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International Trade of Indian Cashew Nut: Customs Duty Analysis and Direction of Trade by Markov Chain Analysis

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Abstract

The average value of Indian exports of cashew kernel was Rs 4710.16 crores per annum. The top five country-wise export share (in value terms) shows that USA was the number one importer with the average export share of 20.17 per cent, followed by UAE (18.95 per cent), Netherlands (8.99 per cent), Japan (8.48 per cent), Saudi Arabia was 7.96 per cent in total exports share and the export share of other countries was 22.62 per cent. It is also evident from Markov chain analysis that United Arab Emirates (UAE) was one of the most stable markets among the major importers of Indian cashew as reflected by the higher probability of retention at 1.00, i.e., the probability that UAE retains its at exports share over the study period was 100 per cent. Netherlands retains its exports share was 92.00 per cent. Thus, UAE and Netherlands were the most reliable and loyal markets for Indian cashew. In nutshell, the study recommends that increase in export incentives (transport assistance) for exports of cashew kernel and salted/roasted cashew, reduction of import duty to zero per cent by their exporting partners, duty free import of raw cashew-nuts should be continued from least developed African countries, the imports of broken and whole cashew kernels should be free if Cost, Insurance and Freight (CIF) value is above Rs 700 per kg for broken and Rs 740 per kg for whole cashew, reduction in International Goods and services tax (IGST) and reduction in basic customs duty of roasted/salted cashew kernels, cashew kernel broken, whole and raw cashew nut. The study also recommended to strengthen food safety and quality standards at production, processing and storage levels to advance Cashew trade performance of India to regain its number one position in the globalized economy.

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Direction of Trade, Customs duty, Cashew nut, Indian exports, Markov chain analysis and International Trade.

Introduction

In India cashew is being grown in an area of 10.27 lakh hectares with a total production which ranges between 7.25 lakh tonnes to 7.50 lakh tonnes of raw nuts and unit area productivity of 706 kg/ha. India is the second largest producer of raw cashew nut contributing around 20 per cent of global production (Food and Agriculture

Organization, 2021). In agricultural commodity trade, Cashew is one of the India's foreign exchange earners. Indian Cashew industry is almost export oriented.

India is the major exporter of cashew kernels and earns a sizeable amount of foreign exchange to the tune of Rs 4710 crores per annum (Directorate General of Commercial Intelligence and Statistics, 2021). India

exports cashew kernels to more than 100 countries mainly to USA, UAE, Netherlands, Saudi Arabia and Japan.

The average quantity of exports of cashew kernel was 98516 tonnes per annum during the study period (2012-2021) from India in addition to other by-products like Cashew nut shell liquid and Cardanol. Cashew exports provide employment to about 10 lakh workers.

In general, Indian cashew exporters are facing problems like food safety and quality standards, stiff competition from other exporting countries, inconsistency in import and export policies and tariff rates, quality of product, fluctuation of price in international market and fluctuation in demand for products etc.

The success of cashew trade and its competitiveness largely depends on the cost-effective management of operations like production of raw cashew nut, processing, trade of cashew nut in the supply chain. Competitive trade leads to enhance the profits of exporters. With changing production, consumption and food habits, export of cashew from India is also changing its direction. Keeping these facts in view, this research study was conducted with the major objective to analyze the per cent share of exports to different countries and to examine the changing direction of exports of cashew.

Materials and Methods

The secondary data on country wise cashew kernel exports details were collected from Directorate General of Commercial Intelligence and Statistics website (DGCIS, 2021) Ministry of Commerce and Industry, India, APED Aagri-exchange website (APEDA, 2021) and Food and Agriculture Organization (FAO, 2021) website.

The details of customs duty for Cashew and its products charged by India and charged by other countries were collected from website of International Trade Centre (ITC, 2021) and website of Central Board of Indirect Taxes and Customs (CBITC, 2021). The reference period for secondary data collected for this study pertains to the year 2011-12 to 2020-21. The data collected from the published sources pertains to the latest year of the availability of data. Per cent share of exports to different countries was analysed by tabular analysis method. The shift in exports was examined by employing Markov chain analysis. The customs duty for Cashew and its products was arranged in tabular form.

Markov chain analysis

In this study, the direction of trade and the changes in exports were examined by employing first order Markov chain model. There is growing awareness of the usefulness of this technique for analysis and forecasting in many fields including exports particularly in the case of variables in the process of constant but gradual change.

The share of trade of cashew from India (X_{it}) to a particular market (j) at time 't' is considered as a random variable and this depends only on its past trade of the particular markets. In the context of current analysis, major importing markets of Cashew from India were considered. The average trade to particular market was considered to be a random variable following a first order Markov process.

The average trade to a particular country was considered to be a random variable which depends only on the past trade to that country, which can be denoted algebraically as

$$X_{jt} = \sum_{i=0}^{n-1} X_{it-1} \cdot P_{ij} + e_{it}$$

Where,

E_{jt} = Exports from India to the j^{th} country during the year t.

E_{it-1} = Exports to the i^{th} country during the year $t - 1$.

P_{ij} = Probability that exports will shift from the i^{th} country to j^{th} country.

E_{jt} = Error-term which is statistically independent of e_{jt-1} ,

and r = Number of importing countries.

The transitional probability (P_{ij}) is central to Markov chain model which can be arranged in a ($c \times r$) matrix, has the following properties.

$$0 < P_{ij} < 1$$

$$\sum P_{ij} = 1, \text{ for all 'i'}$$

The transitional probability P_{ij} indicates the possibility that trade will switch over from the country 'i' to other country 'j' with the passage of time.

The probabilities P_{ij} for $i \neq j$ indicate the gain or losses in trade of each of the importing country.

The probability P_{ij} for $i = j$ (diagonal probabilities) indicates probability of retention of an importing country (Kanti Swarup *et al.*, 2001).

Results and Discussion

Customs duty charged by India

Table 1 displays that the cashew importing countries are charging different customs duties to different countries for import of raw cashew nut and cashew kernels. India is charging basic customs duty from other countries for their imports in the range of 30 to 70 percent, IGST levy (12 per cent) and Social Welfare Surcharge (10 per cent).

Tariff concessions

1. In the case of other categories of cashew nut under GSTP (Global System of Trade Preferences among Developing Countries) India has extended duty free imports of Cashew nut shelled (08013200), cashew kernel wholes (08013220), Cashew kernel broken (08013210) and cashewnut-others (08013290) for least developed countries (LDC) countries.
2. Roasted cashew kernels and further value-added cashew products which comes under chapter 20 of the customs tariff under various Free Trade Agreements have been fully exempted from payment of basic customs duty by India.

Customs duty charged by other countries

Table 2 shows that the cashew importing countries are charging different customs duties to different countries for import of raw cashew nut and cashew kernels. India is paying customs tariffs (applied tariff) to other countries for their exports in the range of 0 to 5 percent

Direction of exports of Cashew kernel

It was found from the table 3 that U S A, UAE, Netherland, Japan and Saudi Arabia were the top five importing countries from India. The country-wise export share (in value terms) analysis shows that USA was the number one importer with the average export share of 20.17 per cent, followed by UAE (18.95 per cent), Netherland (8.99 per cent), Japan (8.48 per cent) and Saudi Arabia was 7.96 per cent in total exports share. The country-wise export share was less than three

percent for the following countries namely Germany (2.72 per cent), Spain (2.64 per cent), Belgium (2.33 per cent), France (2.30 per cent) and U K (1.99 per cent) in the top ten importing countries list.

It was concluded from the above analysis that total export share of top ten importers was 77.38 per cent and the export share of other countries were 22.66 per cent in total exports share. This study also confirmed that more than 40 per cent of Indian exports of Cashew Kernels were to USA and Europe union countries only and the total export share to Asian countries was more than 35 per cent during the study period.

Markov chain analysis for Direction trade

Based on the per cent share of exports to different countries, the major five countries were selected to study the shift in Cashew exports by Markov chain analysis method. The five countries which selected were U S A, UAE, Netherlands, Japan and Saudi Arabia.

It is evident from table 4 that United Arab Emirates (UAE) was one of the most stable markets among the major importers of Indian cashew as reflected by the higher probability of retention at 1.00, i.e., the probability that UAE retains its at exports share over the study period was 100 per cent.

Netherlands retains its exports share was 92.00 per cent. Thus, UAE and Netherlands were the most reliable and loyal markets for Indian cashew. Japan retained its export share of 44 per cent. The remaining countries such as Saudi Arabia and USA had the retention of 19 per cent and 9 per cent of its original share. This implied that they were also the stable importers of Indian cashew kernel. The 'other' countries showed high stability, which retains its export share over the study period was 100 per cent of its original share.

Amongst the five countries, USA was the major loser of market share of Indian Cashew kernels because its lost 91 per cent share to UAE. Netherland lost 8 per cent to Japan. Japan lost 56 per cent to Saudi arabia.

Saudi arabia lost 81 percent of share to other countries. It was also reported and confirmed that due to entry of Vietnam in global market in the year 2008, the export share of Vietnam had increased to USA and Europe during the period from 2009-2019 and Indian export share to USA and Europe had decreased accordingly (United Nations Conference on Trade and Development, 2021).

Table.1 Customs Tariff Head from India (Import duty) per Kg of Cashew.

Customs Tariff Head from India (Per cent)						
S. No	Particulars	Cashew nut, roasted, salted or roasted and salted	Cashew nuts in shell	Cashew nuts in shelled	Cashew kernel, broken	Cashew kernel, whole
	HS CODE	08011220	08012100	08012200	08013210	08013220
1	Basic Customs Duty	70	30	30	30	30
2	Social Welfare Surcharge	10	10	10	10	10
3	IGST Levy	12	12	12	12	12
4	Total Duty	98.24 %	48.96 %	48.96 %	48.96 %	48.96 %
	Bound Tariff	100 %	100 %	100 %	100 %	100 %

Source: CBITC (2021).

Table.2 Customs duty charged by other countries.

S. No.	Country Name	Customs duty in per cent (MFN applied tariff) for Cashew nuts, fresh or dried, shelled (HS CODE -08013200)
1	U S A	0
2	UAE	5
3	Netherland	5
4	Japan	0
5	Saudi Arabia	5
6	Spain	0
7	Germany	0
8	Belgium	0
9	France	0
10	U K	0

Source: ITC (2021)

Table.3 Top 10 Country wise export share of Cashew Kernel from India (Period 2011-12 to 2020-21).

S. No.	Country Name	Country wise percent share (Rs. In Crores)
1	USA	20.17
2	UAE	18.95
3	Netherlands	8.99
4	Japan	8.44
5	Saudi Arabia	7.96
6	Spain	3.16
7	Germany	3.05
8	Belgium	2.33
9	France	2.30
10	UK	1.99
11.	Others	22.66
	Total	100.00

Source: Author calculations

Table.4 Transitional probability matrix of Cashew kernel exports (2011-12 to 2020-21).

From	To					
	U S A	United Arab Emirates	Netherlands	Japan	Saudi Arabia	Others
U S A	0.09	0.91	0.00	0.00	0.00	0.00
United Arab Emirates	0.00	1.00	0.00	0.00	0.00	0.00
Netherlands	0.00	0.00	0.92	0.08	0.00	0.00
Japan	0.00	0.00	0.00	0.44	0.56	0.00
Saudi Arabia	0.00	0.00	0.00	0.00	0.19	0.81
Others	0.00	0.00	0.00	0.00	0.00	1.00

Source : Author calculations

Conclusion

The country-wise export share (in value terms) analysis shows that USA was the number one importer with the average export share of 20.17 per cent, followed by UAE (18.95 per cent), Netherland (8.99 per cent), Japan (8.48 per cent) and Saudi Arabia was 7.96 per cent in total exports share. The research also concluded that United Arab Emirates (UAE) was one of the most stable markets among the major importers of Indian cashew as reflected by the higher probability of retention at 1.00, i.e., the probability that UAE retains its at exports share over the study period was 100 per cent. Netherlands retains its exports share was 92.00 per cent. Thus, UAE and Netherlands were the most reliable and loyal markets for Indian cashew.

Policy implications

Based on the insight provided by the study, the following policy implications are being suggested that India could make the Cashew trade highly export oriented and export competitive at international level.

1. The export incentives (transport assistance) for exports of cashew kernel and salted/roasted cashew may be increased to 10 percent as per their total value of exports.
2. India may negotiate with its major exporting partners viz. UAE, Netherlands, Japan and other countries to reduce their import duty to zero per cent or at the lowest possible level.
3. Duty free import of raw cashew-nuts should be continued under Duty Free Tariff Preference (DFTP) Scheme from Least Developed Countries (LDCs) since more than 80 percent of Indian raw cashew nut imports from least developed African countries.

4. The imports of broken and whole cashew kernels should be free if CIF (Cost, Insurance and freight) value is above Rs 700 per kg for broken and Rs 740 per kg for whole cashew.
5. International Goods and services tax (IGST) may be to reduced to 7 per cent from existing 12 per cent.
6. Basic customs duty of roasted/ salted cashew kernels may be reduced to 50 percent from the existing 70 per cent and for other cashew categories namely cashew kernel broken, whole and raw nut may be reduced to 20 per cent from existing 30 per cent.
7. Cashew nut shell liquid (CNSL) exports should be promoted to avoid wastage of cashew nut shell and increase the use of shell in effective manner.
8. Food safety and quality standards may be strengthened at production, processing and storage levels to access foreign markets like Europe, USA and other developed countries (as different countries following different quality standards) and evade rejection of export consignments due to mycotoxin and pesticide residue problem.

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