



A Study on Growth and Instability of India's Sugar Exports

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ABSTRACT

The aim of this paper is to study the growth and instability of India's sugar exports during the period from 2000-01 to 2020-21. The sugar export registered high growth rate and high instability which recommended gigantic inter-year fluctuations during the whole study period. The cyclical production is because of unsure climate conditions, lower productivity and utilization of customary strategy for production. India is net exporter of sugar notwithstanding steady government interventions in external trade of sugar is to control the ascent in prices of sugar in the domestic market. Yet, higher domestic sugar prices than global sugar prices propose the critical arrangement changes are required. Additionally, the potential for growing sugar production in India exists and can be completely taken advantage of in case changes. Unambiguously, the advancement of the sugar industry must be embraced inside the setting of more extensive domestic reforms, in view of the linkages on both demand and supply sides that succeed in agricultural commodity markets.

Key Words: Growth, Exports, Instability, Prices, Domestic Market.

Introduction

Sugar, which the chemist known as 'sucrose', one of the family of sugars, otherwise known as saccharides is in the grouping called carbohydrates. Historically, sugar was only produced from sugarcane and then only in relatively small quantities. This resulted in its being considered a great luxury, particularly in Europe where cane could not be grown. History of the world is loaded up with culinary fixings that extraordinarily affected our civic establishments, advancement of sciences, and worldwide financial status. One of the most significant of them was sugar, top of the line "fine pice" of the Asia and Middle East, who was dependable for enormous changes in our weight control plans, yet in addition as a beginning stage in the improvement of huge European trading fleers in early Renaissance and spreading of African slaves all throughout the planet somewhere in the range of seventeenth and nineteenth century that permitted sugar to at long last become mass item that is utilized by everybody.

From the movement European settlers came into Caribbean, Central and South America, they saw that these newly discovered lands could be ideally suited for the development of sugarcane. Island of Hispaniola began its sugar creation as ahead of schedule as 1501, and Brazil figured out how to extend to more than 2800 sugarcane factories in the seaside regions, Santa Catarina Island, Demarara and Surinam. This remarkable requirement for the creation of such large number of sugar plants constrained the improvement of new modern cycles and expansion in iron assembling, which was one of the critical stages in empowering the beginning of the seventeenth century Industrial Revolution. By mid 1600s sugar creation spread all over Spanish, French and Dutch terrains in the New World, bringing drop of its cost and empowering it to at long last opened up on the tables of the less fortunate Europeans.

As sugar creation began expanding in North American provinces held by the French and the British, need for securing new labor force brought the time of servitude. As work on the sugarcane field was hard and extremely risky, high death rate caused demise of more than 3 million Native American and African slaves. Since the start of the slave exchange, grounds of British West Indies imported more than 4 million slaves from Africa, yet simply 400 thousand figured out how to get by after servitude was canceled in British Empire in 1838. High flood of slaves made Caribbean the biggest overall maker of sugar. Low price of sugar from Guadaloupe, Barbados, Jamaica and Saint-Dominguez caused the finish of the sugar exchange among Europe and India in eighteenth century. During this time, sugar turned out to be colossally well known in the Europe, in any event, figuring out how to outperform grains by its prominence and worth. New food sources like jams, espresso, tea, cocoa, candy, handled food sources and numerous other caused extraordinary changes in European and North American eating regimens. Before eighteenth century's over, costs of sugar dropped to such levels that it opened up to everybody, wherever on the planet.

Review of Literature

Deokate Tai Balasahed (2013) in his study focused on international trade of sugar. It has vital significance to India as it helps in keep up with strength in the domestic sugar prices in spite of the cyclicity underway. Additionally, the potential for extending sugar production in India exists and can be completely taken advantage of in case changes were acquainted with guarantee a market driven relationship between sugar and sugarcane prices. Higher domestic sugar prices than global sugar prices recommend the huge arrangement change are required in India. India is fourth biggest exporter of sugar and has the potential and benefit in commodity of sugar to sugar shortfall nations in the Middle East and East Africa. The concentrate likewise recommends that there is earnest need to redirect the product of sugar from existing nations where, the value acknowledgment is less to the nations where the price acknowledgment is relatively more.

Gurumoorthy. T. R, Palanisigh. V & Salahudeen V. Abdul (2017) in their study examined the Indian sugar industry, which is significant agro-based industry that impacts the provincial job of around 50 million sugarcane farmers and 5 lakh workers directly worked in sugar factories. India is the second largest producer, exporter and biggest consumer of sugar. A humble endeavor has been made in the article to concentrate on the development of global per capita consumption of sugar, cane price comparison of significant nations and sugar trade execution of India. Around the world Brazil, India, China, Australia and Thailand are the significant maker.

Methodology

The prime objective of this article is to study the growth and instability of India's sugar exports during the period from 2000-01 to 2020-21. For this purpose, the secondary data on India's sugar exports have been collected from various issues of Monthly Statistics of the Foreign Trade of India, Economic Survey, and Handbook of Statistics on Indian Economy. The collected data were analyzed with the help of econometrical tools such as Linear Trend Model, Semi-log Model, Compound Growth Rate and Cuddy Della Valle Index. By using SPSS 19 software, the study has been done.

Linear Trend

$$Y = \beta_0 + \beta_1 t + U_t$$

Semi-Log

$$\text{Log } Y = \beta_0 + \beta_1 t + U_t$$

Compound Growth Rate

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

Cuddy Della Valle Instability Index

$$I = CV \cdot \sqrt{1 - \bar{R}^2}$$

Data Analysis and Discussions

The following table displays the value of India's sugar exports and its share in India's total agricultural and total exports during the period from 2000-01 to 2020-21.

Table 1
India's Sugar Exports during 2000-01 to 2020-21

Year	Sugar Exports (Rs. In Crores)	Annual Growth Rate	Share in Total Agricultural Exports	Share in Total Exports
2000-01	511	-----	1.79	0.25
2001-02	1782	248.73	6.08	0.85
2002-03	1814	1.80	5.38	0.71
2003-04	1235	-31.92	3.41	0.42
2004-05	155	-87.45	0.39	0.04
2005-06	598	285.81	1.28	0.13
2006-07	3260	445.15	5.53	0.57
2007-08	5663	73.71	7.45	0.86
2008-09	4532	-19.97	5.55	0.54
2009-10	130	-97.13	0.15	0.02
2010-11	5633	4233.08	5.06	0.49
2011-12	8971	59.26	4.98	0.61
2012-13	8800	-1.91	3.94	0.54
2013-14	7326	-16.75	2.81	0.38
2014-15	5522	-24.62	2.29	0.29
2015-16	10481	89.80	4.84	0.61
2016-17	8993	-14.20	3.94	0.49

Table 1 Continued..

Year	Sugar Exports (Rs. In Crores)	Annual Growth Rate	Share in Total Agricultural Exports	Share in Total Exports
2017-18	5323	-40.81	2.14	0.27
2018-19	10110	89.93	3.73	0.42
2019-20	14499	43.41	5.84	0.65
2020-21	21985	51.63	7.12	1.02

Source: Monthly Statistics of the Foreign Trade of India.

Table 1 portrays the value of India's sugar export has significantly augmented from Rs.511 crores in 2000-01 to Rs.1814 crores in 2002-03 however its shares in total agriculture export has raised from 1.79 per cent to 5.38 per cent during the corresponding years. Then this export value has increased from Rs.155 crores in 2004-05 to Rs.598 crores in 2005-06. Further the value has immensely increased from Rs.3260 crores in 2006-07 to Rs.5663 crores in 2007-08. Unfortunately, the value of sugar export has suddenly decreased from Rs.4532 crores in 2008-09 to Rs.130 crores in 2009-10 owing to low production in India also its share in total exports decelerated from 0.54 per cent to 0.02 per cent during the corresponding years.

After that the sugar export has extremely expanded from Rs.5633 crores in 2010-11 to Rs.8971 in 2011-12 due to sugar crop areas prolonged on the back of higher prices. In the year 2012-13 because of the reason that increasing domestic prices and lower global rates of sugar India's sugar export suddenly fell down to Rs. 8800 crores. Again the sugar export slightly decelerated from Rs. 7326 crores in the year 2013-14 to the level of Rs. 5522 crores in 2014-15 because of low supply of sugar by Maharashtra which was the largest sugar producing state in India. The state has been severe drought situation in its Vidarbha region. Another reason for the slowdown in sugar export is the international prices of sugar were lower than domestic prices. Then the sugar export has massively shrunk from Rs. 10481 crores in 2015-16 to the level of Rs.8993 crores in 2016-17 because of lesser rainfall and drought in Maharashtra and Karnataka. Thereafter the sugar export has increased from Rs. 14499 crores in 2019-20 to Rs. 21985 crores in the year 2020-21 due to greater demand and adequate financial backing by the government.

During years 2003-04, 2004-05, 2008-09, 2009-10, 2012-13, 2013-14, 2014-15, 2016-17 and 2017-18 the value of India's sugar exports has registered negative annual growths. In the year 2010-11 the annual growth of sugar export has registered highest level of 4233.08 per cent, whereas in the year 2002-03 the annual growth has registered lowest level of 1.80 per cent. In the year 2001-02 the share of sugar export in total agriculture exports has registered highest level of 6.08 per cent while in the year 2009-10 the share has registered lowest level of 0.15 per cent. Likewise in the year 2020-21 the share of sugar exports in total exports has recorded highest level of 1.02 per cent while in the year 2009-10 the share has recorded lowest level of 0.02 per cent.

Table 2
Trend and Growth Rates of India's Sugar Exports during 2000-01 to 2020-21

Variables	Linear Model					R ²
	a	b	F	t	R ²	
Sugar Exports	-1908.914	724.719	41.725	6.460 **		0.687
Variables	Semi-log Model					CGR
	a	b	F	t	R ²	
Sugar Exports	6.267	0.166	20.159	4.490 **	0.515	0.180

Source: Authors own calculation.

The Table 2 visibly depicts that the R² and F values of India's sugar export were found to be satisfactory and 't' values were also found to be statistically significant at one per cent level. During the study period on an average the value of India's sugar export has increased by Rs.724.719 crores per annum. The annual average growth rate of India's sugar export has risen by 16.6 per cent per year. Similarly, the compound growth rate of sugar export was found to be 18 per cent per annum.

The Cuddy Della Valle Index of India's sugar exports during 2000-01 to 2020-21 was calculated and the results are given in Table 3.

Table 3
Cuddy Della Valle Index of India's Sugar Exports during 2000-01 to 2020-21

Variable	CV	Adjusted R ²	CDVI	Inference
Sugar Exports	89.474	0.489	63.974	High Instability

Source: Authors own calculation.

The sugar exports in India during 2000-01 to 2020-21 are showing high growth rate with high instability. The International sugar market stays one of the most unstable of all products because of uncertainty in supply among some Asian nations, especially India. The cyclical production is

because of unsure climate conditions, lower productivity and utilization of customary strategy for production. The world sugar market has gone through critical underlying changes over the previous decade still it remains vigorously contorted because of protectionism strategy by different state run administrations. A change in domestic support policies help approaches and line measures, like the burden of commodity limitations, significantly affect exchange volumes and global costs. India also exported to Somalia, Saudi Arab, Malaysia, Sri Lanka, Afghanistan, Iraq, Pakistan, Nepal, China etc. India can possibly trade sugar to sugar shortfall nations in the Middle East and East Africa. India appreciates cargo advantage in trading sugar to these nations however the main disservice is that cost brought in these nations is a lot of lower than the cost got in Europe and North America. The Indian sugar area needs to zero in on European and North American business sectors on a drawn out premise to bring greater prices for Indian sugar.

Conclusion

The sugar export registered high growth rate and high instability which implied huge inter-year fluctuations during the whole study period. The cyclical production is because of unsure climate conditions, lower productivity and utilization of customary strategy for production. India is net exporter of sugar notwithstanding steady government interventions in external trade of sugar is to control the ascent in prices of sugar in the domestic market. Yet, higher domestic sugar prices than global sugar prices propose the critical arrangement changes are required. Additionally, the potential for growing sugar production in India exists and can be completely taken advantage of in case changes. Unambiguously, the advancement of the sugar industry must be embraced inside the setting of more extensive domestic reforms, in view of the linkages on both demand and supply sides that succeed in agricultural commodity markets.

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