enable its members to enter into a free trade agreement (5). In 2021, Afghanistan's top exports were gold (419 million US\$), grapes (197 million US\$), tropical fruits (164 million US\$), raw cotton (159 million US\$), and other nuts (140 million US\$) (8). In the first two months of 2023, export performance reached USD 0.3 billion, a 16% increase from 2022. The growth was primarily due to increased exports of food (59%), coal (20%), and textiles (15%), with food exports increasing by 7%, coal by 19%, and textiles by 84% (14). The study examines the agricultural export performance of Afghanistan in the region, as it is a crucial source of foreign exchange earnings, a driver of crop diversification, and a driver of farm income improvements (11).

There's a mounting focus in recent research on comprehending the revealed comparative advantage of commodities in various countries. Helleiner (6) used the revealed comparative advantage index to measure the business strategy of exporting some goods in the short term. The study reported that if the RCA criterion indicates fluctuations in comparative advantage and strength of export goods, then the set of commercial policies of the country that are effective on RCA fluctuations can be measured. Therefore, the researcher believes that the trend of comparative advantage changes over time and can indicate the export strategy for that product.

Smyth (11) examined comparative advantage in seven products, including food and live animals, beverages and tobacco, raw materials, mineral fuels, animal and vegetable oils, manufactured goods, transport equipment, and various machinery in Ireland during 1997–

2002. The results show that in 2002, Ireland was only in two sectors: food and live animals, and manufactured goods have been highly beneficial.

Anoueh Tekeh (2) investigated the revealed comparative advantage of Iran's apple exports in comparison to the major exporting countries of this product during the period of 1995–1999 using the RCA measure. The results of the study indicate that Iran has a revealed comparative advantage in relation to the apple product, but the export structure of Iran's apple has weakened the competitive position due to the large fluctuations and the lack of a fixed and specific plan for the export of this product in Iran.

Karbasi and Piri (7) determined the comparative advantage of apricot production and export by using the RCA and Revealed Symmetric Comparative Advantage indices. The results showed that between 1994 and 2000, Iran had a comparative advantage, but in 2000–2005, with a significant decrease in apricot exports, this advantage was lost.

Serin and Civan (10) investigated the revealed comparative advantages of three products: tomatoes, fruit juice, and olive oil in Turkey. Two indices, RCA and CEP (Comparative Export Performance) have been used in this study. The results showed that Turkey has a high comparative advantage in the European market in terms of exporting olive oil and fruit juice and lacks such an advantage in the European tomato market.

Bano (4) investigated the export growth and production of New Zealand kiwi during 1984–2009. For this purpose, he used the RCA approach. The results showed that New Zealand always had the highest amount of export advantage, and Chile, Greece, and Italy were in the next place with high comparative advantage, but the trend of the advantage index of these countries was decreasing from 2000 to 2009. The advantage index of Iran has experienced a lot of fluctuation in the years 2000 to 2005, and in Portugal and France, the advantage number tends to one, but it is not possible to distinguish its advantage or not. The United States, Japan, and China have no advantage, and the main competitors of New Zealand are Chile and South Korea.

Khalid et al. (16) delved into the measuring the global trade competitiveness of Pakistan's cotton crop. The results of the study portrays that Pakistan has a competitive and comparative advantage in exports of cotton while having a disadvantage imports of cotton and also no specialization in its exports. Ahmad et al. (15) studied the analyzing export competitiveness of major fruits and vegetables of Pakistan. This study utilizes Balassa's index of revealed comparative advantage for the period 2001-2018. The findings of the study displayed that Pakistan enjoyed RCA index in case of fruits and vegetables.

The study aims to identify Afghanistan's export priorities of agricultural commodities and compare its export performance before and after the ECO bloc and free trade agreement formation. It also examines the export performance of agricultural products after a 15% tariff reduction of 80% of traded goods. The goal is to propose policy measures to boost agricultural commodity exports to the bloc.

### **Data source and methodology**

As stated in the previous chapters, the objective of this study is to determine the export priorities of Afghanistan's agricultural products. To achieve the aforementioned goal, secondary data on the country's exports for the three years of 1980, 1992, and 2021 have been compiled from the Food and Agriculture Organization. The data were analyzed using functional analysis. To determine the revealed

comparative advantage in the export performance of agricultural commodities, the Balassa index was computed.

### Balassa Index

In 1965, Balassa developed the comparative advantage index, which measures a country's export advantage for a specific commodity by dividing its share of exports by the total agricultural product exports of a region. This index is used to determine a commodity's comparative advantage in trade (1).

$$RCA_a^i = \frac{X_a^i / X_a^e}{X_m^i / X_m^e} \quad (1)$$

Where,  $RCA_a^i$  is the revealed comparative advantage of the  $i^{\text{th}}$  country for the  $a^{\text{th}}$  commodity.

$X_a^i$  is the total export value of a commodity, for example, Cereal, by the exporting country  $i^{\text{th}}$ .

$X_a^e$  is the total export value of the same commodity by all member states of ECO.

$X_m^i$  is the total value of the export of agricultural commodities by the exporting country.

$X_m^e$  refers to the total value of all agricultural commodities by ECO bloc.

When evaluating the relative advantage, this index performs exceptionally well by taking other export commodities' statuses into account (13). The Balassa index is an indicator that indicates a country's comparative advantage (RCA) in a specific commodity, with a value less than unity indicating no RCA, and higher values indicating comparative advantage.

## RESULTS AND DISCUSSION

The revealed comparative advantage (RCA) in agricultural trade was analyzed using the Balassa index, which is divided into four groups: no comparative advantage ( $RCA \leq 1$ ), weak ( $RCA \leq 2$ ), medium ( $RCA \leq 4$ ), and strong ( $RCA > 4$ ). The index was calculated for three years, 1980, 1992, and 2021, to assess the volatility of RCA indices and determine their stability as comparative advantage indicators.

Table 1 reveals the RCA of some agricultural commodities in Afghanistan by comparing the results of the years 1980, 1992, and 2021. After the establishment of the ECO bloc, as is evident from the available data, the comparative advantage of exporting five agricultural commodities. In the case of Afghanistan, the index indicates that flour of pulses and other fresh vegetables have no comparative advantage after the ECO trade agreement in 2021. Afghanistan can focus on exporting cereals and cotton due to their strong index value in the region. In other words, according to the agreement to reduce the 15 percent tariff on 80 percent of commercial products, the export performance of agricultural products has increased significantly for all selected products. These results substantially accorded with antecedent literature of Ahmad et al. (15) and Khalid et al. (16).

**Table 1. RCA for five agriculture commodities of Afghanistan in ECO bloc, 1980, 1992 and 2021.**

Commodity code	Commodity	Afghanistan		
		1980	1992	2021
1199.9	Cereals	0.00	0.00	20.58
1921.02	Cotton	0.77	0.96	5.10
23170.03	Flour of pulses	0.00	0.00	0.89
21419.99	Other dried fruit	0.00	0.53	1.36
1290.9	Other fresh vegetables	0.00	0.00	0.11

Source: FAo.org/faostat/en/#data/TCL

### Conclusion and policy implications

The Balassa index is an indicator used in export performance of commodities for calculating the relative advantage and disadvantage of a certain country in particular category of commodities as evidenced by trade flows. In this study for data analyzing in agricultural trade Balassa index was used. Economic Cooperation Organization is one of the vital bloc that was established in 1985. The objective of the study is, a comparison of the export performance of the member countries before and after the formation of the ECO union and ECOTA. The revealed comparative advantage of five agricultural export commodities, which include cereals, cotton, flour of pulses, other dried fruit and other fresh vegetables, has been evaluated. In case of Afghanistan, cereals and cotton displayed strong index value while before ECOTA, all of the selected agricultural commodities have a comparative disadvantage in the bloc. The study also concluded, cereals is the most valuable export commodity for Afghanistan in 2021 with the record of 20.58 RCA followed by cotton, other dried fruit, flour of pulses and Other fresh vegetables. It is usually observed that, the Afghanistan did not enjoy a strong, medium and weak comparative advantage for flour of pulses crop and other fresh vegetables.

Based on the obtained results, it is suggested that:

- After the establishment of the ECO bloc and ECOTA, the comparative advantage of exporting five agricultural commodities for Afghanistan significantly increased. Therefore, ECO union should reduce the trade barriers among themselves.
- The study reveals Afghanistan has strong, medium, and weak RCA in five agricultural commodities. To boost export promotion, the country should support export-oriented firms in international trade fares, encourage product quality improvement, and opt for insurance policies to protect exporters from commercial and political risks.
- Afghanistan should stop the export of agriculture commodities with no comparative advantage and focus on exporting more, which have a relatively better position in RCA in a particular commodity.

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