

Research Article

Export Performance of Agricultural Commodities in ECO Member States Using the Balassa Index

Ayaz Khan Naseri¹, Mohammad Naseer Haidari^{2*}

¹Dept. of Agricultural Economics and Extension, Kabul University, Kabul Province, Afghanistan

²Research Department, Al Taqwa University, Nangrhar, Afghanistan

*Corresponding Author: naseerhaidere@gmail.com

Received: 01/Mar/2024; Accepted: 03/Apr/2024; Published: 30/Apr/2024

Abstract— The paper compares the export performance of five agricultural commodities before and after the establishment of the Economic Cooperation Organization (ECO) bloc and the ECO trade agreement. Secondary data from the Food and Agriculture Organization website was collected to understand the comparative advantage in export performance. The Balassa index was computed to determine the comparative advantage. The study found that after the ECO bloc and ECO trade agreement, the comparative advantage of exporting five agricultural commodities to countries like Iran, Pakistan, and Turkey has not significantly increased. Afghanistan, for example, has no comparative advantage in flour of pulses and other fresh vegetables but can focus on cereals and cotton exports. Iran's dried fruit showed a strong comparative advantage in 1980 but dwindled significantly in 2021, which is supported by the positive value of SRCA. The study suggests that countries with strong, medium, and weak comparative advantages should accelerate export promotion policies, upsurge participation in regional trade fares, and improve product quality to remain competitive in regional and international markets.

Keywords— Trade, Balassa index, Stability, ECO bloc, RCA, RSCA

1. Introduction

Higher levels of consumption and investment improve the welfare of a country in international trade. It has positive implications for employment, income allocation, poverty, and the country's foreign exchange resources through the export of its products. The fact that global trade has an important role in the development of an economy. For increasing world trade, deepening economic integration is important. Trade within the bloc is one of the most direct forms of regional economic cooperation. Due to the free trade agreement, regional integration has developed [1], [29]. To achieve the benefits of economic integration, the Islamic Republic of Iran, the Islamic Republic of Pakistan, and the Republic of Turkey proposed an economic cooperative body of regional cooperation for development (RCD) in 1964, and the Forum was rechristened the Economic Cooperation Organization (ECO) in 1985. The membership of ECO was also expanded to ten by admitting Afghanistan in 1985 and six of the new independent countries, such as Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, in 1990. The bloc comprises almost 6 percent of the world population and expands over 8 million square kilometers of land, connecting the north to the south, the south and east to the west, Asia to Europe, and Eurasia to the Arab World [2]. In 2013, the exports of the countries of this organization around the world reached 371 billion dollars, and the imports reached 456 billion dollars. The share of this bloc's exports in

world exports is 2.2%, which is much lower than the potential. The export share of the ECO Union has remained between 2 and 3 percent in the past few years. Turkey's export share within the bloc reaches nearly 49 percent. The deep dependency of most member's economies on natural resources whose in markets (customers) are outside of the Eco region [3]. For instance, the economies of Iran, Turkmenistan, Azerbaijan, Kazakhstan, and Uzbekistan are dependent on sales of gas and oil to countries other than the ECO members, and this has limited the potential of intraregional trade. In terms of trade volume, Iran, Turkey, and Pakistan are also the most powerful in the bloc. In 1996, Iran's share of trade with other ECO nations was around 3 percent of its total exports and 5 percent of its imports. The figures for Turkey recorded 3.2 percent for export and almost 2.6 percent for import, while for Pakistan, export and import were noted at 2 and 3.3 percent, respectively. On the other hand, the three members of Central Asia—Kyrgyzstan, Turkmenistan, and Uzbekistan—have sizeable trade with other ECO member states, but even these are falling. A list of studies reported that except for some limited and disjointed efforts to reduce trade barriers for certain commodities (preferential tariff arrangements), no serious concerted effort has taken place in this regard [2]. Therefore, a preferential trading arrangement was concluded in 2003 in the region. Agreement ECOTA¹ 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 pave the way for the members to enter into a free trade agreement [3]. With this in mind, the current study was conducted with the aim of investigating the export performance of agricultural products in ECO's member countries. The performance of agricultural exports has always attracted policymakers' attention as it is an important source of foreign exchange earnings, a driver of crop diversification, and a driver of farm income improvements [4],[28]. Therefore, the intended study is planned with the following specific objectives:

1. To identify the export priorities of agricultural commodities and a comparison of the export performance of the member countries before and after the formation of the ECO bloc and free trade agreement.
2. Preparing a list of suitable policy measures to stimulate the export of agricultural goods from the country to the bloc.

Numerous studies have demonstrated the advantages of using various indicators to identify the export performance of agricultural commodities. Helleiner (1990) used the revealed comparative advantage index (RCA) to measure the business strategy of exporting goods in the short term. The RCA criterion indicates fluctuations in comparative advantage and strength of export goods, which can be measured by the set of commercial policies effective on RCA fluctuations [5]. Smyth (2005) examined comparative advantage in seven products in Ireland from 1997–2002, finding that Ireland had only a comparative advantage in the food and live animal sectors in 2002 [6]. Anoueh Tekeh (2006) found Iran had a comparative advantage in fruits exports, but the export structure weakened its competitive position due to large fluctuations and a lack of a fixed plan for exporting this product [7]. Karbasi and Piri (2007) determined the comparative advantage of apricot production and export using the RCA and Revealed Symmetric Comparative Advantage indices. Results showed that Iran had a comparative advantage between 1994 and 2000 but lost it in 2000–2005 due to a significant decrease in exports [8]. Serin and Civan (2008) found Turkey had a high comparative advantage in the European market for olive oil and fruit juice, but no advantage in the European tomato market [9]. Bano (2011) investigated the export growth and production of New Zealand kiwi from 1984–2009 using the RCA approach. The results showed that New Zealand always had the highest export advantage, followed by Chile, Greece, and Italy. The advantage index of Iran experienced fluctuation from 2000 to 2005, while Portugal and France had an advantage number of one. The United States, Japan, and China had no advantage, and New Zealand's main competitors are Chile and South Korea [10]. Naseri and Sidana's 2017 study examined the comparative advantage of agricultural commodities in SAARC countries using Balassa's index for 2013. The study found that Afghanistan's cereals lack comparative advantage, while cotton, fruits, and pulses have a strong index value [11]. Balogh (2024) delved into the agri-food trade competitiveness in Latin America and the Caribbean Region and found Chile to be the most competitive

country, whereas Venezuela ranks least competitive. While all countries have made progress in human, economic, and social development, their agriculture faces comparative disadvantages. Despite the global relevance of this topic, research on the patterns and dynamics in Latin America and the Caribbean is scarce compared to other regions [12]. Akram et al. (2024) investigated the bilateral trade relations between India and Sri Lanka, focusing on the South Asian Free Trade Area (SAFTA) and the India-Sri Lanka Free Trade Agreement (ISFTA). The analysis, which spanned from 1995 to 2020, revealed that bilateral trade performance has been sluggish, with no discernible effect of the agreements. The study used the "revealed comparative advantage" and "trade complementarity" indices to investigate the reasons for this lackluster performance. The findings confirmed that the countries are competitors rather than natural trading partners. Although substantial future surges in bilateral trade are unlikely, the paper suggests methods to strengthen trade [13]. Meghana et al. (2023) looked at the trade performance of India's groundnut exports from an economic perspective. According to the report, India has a comparative advantage in groundnut exports from 2011 to 2020 with an RCA of greater than 1. The positive RSCA score, which varied from 0.10 to 0.52 in value, supports this [14]. Gustrinazul et al. (2023) investigated the pepper commodity's export competitiveness in the global market. The study's findings showed that peppers from Brazil, Vietnam, and Indonesia have comparative advantages with more than one RCA indicator, indicating their excellent competitiveness in the global market [15]. Fahrul et al. (2023) investigated the examination of Indonesian palm oil. Analyzing Indonesian palm oil exports' competitiveness in the Asian and European markets was the study's main goal. According to the anticipated results, from 2014 to 2020, Indonesian palm oil products will have a competitive advantage of more than 1. [16]. Kavacik and Izgi (2024) delved into the analyzing global competitiveness of Turkish air conditioning industry. The study applied Ballasa's revealed comparative advantages index (RCA) and revealed symmetric comparative advantages index (RSCA) to assess competitiveness of sub-product groups, spanning from 2001 to 2021. The study exhibited that Turkey has competitiveness for 11 products, a near-limit competitiveness for 3 products, and a lack of competitiveness for 10 products [17]. SARICA and Dag (2023) proved the analyzing and forecasting competitiveness of Turkish cotton industry. They utilized revealed symmetric comparative advantages from 1961 to 2020. After observing cotton RSCA, the resulted indicated that cotton commodity has no competitive advantage and no specialization [18]. Maqbool et al., (2020) measured the cereal export competitiveness of Pakistan in global economy by utilizing diver indices. The data have been collected for cereal export of Pakistan from 2003 to 2018. The results of the study displayed that Pakistan had a comparative and competitive advantage in the cereal sector over the period of time [19]. The paper is divided into four sections: introduction, theoretical framework & methodology, results and discussion, conclusion & policy implications with future directions.

2. Theoretical Framework and Methodology

This chapter provides an explanation of the theoretical framework for understanding foreign trade, its causes and its significance. It also discusses the concept of comparative advantage and its supporting theories. Foreign trade is a pivotal factor in economic development, with classical and neoclassical economists focusing on its role as an engine of growth. However, radical economists like Perbisch, Myrdal, and Singer argue that it has historically worsened international inequalities, leading to wealthier and poorer countries. Business benefits include both static and dynamic benefits for founders: technology transfer, increased competitive power, returns relative to scale, and higher income levels. Trade consists of export and import components, and reducing the gap between them is essential for improving the balance of payments. Economists use commercial policies, such as import substitution and export promotion and development, to achieve this goal. Export development policy is preferred over import substitution due to its superior allocation of resources, efficiency, product quality, and competitiveness. The implementation strategy involves examining actual and potential export markets and prioritizing export products based on the size of the comparative advantage. This study aims to identify the export priorities of agricultural products in ECO member countries and evaluate their comparative advantages. It will discuss the most important agricultural products and evaluate indicators based on post-trade information. Various indicators of revealed relative advantage have been presented, and their evolution and evaluation will be discussed in the following.

2.1. Balassa Index

Balassa in 1965 obtained the comparative advantage index by dividing a nation's share of exports of a specific product and the total exports of agricultural products produced by the region under study [21]. This index is used to identify whether that product has a comparative advantage for export or not. This is defined as the comparative advantage in trade of major agricultural commodities that has been worked out using the Balassa Index estimated as per Equation (1).

$$RCA_{\alpha}^i = \frac{X_{\alpha}^i / X_{\alpha}^e}{X_m^i / X_m^e} \quad (1)$$

Where, RCA_{α}^i is the revealed comparative advantage of the i^{th} country for the α^{th} commodity.

X_{α}^i is the total export value of a commodity, for example, Cereal, by the exporting country i^{th} .

X_{α}^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.

The superiority of this index is in considering the status of other export commodities in determining the relative

advantage [21]. This index is known as the Balassa index. The estimated value of the index lies between zero (zero) and infinity. If the RCA index is less than one, it means that i^{th} country does not have RCA in a particular product. If it is more than one, it shows that the country has a comparative advantage in that item. Hinloopen and Marrewijk's 2001 study identifies four types of comparative advantage: weak, medium, and strong, RCA with less than one indicates no comparative advantage, from 1 to less or equal to two, from two to less or equal to four, and more than four, respectively [22]. The RCA index is criticized for its time instability, poor ordinal ranking property, asymmetry of distribution, uncertainty of the mean, unaddressed bias, and data distortions [21], [23], and [24]. It has a fixed lower bound at 0 and an unlimited upper bound, with 1 being the comparative-advantage neutral point [25]. The asymmetric property of RCA affects comparability across countries or commodities, as the mean is above the median and the distribution is skewed to the right. Pure RCA is not comparable on both sides of unity, and a country is considered specialized if the index ranges from zero to one or one to infinity [26]. This can lead to conflicting conclusions based on cardinal versus ordinal interpretations, as the potential for bias is greatest when comparisons are made between industries with wide differences in their underlying RCA distributions [23]. The RCA index is also criticized for ignoring economy size, tending to have "small-country bias," failing to count for import flows, and lacking additivity property.

2.1.1. Normalization of RCA Measures

Diverse methods have been developed to normalize the original RCA measure to address the identified issues. Hence, this modified RCA became the Revealed Symmetric Comparative Advantage [27]. The value of RSCA lies between -1 and +1. A modified formula is as below:

$$RSCA_{\alpha}^i = \frac{RCA_{\alpha}^i - 1}{RCA_{\alpha}^i + 1} \quad (2)$$

RSCA represents the revealed symmetric comparative advantage the country enjoys for a product when the value is above 0 (zero) and vice versa if the value is below 0 (zero). As stated in the previous chapters, the objective of this study is to determine the export priorities of ECO's agricultural products. For achieving the aforementioned goal, secondary data on ECO'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 know the revealed comparative advantage in the export performance of agricultural commodities before and after the establishment of economic cooperative organizations, the Balassa index was computed.

3. Result and Discussion

The Balassa index was used for analyzing the revealed comparative advantage (RCA) of specific goods in agricultural trade. The range of the Balassa index was between 0 and 1, while the comparative advantage would definitely be more than one. The Balassa index was calculated in order to compare the performance of exports

before and after the establishment of economic cooperative organizations for the years 1980, 1992, and 2021. Fluctuations in RCA indices can be evaluated and thus determined to what extent they are stable as indices of comparative advantage. Table 1 compares the results of the comparative advantage of some agricultural goods in 1980, 1992, and 2021 among ECO member countries. After the establishment of the ECO bloc, as is evident from the available data, the comparative advantage of exporting five agricultural commodities to countries such as Iran, Pakistan, and Turkey has not significantly increased. In the case of Afghanistan, the index indicates that flour of pulses and other fresh vegetables have no comparative advantage after the ECOTA in 2021. Afghanistan can focus on the export production of cereals and cotton in the region because these products have a strong index value. On the contrary, for the country of Azerbaijan, the flour of pulses and other fresh vegetables recorded a strong comparative advantage after the foundation of ECO, as well as the index value for other fresh vegetables pointedly noted at 70.50 in 1992. This is supported by the positive value of RSCA, which is noted at 0.97. In addition, in Iran, cereals reported 12.7 and other fresh vegetables recorded 64.3 RCA in 2021, while in the case of dried fruit, the RCA decreased from a strong 22.25 in 1980 to no comparative advantage in 2021, which is reinforced by the positive value of RSCA. The study's findings align with previous research by Tekeh (2006) and Karbasi and Piri (2007), which revealed Iran's comparative advantage in fruit exports was lost due to fluctuations and a lack of a fixed export plan, affecting its competitive position. The index also reveals that Pakistan enjoyed a strong comparative advantage only in the export of flour from pulses, whereas it had a weak index for cotton and other dried fruit after the formation of ECO in 1992. On the other hand, in the case of cotton, Pakistan lost its revealed comparative advantage from 1980 to 2021. The study reveals Pakistan's cereals lack comparative advantage, contradicting Maqbool et al.'s (2020) study on cereal export competitiveness in the global economy. It is usually observed that the central Asian countries enjoyed a strong and medium comparative advantage for cotton crops, except Kazakhstan. Table 1 also reveals that Turkey will have a weak comparative advantage for flour of pulses and other fresh vegetables in 2021, while in the case of most agricultural commodities, Turkey will have a comparative disadvantage, supported by a positive SRCA value.

Table 1. Revealed Comparative Advantage of Five Agriculture Commodities in the ECO Bloc, 1980, 1992, and 2021

Commodity	Afghanistan			Azerbaijan					
	1980	1992	2021	1980	1992	2021			
Cereals	0.00	0.00	20.58	n/a	0.00	1.36			
Cotton	0.77	0.96	5.10	n/a	1.20	6.92			
Flour of pulses	0.00	0.00	0.89	n/a	0.00	0.00			
Other dried fruit	0.00	0.53	1.36	n/a	0.00	7.01			
Other fresh vegetables	0.00	0.00	0.11	n/a	70.50	3.37			
Continue...									
	Iran			Kazakhstan			Kyrgyzstan		
	1980	1992	2021	1980	1992	2021	1980	1992	2021
	0.00	0.00	7.12	n/a	0.00	0.00	n/a	0.00	0.07
	0.20	0.02	0.00	n/a	0.31	0.87	n/a	0.77	3.41
	0.00	0.00	0.44	n/a	0.00	0.33	n/a	0.00	0.00

22.25	4.98	0.89	n/a	0.00	0.01	n/a	0.00	0.02
0.37	0.02	3.64	n/a	0.00	0.14	n/a	0.00	0.58
Continue...								
Pakistan			Tajikistan			Turkmenistan		
1980	1992	2021	1980	1992	2021	1980	1992	2021
0.00	0.00	0.04	n/a	0.00	0.00	n/a	0.00	1.29
1.26	1.21	0.01	n/a	2.89	27.54	n/a	3.78	10.18
0.00	5.36	0.00	n/a	0.00	0.00	n/a	0.00	0.00
0.29	1.04	0.19	n/a	14.44	0.00	n/a	0.00	0.00
0.00	0.15	2.63	n/a	0.00	0.13	n/a	0.04	0.03
Continue...								
Turkey			Uzbekistan					
1980	1992	2021	1980	1992	2021			
0.00	0.00	0.00	n/a	0.00	0.00			
0.90	0.05	0.48	n/a	2.08	2.74			
0.00	0.02	1.41	n/a	0.00	2.48			
0.10	0.44	1.09	n/a	0.67	1.70			
1.93	0.07	0.23	n/a	1.37	2.29			

Source: FAO.org/faostat/en/#data/TCL
 *N/A indicates not available the data.

The results of Table 2 support the results of Table 1, as RSCA is a modified form of RCA. Table 2 examines the comparative advantage of agricultural items in 1980, 1992, and 2021 among ECO member nations as well. In Afghanistan, flour of pulses and fresh vegetables have no comparative advantage following the ECOTA in 2021, with index values of (-0.06) and (-0.80), respectively. Afghanistan's high index values in cereals (0.91) and cotton (0.67) indicate a significant potential for export in the region. The current study results for Afghanistan align with Naseri and Sidana's 2017 study, which found that the country specializes in exporting cotton and fruits. In contrast to Afghanistan, Azerbaijan's fresh vegetables saw a high RSCA (0.97) with the founding of ECO in 1992. In addition, in Iran, cereals and fresh vegetables recorded RSCA (0.75) and 0.57 in 2021, respectively, while dried fruit's RCA decreased from a strong -0.06 in 1980 to no comparative advantage at the same year. Table 2 also displays that Pakistan has a strong RSCA in exporting pulse flour but a weak index for cotton and dried fruit after ECO formation in 1992. Cotton exports lost their advantage from 1980 to 2021 due to outdated farming practices, quality seed, improper crop management, and poor infrastructure (Maqbool et al., 2020). It is usually observed that the central Asian countries enjoyed a strong and medium comparative advantage for cotton crops, except Kazakhstan. Kyrgyzstan (0.55), Tajikistan (0.93), Turkmenistan (0.82), and Uzbekistan (0.43) enjoy RSCA. Uzbekistan has the best index value, except for cereals, among Central Asian countries. It should be noted that Turkey lost its RSCA for other fresh vegetables in 2021 while gaining an index value for pulse flour and dried fruit in the same year, as shown in Table 2.

Table 2. Revealed Symmetric Comparative Advantage of Five Agriculture Commodities in the ECO Bloc, 1980, 1992, and 2021

Commodity	Afghanistan			Azerbaijan		
	1980	1992	2021	1980	1992	2021
Cereals	-1.00	-1.00	0.91	n/a	-1.00	0.15
Cotton	-0.13	-0.02	0.67	n/a	0.09	0.75
Flour of pulses	-1.00	-1.00	-0.06	n/a	-1.00	-1.00
Other dried fruit	-1.00	-0.31	0.15	n/a	-1.00	0.75
Other fresh vegetables	-1.00	-1.00	-0.80	n/a	0.97	0.54

Continue...								
Iran			Kazakhstan			Kyrgyzstan		
1980	1992	2021	1980	1992	2021	1980	1992	2021
-1.00	-1.00	0.75	n/a	-1.00	-1.00	n/a	-1.00	-0.87
-0.67	-0.96	-1.00	n/a	-0.53	-0.07	n/a	-0.13	0.55
-1.00	-1.00	-0.39	n/a	-1.00	-0.50	n/a	-1.00	-1.00
0.91	0.67	-0.06	n/a	-1.00	-0.98	n/a	-1.00	-0.96
-0.46	-0.96	0.57	n/a	-1.00	-0.75	n/a	-1.00	-0.27
Continue...								
Pakistan			Tajikistan			Turkmenistan		
1980	1992	2021	1980	1992	2021	1980	1992	2021
-1.00	-1.00	-0.92	n/a	-1.00	-1.00	n/a	-1.00	0.13
0.12	0.10	-0.98	n/a	0.49	0.93	n/a	0.58	0.82
-1.00	0.69	-1.00	n/a	-1.00	-1.00	n/a	-1.00	-1.00
-0.55	0.02	-0.68	n/a	0.87	-1.00	n/a	-1.00	-1.00
-1.00	-0.74	0.45	n/a	-1.00	-0.77	n/a	-0.92	-0.94
Continue...								
Turkey			Uzbekistan					
1980	1992	2021	1980	1992	2021			
-1.00	-1.00	-1.00	n/a	-1.00	-1.00			
-0.05	-0.90	-0.35	n/a	0.35	0.47			
-1.00	-0.96	0.17	n/a	-1.00	0.43			
-0.82	-0.39	0.04	n/a	-0.20	0.26			
0.32	-0.87	-0.63	n/a	0.16	0.39			

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

*N/A indicates not available the data.

4. Conclusion and Policy Implication

The Balassa index is an indicator used in the export performance of commodities for calculating the relative advantages and disadvantages of a certain country in a particular category of commodities as evidenced by trade flows. In this study, for data analysis in agricultural trade, the Balassa index was used. The Economic Cooperation Organization is one of the vital blocs 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 result of the study revealed that, after the establishment of the ECO, the comparative advantage of exporting five agricultural commodities to countries such as Iran, Pakistan, and Turkey has not significantly increased. In the case of Afghanistan, cereals and cotton displayed strong index values, while before ECOTA, all of the selected agricultural commodities had a comparative disadvantage in the bloc. The study also concluded that cotton was the most valuable export commodity in Azerbaijan, Tajikistan, Turkmenistan, and Uzbekistan in 1992 and 2021. It is usually observed that Iran's dried fruit exhibited a strong comparative advantage over the region in 1980 but decreased significantly after ECOTA. On the other hand, all member countries of the region don't have a comparative advantage in the export of pulses, except Pakistan in 1992. It is usually observed that the central Asian countries enjoyed a strong and medium comparative advantage for cotton crops, except Kazakhstan. We must keep in mind that Turkey had a weak comparative advantage for flour, pulses, and other fresh vegetables in 2021, whereas in the case of most agricultural commodities, Turkey had a comparative disadvantage. In addition, the study suggests future research using indices to identify agricultural commodity export priorities and stabilized markets using the instability index, and proposes policy

measures to boost exports. Based on the study's findings, several policy suggestions are proposed:

- After the establishment of the ECO bloc and ECOTA, the comparative advantage of exporting five agricultural commodities to countries such as Iran, Pakistan, and Turkey has not significantly increased. Therefore, the ECO Union should reduce the trade barriers among themselves.
- As shown in the findings of this study, countries with strong, medium, and weak comparative advantages among five agricultural commodities. They should implement export policies, including supporting export-oriented companies to introduce their products as high-quality and desirable products in foreign markets. Also encourage and promote the selection of insurance policies to protect the exporter against commercial and political risks.
- Economic cooperation organization member countries 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.
- ECO organs with strong, medium, and weak comparative advantage should stop exporting agricultural commodities to countries that have a comparative advantage over that product and transfer their products to countries that have a comparative disadvantage.

The recommendations and future research can help policymakers understand and improve export development policies in ECO member countries, thereby promoting sustainable economic development.

Competing interest and Finding source

The authors assert that their work in this paper was not influenced by their financial interests and competing interest.

Data availability

Data will be made available on request.

Acknowledgements

The article explores export performance of agricultural commodities in ECO member states using the Balassa index. The author expresses gratitude to numerous individuals who contributed to the content of this article. As well, i want to express my gratitude to the editorial board for managing the article and to reviewers for their valuable comments, which significantly improved this research paper.

Authors' Contributions

Author-1 wrote the first draft of the manuscript. Author-2 helped in the structure of the article. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

References

- [1] H. W. Akram, D. Ciddikie, M. A. Khan, "India's trade relationship with SAFTA Countries: A review," *Journal of Indian, Research*, Vol.2, Issue.1, pp. 46-58, 2014.

- [2] M. Serum, M.S. Bahae, "Assessing Economic Cooperation Organization performance" *International Journal of Commerce and Management*, Vol.12, Issue.3, pp.148-177, 2001. doi.org/10.1108/eb047451.
- [3] H. Haider, "Regional Integration in ECO: an overview," *ECO Secretariat Staff Papers*, 2015.
- [4] A. Suresh, V. C. Mathur, "Export of agricultural commodities from India: Performance and prospects," *Indian Journal of Agricultural Science*, Vol.86, Issue.7, pp.776-83, 2016. doi.org/10.56093/ijas.v86i7.59741.
- [5] G. K. Helleiner, "Trade Strategy in medium-term adjustment," *world development*, Vol.18, Issue.6, pp.879-897, 1990. https://doi.org/10.1016/0305-750X(90)90010-U
- [6] A. D. Smyth, "Ireland's Revealed Comparative Advantage," *Quarterly Bulletin Articles*, Central Bank of Ireland, pp.101-114, 2005.
- [7] T. L. Anoueh, "Comparison of the relative advantage of Iran's export site with the major countries that export this product," *Journal of Agricultural Economics and Development*, Vol.58, Issue.15, pp.177-203, 2016.
- [8] A. Karbasi, M. Piri, "Determining the relative advantage of apricot production and export: a case study, East Azarbaijan province" *Journal of Research in Agricultural Sciences*, Vol.4, Issue.2, pp.226-237, 2017.
- [9] V. Serin, A. Civan, "Revealed Comparative Advantage and Competitiveness: a Case study for Turkey towards the EU," *Journal of Economic and Social Research*, Vol. 10, Issue 2, PP. 25-41, 2008.
- [10] S. Bano, S. Frank, "New Zealand Kiwi fruit Export Performance: Market Analysis and Revealed comparative Advantage," *Working Paper in Economics*, University of Waikato: Hamilton, NZ, USA, 2011.
- [11] A. K. Naseri, B. Sidana, Export performance of india's agriculture commodities to SAARC nations," *Agriculture and food science*, Vol. 14, Issue 3, 2017.
- [12] J. M. Balogh, "Agri-food Trade Competitiveness in Latin America and the Caribbean Region," *Value chain dynamics in a Biodiverse Environment*, PP. 15-36, 2024. DOI: 10.1007/978-3-031-49845-9_2
- [13] H.W. Akram, A. Ahmad, L. P. Dana, A. Khan, & S. Akhtar, "The bilateral trade relations between the two important countries of South Asia, India and Sri Lanka" *Sustainability*, Vol. 16, Issue 2, PP. 582, 2024.
- [14] J. Meghana, K.N. Ravi Kumar, K. B. Vedamurthy, K. U. Devi, Srinivasa Rao and M. Rama Devy, "An economic analysis of trade performance of groundnut export from india," *The pharma Innovation journal*, Vol. 12, Issue 5, PP. 910-914, 2023.
- [15] S.H. Gustrinazul, R. Fajar, L. Putri, "Export competitiveness analysis of pepper commodity in the international market," *Jurnal Agroteknologi dan Agribisnis*, Vol. 7, Issue 2, PP.135-142, 2023.
- [16] R. M. Fahrul, S. KetutM Nusril and Sriyoto, "Analysis of Indonesian palm oil competitiveness in the main export destination countries," *Indonesian journal of agricultural research*, Vol. 6, Issue 2, PP. 68-78, 2023.
- [17] M. Kavacik, F. Izgi, "Analysing global competitiveness of Turkish air conditioning industry," *Turkish Journal of Engineering*, Volume: 8 Issue: 2, PP 209-234, 2024.
- [18] D. SARICA, M. M. Dag, "Analysing and Forecasting competitiveness: the cse of the Turkish cotton industry," *Economic Engineering in Agriculture & Rural Development*, Vol. 23 Issue 4, 2023.
- [19] M. S. Maqbool, T. Mohmood, S. Hussain, M. Ashraf, "Analysis of trade competitiveness of Pakistan cereal Products in global Prospective," *Review of Economics & Development Studies*, Vol. 6, Issue 1, 97-106, 2020.
- [20] B. Balassa, "Trade Liberalization and Revealed Comparative Advantage," *The Manchester School*, Vol. 33, Issue 2, PP.123-99, 1965.
- [21] T. L. Vollrath, "A theoretical evaluation of alternative trade intensity measures of Revealed Comparative Advantage," *Weltwirtschaftliches Archiv*, Vol. 127, Issue 2, PP. 265-280, 1999.
- [22] J. Hinloopen, C. V. Marrewijk, "On the empirical distribution of the RCA," *Weltwirtschaftliches Archiv*, Vol. 137, PP 1-35, 2001.
- [23] A. J. Yeats, "On the Appropriate Interpretation of the Revealed Comparative Advantage Index: Implications of a Methodology Based on Industry Sector Analysis," *Weltwirtschaftliches Archiv*, Vol. 121, issue 1, PP. 61-73, 1985.
- [24] E. Leromain, G. Orefice. "New Revealed Comparative Advantage Index: Dataset and Empirical Distribution." *International Economics*, Vol. 139, issue.1, pp.48-70, 2014.
- [25] R. Yu, C. Junning, L. PingSun "The Normalized Revealed Comparative Advantage Index," *Annals of Regional Science*, Vol. 43, PP. 267-282, 2009.
- [26] L. Benedictis, M. Tambari, "A Note on the Balassa Index of Revealed Comparative Advantage," *Working Paper No.158*, Università de Macerata and Università de Ancona, Italy, 2001
- [27] B. Dulum, K. Lauresn, G. Villumsen, " structural change in oecd export specialization patterns: de-specialisation and statistics," *Internation Review of Applied Economics*, Vol.12, pp.447-467, 1988.
- [28] B. Anjali, " Influence of mathematical – Kinetic Models for the Removal of Organics and Nutrients from Municipal Wastewater in Moving Bed Biofilm Reactor," *International Journal of scientific Research in Multidisciplinary Studies*, Vol.5, Issue.8, pp.66-76, 2019.
- [29] A.A. Zelianin, Resource as Tools of Geopolitics: the Case of Euro-Russian Energy trade," *International Journal of scientific Research in Multidisciplinary Studies*, Vol.5, Issue.11, pp.59-63, 2019.

AUTHORS PROFILE

Ayaz Khan Naseri, an Afghan academic with a B.Sc. from Nangarhar University, M.Sc. from Punjab Agriculture University, and a Ph.D. in Agricultural Economics from Ferdowsi University of Mashhad, is currently an Assistant Professor at Kabul University's Department of Agriculture Economics and Extension. He has held various positions since 2011, including Assistant Professor at Kabul University, Dean of Agriculture Faculty at Laghman University, and Vice Chancellor at Laghman University. Naseri has published six research papers in reputable international journals and five in national.



Mohammad Naseer Haidari Studied BA Economics (Hon) From Nangrhar University and MS Management Science Finance From IN University Peshawar Currently Lecturer and Head of Research and Development Department at Al Taqwa University Nangrhar. He has translated two books and So far 9 Research Paper have been Published in Valid International Journals. He has Three Years' Experience in University Lectureship and Scientific Research.

