

Make in India: Evaluating Trade Competitiveness of Indian Coffee through Revealed comparative advantage Analysis

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Abstract

Coffee is one of the most traded commodities in the world and the research proves that it is a drink that is even preferred over tea. The consumption of coffee is maximum in the developed countries whereas the major supplier countries are the developing countries. Over the last few decades, coffee markets have been rapidly growing in India as well and the emergence of coffee joints in India and its popularity among the youngsters is a proof to it.

Through this paper the author tried to assess the competitiveness of coffee in the global market. The methodology adopted includes the use of INTRACEN data from 2001 to 2014. Various indices of measuring comparative advantage were calculated using this data.

The study found that India has enjoyed comparative advantage in coffee over past one decade. Several reasons are responsible for distinctiveness and high demand of Indian coffee in the world. While several concerns exist due to dependency of coffee cultivation on monsoon and price volatility in international market. However, strong policy support and insurance covers to the farmers can further boost the production of coffee in India.

Key Words: Coffee, exports, production, comparative advantage,

Introduction

Coffee is not just a drink; it's a global commodity and is the second most traded commodity in the world. It is estimated that 1.6 billion cups of coffee are drunk worldwide every day. Coffee is a \$20 billion industry mostly consumed by developed economies. Worldwide coffee is more preferred drink than tea. USA is the largest consumer of coffee in the world, with annual consumption of coffee 22.75 million bags in 2012, followed by Germany, Italy and Japan¹. While 90% of consumption of coffee is in developed countries, the main suppliers to the world are the developing countries. Given the demand and supply ratio, the benefits of revenue earned from coffee consumption by industrialized should pass on to the developing and underdeveloped countries.

World Coffee Production

Brazil is world leader in coffee production and coffee export followed by Vietnam and Columbia, India ranks 6th in total Coffee production and third largest in Asia. Other main producers of coffee being Africa, USA and Asia.

Coffee- Total Production of the exporting members(thousands ton)							
S.no.	Country	2009	2010	2011	2012	2013	2014
1	Brazil	39 470	48 095	43 484	50 826	49 152	45 342
2	Vietnam	17 825	20 000	26 500	25 000	27 500	27 500
3	Colombia	8 098	8 523	7 652	9 927	12 124	12 500
4	Indonesia	11 380	9 129	7 288	13 048	11 667	9 000
5	Ethiopia	6 931	7 500	6 798	6 233	6 527	6 625
6	India	4 806	4 728	4 921	4 977	5 075	5 746

Source : International Coffee Organization, accessed February 2015

Some 70 countries export coffee and are major contributors to global coffee output. For many countries, coffee exports are not only a vital contributor to foreign exchange earnings but also account for a significant proportion of tax income and gross domestic product. Worldwide coffee consumption is rising and India offering distinct and unique variants of coffee.²Pregal (2007) assessed that "The global market is asking for more coffee, more quality, better accessibility and new beverages. In order to give people what they want there must be multiple products and multiple channels".³

Coffee Industry in India and Production

Coffee markets in retail industry are expanding at a rapid rate due to policy support by allowing 100% investment in the coffee industry. Rapid expansion of coffee joints in India is visible and an indication of increasing acceptance of coffee. Coffee is has gained popularity in India similar to china where the young generation has increasing preference for coffee over tea.

The Coffee Board is a statutory organization constituted under the Coffee Act, 1942 and functions under the administrative control of the Ministry of Commerce and Industry, Government of India.

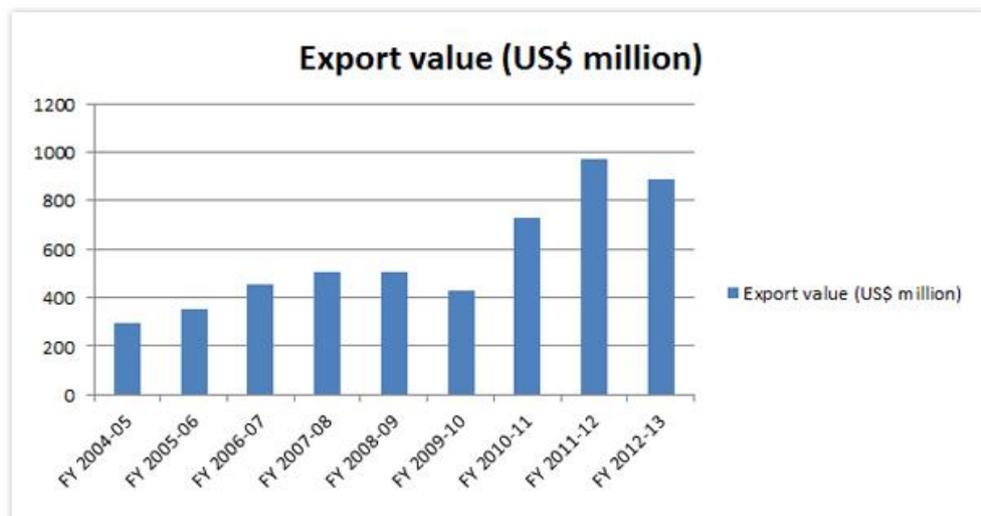
Commercial plantation of coffee in India dates back to 18th century. Coffee in India is grown in one of the world’s rainiest inhabited region that receives 2,500 to 4,000 mm rainfall spread over 100 days, followed by more than 100 days of continuous dry period.⁴

Indian coffee is grown under a thick natural two tier shade of trees. The dynamics of world coffee production are generally characterised by considerable unsteadiness, with a large crop in one year commonly followed by a smaller crop in the next.It is grown in heavy rain inhabited areas for couple of months and followed by dry climate for another few months. India is perhaps the only coffee producing country whose coffees are completely shade grown, entirely handpicked and completely

sun dried. Total global production of shade grown coffee has increased since 1996, but the area of land used for non shade coffee has increased at a much faster rate, resulting in shade grown coffee falling from 43 percent of total cultivated area to 24 percent.

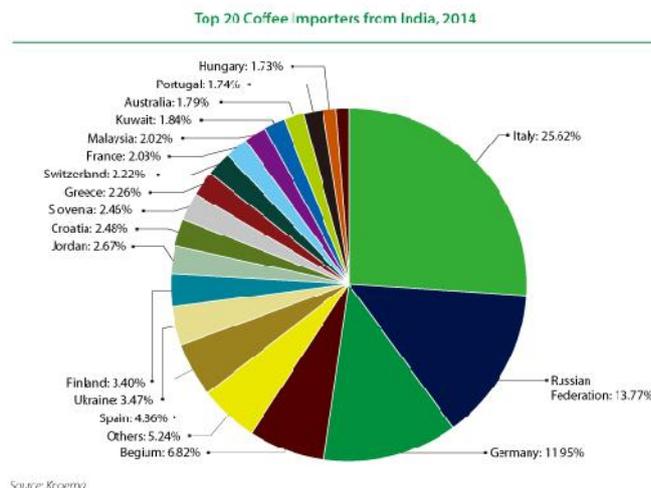
Arabica is a mild coffee with more aromas and fetches higher market value compared to Robusta beans. Robusta has more strength in the cup and used in making various blends. Arabica is grown in higher altitudes than Robusta. Arabica is the more common type of bean grown (70 percent of coffee is Arabica), and it's considered more flavourful. Robusta is hardier and cheaper, most commonly seen in instant. Both varieties of coffee are grown in India, Robusta and Arabica. Indian Robusta is highly demanded in international market due to high blending quality.

In 2013-14, India's coffee exports stood at 313,025 metric tonnes, generating revenue of US\$ 793.22 million. India exports coffee to over 45 countries, over 50 per cent of Indian exports in 2013-14 headed to Europe.



Source : IBEF

Italy is the largest market importing more than 25 per cent from India, followed by Germany, Belgium, Turkey and the Russian Federations.



Karnataka, Kerela and Tamil Nadu are major production region in India and Karnataka producing more than 50% of all coffee production from India. Coffee production in India takes place in small farms. Post liberalization India witnessed rapid increase in coffee production of coffee due to policy support from government of India, allowing the farmers to sell production directly to the importers.

Research Methodology

The study uses Balassa Index for to measure the comparative advantage of Indian Gems and jewellery industry. The Balassa index is the more frequent measure used to compare relative advantages in export performance, by country and by industrial sectors. This index is defined as a country export share for a specific industrial sector divided by the export share of a group of countries, named “reference group”, for the same industrial sector.

The Balassa index for the country I, compared to the World, for the industrial sector J should be calculated as follows:

$$B_{i,j} = (X_{i,j} / X_{world,j}) / (X_{i,total} / X_{world,total})$$

where i is the country under study

j is the industrial sector being compared

If $B_{i,j}$ exceeds 1, it may be said that the country I has a ‘revealed comparative advantage’ in industrial sector J, since this sector is more important for country I ‘s exports than for the exports of the reference countries.

The Balassa index has been subject to several critiques, leading some authors to propose several modified versions. Laursen (1998) suggests a transformation that produces a symmetric outcome, ranging from -1 to 1 with a threshold of 0; Proudman and Redding (1997, 2000) suggest a

transformation that results in a constant mean across the different sectors for a given country. As in the Proudman and Redding (1997, 2000) contribution, the product specialization index suggested here has a clear and well-defined link with the original Balassa index.

Clark et al. (2005) use the method of revealed comparative advantage to identify the pattern of comparative advantage for United States (US) regions. Their findings indicated the regions of the US which have a comparative advantage or disadvantage in a particular industry and also facilitated an interregional comparison of comparative advantage for each industry. Comparative patterns were similar but not identical.⁵

Vollrath (1991) offered three alternative specifications of revealed comparative advantage. The first of these measures is the relative trade advantage (RTA). It is calculated as the difference between relative export advantage (RXA), which equates to the Balassa (B) index, and relative import advantage (RMA):

$$RTA = RXA - RMA, (2)$$

Where $RXA = B$;

$$RMA = (M_{ij} / M_{it}) / (M_{nj} / M_{nt});$$

M – import.

The positive value of RTA indicates comparative trade advantages, while negative indicates comparative trade disadvantages. If $RTA > 0$, then a comparative advantage is revealed, i.e. a sector in which the country is relatively more competitive in terms of trade. RTA measures a country's exports and imports of a commodity relative to its total exports and imports. Imre Fert classified RTA index in three categories:

$RTA < 0$ refers to all those product groups with a comparative trade disadvantage. $RTA = 0$ refers to all those product groups in a break even point without trade advantage or trade disadvantage. $RTA > 0$ refers to all those product groups with comparative trade advantage (Fert, 2008). To measure the patterns of comparative advantage in trade between the Baltic States and the EU, this study uses relative export advantage index (RXA).

Vollrath's second measure is simply the logarithm of the relative export advantage ($\ln RXA$); and his third measure is revealed competitiveness (RC), defined as:

$$RC = \ln RXA - \ln RMA (3)$$

The advantage of expressing these latter two indices in logarithmic form is that they become symmetric through the origin. Positive values of Vollrath's three measures, RTA, $\ln RXA$ and RC, reveal a comparative advantage (Fert & Hubbard, 2002).

Laursen (1998) adjusted the RCA index to make it symmetric, the RSCA which is defined as:

$$RSCA_{ij} = (RCA_{ij} - 1) / (RCA_{ij} + 1);$$

The most popular in the second group is the Lafay index, known as LFI index, suggested by Lafay (1992). LFI index takes imports into account in measuring specialization of export and is represented as a modified version of international trade specialization, and the competitiveness structure of the domestic manufacturing sector, measured by a set of industry and country-specific variables. LFI determines the comparative share of product's international trade among other products. Country receives the net export earnings, if the indicator value is greater than zero.

$$LFI = 100 * \left(\frac{X_i - M_i}{X_i + M_i} - \frac{\sum (X_j - M_j)}{\sum (X_j + M_j)} \right) \frac{X_i + M_i}{\sum (X_i + M_i)}$$

Where:

X_i - Country A exports of product i ;

M_i - Country A imports of product i ;

X_j - Country A exports of all others products except i ($j = 1$ to n and $j \neq i$);

M_j - Country A imports of all others products except i ($j = 1$ to n and $j \neq i$);

Results and Discussion

The data for exports was sourced from intracen and comparative advantage of India in Coffee exports was calculated using all the above stated measures of Comparative Advantage. Thus comparative advantage was calculated using all the above stated methods. The analysis revealed that India has enjoyed consistent competitive position broadly.

Balassa index(RCA) and Vollarath (RTA) and (RC) depicts that though India has enjoyed Comparative advantage, but values reflect that their has been marginal fall in the advnatge. The values of LFI index are positive from 2001 to 2014 indicating consistent competitive position of India.

Comparative Advantage Indian Coffee Exports

Year	RCA	RTA	RC	RSCA	LFI
2001	3.69	3.66	1.30	0.57	3.718
2002	2.79	2.77	1.02	0.47	3.002
2003	2.60	2.53	0.93	0.44	3.227
2004	2.03	1.94	0.66	0.34	3.154
2005	1.97	1.74	0.55	0.33	4.430

2006	2.11	2.01	0.70	0.36	6.384
2007	1.57	1.45	0.37	0.22	5.738
2008	1.57	1.43	0.36	0.22	7.454
2009	0.91	0.79	-0.24	-0.04	4.737
2010	1.08	0.97	-0.03	0.04	7.214
2011	1.13	1.03	0.03	0.06	13.040
2012	1.16	1.02	0.02	0.08	11.172
2013	1.11	0.94	-0.06	0.05	10.259
2014	0.99	0.81	-0.21	-0.01	9.469

Source : Intracen , Author’s Calculations

Vollarath’s RC values are positive majorly reflecting India’s comparative advantage in coffee from 2001 to 2014 with an exception in 2009, 2013 and 2014. Comparative disadvantage in 2009 is due to major crop failure leading to low production and export. The reason for the drop is attributed to a long spell of drought after receiving blossom showers, followed by an extremely harsh monsoon. The monsoon started on time but continued unabated, with some areas witnessing continuous rainfall for 60 days and more. In 2013 there was fall in coffee production. According to data gathered by the Karnataka Planters⁶ Association (KPA) for the current harvesting season, which has just ended, the production of beans for 2013-14 is said to be in the range of 280,000 tonnes, about 12% lower than the previous year. In 2012-13, India produced 318,200 tonnes.⁷ The main reason attributed to fall in production is uncertain rains and pest infestation in Arabica crops. From 2002 to 2011, Indian coffee production declined by nearly 30 percent.⁶ Heavy crop losses in 2009 and 2010 have been attributed to heavy unseasonal rains. Maximum daily rainfall amounts in western India have been rising at a rate of 0.3 percent per year. About half of this increase is estimated to be attributable to emissions of heat-trapping gases—primarily from the burning of oil, trees, and gas.⁸

Conclusion

The study reveals India’s competitiveness in Coffee production and exports globally. However minor fluctuations in coffee production are due to erratic climate patterns which have direct influence on crop production leading to price rise. Another problem is frequent crop infestation. While climate factors can be forecasted but not controlled it is suggested that government support in form of crop insurance and act as motivating factor for coffee farmers. Coffee board has initiated the crop insurance program for the farmers, but the benefits can be reaped it if reaches the farmers. Further initiatives can be providing financial assistance to the coffee producing farmers for participation in overseas trade fairs and exhibitions.

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