Economic Affairs, Vol. **70**(02), pp. 273-281, June 2025

DOI: 10.46852/0424-2513.2.2025.11



RESEARCH PAPER

Analyzing India's Dairy Trade: A Quantitative Approach

Manpreet Kaur¹, Surbhi Bansal² and Lovepreet Singh^{3*}

¹Baba Farid Law College, Faridkot, Punjab, India

²Department of Economics, Kamla Lohtia Sanatan Dharam College, Ludhiana, Punjab, India

³Faculty of Agriculture, Guru Kashi University, Talwandi Sabo, Punjab, India

*Corresponding author: lovepreet.singh@gku.ac.in (ORCID ID: 0000-0002-3905-3500)

Received: 16-03-2025 Revised: 22-05-2025 Accepted: 03-06-2025

ABSTRACT

The present study is an attempt to analyse the growth, composition, comparative advantage and competitiveness of Indian trade in dairy products during 2001-2022. Despite the largest milk producer as well as export growth, the share of quantity exported to total milk production has remained less than 0.05% indicating the heavy domestic consumption of Indian population on dairy products. Similarly, it has also remained a minor player in international market and its share of total national exports has also remained less than 1%. USA is main buying market for India's dairy exports. During the entire time period, the country experienced no comparative advantage in export of dairy products. However, India's exports of dairy products have been competitive during the period except 2010. In this context, the study suggested to put major emphasis on export of high-value dairy products, value addition of low value dairy products and increasing the milk yield of milch animals.

HIGHLIGHTS

- **o** India, despite being the largest milk producer, exported less than 0.05% of its milk production and contributed under 1% to national exports due to high domestic consumption.
- The composition of dairy trade shifted, with rising exports of butter and milk fats and growing imports of whey and cheese; the USA remained the main export market.
- India lacked comparative advantage but showed export competitiveness (except in 2010); the study suggests focusing on high-value exports, value addition, and improving milk yield.

Keywords: Dairy products, Export, Import, Simpson Index, Revealed Comparative Advantage, Revealed Competitiveness

With the introduction of new economic reforms in 1990, the Indian economy registered a significant rise in the volume of international trade due to reduction in trade barriers in terms of tariff duties, quotas etc and fall in trade costs. Hence, with the introduction of economic reforms and thereby, liberalize the international trade, it was expected to change the composition in Indian export basket particularly towards agricultural and allied commodities (Jagdambe, 2016). In this context, with the increase in export potential for agricultural products, the Indian agricultural system is diversifying towards allied activities such as livestock, fisheries, agro-forestry etc. (Fayaz and

Ahmad, 2020). Although, the export potential of these agricultural and allied commodities has increased, but the importance of these products has been neglected in economic reforms. Therefore, by taking into consideration, the role of agricultural commodities in international trade, India may gain comparative advantage in these types of commodities. Apart from increasing the foreign exchange reserves and correcting the balance of

How to cite this article: Kaur, M., Bansal, S. and Singh, L. (2025). Analyzing India's Dairy Trade: A Quantitative Approach. Econ. Aff., **70**(02): 273-281.

Source of Support: None; Conflict of Interest: None



trade deficit, the increase in export potentiality may also revive the economic condition of farmers as despite a significant decline of agricultural and allied activities in the share of Gross Value Added (GVA), still around 55% of its population is directly and indirectly engaged in these types of activities.

Among all these activities, the enterprise of milk production is considered as the pro-poor enterprise as it is a source of income and employment for the vulnerable sections of the rural society viz. landless, marginal and small farmers who constitute in bulk. India ranks first in the livestock population constituting around 11.6 per cent of the livestock population in the world (Baby, 2017). The demand for milk and milk products has also grown significantly due to many demand driven variables, including rising per capita income, increased health consciousness, rising level of education, rapid urbanisation etc. (Kaur and Singla, 2018). India has also the distinction of lowest cost milk production (Joshi, 2014). India is the largest milk producing country in the world as it accounts around 17 per cent of the global milk production (Anonymous, 2019). Milk production in India has experienced remarkable growth as it rose from around 20 to 187.7 million tonnes from the period 1960-61 to 2018-19, respectively. This increased milk production was the result of one of world's largest dairy development programme of 26 year programme (1970-1996) viz. 'Operation Flood Programme' due to which India jumped from 50th rank in milk production during 1970 to rank first during 1997. Before, 1999, India was a net importer of dairy products. As a consequence of successful completion of the Operation Flood Program, despite being the largest milk consumer, India also became the net exporter of dairy products after 2000 (Kumar et al. 2011; Parida et al. 2019). Due to net exporter in dairy products, trade in Indian dairy sector has emerged as a source of foreign exchange earnings. The Middle East, South Asia, South East Asia, and USA are the major markets for India's dairy products (Parida et al. 2019). In this context, the present study was conducted to investigate the trend and composition of export and import of Indian dairy products, product-wise comparative advantage, and competitiveness of trade in Indian dairy sector during 2001-2022. Although, a few studies have been conducted on the trade potential

of Indian dairy sector but none of the studies have been carried out to analyse the product-wise and year-wise trend of trade in dairy products in terms of comparative advantage and competitiveness.

MATERIALS AND METHODS

The entire study is based on secondary data taken from Trade Map and The Agricultural and Processed Food Products Export Development Authority (APEDA) for the period of 2001-2022. APEDA provides wide range of agricultural processed food products for agricultural export promotion of various agricultural products such as fruits, vegetables, dairy, poultry, meat and so on. However, APEDA provides only India's trade performance and secondly, it is concerned with only some agricultural commodities. Therefore, in order to address this issue, data form Trade Map was also used to analysed. Trade Map concludes a wider trade perspective as it takes into consideration both the import and export performance of all th countries and in case of all agricultural and nonagricultural commodities. For retrieving the data from Trade map, 4 digits HS code was used to analyzed.

Different concepts and methods used in the study are outlined below.

Compound Annual Growth Rate (CAGR)

This was computed for calculating the yearly growth of export and import of dairy products by using the following formula:

Where, Y = controlled variable; a = Intercept; b = slope coefficient; t = time; e = error term. The logarithmic form of equation (1) can be obtained as follows.:

$$LnY = Lna + tLnb + e$$
 ...(2)

The CGR equation as follows:

$$CGR = [Anti Ln \text{ of } Ln (b) - 1] \times 100$$

Simpson Index

The diversification in export as well as import of



dairy products was measured by Simpson Index. It was calculated on 4 digits HS code. The index was calculated by using the following formula;

Simpson Index =
$$1 - \sum Ai^2 / A^2$$

Where, Ai = export value of ith dairy product, Ai = export value of total dairy products. The value of Simpson Index ranges between 0 to 1 in which zero value indicates perfect concentration of trade towards an individual dairy product whereas one indicates total diversification (Anjum and Khan, 2017).

Revealed Comparative Advantage (RCA)

The concept of RCA reflects the export potential or relative trade performance of individual countries in particular commodities (Gopal *et al.* 2009). It indicates if a country is in the process of expanding the products in which it has a trade potential, as opposed to circumstances where the number of products that can be competitively exported is static. Therefore, in present study, this was used to study the relative trade performance of India in world market in case of dairy products. The original index of RCA was first formulated by Balassa (Jagdambe, 2016) and this export based RCA can be written as follows:

$$RCA = \frac{X_{ij}}{X_{i}} / \frac{X_{wj}}{X_{...}}$$

 X_{ij} = value of country i's (India) export of 'j' dairy products; X_i = value of country i's (India) total exports; X_{wj} = value of world exports of 'j' dairy products; X_{w} = value of total world exports.

If the value of RCA index is greater than one, it shows that country had comparative advantage in export of those products and vice-versa. Since, this method takes into consideration only the value of exports of the product; hence it is also known as *Relative Export Advantage (RXA)*.

However, The categorization of RCA index values exported as static has served as the foundation for the interpretation of RCA index values (Hinloopen and Marrewijk, 2001; Startiene and Remeikiene,

2014), where Category A: values vary from 0 to 1; Category B: value between of 1 to 2; Category C: values between 2 to 4; Category D: values above 4. In Category A: , it includes all the products by which a country does not have revealed comparative advantages; another category i.e., B,C,D approximately divide the products related to revealed comparative advantage into three levels: "weak comparative advantage" – category B: "medium comparative advantage" – category C:, and "strong comparative advantage" – category D.

Revealed Symmetric Comparative Advantage (RSCA)

The modification of RCA index – symmetric revealed comparative advantage (Startiene and Remeikiene, 2014) – was calculated in the second stage of the research in order to prevent the problem of asymmetry:

$$RSCA = \frac{(RCA - 1)}{(RCA + 1)}$$

The RSCA ranges from -1 to +1 and avoids the problem of zero values. It is free from the problem of skewness (Jagdambe, 2016). If the corresponding value of RSCA is positive, a commodity have comparative advantage in its exports and vice-versa.

Apart from RCA and RSCA, the export competitiveness was also analysed by using the two another indices formulated by Vollarth as along with exports, these indices also use imports. These two indices are Revealed Trade Advantage (RTA) and Revealed Competitiveness (RC).

Relative Trade Advantage (RTA)

It includes both Relative Export Advantage (RXA or RCA) as well as Relative Import Advantage (RMA) and is calculated with the difference between RXA and RMA where;

$$RMA = \frac{\frac{M_{ij}}{M_i}}{\frac{M_{wj}}{M_w}}$$

 M_{ij} = value of country i's (India) import of 'j' dairy products; M_i = value of country i's (India) total

imports; M_{wi} = value of world imports of product 'j' dairy products; M_{vv} = value of total world imports. Hence.

$$RTA = RXA - RMA$$

Or in other words, RTA can be written as;

$$RTA = \frac{X_{ij}}{X_{i}} / \frac{M_{ij}}{X_{wj}} - \frac{M_{ij}}{M_{i}} / \frac{M_{wj}}{M_{w}}$$

Revealed Competitiveness

This index was derived by taking the logarithm of Relative Export Advantage i.e. Ln (RXA) and logarithm of Relative Import Advantage i.e. Ln RMA.

$$C = Ln RXA - Ln RMA$$

By expressing it in logarithmic form, the indices become symmetric through their origin. A positive value of all indices, i.e. RTA and RC revealed a comparative advantage of country with reference to the commodity (Gopal et al. 2009).

Cuddy Della Valle Instability (CDVI) Index

For finding the growth and instability in the export and import of dairy products, Cuddy Della Valle Index was calculated. As, the simple coefficient of variation overestimates the level of instability in time-series data, therefore, the Cuddy-Della Valle index was used to correct the coefficient of variation (Krishan and Chanchal, 2014). The formula for CDVI index is as follows;

$$CDVI = CV\sqrt{1 - R^2}$$

Where CV is the coefficient of variation in percent, and R^2 is the coefficient of determination from time trend regression adjusted by degree of freedom.

Before, calculating this index, CDVI reomes the impact of any long-term trendes in time-series and provides a more precise picture of short term fluctuations. Higher the value of this index, greater will be the instability and vice versa.

Nominal Protection Coefficient (NPC)

NPC was used to calculate the export competitiveness of dairy products in India. The net present value (NPC) signifies the variation in pricing between domestic and international borders, which helps to describe the extent of protection given in a country (Prajapati et al. 2022). The occurrence of some market interventions such as taxes, subsidies are the major causes of discrepancies.

$$NPC = \frac{P_{id} * ER}{P_{ib}}$$

NPC = Nominal Protection Coefficient

ER = Exchange Rate

 P_{id} = Domestic wholesale price (in domestic currency)

 P_{ib} = Border wholesale price (in foreign currency)

However, as the wholesale price cannot be considered as export price and due to the lack of accuracy, the domestic wholesale price cannot reflect the actual level of competitiveness. Hence, in order to overcome this issue, the India's unit price of export (Value of export/Quantity Exported) was compared with global unit rate (Prajapati et al. 2022).

$$NPC = \frac{\text{Export price in India}}{\text{Export price in World}}$$

Unit price were calculated as follows;

Export Price (US\$/tonne) =
$$\frac{\text{Export Value}}{\text{Export Quantity}}$$

If NPC ratio is less than 1, it means that the country has competitive advantage of that commodities and further incentives for export or the commodity is not protected in which producer are taxed and consumer are subsidized. On other hand if value of NPC is more than one which means commodity is protected by government under free trade prices which are assumed to be lower (Khorajiya et al., 2018).



RESULTS AND DISCUSSION

Growth and Instability of India's trade in Dairy Sector

Trend in trade flow of India's dairy products presented in Table 1 depicts that during 2022, India registered a highest surplus in Balance of Trade (US \$ 340.9 million).

During the entire time period, the exports grew by 10.1% and imports growth rate was 6.3%. Hence, the growth rate of exports was more than growth rate of imports. In the post-liberalization era, Indian exports increased at a substantially faster rate than global exports, albeit with more volatility. Conversely, in the post-liberalization era, Indian imports of all dairy products increased far more slowly than global imports relative to the base year (Rajarajan et al. 2007). With a compound annual growth rate of 10.05 percent, the export of livestock products climbed from ₹ 152 crore in 1990–1991 to ₹ 30953 crore in 2021–2022. The report also showed that animal exports increased significantly over the previous 2.5 years, despite the COVID-19 epidemic. The result of the centres' efforts, which include setting up business-tobusiness exhibitions abroad and utilising Indian embassies to actively participate in general and product-specific marketing campaigns to explore new potential markets, has been an increase in agricultural exports, including livestock products. (Kumar, 2022).

Table 1: Growth of India's trade flow of dairy products (in million US \$)

Year	Export	Import	Balance of trade
2001	39.71	4.86	34.85
2006	109.15	21.67	87.48
2010	115.33	183.78	-68.44
2015	121.46	45.03	76.43
2022	374.5	33.6	340.9
CAGR 2001-2010	22.39	28.97	_
CAGR 2011-2022	6.27	-10.83	_
CAGR 2001-2022	10.1	6.31	_

Despite the significant growth in exports of dairy products as discussed in Table 1, the share of quantity exported to total milk production has remained within the range of 0.03% to 0.5% (Table

2). It is thereby concluded that although India ranks first globally in milk production but its share in export to total milk production is less than 1% as at the same time, India is the largest milk consumer as well.

Table 2: Share of quantity exported of dairy products to total milk production (in %)

Year	Export (in million tonnes)	Production (in million tonnes)	Share of exports to total milk production (in %)
2001	0.02	84.4	0.03
2006	0.05	102.6	0.05
2010	0.05	121.8	0.04
2015	0.04	155.5	0.03
2022	0.10	221.1	0.05

Share of India in global export of dairy products increased from 0.14% to 0.21% from 2001 to 2022, respectively (Table 3). India remained more dependent on dairy imports during 2010 as compared to the other time periods as it is clear form Table 1 as well as Table 3. In this context, the share of India's dairy imports in global dairy imports was more (0.32%). However, despite the increase in share in global export, it is still a minor player in international market.

Table 3: India's trade position of dairy products in International market

Year	global t	of India in trade flow of oducts (in %)	Rank of India in global trade flow of dairy products		
	Exports	Imports	Exports	Imports	
2001	0.14	0.02	45	101	
2006	0.21	0.05	39	98	
2010	0.19	0.32	42	49	
2015	0.18	0.07	46	89	
2022	0.21	0.03	43	108	

Source: APEDA.

India's trade performance of dairy products in overall trade: Share of dairy exports to total national exports has remained from 0.5% to 0.9% during 2001-2022 and thereby, its share in overall national exports has ever remained less than 1% (Table 4). Similarly, the share of dairy imports to total national imports was 0.01% with an exception of 2010 (0.05%) as it is already discussed that in 2010, India imported more dairy products than before and after.

Table 4: Share of trade flow of dairy products to total national trade flow in India

Year	Share of dairy exports to total national exports	Share of dairy imports to total national imports	
2001	0.09	0.01	
2006	0.09	0.01	
2010	0.05	0.05	
2015	0.05	0.01	
2022	0.08	0.005	

Composition and Diversification of trade in various dairy products in India

Diversification of India's dairy products: Diversification in India's trade of dairy products is exhibited in Table 5. In case of dairy exports, the diversification was found to be more in 2015 (Simpson value = 0.64) whereas these were more

concentrated during 2001 (Simpson value = 0.29) and out of various dairy products, the share of Milk and cream (concentrated or sweetened) alone constituted 83.5% in total dairy exports. However, during 2022, the share of butter and other fats and oils derived from milk rose quickly to 55.35% and the value of Simpson index fell down to 0.60. Similarly, in case of dairy imports, the diversification in dairy products tended to decline as the value of Simpson Index reduced from 0.72 to 0.55 during 2001 to 2006 and again rose to 0.63 in 2022. This index thereby states that India has started to export the various kinds of milk and milk products but in case of imports its dependence on whey and natural products has increased.

Direction of India's trade of dairy products: India's major exporting and importing destinations in dairy products are presented in Table 6 and 7 respectively.

Table 5: Composition of India's dairy exports as well as imports (in %)

Year	Milk and cream, not concentrated nor sweetened (HS- 0401)	Milk and cream, concentrated or sweetened (HS- 0402)	Buttermilk, curdled milk and cream and yogurt (HS- 0403)	Whey and natural products (HS- 0404)	Butter and other fats and oils derived from milk (HS- 0405)	Cheese and curd (HS- 0406)	Simpson Index
Exports							
2001	0.03	83.51	0.15	2.79	12.68	0.84	0.29
2006	1.94	80.98	0.80	1.78	12.55	1.95	0.33
2010	2.15	52.76	0.43	2.06	35.07	7.53	0.59
2015	3.28	44.91	0.30	0.02	36.25	15.23	0.64
2022	2.93	28.81	0.60	0.25	55.35	12.07	0.60
Imports							
2001	0.19	18.21	0.49	19.61	41.56	19.95	0.72
2006	0.19	6.64	0.86	15.08	63.44	13.78	0.55
2010	0.09	49.52	0.30	6.17	40.21	3.71	0.59
2015	0.96	8.93	0.14	46.06	27.91	15.99	0.68
2022	3.82	6.21	4.08	46.69	6.78	32.43	0.63

Direction of trade

Table 6: Year-wise India's top ten export destinations of dairy products

Country	2001	2006	2010	2015	2022
First	Bangladesh (30.78)	UAE (14.72)	USA (40.49)	USA (42.92)	Bangladesh (18.62)
Second	UAE (19.65)	Egypt (12.25)	UAE (8.02)	UAE (11.74)	UAE (18.47)
Third	Egypt (5.21)	Bangladesh (11.02)	Egypt (5.65)	Pakistan (7.22)	Saudi Arab (11.86)
Fourth	Oman (4.99)	Nepal (5.03)	Bangladesh (5.32)	Bangladesh (6.13)	USA (8.11)
Fifth	Malagasay Rep (4.26)	Algeria (4.62)	Saudi Arab (4.62)	Saudi Arab (3.96)	Bhutan (7.47)
Tenth	Sri Lanka (2.28)	Philippines (2.78)	Singapore (2.24)	Afghanistan (1.85)	Nepal (2.45)



Table 7: Year-wise India's top ten import destinations of dairy products

Country	2001	2006	2010	2015	2022
First	France (33.53)	New Zealand (55.36)	New Zealand (61.09)	New Zealand (26.78)	France (45.96)
Second	Australia (21.33)	France (10.44)	Australia (24.19)	France (24.09)	Italy (7.58)
Third	New Zealand (14.73)	Nepal (9.61)	France (2.34)	Netherland (11.23)	Germany (7.50)
Fourth	Denmark (12.84)	Denmark (6.61)	China (2.15)	Denmark (8.82)	Poland (6.09)
Fifth	UK (4.81)	Netherlands (3.99)	Denmark (1.94)	Uganda (4.85)	UK (5.02)
Tenth	Germany (0.84)	UK (1.49)	Italy (0.86)	Saudi Arab (1.64)	Estonia (2.64)

Table 8: Export Competitiveness of dairy products to total products during 2001-2022

Year	RCA	RSCA	RMA	RTA	RC
2001	0.20	-0.67	0.02	0.18	0.96
2006	0.24	-0.61	0.03	0.21	0.86
2010	0.12	-0.78	0.13	-0.01	-0.02
2015	0.11	-0.80	0.03	0.09	0.61
2022	0.20	-0.66	0.02	0.18	1.13
Average (2001-2022)	0.19	-0.69	0.04	0.15	0.75

Table 9: Commodity-wise Revealed Comparative Advantage (RCA) of dairy products

Year	Milk and cream, not concentrated nor sweetened (0401)	Milk and cream, concentrated or sweetened (0402)	Buttermilk, curdled milk and cream and yogurt (0403)	Whey and natural products (0404)	Butter and other fats and oils derived from milk (0405)	Cheese and curd (0406)
CDVI	98.17	114.43	153.65	148.94	54.55	60.67
RCA						
2001	0.001	0.554	0.005	0.129	0.263	0.004
2006	0.042	0.803	0.029	0.069	0.335	0.011
2010	0.023	0.253	0.009	0.044	0.397	0.023
2015	0.033	0.188	0.005	0.000	0.409	0.043
2022	0.061	0.233	0.053	0.01	1	0.062
Average (2001-2022)	0.035	0.456	0.029	0.059	0.48	0.03
RSCA						
2001	-0.999	-0.287	-0.989	-0.771	-0.583	-0.992
2006	-0.919	-0.109	-0.944	-0.871	-0.498	-0.978
2010	-0.954	-0.596	-0.983	-0.915	-0.431	-0.955
2015	-0.936	-0.684	-0.989	-0.999	-0.420	-0.918
2022	-0.886	-0.821	-0.970	-0.981	0.079	-0.883
Average (2001-2022)	-0.933	-0.373	-0.943	-0.888	-0.395	-0.945
RTA						
2001	0.000	0.541	0.003	0.036	0.177	-0.007
2006	0.042	0.794	0.025	-0.017	0.123	-0.0001
2010	0.022	0.006	0.002	-0.099	-0.109	0.011
2015	0.031	0.179	0.005	-0.205	0.330	0.032
2022	0.056	0.094	0.004	-0.120	1.163	0.050
Average (2001-2022)	0.033	0.405	0.024	-0.068	0.305	0.017

RC						
2001	0.197	1.625	0.426	0.140	0.483	-0.430
2006	1.865	1.961	0.838	-0.097	0.199	-0.004
2010	1.376	0.010	0.144	-0.510	-0.105	0.285
2015	1.137	1.332	0.936	-2.755	0.715	0.581
2022	1.082	1.428	0.140	-1.136	2.135	0.700
Average (2001-2022)	1.283	0.951	0.777	-0.333	0.529	0.385

Table 10: Nominal Protection Coefficient (NPC) of dairy products of India

Year	HS- 0401	HS- 0402	HS- 0403	HS- 0404	HS- 0405	HS- 0406
2001	3.04	0.93	1.41	2.21	1.48	0.91
2006	0.99	1.00	1.14	1.57	0.98	0.67
2010	1.12	0.82	1.22	0.82	0.78	1.00
2015	1.31	1.24	1.13	2.44	1.63	1.01
2022	0.83	1.18	0.89	1.75	0.88	0.92

USA has emerged the major importing country of India in dairy products as India exported more than 40% of the total export of dairy products to USA in 2010 and 2015 although, its share reduced to 8.11% in 2022 but still its rank remained first. Similarly, along with dairy exports, India, at the same time, simultaneously dependent on imports of dairy imports mainly from France, Italy, Germany, Poland, UK and Estonia etc. in 2022.

Comparative advantage and competitiveness of dairy

Export Performance, Instability Competitiveness and Protection

products: The results of RCA, RSCA, RTA and RC are scrutinized in Table 8. As the value of RCA is less than one and that of RSCA is negative for the entire time period under study, therefore, the country has no comparative advantage in trade of dairy products. However, the values of RTA and RC, which are positive for all the studied periods except 2010, indicate that India's exports of dairy products have been competitive during the period except 2010 as in 2010 India imported more dairy products than its exports as is shown in Table 1 also. Results of commodity-wise RCA as well as RSCA indicate that India has no comparative advantage in any dairy product except butter and other fats and oils derived from milk during 2022. However, the positive values of RTA and RC concludes that India has competitiveness in all the dairy products except whey and natural product during the entire period, Butter and other fats and oils derived from milk during 2010 and butter and cheese during 2001 and 2006.

The results of Nominal Protection Coefficient (NPC) of various dairy products are explained in Table 10. The NPC value of Milk and cream, not concentrated nor sweetened (Commodity code HS- 0401), Buttermilk, curdled milk and cream and yogurt (Commodity code HS- 0403), Butter and other fats and oils derived from milk (Commodity code HS- 0405) was fell down to less than one indicating that India is competitive in the export of these products. It also means that domestic market is not protected. Similarly, the NPC value of cheese and curd was also less than one indicating its export competitiveness in global market. However, the NPC value more than one in case of milk and cream; concentrated and sweetened and whey and natural products (Commodity code HS- 0402) and (Commodity code HS- 0404) indicating that the exports in these commodities are not competitive and thereby, domestic market is protected.

CONCLUSION

The study concludes that although India is the world's largest milk producer as well as net exporter too, but, due to more domestic consumption, still it is a small player in International market. At national level also, the share of export of dairy products to total exports has remained less than one percent. Among the various dairy products, the



share of milk and cream, concentrated or sweetened declined significantly and that of butter and other fats and oils derived from milk rose quickly from 2001-19. Further, the share of butter and other fats and oils derived from milk and milk and cream, concentrated or sweetened in dairy imports declined considerably and that of whey and natural products and cheese and butter rose significantly. USA has emerged major importing country of India in dairy products. During the entire time period, the country experienced no comparative advantage in export of dairy products. However, India's exports of dairy products have been competitive during the period except 2010. In this context, in order to increase the potential of dairy exports, the study suggests to put major emphasis on increasing the export of high-value dairy products, value addition of low value dairy products and increasing the milk yield of milch animals.

REFERENCES

- Anjum, S and Khan, A. 2017. Changing pattern in India's agricultural exports under WTO. *Economic Affairs* **62**(2): 253-262.
- Anonymous. 2019. Basic Animal Husbandry and Fisheries Statistics. Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture Government of India, New Delhi.
- Baby, K. 2017. Animal husbandry: An economic assessment. *Kurukshetra*, **65**(3): 22-24.
- Fayaz, M. and Ahmed, M. 2020. Fisheries exports of India: a constant market share analysis. *The Indian Economic Journal*, **68**(1): 29-39.
- Gopal, N, Jeyanthi, P, Geethalakshmi, V and Unnithan, G R. 2009. Indian finfish exports- An analysis of export performance and revealed comparative advantage. *Agricultural Economics Research Review*, 22(July-December): 291-297.
- Hinloopen, J. and Marrewijk, Ch. 2008. Empirical evidence of the Hillman condition for revealed comparative advantage: 10 stylized facts. *Applied Economics*, **40**: 2313–2328.

- Jagdambe, S. 2016. Analysis of Export Competitiveness of Indian Agricultural Products with ASEAN Countries. The Institute for Social and Economic Change, Bangalore. Working Paper No.: 356.
- Joshi, R.M. (2014). India's dairy exports: Opportunities, challenges and strategies. In *Invited Article*. National Seminar on "Indian Dairy Industry—Opportunities and Challenges". AAU Anand.20-36.
- Kaur, M and Singla, N. 2018. Growth and structural transformations in dairy sector of India. *Ind. J. Dairy Science*, **71**(4): 722-729.
- Khorajiya, M., Shiyani, R.L., Ardeshna, N.J., Swanithan, B. and Meena, M. 2018. Export competitiveness and performance of Indian livestock export: A balanced panel data analysis. *International Journal of Livestock Research*, 8(3): 140-156.
- Kumar, A., Rai, D.C. and Choudhary, K.R. 2011. Prospects and opportunities for dairy products from India. *Ind. J. Animal Sciences*, **81**(2): 188-193.
- Kumar, V. 2022. Trend and Composition of Export of Livestock Products in the Context of the WTO Regime. Indian Journal of Agricultural Marketing, 36(3spl), 196-234.
- Parida, Y., Ghule, A.K. and Dudharejiya, P. 2019. *Trade competitiveness of Indian dairy industry: An Empirical Analysis*. Institute of Rural Management, Anand. Working Paper No.: 295.
- Prajapati, D.M., Kumar, V., Dave, K.D. and Jagalan, V. 2022. The trade competitivenessof Indian processed cheese. *Bhartiya Krishi Anusandhan Patrika*, **37**(2): 144-150.
- Startiene, G. and Remeikiene, R. 2014. Evaluation of revealed comparative advantage of Lithuanian industry in global markets. *Procedia - Social and Behavioral Sciences*, 110: 428-438.
- Rajarajan, T.R., Saravanakumar, V. and Singh, R.V. 2007. Implications of trade liberalisation on indian dairy sector: An empirical analysis. *Indian J. of Agricultural Economics*, **62**(3).

https://www.trademap.org/

https://apeda.gov.in/apedawebsite/