CHAPTER 6

SUMMARY, CONCLUSION AND IMPLICATIONS

In Indian economy, agriculture has the largest share in its National Income and Employment. Therefore it is looked upon to provide for increasing demand for food and raw materials and has to continue to earn more and more of foreign exchange, atleast for some more years to come; so as to ensure a sustained economic development.

In a free market economy both the increases in agricultural production and the transfer of the surpluses in the agricultural sector to the other sectors of the economy are to be brought about by the price system. But there may be occasions for the government to intervene when the structural bottlenecks of the market stifle its function of providing sufficient and just price signal. Intervention may be to strengthen the forces of demand and supply. One such case was the Indian Coffee market in the beginning of this century. The coffee Board set up under the Coffee Act of 1942, came into being and has full authority and
responsibility for the collection, storage, curing and marketing of coffee both for internal consumption and export.

Eventhough coffee is not an important agricultural commodity in India areawise, productionwise and exportwise, it is important as a major foreign exchange earner and as a source of revenue to the government. Historically, the production of coffee grew; so did the exportable surplus in it. This was mainly because the growth in domestic consumption was at a much slower pace than that of production. Fortunately, however the country was able to find export market for the whole of its exportable surplus of coffee in most of the years in the past. In recent years, however sudden jump in production has resulted in accumulation of huge stocks and marketing of coffee has assumed greater importance and urgency. But the task is not simple, because the international market for coffee is competitive and much complicated with several bilateral and multilateral agreements, regulations and tariffs. The International Coffee Agreement (1954) provided a helping hand, but it collapsed in 1989. In contrast to export quota, a buffer stock tries to contain prices in complete conformity with the market mechanism.
Thus, as an internationally traded commodity, price of Indian coffee would depend upon four variables viz., i) domestic demand, ii) foreign demand, iii) domestic supply and iv) supply of the rest of the world (principal competitors).

Therefore, if India can achieve economic advantage in the world trade, it could expand its share in the international market for coffee and the ways to achieve this advantage must be found and that too urgently. To meet this need the present study was taken up. Its approach, scope and salient findings are presented in this chapter and conclusions are drawn. Their implications for policy and research are also stated.

6.1 OBJECTIVES:

Therefore the overall objective of the study is to evaluate the performance of the Coffee Board at a time when its existence is questioned. More specifically the objectives are to evaluate the performance of the Coffee Board Vis-a-Vis its mandate to increase production, export and consumption of coffee with adequate protection to the interest of the growers; to measure
the instability in production, export, domestic sales and prices of coffee in export, retail sales and to the farmers; to identify the major causes of instability; and, to suggest specific strategies for efficient management of increasing supply and consequent rise in stock holding.

6.2 METHODOLOGY:

The purpose of this study was to assess the performance of Indian Coffee Board with a special reference to price stability and supply management in both the domestic and international markets. Entire analysis was based on the secondary data relating to the period of 32 years from 1960-61 to 1991-92. Various issues of 'Indian Coffee' and publications of the Coffee Board provided the data base for the study.

First attempt was to choose a measure of instability. After a review of various measures, one based on the work of Cuddy and Valle was chosen with its stringent conditions, viz., (i) the regression model should be properly founded in theory and (ii) empirically estimated model should confirm to the theoretical expectations and statistical tests.
Here, two different forms of trend equations were used—one was linear and the other was log-linear. The final choice of an index of instability was done as per the suggestion of the authors namely,

a) If the regression equations (linear and log-linear) are both significant choose ISIXg based on log-linear equation,

b) if $R^2$ is significant at one per cent level for one equation but not for the other, choose ISIXg corresponding to the significant equation,

c) if $R^2$ is not significant at the one per cent level for either equation, choose CV.

Next attempt is to understand the causes of instability and their relative importance with the help of an econometric model of Competitive Price Adjustment. A dynamic disequilibrium model of price adjustments in competitive market based on the work of Hwa is used. It yields structural information directly. This basic model is used to specify separate models for determining domestic prices and export prices. Though formulated on competitive structure assumptions, the models show
imperfections in the market, if any, by the insignificance of coefficients of supply, demand and stock variables. Both the models used the rational expectation hypothesis of Muth and were estimated by the ordinary least squares method. Estimated equations have good fit and are valid for drawing inferences. Salient findings of the analysis are briefly stated below.

6.3 FINDINGS:

As a commodity important for earning foreign exchange to the country and for its world wide preference for its special flavour, Indian coffee has received the attention of the Government of India. While internationally, International Coffee Council and the International Coffee Agreement have been tried as a price stabilization device, in India the efforts came in legislative actions. Several Acts were passed and they led to the establishment of the Coffee Board. The Board consists of a Chairman appointed by the Government of India and 32 members representing various interests.

Under the Coffee Act (VII of 1942) all coffee growers are under a statutory obligation, to register their estates and to deliver their entire crop to the
pool after retaining such quantities as they are allowed by the Board for their domestic consumption and seed requirements. The extension of the pool marketing to the entire crop was brought in stages to ensure smooth changes and fair marketing practices. Pool depots and pool agents collect coffee from growers. The processing and the quality testing are done by the curers.

The final products, parchment coffee by wet method and cherry coffee by dry method of processing go by the general term "Cured Coffee". The grading of coffee in India is at present done by the curers in accordance with the standards prescribed by the Board. Finally, the graded coffee is assessed separately against Fair Average quality samples and points are awarded in the price differential scale. The total points obtained for a lot determine the quality of the coffee and the total money value for a consignment.

After the estimation of the current season's coffee crop by the Board and making adequate provisions for the internal market and the balance for exports, the Board release the pool coffee for internal market through the following four main channels: (a) pool sales, (b) local sales, (c) allotments to co-operative societies and (d)
allotments to propaganda departments. The coffee is then sold by open or closed auctions. For these sales, the price is fixed above the cost of production (COP) which is estimated by the Government of India on the basis of estimates made for a sample or representative farms. In the external market, the International Coffee Agreement binds all the member countries and India is allotted an export quota of about 43,000t and the supplies in excess of it has to find market in non-member (of ICO) countries. The USSR and China are the major buyers, outside ICO of course, with a discount on prices. Coffee is also sold to foreign buyers on 'spot sale' against the quota allotted under the ICA. The Board sells coffee to instant coffee producers who export their produce directly.

Initial payment (as advance) is made to the growers as soon as the coffee is delivered by them to the pool. The small growers are paid a slightly higher rate than the large growers. The balance is paid after the coffee is sold and accounts audited. Ultimately, the planters get the actual value realised by each variety of coffee less the marketing cost. If the overall price for a variety of coffee is higher than
that of other varieties, the growers of the variety would get proportionately larger payment by means of bonus points. That such an elaborate procedure entails delay can not be disputed.

Thus the Coffee Board has succeeded in vertically integrating the process of production, processing, marketing, export and domestic sales and in evolving a system of cost based pricing that allows reasonable profit to producers, incentive to producers of quality coffee and reasonable price to domestic consumers. This has provided an opportunity to the Board to equalise supply-despite its fluctuation - to the demand.

In spite of its monopoly control over the whole process, the system of pricing is allowed to have a competitive element in the method of pooled sales, through auctions. Elaborate arrangements for quality control; to help small growers with sufficient initial payment and scientific method of quality based pricing are its strategies to improve productivity, consumption and export.

Indian coffee of all grades is the best in the world and is used to blend with coffee of other origins.
Yet, the share of Indian coffee is not that large in world export, largely because her production itself is very small compared to the total production in the world. Robusta coffee was more sensitive to the seasonal variations, than Arabica coffee. Therefore, relatively lesser share of Robusta coffee in total production contributed in a way to reduce variation in total production of coffee.

Thus over the decades domestic consumption has increased, but only slowly. In contrast, its share in total supply had sharply declined to as low as 12.60 per cent. Though it showed ups and downs over the years, a general uptrend was significantly visible in export of Indian coffee. Production of coffee has more than trebled during the three decades ending 1991-92. Notwithstanding its biannual nature of production a steady uptrend in production is seen. This has contributed to the increasing size of stock holdings, largely because both domestic consumption and export had moved up at relatively slower pace.

Area under coffee had doubled in 30 years, while production in spite of its year to year variation had increased merely three folds, revealing that improvement
in productivity per hectare was not small. This steady and significant rise in productivity of the crop showed that the Board had succeeded in transferring technology to the growers and in helping them realise the benefit. Farmer's prices in excess of retail price showed that farmers interest has been protected by the Board by helping them receive prices higher than the retail price, the consequent losses being absorbed by the Board. This was possible by the near mono-poly power enjoyed by the Board over the supply and sales of coffee.

The share of domestic sales in total supply was around one third of the supply. Large quantities went for export and when it was not possible remained as stock. It was shown earlier that the size of stock holding increased with the rise in production. Yet, the Board's efforts to promote export had found reflection in the increasing volume of export. Not only the volume of export increased but also the price per unit of export (Unit value realised in rupees at the current exchange rate).

However with the collapse of ICA in 1989, India was the looser in terms of export price for coffee. In the
last three years unit value realised had declined sharply, but volume exported increased substantially.

Therefore the Board exploited economically advantageous export market to make good its losses in the domestic market. Its performance showed that the Board had served its role successfully.

Values realised in export of coffee showed that a rise in price of coffee for one or two years was followed by a fall in price in the following year up to 1972. There was rise in price up to 1978 and then the earlier cycle was revived. This was the evidence for high instability in realized value of coffee exports.

The coefficients of the trend variable were statistically highly significant in all the equations. Therefore, CV of non-detrended data would overstate the variations in the variable studied.

Coffee production in India grew at the rate of 1.74 per cent per annum, while domestic consumption and export grew at 0.9 per cent and 2.23 per cent per annum respectively necessitating inventory accumulation at the rate of 3.96 per cent per annum.
The growth rate in domestic price of coffee was much higher than that in unit value realised for coffee exported. It implied relatively cheaper supply of Indian coffee to foreign buyers as compared to domestic consumer.

Nearly 99 per cent of variation in the domestic price of coffee could be explained by the variables specified as explanatory variables. The consumption of (demand for) coffee to have had a negative relationship with its price the supply side effect was absent in the market for coffee within the country. There was a cobweb pattern in price movements suggested by the rational expectation hypothesis of Muth. It should be remembered that production and stock holding (together constituting total supply) did not influence the domestic price per se but the last year price did. This was due to the operation of the control by the Coffee Board over the supply of coffee.

This implied that the Coffee Board had sufficient market power to effect desired changes in the price of coffee in the domestic market.
Maintenance of parity for the price of coffee with that of tea would have a positive impact on the domestic price of coffee, but the effect of an rise per capita income and domestic consumption would have a negative effect. However, by reducing cyclical fluctuation in price of coffee (i.e., by maintaining stability in the price of coffee) the Board would be able to make adjustment in the domestic price of coffee. If the price stability is lost, the result would be explosive. Therefore the right policy option to the Coffee Board would be cautiously guard the stability in price of coffee.

Real option to the Board was therefore demand creation and management of supply (production and stock holding) to be in equilibrium with it to ensure stability in the price.

Nearly 91 per cent of variations in the export price of coffee could be explained by the variables specified. The domestic price and lagged export price had no influence on the unit value realised for the Coffee exported.
Its competitors held the market mostly (more than 95 per cent share of the market) and India had least market power. Yet, Indian Coffee is most preferred for its taste and quality. Therefore better processing and quality control to enhance the quality of coffee, especially in the new, ready-to-use farms such as freeze, dried instant coffee, might bring price advantage and improve its market share at least, marginally.

ICA brought price advantage to Indian Coffee in the international market. But the value of the elasticity coefficient was very small, just 0.6663. Therefore, recent collapse of ICA had removed even this small gain and its revival would be to the advantage of India.

An over view of the results discussed above would lead to the conclusion that India would gain in export of Coffee if ICA were operational and would loose in a free competitive world market largely because of its negligible market share; but the quality of the coffee would assure it a hold on the international coffee trade.
6.4 CONCLUSION:

The summary of the salient findings presented above supported the hypotheses framed for the study. Results clearly showed that the Coffee Board was fairly successful in promoting area, yield, production and export of coffee and there was improvement also in unit value realised for export. But the growth of domestic consumption of coffee was very small, despite low and stable prices. This had resulted in the accumulation of stock unsold, the size of which was seen to increase fast. Therefore attention to the domestic market to promote consumption would help reduce the stock holding and achieve stability in coffee prices to the consumers. Thus the domestic market could be managed to be a cushion against uncertainties in the international market. This was in fact the first hypothesis of the study.

As the increasing size of stock holdings was the major problem that eluded solution for all the efforts of the Coffee Board, the alternative would be to reduce the Board's monopoly over production and supply. Optional pooling - which meant that farmers would be
given option either to deliver the produce to the coffee Board or to sell it outside - after delivering a specified percentage of their total production to the Board. It would be a sort of levy system, to replace the present monopoly procurement. One advantage would be that the responsibility to hold stock would be shared by the Board and the producers. Producers self-interest would require them to offer their supplies in response to the market demand. Thereby it might be possible to achieve both growth and stability in production. Price adjustment model indicated strong influence of the market power of the Board on domestic price of Coffee. Therefore reduction of this power through optional pooling would only add to instability and would not reduce it. Present system had helped significant growth too. So optional pooling was not a sure choice for stability or growth. Therefore the second hypothesis had strong evidence to support it and the Board has to continue with its powers, at least till an alternate system is put in its place.

The Coffee Board had complete control over distribution of coffee. Then, year to year increase in stock holding of the Board that coexisted with
instability in domestic prices would show that buffer stock operation was ineffective in maintaining price stability for coffee in the domestic market. Nor it could have any effect on the international trade because India's share in the total world trade of coffee was less than four per cent. International Coffee Agreement with its quota system brought little price advantage to the country but it reduced instability in unit value realised for export. Therefore quota system was more beneficial than buffer stock for such participant in international trade, as India. This implied a role for the Coffee Board as stated in the third hypothesis.

The Coffee Board was taking special efforts to help small growers by way of transfer of technology, payment of premium price and large share of the value of the purchases as advance. All these measures are further strengthened by providing them an assured market and incentive prices. Scientific method of pricing, pool sales provided guarantee of profit to the small growers. The result was seen in significant growth in area, yield and production of coffee. Therefore the present policy of the Coffee Board had to be continued to safeguard the interest of the small growers. This role of the Board confirmed with the above hypothesis.
The operation of ICA had the effect of lowering the unit value realised for Indian coffee export both in absolute value and annual growth rate. Therefore, the inference would be that ICA had to continue for earning the foreign exchange and for not losing the market share already existed. Thus, the fourth hypothesis was verified to be true.

An overview of the results summarised and the verification of hypotheses lead to the conclusion that the Coffee Board was successful in playing the role assigned to it in respect of production, pricing, protecting interests of growers — particularly small growers among them, and in export. But accumulation of stock and instability in prices were observed to be beyond its control. One basic solution to these problems was an increase in domestic consumption and slow down in the growth of production. Supply management of coffee would require the Coffee Board to plan area expansion in pace with the domestic demand for coffee rather than in isolation with a pursuit of growth per se.
6.5 IMPLICATIONS FOR RESEARCH:

Above conclusions have specific implications for policy and further research. With its monopoly control over coffee production and trade, the Coffee Board will find these implications useful for its policy decisions.

* Robusta coffee crop is more sensitive to the variations in agro-climatic conditions than the Arabica variety. Therefore, area under Arabica should find preference in new extension area under coffee to help stabilization in production. Whether it will help stabilization in price of coffee in turn? This question can not be answered by this study because the coefficient of production (Variable representing supply side forces) and that of stock holding were not statistically significant.

* India's presence in the international market for coffee is more due to the quality than the quantity of coffee supplied. Therefore, stringent measure of quality control must continue without any room for complacency.
Elaborate procedure in fixing value paid to the coffee growers for the coffee delivered by them works satisfactorily. But, it has scope for improvement by reducing time lag in announcing MRP and relating it to current year COP. An arrangement for continuous and annual estimation of COP and computerisation of the accounting system are the urgent needs.

Control over inventory accumulation is the best theoretical solution for price instability. Results show a rise in the year-end stock of coffee over the years, especially in the recent years. Rapidly increasing production vis-a-vis a stagnant domestic sales and restriction by quota in the export market are the causes of accumulation of stock. Therefore, promotion of domestic consumption of coffee must receive special attention, besides sales to non (ICO) member countries. Relatively more stable domestic price of coffee is an advantage to promote coffee consumption.
The Board's success in production of coffee had yet to find a matching performance in domestic sale. In export also the very large exports in the more recent years might be a temporary phenomenon and every effort to maintain the present level would be useful to reduce the size of stock holding.

The stability in domestic price of coffee is largely due to the effective control of the market by the Coffee Board. Results show that the Board has to take the market price of tea and the price expectations into account in fixing the sale price of coffee.

ICA brought very small price advantage to India but it reduced instability in unit value realised for the export. Therefore, India should persuade the members of ICO to revive ICA, because open competition may be difficult to survive, for India, which has a very small share in the world market for coffee.
The coefficient of variation of the non-detrended data generally overstates the instability in the variable studied. Therefore, its use must be restricted to comparative study of two or more variables (where the bias can be assumed to be uniform) or when the number of observations are too few to allow estimation of trend. Whenever a trend estimation is possible detrending the data was essential.

The ordinary least squares method used in this study is simple and has yielded good fit for the equations. However, it must be possible to add sophistication to the method by the use of a system of simultaneous equation models for describing the market structure in more detail.