



## Growth and Export Performance of Coffee in India – An Economic Analysis

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Received: 8.02.2018 | Revised: 15.03.2018 | Accepted: 22.03.2018

### ABSTRACT

*Coffee is an important commercial plantation crop and is one among the most traded commodities in the global market. In India coffee is a commercial crop and is grown by plantation method. Arabica and Robusta are the two types of coffee cultivated in commercial scale. In this paper an attempt is made to analyze the growth rate of planted area, production and productivity and export of coffee in India. This study is mainly based on a time series data has been collected for the years 1985-86 to 2016-16. For the analysis purpose, the study period is divided into two sub periods that is pre liberalization period from 1985-86 to 1990-90 and post liberalization period from 1991-92 to 2015-16. Trend analysis and the Compound Growth Rate are calculated to understand the changes during the pre and post liberalization periods.*

**Key words:** Coffee export, Area, Compound growth rate.

### INTRODUCTION

Coffee is one of the most widely traded agricultural commodities in the world. It is farmed in 80 countries and exported by over 50 in Central and South America, Africa and Asia. The 25 million coffee farmers in the developing countries are mostly small scale producers. More than a 100 million people are engaged in producing and processing coffee and the production of coffee has a significant impact on the economic development of the producing areas and their environment. Coffee bean prices often below low cost of production unleaded a series of adverse consequences among rural workers and small scale farmers. As handful of transnational corporations control the market. This project is about the

Indian exports of coffee in the world as India accounts for about 4.5 per cent of world coffee production and the industry provides employment to 6 lakh workforce. It was seen from the exports figures that India exports major portion of green coffee instead of processed coffee. Due to that the growers of India as well as exports are not getting the maximum profit being one of the largest producers of coffee beans. Being an important export commodity, coffee was the top agricultural export for twelve countries in 2004, and it was the world's seventh-largest legal agricultural export by value in 2005. Coffee ranks second only to petroleum in terms of legally-traded products worldwide.

**Cite this article:** Balakrishnan, M. and Chandran, K., Growth and Export Performance of Coffee in India – An Economic Analysis, *Int. J. Pure App. Biosci.* 6(2): 713-717 (2018). doi: <http://dx.doi.org/10.18782/2320-7051.6238>

As most of the coffee producing and exporting nations are poorer countries, and coffee importing nations are the wealthier countries, coffee represents a product with the potential to alleviate the income disparity between these nations.

### Coffee – Global scenario

Coffee is mainly produced in Brazil, Columbia, Mexico, in addition to African Countries such as Ethiopia, Uganda, Honduras, Castalia, Peru etc. alongside Asian nations like Vietnam, Indonesia and India. With respect to crop year of 2013-14, total coffee production was to the tune of 145 million bags (60kg each), of which Arabica production accounted 59%, while Robusta contributed the remaining 41%. In terms of world production in 2013-14, Brazil ranked highest, accounting for 35% of global coffee production, followed by Vietnam (15%), Indonesia (9%), Columbia (6%), Ethiopia (6%), and India (4%). Domestic coffee consumption in Brazil increased at a CAGR of 3.6% in the past four crop years from 2008-09 to 2012-13, while that in India grew at a CAGR of 5.1%.

### Introduction about Coffee Sector in India

Indian Coffee has created a niche for itself in the international market, particularly Indian Robusta which is highly preferred for its good blending quality. Arabica coffee from India is also well received in the international market. India is perhaps the only coffee producing origin whose coffees are fully shade grown, entirely hand-picked and completely sun dried. In India, coffee plantation occupies an area of around 3.81 lakh hectares providing rural employment pre-dominantly in Karnataka, Kerala and Tamil Nadu, which contribute about 99 per cent of the total Coffee production. There are 2,21,200 coffee holdings, out of which 2,18,450 fall within the small growers' category (upto 10 hectares) and balance 2,750 holdings fall under medium and large holdings (above 10 hectares category). Although coffee is considered as an export-

market crop, its performance has not been encouraging in the post 1991 economic liberalization period. Coffee, although an important commodity in India's agricultural exports have faced fluctuating international prices and decreasing unit value realization, especially in the post-reform period. As we know that the Coffee Industry of India is the 6<sup>th</sup> largest producer of the coffee in the world. It produces both variety of coffee i.e. Arabica & Robusta. The bulk production taking place in the southern states and most noted is its Monsooned Malabar variety. And it is believed that coffee variety has been cultivated in India longer than anywhere outside of the Arabian peninsula. 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. The Board comprises of 33 members including the Chairman, who is the Chief Executive. The remaining 32 Members representing the various interests are appointed as per provisions under Section 4(2) of the Coffee Act read with Rule 3 of the Coffee Rules, 1955.

### Review of Literature

Mahesh<sup>3</sup> studied the export competitiveness of Indian tea by estimating the NPC and DRC under both importable and exportable hypotheses during the year 1998-99. The results revealed that under importable hypothesis the NPC and DRC were 0.71 and 0.66 respectively. The NPC was below unity, which indicated that the domestic tea was an effective import substitute, whereas the DRC was also less than one implying that the tea growers spend less than a rupee equivalent of foreign exchange on the production. Hence, it was profitable to use non-tradable inputs in the production of tea in India. Under exportable hypothesis, the NPC and DRC were 0.98 and 0.93 respectively. The NPC was less than unity which reveals that tea was competitive in the international market and it represents an

effective export commodity whereas DRC was also less than one implying its export competitiveness in the international market. Jayesh<sup>2</sup> studied the production and export performance of pepper and cardamom in south India. He found that all the south Indian states except Karnataka (-0.47 %) and Tamil Nadu (-1.62 %) recorded significant growth in area and production of pepper and in case of cardamom, all the states recorded a negative growth in area, while the productivity and production showed significant growth. A positive growth was found in the export quantity, value and unit value of pepper. But a negative growth was recorded in the export of cardamom. Jayesh<sup>2</sup> used the nominal protection coefficient technique for the export competitiveness of Indian pepper. Under the exportable hypothesis, the nominal protection coefficient value were found to be lesser than unity (0.849) in Calicut and (0.817) in Sirsi markets, indicating that the Indian pepper is competitive in the international market and which is an efficient export oriented commodity. Sharma and Sharma<sup>5</sup> studied the production and export performance of tea and reported that the growth rates were positive for area, production and productivity of tea. The share of Indian tea export in the total export was as high as 72.17 per cent in 1950, which had steadily declined to 23.79 per cent in 1999. Sudeesh *et.al*<sup>4</sup> studied the export performance of Indian spices revealed that there was a relatively higher growth in export of spices from India during the pre-WTO era, magnitude of which fell in post-WTO period. Latter period also saw a significant reduction in instability in exports of spices, mainly in quantum of exports. Jose and Jayasekhar<sup>1</sup> studied the growth trends in area, production and productivity of Arecanut in India during the period from 1971 to 2004. It revealed that the area and the production of Arecanut in India increased tremendously at the rate of 2.2 per cent and 3.2 per cent respectively. The rate of increase in both area and production is

mainly due to favorable price prevailed during the period.

## MATERIALS AND METHODS

The present study was based on secondary data. The time-series data on export quantity, was collected from published sources of the indiastat for the period (from 1980-81 to 2015-2016). For analytical purpose, this entire period was divided subjectively into two sub periods, with the implicit assumption that each sub period has distinct nature and pattern of development due to the establishment of WTO. Pre-WTO period covered the period 1980-1981 to 1990-1991 and Post-WTO period covers 1991-92 to 2015-2016. Compound Growth Rate of coffee was estimated for two periods' viz., Pre-WTO period covered the period 1980-1981 to 1990-1991 and Post-WTO period covers 1991-92 to 2015-2016. This grouping was done mainly to find out the effect of WTO agreements and to compare the export performance of the coffee. The growth in area, production, productivity, quantity exported, export value and unit value realized from exports were estimated by using the exponential growth function of the form

$$Y = ab^t \cdot e_t \dots \dots \dots (1)$$

Where, Y = Dependent variable, t = Time variable,  $e_t$  = Error term, a & b are unknown constants to be estimated. The unknown constants a and b were found by applying methods of least squares by transforming the equation into logarithmic form

$$\ln Y = \ln a + t \ln b \dots \dots \dots (2)$$

Where, log Y is natural logarithm of Y, log a and log b are similarly defined. The compound growth rate 'r' was computed by using the relationship

$$r = (\text{Anti log of } (\ln b) - 1) \times 100 \dots \dots \dots (3)$$

$$\ln b = \frac{\sum (t \ln Y) - (\sum t \sum \ln Y) / n}{\sum t^2 - (\sum t)^2 / n}$$

where n is number of time points.

## RESULTS AND DISCUSSIONS

Table 1: Compound Growth Rate of export of Coffee in India

Particulars	Pre-WTO Period (1980-81 to 1990-91)	Post-WTO Period (1991-92 to 2015-16)
R <sup>2</sup>	0.39	0.78
Coefficient	0.0345** (0.0391)	0.0343*** (0.000)
CGR	3.15	3.49

**Note:** Figures in the parentheses indicates Standard Errors of the respective Coefficient.

\*\* - Significant at 1 per cent level; \*-Significant at 5 percent level

## Growth Analysis of Coffee

The Compound Growth Rates (CGRs) export of Coffee crop for the periods 1980-81 to 1990-91 (Pre-WTO Period) and 1991-92 to 2015-16 (Post-WTO Period) were estimated and are furnished in Table 1. Regarding the export of coffee both Pre-WTO Period and Post-WTO period had a high significant growth rate (3.15 per cent) as compared with (3.49), respectively. This was reflected in production growth rate. It was concluded from the above results that the growth rate of coffee in terms of area was high during Post-WTO period. The Compound Growth Rates (CGRs)

area, production and productivity of Coffee crop for the periods 1980-81 to 1990-91 to 1991-92 to 2015-16 (Post-WTO Period) were estimated and are furnished in Table 2. The growth rates of coffee in terms of area, production and productivity showed variations. The compound growth rate for area (2.34 per cent) was positive and significant at one per cent level. It was concluded that the area of the coffee crop was increased during investigation period. The coffee production had a high significant growth rate of 2.80 per cent during the shows that production also increased.

Table 2: Compound Growth Rate of export of Coffee in India

Particulars	Area	Production	Productivity
R <sup>2</sup>	0.94	0.74	0.08
Coefficient	0.0232** (0.000)	0.0276*** (0.000)	0.0044 (0.1052)
CGR	2.34	2.80	0.44

**Note:** Figures in the parentheses indicates Standard Errors of the respective Coefficient.

\*\* \*- Significant at 1 per cent level;

The results showed that there was a positive and significant at one per cent level. This indicates that there has been a steady increase in the plantation area of coffee. The area under cultivation for the periods has been increasing due to high demand for Indian coffee in the markets. Coffee cultivation has also been supported with good climatic conditions. The increasing trend of coffee production but also faced many fluctuations because of the low prices of coffee in domestic and international market and the growers also not get the awareness about the plant protection, irrigation, rejuvenation and replanting coffee trees. The compound growth rates of  
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respective period is 2.80 percent. From this analysis it can be stated that the Indian coffee production is significant at one percent level and also have a positive growth rates. The secondary data analysis on production and productivity of coffee in India has revealed that there is a positive variation in production and productivity of coffee in India. It is evident from the discussion, the growth rate of coffee production increases during the study period. The trend analysis reveals that there is a positive annual change in the production of coffee in India. The productivity of coffee alone shows the low growth rate in the period. This is mainly because of the high fluctuations

in the coffee prices. The better prices received by growers has helped to improve the productivity of coffee. So from the analysis without a doubt there is a positive impact on area under cultivation and the production of coffee in India.

### CONCLUSION

The positive average production of coffee over the entire study period reveals that there is scope for increasing the coffee production for strengthening the coffee exports in India. This could be done by adopting new technology for coffee cultivation. The climatic events and supply shocks remain the real threat to the development of a balanced market and sustainable conditions for the Indian coffee economy. Government and financial institution should take appropriate steps to increase the credit facility to the growers, which will increase the production of coffee all over India and will help the country to face competition in the international market in the present globalised era.

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