Chapter 1

Introduction

1.1 Background

The objective of my study is to judge the extent to which the living standards of the poor are affected by trade liberalization in agriculture. Though there are various studies regarding whether the incidence of poverty has been increased or not during the 90s when India opted for liberalization, there are no studies how trade liberalization in agriculture in India would directly hit the cost of living index of the poor section of the population. The measuring rod, I have chosen is the Consumer Price Index of Agricultural Labourer (CPIAL). The period of study extends over 27 years (1977-78 to 2003-04), which is equally divided into two sub-periods – pre-liberalization period and post-liberalization period. Though the formal treaty on agricultural trade liberalization in India was signed in 1994, we can loosely term 1991 as the beginning of liberalization era. Therefore the pre-liberalization era extends from 1977-78 to 1989-90, the post –liberalization era is the residual part of the period covered i.e. 1990-91 to 2003-04.

We live in an age obsessed with growth and globalization. Some nations have been proactive in adapting their domestic environment to attract international business and liberalize trade, while others have been reluctant. India is a latecomer in the process of globalization. The development strategy, pursued in India so far, however has differed from the general trend in many ways. The solution to the problem of development including poverty in India was seen in having a public sector dominated, heavy industry
based, import-substituting industrialization. Growth impulse from such inward looking policies was inadequate. Policies and institutions evolved in the backdrop of such a development strategy had perverse incentives, constrained development and provided avenues for rent-seeking (one such avenue was import licensing). Rates of return were low or even negative and instead of fostering growth, the public sector enterprises became a drain on public resources. India’s infrastructure, which was widely recognized to be of inadequate quantity and quality, became increasingly stretched as economic activity (despite the low rate of growth) led to increase demands on infrastructure at a rate greater than that at which supply was increasing.

Although India’s monetary and fiscal policies were relatively conservative, in contrast with those in a number of developing countries, the upward shift in the demand for imports arising from the plan pattern of expenditure and a rate of inflation above that in the rest of the world combined to lead to increasing rupee overvaluation. That overvaluation plus the pull of resources into import substitution induced by high level of protection (both from tariff and the unavailability of import licenses) discouraged export production and exporting.

By the 1980s, fiscal and monetary policy became significantly more expansionary. While that policy stance was unsustainable in the long run, the real rate of economic growth accelerated to average around 5.8% annually leaving low rate of growth (called Hindu rate of growth) under 2% up to 1980, far behind. In 1991, the inevitable consequences of expansionary policy were felt in the form of a balance of payment crisis, as foreign debt had accumulated during the 1980s and the inflation rose to a peak level of 17%, much above the politically acceptable rate. Foreign exchange reserves had dwindled to a level that could provide only two week’s import.
The then Finance Minister Manmohan Singh went beyond the traditional stabilization package, announcing a program of economic reforms which may be called structural reforms (i) opening up to world market (ii) deregulation of domestic market. These measures implied a significant departure of earlier policies of regulation and governmental intervention in the economy.

Since globalization measures had been taken all on a sudden (There were several indirect evidences to imply that these measures were not well planned ones), out of a severe macro-economic imbalance, these measures aroused a considerable amount of debate. Specially, ‘market’ was not palatable to the poor. While there was unanimity about the steps to check prodigal government expenditure, the retreat of the government from the developmental activities was highly debated.

The specific measures taken by the government, apart from reduction in fiscal deficit, were (i) devaluation of rupee (ii) abolition of exports subsidies and import entitlement scheme for the importers and (iii) trade liberalization of agriculture. Specially, the last measure became the most controversial issue. With devaluation of rupee and trade liberalization in agriculture, the prospect of ‘cereal’ trade which had hitherto been secluded from the world market, increased manifold as the difference between domestic price and international price of the cereals had been widened in consequence of devaluation. Most of the economists of the date were more concerned, not with the prospect of liberalization in agricultural trade but with the fact that with the opening of trade, the relative price of food, including rice and wheat, the staple food for the poor, would increase at a striking rate. There was a serious concern also regarding the availability of food since there was an inverse relation between food availability and agricultural export.

Though there was considerable amount of debate about the potential of agriculture to flourish after trade liberalization, there
was consensus that this measure would be a direct hit on the living standards of the poor and a protective cover should be accorded to them. But at the same time, as mentioned by Nayyar and Sen (1994), India would be a ‘large’ country with respect to cereal trade, which was hitherto been prohibited. According to them, the large country status of India would not enable her to enjoy this difference between domestic price and international price for long as large scale participation in world trade would lead international price to come down in near future.

I go through empirical verification and the empirical results found are not quite the same as expected. There are some anomalies there in the post-liberalization era (Since my objective is to judge the impact of trade liberalization in agriculture, the expectations spelt out are regarding the possible effects of trade liberalization, anomalies are found with respect to those expectations in the post-liberalization data. While explaining these anomalies found in the post-liberalization period, I have established with data that not the trade liberalization in agriculture but the price-support system working through increase in procurement price, volume of procurement, issue price were responsible for variations in CPIAL. Working of this price-support system entailed huge amount of subsidy expenditure at the time of fund-crisis in the post-liberalization era. I try to capture the implications of those food policies related to price support system in an economy stuck with fund-crisis. The fund crisis is represented by the fixed budget of the government. Whenever there is an increase in subsidy expenditure, there will be a corresponding decline in welfare expenditure. I try to judge the impact of those food policies in a two-sector model and three-sector model in a closed economy and then the three-sector model with free trade in an open economy. Comparative static exercises are done with respect to different food policies, which are undertaken with more frequencies and intensities during post-
liberalization era compared to pre-liberalization era and results are analyzed from the point of view of the farmers, consumers and the point of view of the society as a whole. At the same time I want to point out where the results are deviated from reality and why. Both from the empirical and theoretical analysis, it appears that liberalization of trade in agriculture gives the farmer so strong a foothold that they can manipulate policies like procurement price, volume of procurement in their favour. That’s why I want to give a policy prescription in terms of a separate model, where the farmers decide over the volume of procurement and manipulate procurement price by lobbying.

1.2 Survey of Literature

The survey of literature for my study covers the following areas

(i) Globalization – problems and prospect
(ii) Trade liberalization in agriculture – problems and prospect
(iii) Effect of curtailment in government expenditure
(iv) Effect on Poverty
(v) Effect on Food security and Public Distribution System
(vi) Macro economic models with Public Distribution System
(vii) Rent-seeking

The time has come when nobody can say a clear “no” to globalization. Though the economists feel that now they have to steer the economies and societies through a change and adaptation towards market economies but at the same time become apprehensive about the adverse effects, especially on the poor. Sikdar (2002) indicated three potential dangers for a country:

(1) Increased exposure to rise of unpredictable ups and downs in the global business.
(2) Worsening of income distribution and
Adverse effect on environment and cultural diversity.
Patnaik (1995) in his paper has expressed the fear that globalization in the era of financial mobility dooms economies like India to a perennial state of low and highly unstable growth. This fear is expressed also by D. Nayyar (2003) in his paper. According to him, contrary to the ideology of market economics and political democracy, they may not ensure prosperity for everyone but may in fact exclude a significant proportion, particularly the poor from the process of development. He has analyzed how markets exclude people, as there is no equality among economic agents or political citizens in terms of their economic and political freedom to choose.

Since my topic of research centers round trade liberalization in agriculture in India, my second theme in the survey of literature is the problems and prospect of agricultural trade liberalization in India. We should start with Gulati, a strong proponent of trade liberalization in agriculture. Gulati (1998) is of the opinion that globalization in the economy including agriculture offers opportunity to correct anti-agricultural bias in the trade policies that have been in existence since 1950s. He has measured Aggregate Measure of Support (AMS) in terms of minimum support price and input subsidies extended by government. AMS is calculated for different agricultural product for the triennium ending 1988-89 and 1992-93. In his paper Gulati (1994) showed that it was negative in terms of support price The negative support (or net taxation) was due to the fact that price of different crops were fixed by the government below their international level (barring rapeseed, mustard and sugarcane). The highest negative product-specific AMS was found for wheat [Rs.(.)85.74 billion], closely followed by rice [Rs.(.)77.23 billion]. He hoped that after trade liberalization agriculture would prosper and propel growth on other
sectors too on a sustainable basis if supply bottlenecks were freed and a protective cover was accorded to the poor.

Some recent empirical studies (Thamarajakshi 1994, Desai and Namboodri, 1997, Mungekar 1997) showed negative coefficient between the terms of trade and the aggregate output/marketed surplus indicating that the relative prices (domestic inter-sectoral terms of trade) did not matter much in influencing aggregate output. But Mishra (1998) challenged those results by his own estimates. According to his estimate, in the process of economic reform, favourable terms of trade seemed to have helped not only in raising overall aggregate production but also in creating conditions under which private gross fixed capital formation (private investment) in Indian agriculture increased although the growth rates of both aggregate output and private investment had shown a decline in the period of post-economic reform.

So far as the supply bottlenecks were concerned, Balakrishnan and Ramaswamy (1997) have pointed out that unless there was adequate infrastructure (eg. roads, telecommunications and port facilities) and a network of producers’ services (eg. transportation, packaging, refrigeration, repair services and credit) market opportunities thrown up by trade liberalization could not be perceived and responded in a timely manner. The same argument was shared by Gill and Brar (1996), while estimating the export competitiveness of wheat and rice in Punjab. They showed that under the present production technology, marketing and handling system and tax structure accompanied by double-digit inflation had eliminated whatever advantages the country could acquire in these two commodities following massive devaluation of rupee in 1991. Moreover international prices were volatile in nature. The prices, paid by the final users, were shared by processors, traders and farmers. When the three categories belonged to different countries
with farmers belonging to developing world, the share left to the latter was very small.

So far as export performance of India was concerned, Srinivasan (2004) pointed out that since the mid-sixties real wages and labour costs had risen in East Asian countries, thereby eroding their international competitiveness in the world market. Other labour abundant economies such as China and India lagged behind East Asia in the growth of real wage, could be expected to gain market shares at the expense of East Asia. China having opened her economy a decade earlier swallowed the initial relative advantage in the competition for market shares. Although compared to the pre-reform era, India’s export performance improved, India’s competitors, particularly China had done much better. Tendulkar (2000) confirmed India’s weak competitive position. It is clear that the domestic constraints raised the cost of Indian producers relative to their international competitors. The failure to reform state-owned enterprises in power, transport and financial sectors and the functioning of ports meant that the production as well as transaction costs of Indian producers remained relatively high. Because of financial constraints faced by the government those state owned enterprises could not be modernized.

Of course an appropriate exchange rate could offset the cost disadvantages. Srinivasan and Wallack (2004) analyzes the relationship between the real exchange rate and the export competitiveness from 1963-98. The relationship between the real effective exchange rate and the log of total value of exports was strong, the coefficients are negative and highly statistically significant.

I have already mentioned that many economists of the date were more concerned, with the adverse effect of it on poverty and food availability and about the functioning of the Public Distribution
System rather than the not so bright prospect of agricultural trade. Sen (1996) observed from National Sample Survey (NSS) data that poverty which had not showed any time trend at all till the mid 70s, declined significantly between the mid 70s and the end 1980 but appeared to have increased in the 1990s. Sen claimed that the econometric models which include Relative Price of Food (RPF) and other explanatory variables such as agricultural productivity resulted in a much better explanation of pre-reform and post-reform poverty than econometric models that ignored RPF. Furthermore Sen showed that RPF did better in tracking poverty than the inflation rate. But he stressed emphasis on non-agricultural employment as a crucial factor for rural poverty. His hypothesis was that unsustainable increase in fiscal deficit during 1980s led to increase in non-agricultural employment, increase in real wage rate and decline in rural poverty. In the post-liberalization era, not liberalization but contraction in government expenditure, was the cause of decrease in primary employment and increase in poverty.

Ravallion (1998) using 24 observations of NSS rounds from 1958 to 1993-94, obtained a correlation of 0.76 between poverty (head-count ratio) and RPF.

Tendulkar and Jain (1995) established a causal link (though indirect) between economic reform and poverty. They had shown with the help of empirical data that the rural poverty situation deteriorated sharply in 1992 and reached approximately the pre-reform level in 1993-94. According to them, the sharper increase in rural poverty in 1992 was a consequence of weather related natural forces (a dip in agricultural production in 1992), constricted maneuverability of government action (squeeze in fiscal budget for rural employment generating program) and certain political economic factors those were influenced by the reform related policies of devaluation of currency and intended reversal of disprotection of agriculture (farmers getting strong foothold,
pressurized the government by withholding supply, to increase procurement price of rice and wheat and government without having other alternative, in turn increased the issue price).

As regards the food scarcity and functioning of Public Distribution System (PDS). Utsa Patnaik (1996) in her paper expressed the fear that with the opening of trade in agriculture, self-sufficiency in food might be turned into shortage. She cited the experience of Mexico and Sub-Saharan African countries. Africans with their low and declining income could not compete with the global market. When their economies were fully opened up to the pull of international demand, they saw their own land and resources being bid away by the pull of international effective demand from the production on the basis of foods they needed themselves to the production of exportable. P.Patnaik (1996) in his paper established in terms of a model that in an underdeveloped economy like India where output of agricultural sector was not demand determined and its productive capacity could not be augmented in the short run through the shift of resources from elsewhere, domestic availability of such product was inversely related with how much was exported. Alignment with world prices was likely to be a patently in-optimal policy for such an economy.

Last but not the least topic related with agricultural trade liberalization is the functioning of PDS. The research and writings are motivated mainly by two factors. The first is the continued importance of food security in a land with millions of poor and undernourished persons and the second is the threat to food security in the current context of liberalization, structural adjustment and associated weakening of welfare system. Swaminathan (1998) has cited four implications of structural adjustment for food security:

(i) With a shift in strategy towards a more export-oriented economy, patterns of production in the agricultural sector
are likely to change and food production for the domestic economy is likely to be affected.

(ii) Devaluation and macroeconomic changes affect the absolute and relative price of food commodities

(iii) Changes in the pattern of expenditure by government affect food subsidies and expenditure through changes in input subsidies, public investment and so on.

(iv) Economy-wide changes in poverty, in inequality and in unemployment are all likely to affect real income and households’ food security.

The weakness of the public delivery system had been exacerbated by the introduction of structural adjustment policies in the 1990s. Since India’s experiments with structural adjustments were relatively recent, she reviewed the experience of Mexico, Srilanka, Jamaica, Zambia and Tunisia to identify the impact of structural adjustments on food subsidies and on the consumption and nutrition and food security of the vulnerable population. These experiences showed that policies of structural adjustment had worsened economic and social inequalities and imposed further hardship on the poor.

The diminished commitment to PDS was reflected in the changes in policy, in the inflation in food prices in the decline of quantities supplied to the distribution network and in the introduction of targeting. While universal rationing leads to wrong inclusion of ineligible beneficiaries resulting in higher financial cost, targeting may lead to welfare cost to individual or society due to inadequacy of food and malnutrition. The latter cost is difficult to measure. One attempt to value the welfare cost of malnutrition in monetary terms was made by Giovanni Cornia and Francis Stewart (1993) They examined the effects of undernutrition on (a) short term labour productivity (b) long term productivity via phenomena such as
growth retardation and (c) intergenerational variable such as reproductive efficiency.

Balakrishnan and Ramaswamy (1997) cited another problem of PDS. They had shown that consumers perceived grains from private retail outlets to be of higher quality than grains available at ration shops, even though the government was not set out to supply lower quality grain. The appearance of quality differential at retail outlets was due to a combination of inefficiencies in the PDS marketing chain such as bad purchase, handling and indifferent service at ration shops. Whatever be the reason, the outcome was that whenever government increased issue price, PDS sales fell as consumers exit into open market.

Next comes the macro-economic models of less developed economy dealing with food policy viz. procurement price, procurement and issue price. I start with Das (1989). She studied the effect of food policy viz increase in procurement price and volume of procurement, fall in issue price under three different modes of financing; budget deficit, direct taxation of profit income and indirect taxation of production of industrial good. The study suggests that budget deficit is the best method of meeting the cost of procurement and distribution of food because the policy induced expansion of output and employment is likely to be reinforced and not hindered under this mode of financing. Direct taxation of capitalists’ income will have a contraction effect, though it cannot offset fully the expansionary effects of food policies provided the workers’ marginal propensity to consume industrial goods is higher than that of capitalists. However financing by means of an indirect tax on industrial output exerts a much stronger dampening influence on demand and can in most cases counterbalance the expansionary forces generated by food policies, especially if the degree of monopoly in the industrial sector is sufficiently high.
In another paper Dasgupta (1989) attempts a macro-theoretic investigation of the links between the procurement price and such variables as the free market price of food, the level of industrial development, the size of food subsidy incurred by the government and finally the distribution of income between industrial capitalists and agricultural landlords. The paper stays scrupulously clear of the speculative forces that might characterize the free market.

The central concern of the study made by Sanyal, Mukherjee and Patnaik (1989) is to pursue the relation between money supply and price in a situation where aggregate demand is less than full-capacity output. The way they visualize this influence is through the supply of credit on the private stock holding decisions in industry as well as in agriculture, and consequence on price follow from variations in these decisions.

Now they want to explore a situation where increased credit availability due to government expenditure prompts a higher stock in agriculture. It raises food price through contraction of supply. The employment in industry will increase if contraction of demand through the rise in food price is greater than the contraction arising from the redistribution of income from workers to agriculturists.

They have explored another situation where apart from boosting effective demand, the other direct impact of government expenditure is on stock holding of industrial goods. Industrial employment will rise if the nominal demand increase on account of government expenditure and the induced increase in stock holding cannot be financed by the savings generated purely because of the price rise. Clearly in such a situation output and employment have to rise to generate extra savings to match the increase in demand.

Bose (1989) has shown that the popular view that the unequal distribution of income is responsible for low capacity utilization in industrial units is not correct If the diagnosis is correct, the redistribution of income or land in favour of rural poor will
definitely boost up the output and employment in the mass consumption good industry. He considers two possibilities (i) more remunerative price for the small farmers and (ii) change in agricultural output. But they may not end up in expansion of output and employment in the mass consumption good unconditionally. The reason is traced to the interaction between foodgrain prices and the demand for industrial goods, given the highly (own price) inelastic demand for food, factors contributing towards an increase in food prices produce ceteris paribus a contractionary effect on the industrial sector.

Rakshit (2003) has described a simple analytical framework which helps us to appreciate some crucial sources of failure in food policy viz, despite low growth and year to year fluctuations in food grain output, persistent increase in procurement, failure to dispose of overflowing granaries and drastic decline in offtake, over the last quinquennium.

Sarkar (1993) has analyzed the formation of agricultural prices. In particular he has shown that (i) the rate of price increase goes down as we move from busy to the lean and from the lean to the leaner seasons (ii) the small sellers sell off their entire stocks earlier than large sellers. The determination of agricultural prices means a price sequence, which is roughly speaking, concave.

Then he considers the effects of certain types of government intervention like trading procurement, announcement of support prices and so on. The pattern of sales is described as follows. In equilibrium, only large sellers will sell both to government and to open market, small sellers will sell to the open market alone. In equilibrium the market price will lie above the procurement price, which is equal to marginal revenue. Even then large sellers sell to the government because if they dump entire stock in the open market, they will experience larger price fall. But the small price-taking sellers will sell only to the open market. Now if the
procurement or procurement prices increases, market price goes up further. Thus the procurement policy of the government benefits the small farmers more than the large farmers as the former sell the entire amount to the open market whereas the latter group sells a significant portion to Food Corporation of India (FCI) at the procurement price, which is less than the open market price.

In the joint paper by Sarkar and Bhattacharya (2000), the effects of international trade in food grains on important macro variables like industrial output, balance of payment and the level of poverty are observed in terms of a simple macro model for a less developed economy. It is shown that trade in food grain might adversely affect industrial output if land distribution in the agricultural sector is sufficiently unequal, the effect on balance of payment is favourable provided the effect on industrial output is adverse and the effect on the level of poverty is at best ambiguous.

In another paper, Sarkar (2001) looks at the welfare aspects of trade in agricultural good in a less developed country where the agricultural market is controlled by a handful of large farmers. It is shown that the success of trade reform depends upon the distribution of output between large and small farmers and the success of land reform leading to redistribution from the large to the poor depends on trade reform. In other words, if undertaken in isolation, each reform might lead to a fall in welfare, but if jointly undertaken, they will lead to an increase in welfare. Thus the two reforms are complementary.

After finishing the survey of macro-models of less developed economy, we will concentrate some literature on rent seeking. Rent seeking takes place when people feel that people in government are amenable to persuasion to provide privileged personal benefits. Rent seeking is generally prevalent in controlled regime. Krueger (1974) has pioneering paper in this field. She has shown that government policy of import licensing during 1970s gave rise to
malpractices like bribery. She has taken two countries India and Turkey. According to her, any sort of rent seeking is welfare worsening as it diverts resources from production to unproductive channel such as bribery, lobbying expenditure.

Bhagwati (1980) is of other opinion. He says that since rent seeking is generally undertaken in controlled regime, trade distortions must be there and if trade distortions lead to negative factor earning, then channeling of resources to zero output activity like lobbying expenditure, may be welfare improving.

There is now quite general recognition from beginnings by Tullock (1967) and development by Posner(1975) and Cowling and Mueller (1978) that the social cost of monopoly power encompasses the resources expended by individuals seeking to become the beneficiaries of monopoly rents. However since the activity of rent seeking is not observable, the observed value of monopoly rents is quite generally adopted in approaches to evaluation of the social cost of such activity. Based on these original works there has been in recent years a large volume of papers on the subject of rent seeking. These papers have taken the subject in various directions such as strategic rent seeking (Tullock, 1980), tariffs versus quotas as object of rent seeking (Bhagwati and Srinivasan, 1980), rent seeking and risk aversion (Hillman and Katz, 1984), rent seeking and rent avoidance (Appelbaum and Katz, 1986a) and equilibrium rent seeking (Appelbaum and Katz, 1986b).

In the above survey of literature though there is suspicion that the food prices will go high and hurt the poor adversely at least at the beginning of the liberalization, there is no empirical verification of its effect on Consumer Price Index of Agricultural Labourers (CPIAL). My thesis is an attempt to do that and explanation of the result in terms of a hypothesis substantiated with empirical data.
1.3 Outline of Chapters

In chapter 2, the objective is to judge the impact of trade liberalization in agriculture on CPIAL. More specifically, the objective of the study is to observe

- Whether the CPIAL has a rising trend a structural break especially after trade liberalization in agriculture
- Even if a structural break is found, I wish to check whether the structural break is caused by agricultural export and import, as expected.
- Since India is a large country with respect to cereal trade, there is a possibility that with large-scale participation (as cereal trade is not allowed before liberalization) may bring down the international price and thereby the domestic price (as both of them are expected to move together after trade liberalization). So I shall also judge whether CPIAL has a downward trend after a time gap corresponding to decline in international price.

To know whether trade liberalization in agriculture is affecting CPIAL in the expected manner, I, first check the time trend of CPIAL through scatter-diagram over the time period 1977-78 to 2003-04. Two features of the time trend of CPIAL worth mentioning

(i) The time trend of CPIAL has been found to have a structural break (supported by statistical test) at the beginning of post-liberalization era, in 1991, though the Uruguay Round Agreement (URA) on trade liberalization in agriculture was signed in 1994.

(ii) There is no downturn observed in CPIAL corresponding to downturn in the international prices. The rising trend in CPIAL is maintained throughout the period of study.

My next task is to verify that since CPIAL has a structural break in 1991, at the beginning of post-liberalization era but before the trade
liberalization in agriculture, whether liberal agricultural export and import are responsible for this structural break. While doing this regression analysis, factors affecting CPIAL in the open economy are considered. If we are to single out the most important factor affecting CPIAL, it must be the market price of agricultural goods (mainly food items), not only because food occupies a significant proportion of consumption basket of agricultural labourers, but also because of the empirical finding that rate of inflation in agricultural product was greater than that of manufactured products starting from 90s. Factors affecting market price of agricultural good (thereby CPIAL) in the open economy are (a) gross domestic product (GDP) generated in the agricultural sector (in value terms),(b) net production of cereals(in quantity terms, gross production –quantity kept aside for seed self-consumption and waste, and the data-set is crop specific),(c) volume of procurement (crop-specific), (d) procurement prices (crop-specific), export and import of agricultural goods (in value terms).

From the regression analysis, which takes CPIAL as the function of all the factors mentioned above, we find that the agricultural export and import play a very insignificant role in explaining the variations in CPIAL throughout the entire period of study. On the other hand, the other factors excluding agricultural export and import, explain more than 99% of the variation in CPIAL.

As a next step, while giving explanation of the empirical result my search centers round three questions

(a) Why at the beginning of post-liberalization era even before the treaty on agricultural trade liberalization was signed, the factors influencing 99% of the variation in CPIAL are influenced so heavily to cause a structural break and

(b) Why did agricultural export and import remain an insignificant factor in explaining the upward rising trend of CPIAL even after trade liberalization in agriculture in 1994
(c) Why the rising trend in CPIAL continued even after international prices of agricultural goods experiences a downturn in the post-liberalization period. Or in other words why the movement in international prices were not transmitted on domestic prices even after trade liberalization.

These three questions are dealt in detail in three subsections of section 5 (explanation of the empirical result) of chapter 2. Three subsections are used to explain results for the three phases of post-liberalization period: (i) 1st phase: beginning of post liberalization era before formal treaty on trade liberalization was signed (1991-92-1993-94) (ii) 2nd phase: after formal trade liberalization in agriculture with upward rising international price (1994-95 to 1997-98), (iii) 3rd phase: post trade liberalization era with declining international price for a short interval (1998-99 – 2003-04). In a venture to find the causes behind those three trends in three phases, the support extended to the farmers in terms of food policy was found to be responsible for rising CPIAL. In a detailed analysis, I try to establish how trade liberalization in agriculture has changed the intensities of the impact of the food policies on the factors explaining the variations in CPIAL and substantiate my hypothesis with data. I analyze the situations under which all the queer developments that have taken place in terms of food policies during the post-liberalization era, (i) continual increase in procurement price (ii) frequent upward revision of issue price (iii) drastic decline in off-take and (iv) excess of stock over the stipulated buffer norm in Food Corporation of India (FCI) and how these developments have direct and indirect effects in rising CPIAL of the economy.

Chapter 3 deals with the over-all impact of those food policies pursued in India at a time of extreme financial constraint in terms of a theoretical structure, befitting Indian economy at the time of
launching liberalization program. Since liberalization measures were adopted in times of extreme financial crisis, fund-crisis has to be incorporated in the model. The fund crisis is represented by the fixed budget of the government. Whenever government extends food subsidy to the consumers or producers, it has to curtail expenditure on social welfare. I consider the effects of food policy instruments, namely procurement price, issue price and volume of procurement with this mode of finance, on different economic variables. Since the impact of changes in quantity of food distributed through ration and that in buffer stock are different, the volume of procurement is divided into two parts, quantity to be distributed through ration shops and buffer stock held by Food Corporation. Since the impact of changes in quantity of food distributed through ration and that in buffer stock are different, I treat them as separate food policies. But we do not consider the effect of decline in off-take, instead we assume that so long as ration price is less than market price, off-take is equal to quantity distributed through ration

In this chapter, as a first step, I confine my analysis to closed economic structure. Since our aim is to consider the impact of food policies, the Public Distribution System (PDS) has to be incorporated in the economic structure from the beginning. Under the closed economic structure, we will do the analysis in two sections

- 2-sector model: Agriculture and welfare (government) with PDS
- 3-sector model: Agriculture, welfare (government) and industry with PDS

Since our objective is to analyze the effects of food policies with fixed budget of the government, we have to consider government as a sector in the simplest structure of the model. Government sector is the social welfare sector where some public goods are produced and supplied at cost-basis to the individuals. There is no market for
the public good. Given demand, the public good is supplied on the basis of availability from the fixed government budget. We carry out the comparative static analysis with respect to different food policies in both two-sector and three-sector model, in two sections in chapter 3 (section 3.3 and 3.4).

The effects of the change in each policy parameter are observed from the point of view of the farmers and consumers. Since the interest of both the parties are conflicting in nature, to evaluate the true worth of the policy, I observe the effects of the policy from the point of view of the society as a whole. Or in other words, we will see how output in the non-agricultural sector (welfare sector in the two-sector model and both welfare sector and industrial sector in three-sector model) and food price behave in response to each policy. Thereafter The comparative exercises are extended to open economy model with free trade Since India is a ‘large’ country with respect to cereal trade, which opened up with liberalization in agriculture,. I discuss the effects of food policies in open economy in two sections, (i) small country case and (ii) large country case. Chapter 4 deals with the open economic version of three-sector model. We segregate the analysis of three-sector open economic model in three sections. In section 4.2, we build the three-sector open economic model with some simplifying assumptions, considering the country concerned is a ‘small’ country with respect to both agricultural and industrial trade and discuss the equilibrium and stability of the model. In section 4.3 we consider the effect of same set of food policies those discussed in closed economic structure namely change in procurement price, change in quantity distributed through ration, change in issue price and change in buffer stock in each subsection in open economy small country case

With trade liberalization in agriculture in India, the prospect of cereal trade, which has hitherto been secluded, has been brightened and India has been considered a ‘large’ country so far as cereal
trade is concerned. Since the objective is to judge the effects of food policies under the backdrop of effects of trade liberalization in agriculture on CPIAL in India, the status of India with respect to cereal trade has to be considered. In the next section 4.4, we consider the country concerned is a ‘large’ country with respect to agricultural trade, but ‘small’ with respect to industrial trade. The same set of exercises is done with respect to food policies in an economy, which is large with respect to agricultural trade but small with respect to industrial trade.

The three-sector model, having ‘large’ country status with respect to agricultural trade resembles India in the post-liberalization era and we find that all the peculiar developments that take place in the functioning of PDS during post liberalization period are expected to occur if we steer the policies in the interest of the farmers. But from the point of view of the consumers and the society as a whole, these policies are not at all optimal. So there is a natural presumption that the farmers must be influencing the government decision or in other words “rent seeking” occurs.

In chapter 5, I try to find out the optimum policy in an economy where the farmers are actively influencing procurement price and volume of procurement, in terms of a single sector (agriculture) model with given production. Agricultural sector is producing a single crop. The farmers have two avenues to sell their product, international market and FC. The existence of lobbying expenditure to influence procurement price also presupposes that after liberalization since the same price prevails in both the domestic market and world market, domestic market is not a place of shelter to the farmers,( when export is uneconomic), whereas sales to FC at procurement price higher than market price, is. So far as the decision of the farmers regarding allocation of the product to various avenues to maximize profit is concerned, we can conveniently divide it into two parts, open market (including both
domestic market and world market for food) and FC. Assuming a fixed internal solution regarding allocation of food between world market and domestic market, we can say that direction of changes in domestic market and world market will be the same. Since we are more interested in the effect of policy recommendation on export instead of assuming an arbitrary internal solution of distributing the production between world market and domestic market, we can drop the domestic market altogether in the decision making process. The farmers maximize profit with respect to two decision variables, the share going to FC, (thereby to export) and the amount of lobbying expenditure. Production being fixed, production cost is not considered in that decision. Only cost is lobbying cost.

After a brief introduction and survey of literature on rent seeking in the first two sections of chapter 5, we concentrate on the existence and stability of the equilibrium of the model stated above in section 5.3. In section 5.4, we observe what happens to equilibrium solution if a proportionate agricultural income tax is imposed in this set up. In the next section 5.5 of the chapter, we observe the effect of change in agricultural production. This section has two subsections, 5.5.1 deals with production effect without tax and 5.5.2 deals with production effect with proportionate agricultural income tax. This 5.5.2 has two further subsections: whereas 5.5.2a deals with production effect with fixed proportionate agricultural income tax, in 5.5.2b we observe the effect of increase in agricultural income tax rate when agriculture experiences an increase in production. Since the two parameters of the system, agricultural production and agricultural income tax-rate increase simultaneously, comparative static cannot be done in 5.5.2b, but various possibilities can be indicated. The section 5.6 makes the conclusion.

The last but not the least, in chapter 6, I discuss the summary results, policy implications and indicates the possible extension of the model.
End Notes

1. When I start doing this exercise the latest available dataset is for 2003-04. Since to realize the impact of trade liberalization in agriculture, pre-liberalization period and post-liberalization period are equally important and the data set on post-liberalization period extends over only 13 years, I have confined the pre-liberalization data set to 14 years only.

2. As a drive towards import substitution India had encouraged oilseed production in the mid-80s just before trade liberalization. If the trade liberalization in agriculture were a well-planned policy drive, it would not be wise to go for import substitution and that too by reducing the production of coarse cereals and pulses in which India had comparative efficiency in production.

Another indication that the trade liberalization policy was not well planned was that large-scale plants had not been allowed to operate in rice melting; oil extraction and poultry feed manufacturing. Consequently the processing industries in India had not been able to take advantage of the scale economies presented by modern technologies and inefficient by international norms. On the other hand non-traditional oilseeds such as sunflowers and soyabees were enjoying the establishment of large-scale processing plants [Balakrishnan and Ramaswamy, 1997] Had the trade liberalization in agriculture been well-planned one, advantage would not be given to those crops which were not competitive in the international market.