The Developing Economies, XXX-2 (June 1992)

GROWTH PERFORMANCE OF THE INDIAN ECONOMY, 1950–89: PROBLEMS OF EMPLOYMENT AND POVERTY

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I. INTRODUCTION

THE purpose of this paper is to contend that in a poor country like India the challenge of economic policy and investment planning must follow a bifocal strategy. Against the background of the highly fragmented and distorted economy inherited through the long period of colonial domination and the low level of infrastructure, human resource development, and living standards, in many parts of the country, the primary objective of economic and social policy, has to be developmental. At the same time the economy is so complex and restricted by the scarcity of resources, that efficiency as an objective must be actively pursued and integrated into the design of development. A mixed economy, instead of only being a constraint, provides a considerable flexibility in opportunities to pursue these twin objectives. The remarkable vitality of decentralized markets could be integrated in a strategic concept of the direction in which the economy should move. The empirical analysis of the Indian economy attempted in this paper shows that the shortcomings of Indian policies, in different phases can be traced to the insufficient attention paid to one of the two objectives, namely, strategic direction and efficiency.

This paper sets the framework of analysis in terms of the inherited colonial economy and its fragmented and distorted nature. It also shows that the arguments of those who contend that the poor performance of the Indian economy in certain periods was related to inadequate planning are empirically incorrect. The macro-performance of the economy can be explained in terms of structural planning parameters and their changes in various periods or policy trends. Policy reforms and grafting of market principles onto such macro-frameworks, however, also played a role. While a measure of growth has been achieved, the fundamental problem of the Indian economy has not been solved, namely, uneven development and the need to generate sufficient employment opportunities.

II. HISTORICAL BACKGROUND

At the time of independence, India inherited a highly distorted colonial economy. According to the econometrician Angus Deaton, based on the Engel's Law, food-

The author is grateful to the late Professor Sukhomoy Chakraborty for comments on an earlier draft of the paper and to the referee of the journal for very detailed comments.

TABLE I

PER CAPITA AVAILABILITY OF FOODGRAINS, 1901–89

Serial No.	Five-year Period Ending (1)	Per Capita Availability	
		Kg/Year (2)	Gram/Day (3)
1	1905/06	200.21	549
2	1910/11	198.4	543
3	1915/16	191.9	525
4	1920/21	195.1	534
5	1925/26	200.2	549
6	1930/31	179.9	493
7	1935/36	170.7	467
8	1940/41	158.6	434
9	1945/46	152.21	417
10	1950/51	149.9	411
11	1955/56	155.6	426
12	1960/61	163.8	449
13	1965/66	164.0	449
14	1970/71	162.9	446
15	1975/76	158.5	434
16	1980/81	163.5	448
17	1985/86	166.2	455
18	1986–89	178.0	488

Sources: For (1), Government of India, Ministry of Agriculture and Irrigation, *Report of the National Commission of Agriculture,* Vol. 1 (1976); for (2), Government of India, Ministry of Agriculture, *Bulletin on Food Statistics,* 1982–84 and earlier issues; for (3), Government of India, Ministry of Finance, *Economic Survey, 1990–91* (Delhi, 1991).

Notes: 1. Figures are annual averages for the quinquennium.
2. Production figures relate to agricultural year (July–June).

grain consumption is one of the most important indicators of human welfare. Estimates of the National Commission on Agriculture showed that (based on five-year averages to remove the impact of weather fluctuations), the availability of food grains decreased markedly from 202 kg per annum per caput during the period 1901–1905 to 152.21 kg per annum in the five-year period 1940–45 just before independence. During the forty-year period of the independence of India, this trend was decisively reversed but the figure still stands at 166.21 kg for the five-year period 1980–85 and at 178 kg for the four-year average of 1986 to 1989, for which the latest figures are available (Table I). According to the Census of Manufacturing Industry for 1946, around 70 per cent of aggregate industrial employment was located in the presidency provinces of West Bengal, Madras, and Bombay, or around port towns and most of the factory employment involved agro-based industries and repair activities, apart from steel factories, the textile industry, and a rudimentary cement and sugar industry. Per capita income had remained roughly constant in the first half of this century. The transport

network mainly linked up the Indian economy with metropolitan towns and was in no way oriented toward the integrated development of the areas with large population concentrations and great resource endowments.

Planning was essentially conceived to correct this imbalance. The major tasks were to redirect capital resources and technical skills to the large areas where India's manpower and natural resource concentrated [25] [29]. The nature of this challenge has been graphically described in a number of studies on the backwardness and the structural dualism of the Indian economy. The geographer, Moonis Raza [24] and his colleagues follow an interesting paradigm where an indicator of development is taken and mapped through space to show the very uneven levels of development.

The method of mapping an economic indicator through space was followed to its logical conclusion in some of the work that the present author had organized in the Planning Commission of India in the mid-seventies. For 1970 or 1971, estimates for fourteen indicators were collected at the district level. It was found that 83.02 per cent of the total variation of the fourteen variables could be described by three basic components. Table II gives estimates of the composition of these three components.

Component I, which accounted for 45 per cent of all the inter-correlations of the indicators, could be obviously interpreted as a component of backwardness. The use of a mass of information on levels of development (14 variables on 326 districts) showed that 45.04 per cent of the independent information used tended to indicate structural backwardness in space. This aspect was strongly underlined by the negative loadings which pulled a district down the scale of backwardness were the low degree of commercialization (measured by non-food-grain output per caput of population), high proportion of agricultural workers in the labor force, female illiteracy, power consumption, industrialization, level of literacy, and density of population, all pointing to a structure of backwardness. In the case of component II, the highly positive loadings in relation to rural output indicators and the negative loadings in relation to the density of population, literacy and number of workers in factories, were significant features. On the basis of these data, the second component could be labeled as a component of rural development. In the case of component III, since the positive loadings involved the variables relating to industrialization, therefore, this component could be referred to as the component of industrialization. This was convincing empirical proof of the uneven nature of the inherited colonial economy.

III. SYNOPTIC EXPERIENCE

It is now being recognized that the Indian economy has experienced three stages of growth since independence. There was a period of high growth until 1964/65, which was followed by a substantial decline and retrogression which lasted through the mid-seventies. The period since 1975 has again shown a recovery and in recent years, the growth level has increased. National income growth at 4.2 per cent compound per annum in the period 1950/51 to 1964/65 fell to 2.7 per cent per

TABLE II

DETERMINANTS OF BACKWARDNESS IN 1971

Variable	Component I Structural Backwardness	Component II Rural Development	Component III Industrialization
1. Density of population	−0.41007	−0.025562	−0.25529
2. Agricultural workers to total working force	0.73840	0.11679	0.11891
3. Gross value of output of food grains per caput of rural population	0.01993	0.65595	−0.64713
4. Gross value of output of non-food grains per caput of rural population	−0.26436	0.68888	0.14062
5. Percentage of establishments using electricity to total establishments	−0.72771	0.38032	0.37675
6. Percentage of household establishments using electricity to total household establishments	−0.41438	0.35499	0.43430
7. Percentage of non-household establishments using electricity to total non-household establishments	−0.48953	0.38336	0.50080
8. Workers in registered factories per lakh of population	−0.63850	−0.04963	0.08327
9. Length of surfaced roads per lakh of population	−0.18506	0.17188	−0.00491
10. Length of surfaced roads per 100 sq. km of area	0.00554	0.06925	−0.08660
11. Percentage of male literates of male population	−0.85709	−0.28260	−0.23920
12. Percentage of female literates to female population	−0.90182	−0.25175	−0.24203
13. Percentage of total literates of total population	−0.90750	−0.26671	−0.24752
14. Gross value of output of all crops (19 crops) per caput of rural population	0.13670	0.89279	0.40968
Variance (%)	45.04	24.21	13.77

TABLE III

GROWTH PERFORMANCE IN THE PLANNING ERA

	1950/51 to 1964/65	1965/66 to 1974/75	1975/76 to 1988/89	1980/81 to 1988/89
1. Growth of GNP at factor cost	4.2	2.7	5.0	5.6
2. Growth of per capita NNP	1.9	0.2	2.6	3.4
3. (a) Rate of gross capital formation (refers to three-year average of base year in each column)	10.0	16.8 (15.3)	18.9	22.5
(b) Average annual increase (Rs crores at 1970/71 prices) in public investment		(−87)	356	
4. Growth of industrial production	6.6	3.3	5.6	7.7
5. Growth of food-grain production	2.9	2.1	2.6	2.5

Notes: 1. Figures refers to 1980/81 prices, unless otherwise stated.
2. Figures in first two rows are averages of annual changes and in last two rows annual compound growth.
3. Figure in bracket in row 3(a) is three-year average for 1967 to 1969/70 and in row 3(b) is for period 1966/69.
4. Food-grains growth estimate in last column is up to 1986/87. Inclusion of 1987/88 and 1988/89 raises growth rate to over 6 per cent annual on account of bumper crops of 1988/89 and 1989/90.

annum in the decade 1966/67 to 1974/75 (the famous "Hindu rate of growth"). However, it increased to 5.0 per cent in the decade 1975/76 to 1988/89 and has hovered around 5.6 per cent per annum in the eighties (Table III). Per capita growth of 1.9 per cent in the period 1950–64 fell to 0.2 per cent in the period 1965–74 and has stood at 2.6 per cent per annum since 1975/76 and 3.4 per cent in the eighties.

The fiscal gap of the Government of India, namely, the budget deficit of the Treasury and the monetized deficit which includes net credit from the central bank (Reserve Bank of India) to the treasury, increased from 6.1 per cent of GDP at market prices in 1980/81 to 8.2 per cent in 1988/89. This is then a reversal of the policies followed in the mid-seventies where for the aftereffects of the contractional policies of 1974 it has been argued that "the most inappropriate policy in this period was the fiscal and monetary contraction aimed at curbing inflation. As mentioned earlier, the proper step in such a situation is to do nothing to control inflation but to take the necessary steps to adjust" [28, p. 39]. In the eighties for the first time the government sector became engaged in dissaving. These dissavings have been compensated by the gross savings of the public enterprises but the result has been that the gross domestic savings of the public sector (government plus public enterprises) have decreased from the peak level of 5.5 per cent of GNP in 1976/77 to 3.6 per cent in 1980/81 and 1.9 per cent in 1988/89. Improvement in public enterprise savings and a definite reversal in the dissavings of the govern-

TABLE IV

Gross Savings of:	% of GNP at Factor Cost	
	1980/81	1988/89
Governments departments and departmental enterprises	2.3	−1.7
Non-departmental public enterprises	1.5	3.6
Public sector	3.8	1.9

TABLE V

	% of GDP			
	1980/85	1985/86	1986/87	1987/88
1. Exports	5.0	4.4	4.5	5.0
2. Imports	8.4	8.1	7.7	7.8
3. Trade balance	−3.4	−3.7	−3.2	−2.8
4. Invisibles (net)	2.1	1.4	1.2	0.9
5. Current account balance	−1.3	−2.3	−2.0	−1.9

Source: Government of India, Ministry of Finance, *Economic Survey, 1989–90* (Delhi, 1990), p. 110.

ment sector are seen as a prerequisite for non-inflationary development at the current stage. The relative position of the government sector and public enterprises is shown in Table IV.

This is the position at current prices, except for depreciation in taking account of the age structure of fixed assets. If the government savings were presented in nominal terms the figure would be approximately three quarters of 1 per cent in 1980/81 and a *negative* rate of 3.9 per cent would be recorded in 1988/89.

As far as the external gap is concerned the trade balance has remained constant with deficit of around 3 per cent of GDP and taking account of net invisibles, the current account deficit is around 2 per cent of GDP. However it is estimated that this figure increased to 2.7 per cent in 1988/89. The figures until 1987/88, for which greater details are available, are shown in Table V.

The agricultural sector is experiencing a steady growth while the manufacturing sector showed fluctuations. J. C. Sandesara, in a recent authoritative review [27], has summed up the situation very succinctly[1] as follows:

> However, some recent studies based on the statistics since mid-seventies have suggested that the deceleration period is well in the past and that the pick-up has commenced since mid-seventies. K. N. Raj and Yoginder K Alagh were to our knowledge, the first to highlight this change.[2] Since then, a few others, including

[1] We prefer to quote Sandesara, since the present author participated in the growth rate debate and also Sandesara brings out the nuances of the controversies, very sensitively.

[2] Sandesara here refers to Raj [26] and Alagh [4]. Sandesara mentions that, after giving reasons for the improvement in the rate of industrial growth, Raj concluded: "For these reasons, I would advance the view, even though one cannot firmly support it with adequate

those who had clubbed 1975–80 statistics along with the earlier statistics since mid-sixties to document deceleration, seem to accept the view that it may be more meaningful to study the post-1986 period in terms of the two sub-periods of mid-sixties to mid-seventies and of mid-seventies onwards.[3] As to the specific year from which the cut-off should be marked, Alagh[4] suggested 1976–77.

As Sandesara summarizes, Alagh gives three reasons for this suggestion. In the first place Montek Ahluwalia [3] stated that in that year, the Indian economy overcame the problems that had arisen due to the severe negative balance of payments and low domestic savings and investments in the previous years. Second, gross capital formation increased to 20 per cent in that year, and that rate has been maintained or increased since then. Third, in that year the absolute level of public investment increased by around Rs 900 crores, and it has been rising substantially almost every year since then.

> The statistical presentation...based on our view that it is more meaningful to divide the period since 1966 into two sub-periods of low growth rate (mid-sixties to mid-seventies) and rising growth rate (mid-seventies onwards). As to the cut-off point in mid-sixties, there is unanimity on 1966. However, as to the cut-off point in mid-seventies, we have preferred 1975 to 1976 (1976–77), and not 1976 as suggested by Alagh, the reason for this preference being that the rate of industrial growth was about the average in 1975, whereas it was very high in 1976.... 1975 had a growth rate of 5.3% whereas 1976 had it of 12.2%. Thus, the sub-periods of 1966 onwards are: 1966–1974 and 1975 onwards, they may be labeled as low and rising growth sub-periods. The rate of growth of general industrial production for 1966–74 and 1975–85 were 4.5 and 5.1% respectively. Thus, we proceed on the basis of the following periods:
>
> 1. 1951–65: High growth period (7.8% per annum)
> 2. 1966–85: Low growth period (4.9% per annum)
>
> (a) 1966–74: Low growth period (4.5% per annum)

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statistical evidence (in fact not perhaps for another decade till a sufficiently long time series is available), that there has been possibly some increase in the rate of growth of industrial output since the middle of 1970s, raising it closer to the level achieved in the 1950 and 1960s" [26, p. 1802].

[3] Sandesara reviews other important studies by K. L. Krishna and Isher J. Ahluwalia. According to Sandesara, after reviewing briefly the works of Raj [26] and Alagh [4], K. L. Krishna concluded: "Thus, there are some clear indications that the slow-down in industrial growth has been arrested. However, there is no room for complacency" [22, p. 364]. After reviewing the changes in policies since the mid-seventies, Isher Judge Ahluwalia writes: "The growth of value added in industry, which had collapsed from 6½ per cent per annum during the decade ending with 1965–66 to 3½ per cent per annum during the subsequent decade, began a turn-around in the period after the mid-70's. A pick-up in growth to 4.6 per cent per annum in the second half of the seventies was followed by a further acceleration to a growth rate of 6.2 per cent per annum in the Sixth Plan period (the latest available data are for 1983–84). The picture was much the same with total manufacturing or with its registered sub-sector" [2, p. 404]. Sandesara maintains that her presentation of statistics on industrial growth is based on this view. However, in her early influential work Ahluwalia had pooled the 1975–80 statistics along with statistics since the mid-sixties to document and account for the deceleration, a view no longer accepted [1].

[4] The reference here is to Alagh [4].

(b) 1975 onwards (ie 1975–85): Rising growth period (5.1% per annum). [27, pp. 87–88]

The decline of growth since the mid-sixties has been subjected to considerable scrutiny. However, Occam's razor requires that simpler explanations should not be ruled out. The mid-sixties saw an erosion of the discipline of planning. There was a substantial decline in targeted levels in investment and the desire to promote savings. Thus, the rate of gross capital formation which reached about 17 per cent in the mid-sixties peaking at 18.4 per cent in 1966/67, declined to around 15 per cent at the end of the sixties and reached a value of 19 per cent again only in the mid-seventies. Also, public investment at 1970 prices fell by Rs 87 crores annually in the mid-seventies. The nation followed the advice of those who considered that mechanical adjustment to world prices in terms of devaluation of the rupee would bring about rapid opportunities for economic growth through international trade. The attempt at the revival of planning in the fourth plan was mainly conceived as setting into motion a process of decentralized planning and of housekeeping rules of resource allocation across space. Although it is obvious that the Gadgil formula for regional allocation of resources has become an important part of Indian development practice, the real issue of planning, namely, that of accelerating the pace of development, of gaining strategic insights into the major constraints the economy was facing at a particular time, and of implementing policies to overcome the constraints was neglected. There was, therefore, some recovery but little growth.

It must be emphasized that the somewhat fashionable statement that planning and public direction of resources in India are responsible for economic stagnation is simply untrue. The recovery in the mid-seventies began with an engineered revival. Conditions were not very propitious for the change. Agricultural production after reaching a peak in the seventies was stagnating. The energy crisis had hit the economy very hard and prices were rising at 20 per cent compound per annum. And yet a suitable combination of macroeconomic policies and an energy policy saw the economy emerging from the energy crisis with a surplus in the balance of payments.[5] Also the economy achieved price stability very soon and then the Union Finance Minister proclaimed with the use of a double negative, a typical characteristic of an Indian mind, that India had achieved a *negative* rate of *inflation.* However, this period also saw an attempt at targeting at higher rates of investment. The Indian economy enduringly crossed an aggregate level of investment of 20 per cent of GDP, which corresponded to the long-run target the planners were aiming at from the First Five-Year Plan, only in the mid-seventies. Public investment also started rising from that year by a level of Rs 800 to Rs 1,000 crores per annum (1980 prices) and never decreased. The economy, therefore, proceeded to a growth performance of around 5 per cent compound per annum and in the mid-eighties to around 5.6 per cent compound per annum. There is no

[5] According to Montek Ahluwalia [3], India's economy was one of the first economies to emerge rapidly from the first energy crisis with price stability and a surplus in the balance of payments.

great mystery in this performance. In an economy as poor as India, where the extensive pace of development is still ahead of us, low levels of investment and saving and a lowering of options lead to low growth. Efficiency and institutional reform, are very important as we will see later, but it is equally important to combine them with a strategic concept of the direction in which the economy has to move, and the pace it must attain, which is all that planning is about. Otherwise the talk of institutional reform and efficiency and of adjustment in micro-markets domestically and with the rest of the world, by itself and without a strategic dimension of direction, had empirically not led to any growth either in the pre-colonial period or in the mid-sixties and the early seventies. Those who would argue to the contrary, have to produce the evidence. The Indian growth story is a powerful verification of the approach delineated by the Taylor-WIDER studies of the macroeconomic framework of developing countries [32].

The policy-planning strategies can be briefly illustrated in two phases—the mid-seventies, and the mid-eighties, which correspond to the policies controlling the fifth (1974–79) and the sixth plan (1980–85) and the seventh plan (1985–90). Each period was perceived as a phase in which certain objectives could be achieved, if the constraints arising from earlier developments, either domestic or from the rest of the world, were removed and specified development potentials were achieved. Two caveats may be noted at the outset. First, the economy did not always develop as the policy-makers anticipated, although a measure of development along desired lines was achieved. Second, only the central features of the strategy are described and not the details (for details see Alagh [8]). Thus for example agricultural or energy modeling was emphasized, unlike extension strategies, technology policies, or details of rural development policies. Strategies in the mid-seventies had to take account of two sectoral constraints and their reflection in two central economic issues. The sectoral constraints were energy and agriculture and the economic interface was represented by the deficit in the balance of payments and the need to raise investment in a sustained and non-inflationary manner, from the stagnation of the mid-sixties.

Food-grain production in India peaked at 108 million tons in 1970/71 but fell to 105 million tons in 1971/72, and 97 million tons in 1972/73, which led to comments on declining trends and stagnation particularly in the international literature. The World Bank related such trends to a wage goods constraint on medium-term growth prospects for India, since with an income elasticity of demand for food grains of 0.5, non-inflationary growth of investment was not considered feasible with stagnant food-grain supply. While the world trade of grains amounted to around 40 million tons, in the seventies India was considered to be too "large" to depend on grain imports. The dominant view at that time was articulated by Keith Griffin who pointed out that the "green revolution" had not led to output growth acceleration. Thus, "in no region has there been an acceleration in food production. The rate of growth of food output has remained essentially constant in Latin America and in the other areas, the trend may have declined" [19, p. 5].

In an earlier influential article on Indian agriculture Michael Lipton castigated Indian planners as follows: "What the planners may not realize is that not merely

the targets, but the trend, growth rates and with that the Intensive Programme itself may be unapproachable by 1970–71" [30, p. 99]. The experience of the Indian political leadership in negotiating for food aid during the droughts of 1965/67 also led to guidelines to the planners to give self-reliance in food the highest priority.[6] These developments led to the origin of the first agricultural sub-model of the Indian five-year plan [18, Chap. 2]. While the details of this model are described elsewhere [9] [11] [4], it concentrated on field studies on Indian agriculture, to fix behavioral parameters in order to derive realistic investment requirements for the sector. Following the basic structure of policy modeling, considerable emphasis was placed on the estimation of the behavioral and technical relations based on farm management and district-level studies of Indian agricultural performance [13], and only values of instrumental variables like irrigation and extension targets were derived from the model. Thus variables like elasticities of cropping and irrigation intensities, demand functions for agricultural crops, were estimated from historical data, to identify firm requirements for the sector and to predict the land constraint effectively as well as the investment required for land and water development projects and extension needs derived as target variables. Emphasis on pricing incentives was also recognized (see [30]) and the terms of reference of the Agricultural Prices Commission were revised to include considerations in "terms of trade" of the agricultural sector. However getting prices "right" was a supplement to the wider investment strategy. The Planning Commission assumption in 1974/75 that if funds were allocated to bring 8 million hectares under irrigation, food-grain production would reach 125 million tons in 1978/79 and fertilizer consumption would approach to 5 million tons, was received with considerable skepticism, since, as noted earlier, food-grain production had decreased from 108 million tons to 97 million tons and fertilizer consumption had fallen from 2.77 million tons in 1972/73 to 2.57 million tons in 1974/75 due to the energy crisis of the seventies. However after the formulation of the agricultural sub-model a special provision was made in the 1975 budget for the completion of ongoing irrigation and other agricultural projects and in fact in 1978/79 the five-year targets of the agricultural sub-model were exceeded, since food-grain production amounted to 131.9 (corresponding to a trend level of 126.5) million tons and fertilizer consumption to 5.11 million tons.

To overcome the first energy crisis in the early seventies, an energy review was worked out emphasizing the substitution of imported crude oil by domestic coal; the design of programming models for inter-related decisions on the location of coal, power, railway and power transmission projects and fertilizer, petroleum refining and petrochemical capacities; drastic pricing policy towards "non-essential" petroleum use; and development of non-conventional energy resources including a social forestry program, for non-commercial energy use in the household sector in India [14]. The coal industry was nationalized and the annual production which was only 11 million tons between the years 1961–71 rose to 52 million tons

[6] The present author joined the Planning Commission as its Adviser, Perspective Planning Division, in 1974 and both its Chairman, Prime Minister Indira Gandhi and Deputy Chairman P. N. Haksar, assigned this priority as the first task.

between the years 1971–81. Demand-led growth was negative in 1974/75 and 1975/76. However the targets of the non-conventional energy program were not achieved.

The stagflation and stop/go of investment programming in the mid-sixties required the development of a strategy to ensure a stable non-inflationary investment program. A realistic exchange-rate policy, strong fiscal incentives for savings and disincentives for conspicuous consumption were accompanied with an interesting strategy to develop reserves so that a medium-term investment plan could be sustained, namely, the buildup of foodgrain and foreign exchange reserves. In the analysis of the variations in past production trends, targets for optimal levels of food-grain reserves were usually fixed. In taking account of seasonal variations, parastatal market operations were aimed at constantly moving towards such desirable levels at different times of the year by net market operations, either sale or purchase.[7] As regards exchange cushions the projections of the balance of payments in the fifth and sixth plans provided for exchange losses through anticipated terms of trade effects. Thus: "imported machinery and equipment prices increased at a much faster rate than prices of domestic machinery and equipment in 1975–76 over 1974–75. Effects of these adverse movement in terms of trade have been provided for in working out the macroeconomic balances underlying the plan" [15, p. 51] and again: "In addition to commodity imports at 1976–77 prices, a contingency provision has been made in the balance of payments for a reserve to meet cost of import price increases" [16, p. 67].

It may be noted that in both the food and foreign exchange buffers, the Indian policies used "reserves" to enhance the macro-stabilization and functioning of commodity and exchange markets. Needless to say such policies were associated with costs. India never relied on mechanisms like the IMF cereal facility or the World Food Programme since her buffer requirements were much higher than those of the international facilities, e.g., Indian buffer stocks of 12 million tons of food grains in the mid-seventies and 18 million tons in the early eighties compared with the total global facilities of 3 to 5 million tons. However these costs were incurred for ensuring a fairly rapid increase in aggregate investment and a stable level of public investment in the period 1975/76 to 1988/89 (see row no. 3 of Table III).

Planning policies in India have consisted of interventions in basically a market economy. In the mid-eighties as the economy developed and became increasingly in complex the reliance on quantitative allocation rules was abandoned. Interventions at the individual-firm level in quantitative dimensions were substituted by rule-based systems of intervention at the level of the industry or sector. Industrial policies were however related to a development strategy. While macroeconomic issues were to be taken into account, the policies were worked out at the level of individual industries where the priorities of a development strategy really unfolded.

Reform at the industry level in India used the concept of a long-range marginal cost schedule. Technical and normative cost studies were applied to develop the

[7] See "Report of the Technical Group on Buffer Stock Committee Operation" as described in [21, pp. 474–76]) for details of stochastic model used.

supply price at which the postulated output in the medium-term plan would be available through capacity creation or enhancement of existing facilities. Since the market may not ensure this outcome, dual pricing with strong incentives for higher capacity of utilization, tax, changes, and in some cases tariff reforms were used in individual cases. About two-thirds of the Indian industries were transformed to rule-based systems between 1985 and 1987. Price control was abolished in a phased manner in major industries. Domestic competition was enhanced. Tariff-based rules were introduced in intermediate industries and some complex capital-goods industries. In some major industries relating to fertilizers, sugar, and textiles, the reform plans failed, generally due to powerful domestic interests.[8] In the period 1985 to 1989 the manufacturing growth rate increased to 9 per cent per annum. Also substantial cost and energy consumption economies were achieved.[9]

IV. DUALISTIC GROWTH

The loss of planning momentum in the mid-sixties and the fourth plan, however led to some deeper problems. India was pushed back in the rate of technological transformation and in the race between population, land, and other scarce resources. The demographic constraint developed a dimension which was never considered previously. Per capita computation of employment, minimum needs, and welfare programs, developed a dimension which it became difficult to deal due to the scarcity of resources. On the one hand, there was a measure of growth leading subsequently to a degree of agricultural and industrial diversification which had not been seen previously. Yet at another level, in spite of gains, poverty, illiteracy, sickness, and premature death, morbidity, hunger and malnutrition, particularly for the female population, became a part of India. As realistic arithmetic became difficult the poverty and the employment debates got into the rarefied world of aggregate ratios, calorie deficits, and standard person-years. Some facts are shown in Table VI. Even though indicators like literacy rates showed an ascending trend and mortality rates or poverty ratios decreased, the absolute magnitude of the problem continued to increase. In the recent high growth phase also poverty proportions only declined marginally.

V. RECENT ESTIMATES OF POVERTY

The incidence of poverty depends on the level of consumption and the manner in which it is distributed among the different strata of the population. The average level of consumption in a given year is estimated from the total consumption based on national accounts statistics. The distribution of consumption among the different population groups is derived from the nationwide consumer expenditure surveys conducted by the National Sample Survey Organisation (NSSO). These

[8] For description of details of industries relating to cement, tires, capital goods, and thermoplastics and the plans for fertilizer reform, see [7].

[9] See [8, pp. 200–215], for details.

TABLE VI

SELECTED DEMOGRAPHIC DEVELOPMENT INDICATORS

Variable	Mid-1960s		Mid-1970s		Mid-1980s	
	Year	Estimate	Year	Estimate	Year	Estimate
1. Population increase (million)	1965	10.9	1975	13.7	1985	15.0
Of which 0-14 years (million)	1965	2.1	1975	2.5	1985	3.5
2. Deficit of female assuming sex ratio of 1 (million)	1965	16.0	1975	21.5	1985	25.0
3. Rural infant mortality rate	1968	137.0	1975	139.0	1985	107.0
4. % deliveries in rural areas by untrained practitioners			1976	54.0	1983	51.0
5. School enrolment of girls in age group 6-11 (%)	1965	55.0	1975	62.0	1985	77.0
Or numbers not enrolled (million)	1965	14.8	1975	15.3	1985	10.4
6. Female literacy rate in rural areas	1961	8.5	1971	13.0	1981	18.0
7. Persons below poverty line (million)			1978	307.0	1983	271.0
8. Additions to labor force (million)	1965	3.4	1975	5.0	1985	6.8
9. Difference between add. registration and placement in employment exchanges (100,000)	1965	0.9	1975	8.9	1985	27.2
10. Arable area per agriculture worker (ha)	1965	1.03	1975	0.97	1985	0.93

surveys were carried out every year until 1973/74. At present they are carried out once in five years. The survey is a fairly elaborate process as it covers a sample of nearly 120 thousand households for the entire country.

The average level of consumption as estimated from the NSS surveys is different from that estimated in the national accounts statistics because the NSS consumption estimates are adjusted to the estimates of consumption in national accounts statistics which are supplied by the Central Statistical Organisation (CSO). The pattern of distribution of the consumption, however, is used on the basis of NSSO data. There is a growing controversy among social scientists regarding the definition of the poverty line. Theoretically the concept of poverty can vary from extreme want of necessities resulting in debility due to malnutrition to falling short of having comfortable means. The most significant and influential definition of poverty has been expressed in terms of some absolute level of minimum needs, below which people are regarded as poor and which does not change through time. However, the conceptualization of absolute poverty may be considered to be inappropriate and misleading, for people's needs even for food are conditioned

by the society in which they live and to which they belong. Again a minimum level of living may be an elusive concept and is vaguely associated with the culture of people and levels of development of the economy to which they belong and in any case includes non-food-grain items [34]. A recent ILO study by John Harriss and Gerry Rodgers [20] of urban labor markets in Coimbatore, for example, uses textile consumption, non-cereal food demand and housing status for determining poverty cutoff points.

The Task Force on Minimum Needs and Effective Consumption Demand established by the Planning Commission (1979) of which the present author was the chairman, defined the poverty line as the per capita monthly expenditure of Rs 49.09 in rural areas and Rs 56.64 in urban areas at 1973/74 prices corresponding to the per capita daily calorie requirements of 2,400 in rural and 2,100 in urban areas. This concept of poverty line, which was used for the sixth plan, after adjustment for prices, has been used for the seventh plan also. The poverty line defined this way covers the expenditure on food and non-food items and ensures the adequacy of calorie consumption. Under the guidance of Professor P. V. Sukhatme, a member of the task force, the minimum biological needs were worked out at a lower level than these norms and a modified poverty line standing at 75 per cent of the poverty line was proposed since it had been found that the threshold of calorie requirements at this modest poverty line was very *close to that required for biological subsistence* [17, p. 7]. This modified poverty line was only estimated for the early work on this sixth plan.

After adjustment for price changes, the estimate of the poverty line was Rs 101.3 per capita per month in the rural areas and Rs 117.50 in the urban areas for the year 1983/84. For 1986/87, preliminary estimates of a smaller NSS sample were available and released by the Planning Commission for discussion at the meeting of the Panel of Economists in 1989. In March 1990, the Planning Commission had also released poverty estimates for 1987/88 from the 43rd Round of the National Sample Survey. For 1987/88 the poverty line was estimated at Rs 131.80 for rural areas per month and Rs 152.13 for urban areas ("Reply to Unstarred Question No. 850," Rajya Sabha, March 20, 1990). The different estimates discussed above, namely, adjustment of NAS (national accounts statistics) and NSS data lead to different illustrative calculations of poverty (Table VII). Although all of them show a small decline in poverty proportions, the absolute numbers tend to increase. Thus the nature of the problems remains unsolved. However given the many conceptual and data developments that have taken place, the Planning Commission set up in 1989 a High Level Expert Group, under Professor D. T. Lakadawale consisting of all the experts in the field to examine different calculations before preparing new poverty estimates.

The crux of the matter of poverty removal is the question of generation of employment opportunities at a wage level, which equals or exceeds the poverty cutoff income. While nonagricultural rural employment opportunities and urban employment need to be looked at, the major issue lies within the agricultural sector. In the Indian concept of development there is a long tradition of examining this issue with a substantial degree of empirical intensity and focus. The advantage of

TABLE VII

ESTIMATES OF POVERTY

A. Estimates of Poverty Based on Pro-rata Adjustment of NSS Private Consumption Expenditure to CSO Private Consumption Expenditure (% of population)

	Rural	Urban	Tatal	Factor of Adjustment between NSS and NAS Consumption Level
1983/84 (as used in seventh plan)	40.4	28.1	37.4	1.21
1983/84 (revised estimates)	33.57	22.37	30.85	1.319
1986/87	33.59	19.79	30.07	1.285
1987/88			29.23	1.2207

B. Estimates of Poverty Based on NSS Distribution (Unadjusted) (% of population)

	Rural	Urban	Total
1983/84	56.40	42.05	52.91
1986/87	53.99	34.93	49.12
1987/88			45.37

C. Estimates of Poverty Based on Commodity-wise Adjustment of NSS Distribution to Private Consumption Expenditure (% of population)

	Rural	Urban	Total
1983/84	38.60	23.55	34.94
1986/87	37.95	21.16	33.66

Note: NSS=National Sample Survey. CSO=Central Statistical Organisation. NAS=National accounts statistics.

an analysis of the question of levels of development at the district or sub-regional level, is that the relationship between employment and development can be examined as an empirical proposition. This relationship has been analyzed among others, by Raj Krishna [23], A. Vaidyanathan [33], and Sundram and Tendulkar [31], who has also summarized other studies. One of the earlier studies, however, was carried out by the Planning Commission [10], and since it included all the structural aspects revealed by later studies and uses similar data sources and statistical techniques, we will use it since one is always happier with the tools one has fashioned oneself. The quantitative focus which emerged from such disaggregated studies was threefold. First, *a high rate of agricultural growth was a precondition of faster employment growth.* In any employment strategy, anywhere between two-thirds and three-quarters of the desired employment growth are likely to result from the achievement of higher agricultural output levels which in turn depended on the inputs required for the growth process. There were, however, two additional features of Indian agricultural employment structures, which are not intuitively self-evident, but emerge from detailed analysis. The first was that a

regionally disaggregated strategy of agricultural growth led to higher employment opportunities as compared to a regionally concentrated performance. Thus, *widespread agricultural growth* was a great equalizer in terms of employment and poverty reduction outcome in India. This fact implied that the policies which promote faster agricultural growth are doubly rewarded in a sense that they meet both growth and distribution objectives. Second, the implication of land reforms was essential for achieving employment targets. Again, this is not just an ideological question. Security of tenure is important for laying the institutional preconditions for widespread agricultural growth. Also, the use of family labor is higher on small farms. To quote the fifth plan:[10]

> The employment strategy being advocated for the Fifth Five Year Plan and the period beyond consists essentially of three components. The first component is the integration of the employment strategy with the production planning aspect of the rural economy. The second aspect, related with the first, consists of special policy foci on the regional spread of the developmental effort and careful examination of the growth and employment behaviour in the process of the modernisation of the rural economy. The third consists of a special focus on the employment implications of institutional change in the rural sector, particularly the relationship between security of tenure for small and marginal farmers through land reform policies, the strengthening of the production capabilities of this section of the rural economy and the relationship of such policy instruments with the strategy of employment generation in the rural sector. [15, p. 20]

VI. CONCLUSION AND LESSONS

India inherited a highly distorted and dualistic economy at the time of independence. The commercialization of agriculture in the first half century of colonial rule had led to declining living standards as reflected by per capita food-grain production. Development was enclave-based. An interesting feature of the post-independence developments is that even with a systematic growth pattern which was higher than that in the colonial period, the economy had continued to show some of the characteristics of dualistic development and more integrated development processes spread only gradually.

After an initial spurt of growth in the planning era (1950–64), the impact of orthodox economic policies in the mid-sixties (devaluation of the rupee and squeeze of public investment) led to a substantial deceleration in the growth process from 4.2 per cent per annum (1950–64) to 2.7 per cent per annum (1965–74). The cutback in public investment apart from creating an adverse impact on the growth process, was particularly severe in its effect on human resource development, employment, and poverty-related outcome. India's socioeconomic development process went into a stage where the nature of the effort was inadequate in relation to demographic pressures. At the margin, the effort in terms of schooling, health indicators, and employment outcome was not commensurate with the population pressure.

[10] The econometric work on which these statements are based is reported in [5].

The period since 1975 has seen a revival of a macroeconomic policy emphasizing investment and growth. The growth rate of 5 per cent per annum (1975–88) increased to 5.6 per cent during the eighties (1980–88). There was also in this period—particularly the latter part—an attempt at policy reform. While there was some improvement in poverty-related indicators, the magnitude of the problems relating to employment and human resources was still forbidding. Higher growth performance also highlighted the razor's edge of the resource constraints of the Indian economy.

The sectoral details of this theme, namely, the dualistic nature of the economy and performance in relation to the strategic direction of a macro-nature as well as policy reform, particularly of market-based rules and institutional changes and the successes and failures of integrating the two lines of policies have been examined elsewhere [7]. It may be noted in summary, however, that there are two kinds of views on economic policy that are advocated on a global scale for poor countries. In one view, attributed to international financial institutions, the economies of the poor countries should follow orthodox fiscal and monetary policies—high interest rates, balanced budgets with reliance on markets, and the integration of domestic economies with world markets and international prices. In an alternative view, markets and price policies have to be used as a part of a plan. This paper argues that the Indian experience tends to support the latter view.

The stage is now set for major planning initiatives for the Indian economy. It has been shown that there is a long tradition of attempts at revising planning methods to solve problems anticipated in the next phase of development. The details of such methods should be examined and the possibilities of improvement considered in the next phase. Also new planning methods which rely more exclusively on pricing and policy changes need to be tested.

Market, tariff, and pricing policies will need to be developed for the industrial and infrastructure sector. Policies will need to be differentially developed for important industries on a case-by-case basis. It should be emphasized that signals to the producers and consumers should be consistent over a period which allows them to make their adjustment plans. Stop/go in policies has to be avoided. Industrial planning procedures will need to be reviewed and new priorities identified. This discussion implies that it may be possible for the core sector of the economy to model demand/supply interactions with prices built into the system. The whole concept of long-run marginal costs (LRMC) is in fact, as noted earlier, a dynamic supply schedule. There is a scope for explicitly modeling tariff and price interactions.

In the light of the preceding discussions, changes for the present plan methodology can be proposed. The model could have a computable general equilibrium framework with a fixed price component and flex-price component. Towards this end, the model would consist of two parts: the first part would focus on quantitative planning for the core sectors.

The remaining part of the model would consist of a price endogenous model, including supply and demand functions for the different commodity groups considered. The model will, thus, be as follows:

TABLE VIII

PRICE ELASTICITIES FOR SELECTED ITEMS

	Rural		Urban	
	For Persons below the Poverty Line	For Persons above the Poverty Line	For Persons below the Poverty Line	For Persons above the Poverty Line
1. Cereals	−0.73	−0.30	−0.66	−0.04
2. Pulses	−0.83	−0.44	−0.87	−0.19
3. Edible oil	−0.63	−0.63	−0.96	−0.31
4. Sugar	−0.84	−0.63	−0.91	−0.33

$$\mathbf{P} \leftarrow \begin{matrix} \mathbf{X}^s \\ \mathbf{X}^d \end{matrix},$$

where **P** is the vector of commodity prices, the number of commodities being "n"; $\mathbf{X}^s$ is the vector of commodity supply equations where $\mathbf{X}^s = \mathbf{X}^s\ (P_i, \ldots, P_n)$; and $\mathbf{X}^d$ is the vector of commodity demand equations where $\mathbf{X}^d = \mathbf{X}^d\ (P_i, \ldots, P_n)$.

Estimation of such a model would not be difficult in the light of the information that is already available. For instance, there is considerable amount of price-related econometric information in the reports of the Commission of Agricultural Costs and Prices and the Bureau of Industrial Costs and Prices (BICP). BICP estimates of long-run marginal costs for different industries, as noted earlier, effectively measure supply functions. On the demand side, the Planning Commission has already worked out price elasticities which can be derived from the consumption sub-model (for instance, [17]). Some examples are given in Table VIII. These estimates could be used in developing the proposed model.

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