

Growth, Distribution and the Evolution of Agricultural Markets—Some Hypotheses

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This paper aims to explore the relationship between growth and the distribution of growth, on the one hand, and the development of the commodity and labour markets, on the other. The period considered is 1950 to 1970.

Section I outlines theories on the growth patterns of commodity and labour markets. Section II describes trends in demographic pressure, growth, and distribution of growth in India. Section III reviews the growth of commodity markets in India and section IV that of the labour market. While sections III and IV are concerned with all-India trends, Section V deals with one specific area as an instance: viz, Ahmednagar. In the concluding section, the main issues raised in this paper are brought together.

The purpose of this paper is to set forth certain hypotheses for further examination.

THE evolution of commodity and factor markets is a reflection of changes in the production structure. In turn, the growth of markets influences the development of the structure of production. The study of agricultural markets over a period of time, therefore, offers a means to understanding the dynamics of the agrarian structure. While examination in isolation of a commodity market or a particular factor market may provide insights, a simultaneous enquiry into the behaviour of two or more markets, and the mutual interaction between these markets, is likely to lead to a deeper understanding of the sources of change in the sphere of production.

There exists considerable literature on the inter-linkages among markets. Most of it, however, is set in a static frame; the main point of emphasis being that the price variations (during a given period) in a particular market cannot be explained without reference to price changes in other markets [see Bardhan, 1980, p 82]. Our locus is not on the static interactions between markets through price and quantity adjustments. We wish, instead, to understand the process of market growth, including the possible relationship between the growth of different markets.

In this paper, we examine the correspondence of growth and distribution of growth on the one hand, and the development of commodity and labour markets on the other. The basic unit of study is India, and the period chosen is roughly 1950 to 1970. In Section I, we briefly outline some theories on the growth patterns of commodity and

labour markets. In Section II, we describe the trends in demographic pressure, growth, and the distribution of growth in India. This is followed by a review of the evidence on the growth of the commodity market in Section III, and of the labour market in Section IV. Since Sections III and IV are largely at the all-India level, in Section V we discuss, in some detail, a single district: Ahmednagar. The concluding section brings together the main issues raised in this paper.

It is only fair to warn that this paper is exploratory in nature. Certain hypotheses have been set out. These, if found reasonable, could be examined later in greater detail.

Patterns of Commodity and Labour Market Growth

Broadly, three patterns of commodity and labour market growths have been specified. We discuss these here, briefly. We also suggest a fourth possibility that may have been applicable to India, particularly in the 1950s.

(1) According to the Hicksian view, as represented in "A Theory of Economic History", the commodity market growth precedes the growth of the labour market. The historical sequence is explained by Hicks in the following manner :

The commodity markets and the financial markets are the places where the market system is at home; when it proceeds to the formation of factor markets, land and labour markets, it is penetrating, or 'colonising' relatively refractory territory. This was territory where its principles did not fit, or could only with diffi-

culty be made to fit (Hicks, 1969, p 101).

To put the Hicksian point of view in perspective, it must be understood that Hicks is concerned with the transition of an economy from a landlord-peasant system to a system based on commercial principles. During this transition, historical studies do show that the growth of the labour market lags behind the growth of the commodity market. It will be apparent that Hicks deals with a vast time-span extending over several centuries. While over the broad sweep Hicks is correct, the sequence he describes does not necessarily hold over shorter periods. [See for instance the works of M M Postan].

Either because the transitional phase Hicks talks about is not relevant to India in the second half of the twentieth century, or because we considered a period of only two decades, the changes observed did not lend themselves to an interpolation in terms of the Hicksian schematic.

(2) According to the Marxian understanding, the commodity and labour markets grow apace over the period of transition from simple commodity production to capitalist production. The process involved operates as follows: The direct producer is separated from his means of production. This creates the labour market. The commodity market growth is a logical consequence of this separation effected between the direct producer and his means of production, and proceeds simultaneously.

On the one hand the *means of production* from which the small producer is 'freed' are converted into

TABLE 1: SOURCE OF GROWTH IN INDIAN AGRICULTURE, 1950-1970

	1950-51	1955-56	1960-61	1965-66	1970-71
(1) Net area sown	118.7	129.2	133.2	136.2	144.2
(2) Area sown more than once	13.1	18.2	19.6	19.2	24.7
(3) Net irrigated area	20.9	22.8	24.7	26.7	31.2
<i>Area irrigated by:</i>					
(4) Government canals	7.2	8.0	9.2	9.9	11.6
(5) Tanks	3.6	4.4	4.6	4.4	4.5
(6) Wells of which	6.0	6.7	7.3	8.7	11.8
(i) Tube wells	Negative	Negative	0.1	1.3	5.0
(ii) Other wells	6.0	6.7	7.2	7.4	6.8
<i>Modern inputs:</i>					
(7) Pumpsets (000 Nos)	109	170	390	886	3176
(8) Expenditure on modern current inputs					
(i) at 1960-61 prices in Rs lakhs	2075	3474	7338	18401	43355
(ii) as percentage of expense on all current inputs	1.31	1.92	3.63	8.37	15.65
(9) Fertiliser use (kg/ha)	Negative	0.95	1.94	4.60	13.67
(10) Proportion of area under high yielding varieties:					
(i) Rice	NA	NA	NA	2.52	14.51
(ii) Wheat	NA	NA	NA	3.91	35.86

Notes : (1) Rows (1) to (6) are in million hectares.
 (2) modern inputs in column (8) include: chemical fertilisers, electricity, pesticides, insecticides, and diesel oil.
 (3) Some of the entries refer to years adjacent to the ones mentioned in the Table

Sources : (1) Rows (1) to (6): Indian Agricultural Statistics, Directorate of Economics and Statistics, Ministry of Agriculture.
 (2) Row (7): India, Statistical Abstract, CSO, Department of Statistics, Ministry of Planning.
 (3) Row (8): Thamarajakshi (1977).
 (4) Row (9): Fertiliser Association of India: "Fertiliser Statistics", New Delhi.
 (5) Row (10): Narain (1977).

TABLE 2: IRRIGATION INTENSITY BY SIZE-CLASSES

Size of Operational Holdings (ha)	Proportion of Operated Area Irrigated in Different Size-Classes	
	1953-54	1970-71*
Less than 1.0	27.06	25.55
1.0 — 2.0	25.25	20.74
2.0 — 4.0	21.04	18.15
4.0 — 10.0	14.91	14.09
10.0 and above	6.96	8.61
All	14.82	15.00

Note : * The figures for 1970-71 refer to sources of irrigation other than tubewells. See text.

Sources : (1) NSS, Report on Land-holdings, Rural Sector, Report No 74 Table 4.8, p 31.
 (2) India, All-India Report on the Agricultural census, 1970-71, New Delhi, pp 26-28.

capital in the hands of their new owner, serve to produce commodities and consequently, are themselves converted into commodities. ... On the other hand, the means of subsistence of the small producer become the material elements of variable capital. ... Thus these means of subsistence are also, now, converted into commodities. [Lenin, 1967 print].

On the other hand, demographic pressure operates on the growth of the labour market through the subdivision of land holdings. As de Vries notes :

.... the peasants on smaller holdings may find, as the *morcellement* continues, that they cannot support themselves on their holdings: they enter the labour market periodically as day labourers to supplement their inadequate incomes from land [de Vries, 1974, p 4].

The increased participation of small farmers in the labour market arises, however, not just from the need to supplement incomes. In the Indian context it has been noted that the small farmer is under a compulsion to involve himself in the market in order to meet his cash requirements — for working capital, payment of rent and taxes, and consumption of non-agricultural goods, [See Bharadwaj, 1974, Ch 7]. This forced involvement has been noted in the commodity market. It takes the form of the small farmer producing cash crops (including superior foodgrains) to meet his post-harvest cash needs and subsequently buying back inferior foodgrains from the market. It seems likely that, under increasing population pressure, the small farmer may shift his compulsive involvement from the commodity market to the labour market.

Such a shift could occur because the marketable surpluses of all classes of farmers diminish as population pressure increases. Small farmers, dependent to a considerable extent on the market for foodgrains, will be faced with a reduced availability of foodgrains as the marketable surpluses of the larger farmers decline. On the assumption that imports of foodgrains do not increase significantly. The basis for this assumption is that rural-rural trade in India has been extremely limited. This is further discussed in Section V. The decreased availability may, in addition have an uncertainty attached to it. In such a situation, small farmers are likely to increase the subsistence orientation of their farming, shifting land from cash crops to foodgrains for home consumption. To meet their cash needs they may, as a result, be forced into the labour market.

In our judgment, this third pattern of commodity and labour market evolution has been of considerable significance in India during the 1960s.

(4) A poor agrarian economy experiencing growth that benefits all may,

In agriculture, this process may be identified with the differentiation of the peasantry (leading to the growth of the labour market) and the simultaneous capitalist production of commodities for the market.

In a suitably modified manner, this characterisation is of relevance to some pockets of high growth in India.

(3) A third possibility is that the labour market may grow, while the commodity market stagnates (or even declines in size). Such a possibility could occur under increasing demographic pressure.

Over sufficiently long historical periods, the land-man ratio has been known to deteriorate without a compensating increase in land productivity. The per capita agricultural production, therefore, declines. Correspondingly, the marketable surplus of agricultural output also declines; and, unless there is a significant change in the distribution of the output, all classes of farmers (to a greater or lesser extent) will reduce their involvement in the commodity market.*

* An attempt towards establishing that such a process operated in most parts of India in the first half of this century is made in Mody (1980).

TABLE 3: DISTRIBUTION OF FOODGRAIN OUTPUT GROWTH ACROSS STATES

	Standard Deviation of State-wise Compound Growth Rates of Foodgrain Production			
	1952-53 to 1961-62		1961-62 to 1973-74	
	Total Production	Per Capita Production	Total Production	Per Capita Production
All states	1.52	1.75	2.14	2.17
All states except Punjab-Haryana			1.57	1.63

Source: Growth rates have been taken from Alagh, 1980, Table 1.

TABLE 4: INDEX NUMBERS OF MARKETED SURPLUS AND AGRICULTURAL OUTPUT

	Index Number of	
	Agricultural Output (1960-61 = 100)	Marketed Surplus of Agriculture
1951-52	68.45	66.59
52-53	72.15	73.05
53-54	81.69	85.21
54-55	82.57	88.63
55-56	82.38	93.06
56-57	81.15	98.25
57-58	81.50	93.59
58-59	94.06	96.35
59-60	91.82	92.87
60-61	100.00	100.00
61-62	100.29	105.47
62-63	98.73	107.15
63-64	101.17	111.82
64-65	111.98	114.73
65-66	93.28	108.28
66-67	93.38	104.85
67-68	113.53	119.97
68-69	111.78	123.53
69-70	119.28	132.90
70-71	127.95	140.50
71-72	127.46	150.50
72-73	117.43	146.18
73-74	128.14	150.47

Source: Thamrajakshi (1977), Table 2.

over a limited period, witness a withdrawal from both the commodity and labour markets. The withdrawal from the labour market would occur because the compulsions described above decrease. The withdrawal from the commodity market (particularly the food grain market) would occur because of income elasticity of demand exceeding unity at low levels of output (and hence income).

II

Demographic Pressure, Growth and Distribution Trends

Even its early as in the mid-nineteenth century, several regions of

the country were densely populated. From the 1870s, population growth started accelerating. For a few decades the growth of cultivated area kept pace with the accelerating population. However, population growth soon outstripped area expansion and, by the turn of the century, the land-man ratio began to worsen in all major regions of the country. Land productivity failed to respond to the increasing population density. In fact, agricultural production remained almost stagnant over the first half of this century. As a consequence, between 1920 and 1950, per capita output of foodgrains as well as all agricultural output declined significantly all over the country.

While the land-man ratio has continued to worsen, the trend decline in per capita output was reversed around 1950. This has been so, particularly for per capita foodgrain output. During the 1950s, foodgrain and non-foodgrain output grew faster than population. In the 1960s, growth of non-foodgrain output fell below the population growth. However, foodgrain output continued to grow faster than population.

The growth of production during the fifties and the sixties had an important impact on the development of the commodity and labour markets during that period. The nature of the impact, however, was conditioned by two factors. First, per capita production in the fifties rose from a *low base* — a consequence of the continuous decline in per capita production over the previous three decades. Second, as between the 1950s and the 1960s, the sources of growth differed considerably. The inter-farm and inter-regional distribution of growth was, therefore, more skewed in the 1960s than in the 1950s. The rest of this section we devote to elaborating the second point.

(i) Sources of growth:

The proximate sources of output growth are: area expansion and pro-

ductivity increase (output per unit of land). If output is measured in value terms, as it normally is, a shift in the cropping pattern in favour of the higher valued crops also introduces a source of output increase. Further, the all-India average productivity of a particular crop may increase either through: (a) shifts of crop area to regions of high productivity; or through (b) increases in output per unit of land in some or all regions of the country.

At the all-India level, the decomposition of growth into its proximate sources shows that in the fifties area expansion and productivity increases each contributed to about 45 per cent of the growth in output. (Minhas and Vaidyanathan, 1972, p 60.) The rest of the growth was due to shifts in area to higher-valued crops. In the sixties, the contribution of area expansion fell to 24 per cent and that of productivity rose to 54 per cent [Konwar and Lokrey 1973, p 151]. (The Konwar-Lokrey study is based exactly on the Minhas-Vaidyanathan methodology. It will be noted that cropping pattern shifts became significantly more important in the 1960s.) Further, both in the fifties and in the sixties, locational shifts of crop area played little role in raising the productivity of individual crops, the productivity increase in both decades was very largely due to pure yield increases, ie, the mechanism outlined above in (b) [See Sagar, 1980, pp 132-3].

The declining role of area expansion in raising output levels may be seen from Table 1. Both net sown area and area sown more than once increased fairly rapidly in the fifties. The growth of net sown area was particularly pronounced. Despite the large increase in cultivated area during the 1950s, the land-man ratio deteriorated during this period. In the sixties, the area growth was much smaller and productivity growth was of primary importance. Broadly, therefore, the fifties were a period of extensive cultivation and the sixties a period of intensive cultivation [see Kurien, 1980, p 374].

However, even during the fifties about half the growth of output was accounted for by productivity increases. As noted above, the productivity rise was achieved primarily through pure yield increases. Moreover — and this is important — the yield increases in the 1950s were

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realised without significant increases in the adoption of new techniques and use of modern inputs. Table 1 shows that there was an increase in the use of inputs associated with modern technology. However, the *level* of use remained low. Thus, as Kurien points out (his remarks for Tamil Nadu being pertinent for the entire country):

during the period of extensive cultivation the output per hectare of all crops registered an increase. Extensive cultivation of the fifties, therefore, was not the usual case of less fertile land being brought under the plough.... (Kurien, 1980, p 375.)

To understand how this happened, or, in other words, to understand the reasons for growth in the fifties, it is necessary to go beyond the proximate sources of growth. It is well known that water is critical for agricultural production. Irrigation development is consequently an obvious first candidate in the explanation of the agricultural growth.

In the fifties, increase in area under irrigation provided the main impetus for growth. More than three quarters of the increase in area under irrigation was accounted for by government canals and tanks (see Table 1). Canals and tanks provide, in general, extensive irrigation, i.e., irrigation of the type that implies 'light-irrigated crops and wide-distribution of water', leading to the dispersion of 'the development thrust of irrigation' [Rao, 1978, p 994]. As a consequence, agricultural growth during the fifties was of an extensive nature. The importance of irrigation and the manner in which it operated upon both area and productivity have been clearly brought out by Raj [1970]. On examining the pattern of growth in some of the faster-growing regions of the country during the fifties, Raj concludes that a feature common to these regions was:

... an extension in the irrigated area during the period in which high rates of growth were recorded. Such extension led to an increase in the gross area under crops during the period and was responsible to a significant degree for the increases in output. When irrigation was extended to areas with good soil, but where productivity of land was relatively low earlier, owing to inadequate supplies of water, such extension led not only to an increase in the cropped area but to higher productivity all around [Raj, 1970, p 121].

In the 1960s, both the existing stock of irrigation and the increase in area under irrigation played an important role. Irrigation, in general, supported

the more intensive application of modern inputs. It supported, first, the growth of fertiliser use from the early sixties and then the use of high yielding varieties (with the necessary fertiliser mix) from the mid-sixties (see Table 1). It may be noted, in this connection, that the use of fertilisers and HYV seeds required controlled and intensive irrigation, i.e., a given volume of water concentrated in a relatively narrow area [Rao, 1978, p 994]. These requirements induced the growth of tubewell irrigation in the sixties. During that decade, about three-quarters of the increase in area under irrigation was due to an increase in area under tubewell irrigation (see Table 1). Extensive irrigation does not permit large cropping-pattern changes, whereas intensive irrigation does. We, therefore, do find that the extent of cropping pattern changes in the sixties was much more than in the fifties.

(ii) *Inter-farm distribution of growth :*

The inter-farm distribution of output depends upon: (a) changes in the distribution of land and (b) the distribution of productivity increases.

According to available data, there has been no significant change in the concentration of operational or ownership holdings. Changes in the inter-farm distribution of output have been a function mainly of the distribution of productivity increases.

We have argued, above, that productivity increases in the fifties were very largely due to irrigation extension. To understand the distributional impact of irrigation, we need to look at the distribution of irrigation across different size-classes of farms. The debate on the inverse relationship between farm-size and land-productivity brought out quite clearly that, in the fifties, smaller farms were better irrigated than the larger farms. This may also be seen from Table 2, which shows that, in the mid-1950s, the proportions of area irrigated was inversely related to the size of land holding. For our purpose, it is important to know how the *increase* in area irrigated during the 1960s was distributed. The size-productivity debate has been concerned mainly with a static comparison. To understand the dynamics in the 1950s, it is essential to know the changes in the distribution of irrigation. The dynamics in the sixties is based on the adoption of

technical change as discussed below.

While we have data for 1953-54, we do not have comparable data for the early sixties. As a next best we have given the data for 1970-71 in Table 2. The data presented for 1970-71 is for traditional sources, i.e., irrigation sources other than tubewells. This is because the tubewell is a phenomenon of the 1960s (see Table 1), and our purpose is to know how the incremental area irrigated in the fifties was distributed. It will be seen that the inverse relationship continues to hold even in 1970-71. Also, the proportions of area irrigated in each size-class have not changed much. This implies that just as the *stock* of area in the smaller size-classes was better irrigated than the stock of area in the larger size-classes, so also the *increments* in area to the smaller size-classes have been better irrigated than the increments to the larger size-classes. In other words, growth of irrigation in the fifties was through traditional sources, and these sources continued to favour small-sized holdings. During the fifties, therefore, increases in output per hectare are likely to have been larger on the small farms than on the larger farms, since (as we have argued) the increase in output per hectare was essentially a function of irrigation increase. In this sense, growth during the 1950s was well distributed.

A word about the character of irrigation growth. As we have already pointed out, the irrigation expansion was entirely based on traditional sources of irrigation. Besides, 75 per cent of the increase in irrigation was accounted for by government canals and tanks. These are public/community assets and their growth does not depend upon the resource position of the individual farmer. Even in the case of traditional wells, the major input is labour — an input which small-sized holdings have in surplus. The major reason, therefore, why growth in the fifties benefited all classes of farmers was that the major source of growth, viz., irrigation, was relatively neutral to financial resources.

Growth in the sixties was based on technological change, embodied in inputs such as fertilisers, high yielding seed varieties, pesticides, etc. Technologically, the use of these inputs is neutral to scale. In fact, since water is of critical importance to the effective use of fertilisers and HYVS, and since traditionally smaller farms have been better irrigated, and continue

TABLE 5: TRENDS IN WAGE LABOUR

	Proportion of Employees in the Rural Male Population (NSS Estimate)	Agricultural Labour Households as Per Cent of All Rural Households. (ALES and RLES)	Share of Agricultural Wage Labourers in Adult Male Work Force (1950-51 ALE and Censuses)
	(1)	(2)	(3)
1950-51		30.4	18.14
1952	18.13		
1953	17.55		
1953-54	16.02		
1956-57		24.5	
1958-59	15.30		
1960-61	16.60		
1961-62	15.83		17.68*
1964-65	14.27	21.7	
1966-67	17.32		
1971			20.32
1972-73	18.73		
1974-75		25.3	

Notes : * refers to 1961

In column (3) to the 1961 Census estimate of agricultural labourers have been added 50 per cent of cultivators reporting agricultural labour as secondary work and 75 per cent of "unspecified workers". The first adjustment was undertaken because "the possibility of a response bias tending to overstate the proportion on cultivators in the workforce at the expense of other categories (Sundaram, 1977, p 38).

Sources : (1) Column (1) from Visaria, 1977, Table 2.

(2) Column (2) from the labour enquiries of 1950-51 and 1956-57 and 1974-75.

(3) Column (3) from Sundaram, 1977, Table 9.

TABLE 6: OUTPUT GROWTH AND CHANGE IN PROPORTION OF AGRICULTURAL LABOUR

	Rate of Growth of Per Capita Foodgrain Output 1961-1971 (Per Cent Per Annum)	Change in Proportion of AL in Rural Work Force (Per Cent)
Chingeput	1.87 (3)	10.56 (6)
North Arcot	0.65 (5)	7.29 (5)
South Arcot	3.22 (1)	0.93 (1)
Salem	-1.74(10)	10.76 (7)
Coimbatore	-1.30 (9)	14.12(10)
Madurai	-0.07 (7)	12.38 (9)
Tirucharpalli	-0.29 (8)	2.01 (2)
Thanjavur	2.69 (2)	6.72 (4)
Ramanathapuram	1.18 (4)	5.76 (3)
Tirunelveli	0.11 (6)	10.01 (8)

Sources: (1) Growth rates of food production have been computed from "India, Bulletin of Food Statistics".

(2) Proportion of agricultural labourers from the 1961 and 1971 Tamil Nadu Censuses. The 1961 figure was adjusted by adding to the estimate of agricultural labourers, 50 per cent of cultivators reporting agricultural labour as secondary occupation. See Note to Table 5. Unspecified workers were not added to the estimate of agricultural labourers, since their number was small.

to be better irrigated even after the spread of the tubewell, it has

even been suggested that these farms have a relative advantage in the adoption of modern inputs. However, by now it is fairly well accepted that access to modern inputs is not resource-neutral [Hanumantha Rao, 1975, p 137]. In general, larger farmers have greater investible resources (savings as well as credit) per unit of land. Also, larger farmers have a greater risk-bearing capacity. On account of both these factors, modern inputs have been used very much more intensively on the larger farms. This was most strikingly reflected in the gradual disappearance, during the sixties, of the inverse size-productivity relationship in areas experiencing rapid growth. Hanumantha Rao has noted that

... the inverse relationship between farm size and output per acre found under the traditional labour-intensive technology, which was favourable to small farms, does not seem to hold good in areas undergoing technological changes [Hanumantha Rao, 1975, p 150]. [See also Hanumantha Rao, 1975, PP 142-146].

The implication is that land productivity, and hence total output grew much more rapidly on large farms than on small farms during the sixties.

To sum up; In the 1950s, productivity growth on the smaller farms was possibly greater than on the larger farms; in the sixties the reverse

was true: productivity growth on the larger farms was significantly greater than on the smaller farms. Growth in the sixties, therefore, was considerably more unequally distributed across farms in the sixties than in the fifties.

(iii) Regional distribution of growth:

The regional distribution of growth also worsened during the sixties. In Table 3, we have computed the standard deviation of state growth rates of foodgrain production.

It will be seen that, from the 1950s to the 1960s, there has been a significant increase in the standard deviation of both total and per capita foodgrain production growth rates. Since the all-India average growth rates have remained the same, an increased dispersion of growth rates implies a more unequal sharing of growth. The growth rates have been as follows:

	1952-53 to 1961-62	1961-62 to 1973-74
Total production	2.46	2.67
Per capita production	0.48	0.42

The bulk of the increased regional disparity can be attributed to the rapid growth of output in Punjab-Haryana. If these two states are excluded, the standard deviation registers a sharp decline. In this context it should be noted that Punjab-Haryana had a high level of productivity and a high growth rate even in the fifties.

Viewing disparities in growth performance at the interstate level however, is not enough, since such a procedure conceals important disparities within the states. There has been a significant concentration of foodgrain output within Uttar Pradesh in the western half of the state. Again, it should be noted that growth in western UP took place from a high initial productivity base. Similarly, some of the surplus districts of Andhra Pradesh and Tamil Nadu have significantly increased their share of foodgrain production within these states [see Hanumantha Rao, 1977, pp 1369-70].

As Hanumantha Rao has argued, the increase in regional disparities was again due to the fact of unequal access to resources. There was an inbuilt bias in the technology that requires purchased inputs favouring relatively prosperous regions (Hanumantha Rao,

TABLE 7: GROWTH RATE OF CEREAL PRODUCTION IN AHMEDNAGAR

Period	Semilogarithmic Function: $\log Y_t = a + bt$	Growth Rate (per cent Per Annum)
1953-54 to 1974-75	5.77-0.004t	-0.42
1954-55 to 1974-75	5.85-0.010t	-0.96
1953-54 to 1969-70	5.68+0.011t	+1.14
1954-55 to 1969-70	5.76+0.004t	+0.41

Note: Y_t is output at time point t .

Sources: Output figures upto 1956-57 are from:

"India 1962, Maharashtra and Gujarat Agricultural Statistics", Directorate of Economics and Statistics, Ministry of Food and Agriculture; the remaining figures are from "Maharashtra Statistical Abstracts".

TABLE 8: PROPORTION OF AREA UNDER JOWAR AND BAJRA IN AHMEDNAGAR

1916-17	63.9
1917-18	63.7
1938-39	60.2
1939-40	65.8
1940-41	63.3
1941-42	65.7
1951-52	63.7
1952-53	56.8
1953-54	66.2
1954-55	65.9
1955-56	58.4
1959-60	67.2
1960-61	68.2
1961-62	67.2
1962-63	67.6
1965-66	68.9
1966-67	69.7
1967-68	69.7
1968-69	68.4
1971-72	71.2
1972-73	72.8
1973-74	69.0

Sources: (1) 1916-17 to 1941-42: "Agricultural Statistics of India", Volume 1 (British India) Department of Statistics.
(2) 1951-52 to 1955-56: "India, 1962, Maharashtra and Gujarat Agricultural Statistics", Directorate of Economics and Statistics, Ministry of Food and Agriculture.
(3) 1959-60 to 1973-74: Maharashtra Statistical Abstract, various issues.

1975, p 92). Of course, not all prosperous regions recorded growth, since the technology in the 1960s was specific to certain crops which are not grown all over the country.

The brunt of this rather long-drawn-out discussion has been that, while the growth rate of output in the sixties was slightly less than in the fifties, both at the inter-farm and inter-regional level, output gains were considerably more unequally distributed in the sixties than in the fifties.

III

The Commodity Market

The most direct measure of the extent of the commodity market is the proportion of agricultural output marketed. At the all-India level, Thamarajakshi [1977] has estimated a time series of the marketed surplus of agriculture. (Thainarajakshi's estimate of marketed surplus includes only sales by agriculture to non-agriculture. This is not a complete estimate since a part of the marketed output may remain within agriculture. However, it is assumed that Thamarajakshi's series is adequate to study movement over time). To assess the growth of the commodity market, the marketed surplus series should be compared with the time-series of agricultural output. Table 4 shows that the marketed surplus of agriculture has grown at a compound growth rate of 3.11 per cent per annum between 1951-52 and 1973-74. During the same period, agricultural output has grown at the rate of 2.53 per cent. Since marketed output has grown faster than total production, it follows that the proportion of output marketed has increased from the early 1950s to the early 1970s. It will be observed, however, that the difference between the two rates is not large. Indeed, the difference is even smaller than indicated here, Kohlon and Tyagi [1980, p A-177] have argued that Thamarajakshi's 1951-52 and 1952-53 estimates of marketed surplus are underestimates giving an upward bias to the growth of marketed surplus. Hence the commodity market growth has been slow.

However, considering the period, 1951-52 to 1973-74, as a whole, blurs a change in the trend of commodity market growth around 1960-61. Between 1951-52 and 1960-61, marketed surplus and agricultural output grew at the same rate: in fact, there was a fairly close correspondence between

the annual movements of the two aggregates (see Table 4). Thus, the proportion marketed remained stable over this period.

Between 1960-61 and 1973-74, marketed surplus grew faster than total output. The market, after having remained stable in the 1950s, therefore, grew over the 1960s and the early 1970s.

The transition, from a stable to slowly growing commodity market, raises some issues. Between 1952-53 and 1961-62, the share of foodgrain output in total agricultural output declined. Foodgrain output grew at a much lower rate (2.66 per cent per annum) than non-foodgrain output (4.40 per cent per annum) See "India, 1964" 'Growth Rates in Agriculture', Economic and Statistical Adviser, Ministry of Food and Agriculture, p 2. Since the marketed proportion of non-foodgrains is much higher than the proportion of foodgrains marketed, a growing share of non-foodgrains in total output should result, *ceteris paribus*, in the growth of the commodity market. The fact that the commodity marketed did not grow during the period implies that proportion of foodgrains marketed declined. Theoretically, the proportion of non-foodgrains marketed could also have declined. There, however, does not seem to be any reason why this should have happened.

This may be seen more directly, Thamarajakshi gives an estimate of marketed surplus for final consumption, and not of foodgrains only. Final consumption includes, besides foodgrains, milk and milk products, meat, eggs, and fish, fruits and vegetables, and other foods. However, the break-up for 1951-52 and 1961-62 shows that the proportion of foodgrains in this basket has remained the same [see Thamarajakshi, 1972, pp 84-85]. The time series on final consumption may therefore be assumed to represent the time series of foodgrain output marketed. Between 1954-55 and 1961-82, foodgrain output marketed grew at 1.38 per cent per annum, as against foodgrain production which grew at 2.9 per cent per annum.

In an earlier paper [Mody, 1980] we had argued that between the 1910s and the 1940s the proportion of foodgrains marketed declined due to demographic pressure. From the above evidence, it appears likely that this declining trend continued to the end of the 1950s. The element of continuity lay not in the growth rates of production,

TABLE 9: CULTIVATION HOLDINGS IN BOTTOM SIZE GROUPS: AHMEDNAGAR

		(Per Cent)	
1961		1970	
Less than 1 acre	1.37	Less than 0.5 ha	7.77
1 — 4.9 acres	20.36	0.5 — 1 ha	9.18
5 — 9.9 acres	24.56	1.0 — 2 ha	16.25
		2.0 — 4 ha	23.49
			25.43

Note: 1 ha = 2.5 acres

Source: (1) for 1961, Lal, 1972, Table 1.5.

(2) for 1970 Maharashtra, 1978, Report on the Agricultural Census, 1970-71, Department of Agriculture.

TABLE 10: PROPORTION OF AGRICULTURAL LABOURERS IN THE AGRICULTURAL WORK

1961	1961	1971
Unmodified	Modified	Unmodified
26.1	31.0	33.0

Note: The 1961 modified estimate has been arrived at by re-classifying 50 per cent of cultivators having agricultural labour as secondary activity as agricultural labourers.

Sources: Census of India, Maharashtra, Part II-B(i), General Economic Tables, 1961 and 1971.

which in fact turned from negative to positive in the early 1950s (see above Section II). It lay rather in the fact that three decades of falling per capita output (from about 1920 to 1950, see Blyn, 1966) had resulted in a low level of per capita output in the 1950s. The continuing decline in the proportion of foodgrains marketed (in the 1950s), despite growth in per capita foodgrain output implies an output elasticity of home consumption of farm households exceeding unity. The income elasticity of demand was perhaps lower, since income probably grew faster than food output on account of: (a) decline in real value of land revenue; (b) decline in interest payments (due to a possible decline in rural indebtedness; and (c) rapid increase in cash crop output. The greater than unity elasticity may, in turn be explained by the fact that the growth in the 1950s took place from a low initial level. Moreover (as discussed in Section II), both as between farms and inter-regionally, growth was fairly well distributed, so there was no great concentration of the increased output.

From the early 1960s, the share of output shifted increasingly in favour of foodgrains. Foodgrain output increased between 1960-61 and 1973-74 at the rate of 2.67 per cent per annum, whereas non-foodgrain output grew, during the same period at 1.91 per cent

per annum [computed from India, Bulletin of Food Statistics, Ministry of Food and Agriculture]. As pointed out above, the proportion of foodgrains marketed is considerably smaller than the proportion of non-foodgrains marketed. *Ceteris paribus*, the proportion of agricultural output marketed should decline as the pattern of output shifts in favour of foodgrains. And yet, it was precisely during a period when such a shift in the output pattern took place, that the commodity market grew. The implication (on the assumption that the proportion of non-foodgrains marketed did not increase) is that the proportion of foodgrains marketed increased significantly. Once again, this may be seen more directly. Between 1961-62 and 1973-74, marketed surplus for final consumption grew at 3.03 per cent per annum as against foodgrain output which grew at 2.67 per cent per annum. (The data for marketed surplus are from Thamarajakshi upto 1964-65 and from Venkataraman and Prahladachar (1978) thereafter. The latter study is an extension of Thamarajakshi's work, using exactly the same methodology.)

An increase in the share of foodgrains marketed indicates a reversal of the declining trend between the 1910s and the 1950s, which was discussed above. This calls for an explanation.

The rates of growth of foodgrain output at the all-India level provide no answer. The growth rate of foodgrain production between 1961-62 and 1973-74 (2.67 per cent per annum) was roughly the same as between the 1952-53 and 1961-62 (2.46 per cent per annum; see Table 2). To the extent the growth rate was slightly higher after 1961-62, it was more than offset by the increase in the population growth rate. As a consequence, the output per head of the agricultural population grew (if anything) at a slower rate in the 1960s than in the 1950s.

It is possible that per capita output reached a certain threshold level in the early 1960s, so that the further increases in the per capita output (though of the same order as in the previous decade) resulted in an increased marketed surplus. In other words, the growth of output during the 1950s raised the level of per capita output, consequently lowering the output elasticity of home consumption.

Added to that and, perhaps, of greater significance was the fact of increased inter-farm and inter-regional inequalities in the distribution of growth. We showed in Section II that these inequalities were considerably greater in the sixties than in the fifties. The sixties, therefore, witnessed a significant concentration of output. As Hanumantha Rao has put it:

... an important factor behind the emergence of large surpluses of foodgrains — is the increasing concentration of foodgrain output in the developed regions and the large farms where the income level is already high and where, therefore, the income elasticity of demand for foodgrains is low. Consequently, a large proportion of the increments in output is marketed. . . . (Hanumantha Rao, 1977, p 1369).

This line of reasoning, however, provides only a partial explanation because it considers only the increasing surpluses from rapidly growing regions. The other side of the coin of increased inter-regional and inter-farm disparities is the presence of fanners and regions with low and even negative growth rates. We do not have data for different classes of farmers. But the regional dimension may be illustrated. Bhalla and Alagh have studied the growth performance of 289 districts between 1962-65 and 1970-73. Of the 289 districts, 71 districts (or 25 per cent of the districts) had negative growth rates; another 62 (21 per cent) districts had growth rates between 0 and 1.5 per cent per annum [see Bhalla and Alagh, 1979 pp 30-31]. The per capita production is likely to have declined even in the latter districts. Such regions are likely to have reduced their involvement in the commodity market.

A rising all-India proportion of foodgrain output marketed in a period of growing regional inequalities implies a low output elasticity of marketed surplus at low and negative growth rates, and a rapidly increasing output elasticity of marketed surplus as growth rates increase. That is, it reflects an exponential relationship between the elasticity and growth rate. This rela-

**TABLE 11: PROPORTION OF JOWAR AND BAJRA IN GROSS CROPPED AREA
ACCORDING TO SIZE-CLASS**

(Per Cent)					
Size of Holding (Acres)	1955-56	Size of Holding (Acres)	1969-70 to 1971-72	Size of Holding (Acres)	1970-71
0-5	67.7	0-5	71.0	0-5	69.2
5-10	74.1	5-10	74.0	5-10	70.2
10-15	74.1	10-15	71.2	10-12.5	69.3
15-20	75.4	15-25	74.0	12-5.25	68.7
20-25	80.3				
25-30	79.1	25-37.5	76.8	25-50	68.0
30-50	73.1				
50 and above	74.6	37.5 and above	74.3	50 and above	66.5

Sources: (1) 1955-56: Bharadwaj, 1974, pp 78-80, based on Farm Management Survey.
 (2) 1967-70: Nadkarni, 1980, pp 76-77, based on Farm Management Survey.
 (3) Maharashtra, 1976, Report on the Agricultural Census 1970-71.

tionship seems to be in accordance with intuitive reasoning. A reduced involvement in the commodity market is relatively difficult, especially if such involvement is already of a low order. On the other hand, large surpluses are likely to be generated in regions of high growth since consumption normally lags behind production, and is in any case limited by Engers Law. Therefore, even though the all-India average growth rate of foodgrain production did not rise, it appears that the increased disparity in growth rates resulted in faster increase of marketed surplus, since regions of high growth more than offset the decline in market involvement of regions of low and negative growth.

To recapitulate briefly then, we have argued that although the growth rates of foodgrain production at the all-India level remained the same between 1952-53 to 1961-62 and 1961-62 to 1973-74, the proportion marketed in the latter period increased because: (1) the level of per capita output was higher during 1961-62/1973-74, and (2) the inter-regional and the inter-farm disparities increased.

We have discussed the growth of the commodity market thus far mainly at the level of the country as a whole. We have indicated, however, that the experience of different regions is likely to have differed considerably. In order to understand the process of commercialisation in greater depth, we would have to examine more carefully the regional differences. It would be necessary to distinguish as we have indicated, between the high growth and low growth regions. A further distinction would have to be made between regions with high and low *initials levels*

of output. One would also have to examine the sources of growth and their implications for the distribution of growth. The discussion at the all-India level (while useful in itself) was intended to bring out the significance of the initial conditions and distribution. Our case study in Section V focuses on a relatively homogeneous region.

IV

The Labour Market

In this section, we trace the growth of the rural wage labour market between 1950 and 1970. The index of the extent of the wage labour market is the proportion of workers whose principal source of income is wages (or those who spend the major portion of their time in wage-earning occupations) to the total labour force. In part, we will be talking of agricultural wage labour rather than all rural wage labour. This is dictated by data availability.

The study of trends in the proportion of wage labour in the labour force is beset with considerable data problems. Each data source changes its concepts over time, and, therefore, a time series comparison becomes difficult. The procedure followed here is to consider three sources of data. These are the National Sample Survey data, the Agricultural Labour Enquiries and the Rural Labour Enquiries data, and a series constructed by K Sundaram on the basis of the first Agricultural Labour Enquiry and the 1961 and 1971 Population Censuses.

Table 5 sets out the information available on the trends in the growth of wage labour. The common feature brought out by all three sets of data

is that the proportion of wage labour declined in the 1950s and, perhaps, in the early 1960s, and then increased from the mid-sixties. The interpretations drawn from the NSS data are likely to be the most reliable in this regard. NSS data are available for several number of time-points. Also, the series given in Table 1 has been made comparable over time by Visaria [1977]. The NSS data shows that the proportion of employees in the rural labour force declined steadily from 18.13 per cent in 1952 to 15.13 per cent in 1958-59. The decline in the proportion of employees possibly continued into the early sixties, reaching the lowest level in 1964-65. Thereafter, there has been a significant rise in the proportion of employees in the rural work force. However, despite the increase in the sixties, the proportion of employees in the work force in 1972-73 was only slightly higher than in 1952, indicating that the rise in the sixties was only marginally greater than the fall in the fifties. More or less the same picture emerges from the other data sources. (The 1950-51 labour enquiry is not comparable with the later enquiries. The 1950-51 enquiry classified workers according to their time, disposition, whereas the later enquiries classify according to major source of income. Raj has argued that this results in an overestimation of agricultural labour in 1950-51 *via-a-vis* 1956-57, and hence *vis-a-vis* 1964-65 and 1974-75 — Raj, 1961 p 506. The Sundaram series is based on the time disposition criterion and does not have the comparability problem.

How do we explain these movements? Our understanding is that changes in the numbers and proportions of those participating in the wage labour market reflect primarily changes in the *supply* conditions of wage labour. There are two supply factors which could result in a change in the proportion of labour households:

(1) existing labour households (whether owing land or not) could grow at a luster rate than the rest of the population (assuming no upward mobility for these households); or (2) land-owning households could shift primary dependence from cultivation income to wage income; such a shift occurring due to the inadequacy of cultivation income as well as the availability of surplus labour within such households.

A part of the decline in the proportion of wage labour households in the fifties could have been due to the less rapid growth of labour households

compared with the rest of the households; but it seems unlikely that differential growth rates explain the increase in the proportion of labour households in the sixties.

In our judgment, the marginal shifts in the extent of wage labour have been more due to the increased or decreased participation of land-owning households in the wage labour market. The trends in the growth of output and the distribution of growth, in the context of demographic pressure, determine the compulsion of land-owning households to supplement their income through wage labour. We elaborate this below.

The land-man ratio declined continuously over the 1950s and the 1960s. The decline was more steep in the sixties, since area expansion was much less than in the fifties and population growth much more. The declining per capita availability of land reflected itself in a declining per household land availability because of the partitioning of households. Moreover, it appears that partitioning of households has affected households on the smaller-sized holdings more than households on the larger-sized holdings, since the proportion of households cultivating small-sized holdings has been increasing over time. (See Panikar *et al* [1974, pp 43-47] for a discussion on household partitioning and Sanyal [1977] for the data.)

It is important to note, however, that despite a fall in the land-man ratio, per capita agricultural output (foodgrain and non-foodgrain) rose in the fifties. Per capita foodgrain output continued to rise even in the sixties, though non-foodgrain output did not keep pace with the population during this decade. Thus, the increase in land productivity more than compensated for the fall in per capita land availability in the fifties and at least partly so even in the sixties. To this extent, the demographic pressure in the fifties and sixties was *on the average* alleviated.

For understanding the process of change in the proportion of wage labour, it is necessary to know how the increased *average* per capita output was *distributed*. We have no direct figures for distribution. However, in this connection, our discussion in Section II may be recalled. We argued there that the growth in the 1950s was based on traditional irrigation sources and techniques of production. As a consequence, the growth was evenly distributed across different

classes of farmers. The average per capita production increase of the fifties, therefore, reflected an all-round increase in per capita production. The improved production possibilities on the small farms, we feel, provided greater opportunity for the use of family labour on such farms, as well as reduced their dependence on wage income. For this reason, there was a decline in the proportion of wage labour in the rural working force.

In contrast to the fifties, the sixties saw an increase only in the per capita foodgrain output, with per capita non-foodgrain output declining. More important was the distribution of the increased output. We argued in Section II that the growth in the sixties was based very largely on the use of modern inputs, the access to which depends on the initial resource base of the cultivating household. Given the fact that the asset distribution is skewed, the growth in the sixties also tended to be skewed.

The increase in production accrued, therefore, mainly to households with a strong resource base, which, in general, implies relatively large land-holding. From this it follows that households cultivating small-sized holdings are likely to have suffered a decline in per capita output. Such households would be under compulsion to supplement their income from increased labour market participation. Moreover, due to a rapidly declining land-man ratio and increased partitioning, the number of such small cultivator households increased at a fast rate. It is, therefore, not surprising that the declining trend in the proportion of wage labour in the fifties was reversed in the early sixties. The proportion of wage labour in the work force grew at least up to the early seventies (till when we have data).

To explore further the wage labour supply behaviour of marginal cultivator households, we looked at the phenomenon at a more disaggregated level. We wished to test the hypothesis that the growth of wage labour is inversely related to the growth of output on small and marginal farms. We made the assumption (to start with) that the increased production in each region of the country is similarly distributed between different classes of farmers. On the basis of this assumption, we used the growth rate of the regional per capita output to *represent the growth rate (or marginal cultivator households)*. We then ranked the regions according to the growth rates. We

also estimated the *change* in the proportion of agricultural labourers to the rural work force. For the period of the fifties and the early sixties, an interstate comparison indicated an inverse relationship between the growth rate of per capita agricultural output (or foodgrain output) and the change in the proportion of agricultural labourers. The "inverse relationship did not hold for all the states. This was so possibly for the following reasons; (a) the assumption of similar distribution of output increases across states was not valid; (b) cross-currents within the states cancelled themselves out; and (c) our initial hypothesis had only limited validity. To control for the first two sources of error, we looked out for a smaller geographical area, in the hope that it is relatively homogeneous, taking as a sample the districts of Tamil Nadu. Table 6 gives the relevant figures. The growth rates are ranked in the descending order, and the change in the proportion of agricultural labourers in the ascending order. It may be seen that there is a close parallel between the two sets of ranks, indicating the inverse relationship.

Further probing suggests that even the minor differences in ranks may be explained in terms of differences in the distribution of growth. The three districts with the maximum rank deviations are Chingleput, Salem and Tiruchirapalli. Chingleput has a high growth rate but also a large increase in agricultural labourers. Salem and Tiruchirapalli have negative growth rates and also relatively low increase in agricultural labour. The clue to understanding this seems to be in the sources of irrigation growth. (The irrigation figures have been taken from the Tamil Nadu Season and Crop Reports.) In Chingleput, there has been a fall in the area irrigated by the traditional irrigation sources, particularly tank irrigation. This is the only district to have experienced such a fall. On the other hand, tubewell irrigation which is a relatively concentrated form of irrigation has grown. Thus although the per capita output has grown for the district as a whole, the growth has been concentrated. Small holdings are likely to have suffered a decline in per capita farm output due to the decline in irrigation availability from traditional sources, resulting in an increase in the wage labour. In Tiruchirapalli and Salem, traditional irrigation sources have grown considerably resulting presumably in a better distribution of

growth than in the other districts. However, the pattern of changes in Kanyakumari does not seem amenable to the above logic.

While we have stressed supply factors, particularly the supply of wage labour from marginal cultivator households, we do not wish to imply that demand factors have played no role. As Sundaram [1977, p 29] has argued, the growth in the proportion of agricultural wage labourers during the fifties in Maharashtra and Gujarat was due to an increased demand for wage labour consequent upon a shift to labour-intensive cash crops. But more important, perhaps, has been the case of Punjab-Haryana, in the fifties as also in the sixties. Here, demand has increased because increasing production has required greater labour input. The increased demand has been met partly through in-migration of labour into Punjab-Haryana. Partly, small landowners have been leasing their land to large landowners and then joining the labour market. The leasing of land by small to large landowners, often described as reverse leasing, is not peculiar to Punjab-Haryana. It is reported to be prevalent also in other high growth regions where, like in Punjab-Haryana, there is buoyant demand for labour [see Bardhan, 1977, p A-38].

V

Commodity and Labour Market Changes in Ahmednagar District

A considerable proportion of the area under cultivation in India is in the so-called 'dry regions'. These regions are characterised by low and uncertain rainfall. With production depended very largely on rainfall, they are characterised also by low and uncertain production. The low production is the combined result of poor yields and the domination of low-valued crops in the cropping pattern. In general, millions occupy a substantial proportion of the cultivated area.

Ahmednagar district is one such dry area. Approximately 19 per cent of the area under cultivation is irrigated. Production is dependent on rainfall to a very large extent. The district lies in the rainshadow of the Western Ghats and, consequently, has limited rainfall. Moreover, the rainfall fluctuates considerably from year to year (see Lal, 1972, p 13). As in other dry areas, the value of output per unit of land is low. The Bhalla-Alagh study, which has classified the districts of the country according to the value of pro-

ductivity, finds Ahmednagar to be in the lowest productivity group, ie, less than Rs 700/ha. (Bhalla-Alagh, 1979, P 214). The low productivity is essentially a reflection of the fact that roughly two-thirds of the area under cultivation is under jowar and bajra — crops with a low physical output per hectare as well as low value.

For our later purpose, it should be noted that the predominance of jowar and bajra in the cropping pattern implies that the cultivators have a relatively limited commodity market involvement. Jowar and bajra are grown primarily for home consumption. According to Nadkarni's estimates, the proportions of jowar and bajra production marketed in Ahmednagar (in 1969-70/1971-72) were 24.4 per cent and 29.7 per cent, respectively [Nadkarni, 1980, p A-15]. In the 1960s, there was a breakthrough in bajra production with the development and successful use of certain HYVs. Conceivably, regions in which the HYVs were used extensively, bajra ceased to be grown as a subsistence crop. In our context, it is only necessary to note that the dry regions were relatively untouched by the HYVs [Jodha, 1973, p A-146, Table 2].

We wish here to study the changes, over time, in the commodity and labour markets. Our broad conclusion is that demographic pressure has been the major influence on the development of both the commodity and labour markets. Food production has not kept pace with population. This has forced a further shift in area to the subsistence crops, jowar and bajra. Thus, there has been a withdrawal from the commodity market. On the other hand, demographic pressure has meant a decline in the average size of operational holding. More specifically, the number and proportion of households operating the relatively small holdings has grown. Increasing numbers of cultivator households have, therefore, been forced to supplement their income through wage labour. The growth in the numbers of wage labourers has probably been accentuated by the fact that households operating small holdings have been shifting their compulsive market involvement from the commodity to the labour market for reasons discussed in Section I. The rest of this Section is devoted to providing the evidence for these conclusions. It may be noted that we do not here make a distinction between the 1950s and the 1960s as we did while discussing the country as a whole.

(i) Growth of per capita cereals output and cropping pattern shifts:

The measurement of foodgrain output growth is complicated by the fact (that the considerable rainfall fluctuations reflect themselves in output fluctuations. There is no standard method of eliminating the fluctuations and deriving the 'pure' trend. In our particular case, there is a special problem. The first half of the 1950s was a period of very poor rainfall and hence production was depressed. If, therefore, the early 1950s are taken as the base, the growth is exaggerated. On the other hand, 1971-72 and 1972-73 were also years of depressed production, on account of poor rainfall. If these years are taken as the end-points, the growth rate calculated would be an underestimate.

To try and get over this problem, we have estimated growth rates with different starting and ending points. These are given in Table 7. It will be immediately obvious how sensitive the growth rates are to the base and final years. For our purpose, however, what is important is that growth rates have either a negative value or a small positive value. The highest growth rate is 1.14 per cent per annum. (This is between 1953-54 and 1969-70.) Even this is considerably lower than the growth rate of the rural population during the 1950s and the 1960s. Between 1951 and 1961, the population grew at 2.3 per cent per annum, and between 1961 and 1971 at 2.42 per cent per annum. We assume that the growth rate of rural population is a good approximation to the growth rate of the population in cultivating households. It follows that per capita cereals output has been falling in the cultivator households.

The reaction to a declining per capita cereals output would depend upon the extent of imports availability. If the region has unlimited access to foodgrain imports, a fall in per capita production of food grains may have no impact on the cropping pattern. By unlimited access to foodgrain imports, we imply, naturally, access at stable prices. Indeed, a declining production may be accompanied by (or even due to) a shift away from foodgrains in a situation of easy import availability. (See Panikar, *et al.*, 1974 pp 6-20 and Mody, 1980, p 60.) However, if foodgrains can be imported only in limited quantities, it may be expected that there will be a tendency to offset the decline in per capita production through a shift in area to cereal production.

There is reason to believe that foodgrain movements within the country do not iron out inter-regional production differences. An inter-state cross-sectional study shows close correlation between foodgrain production and foodgrain consumption (UN, 1975, p 19). Hence, import of foodgrains does not appear to be an option for low production areas.

Though we do not have direct evidence, the shift in cropping pattern in Ahmednagar suggests that imports of foodgrains on a significant scale into the region has not been feasible. With per capita cereal output falling, there has been a shift towards subsistence farming. Jowar and bajra, which are basically subsistence crops, have been claiming an increasing proportion of the cultivated area (see Table 8).

Possibly, Table 8 exaggerates slightly the shift in area to jowar and bajra. Rainfall fluctuations cause not only output fluctuations, but also fluctuations in cropping pattern. The years, 1971-72 and 1972-73, were years of poor rainfall. In such years, the impending shortfall in production is sought to be partly offset by allocating a larger proportion of the area to foodgrains than in a year of normal rainfall. Strictly, therefore, an assessment of the trend shift in cropping pattern should be based on a comparison of years with similar rainfall. The years, 1951-52 to 1953-54, provide a comparison to 1971-72 and 1972-73. The difference, if anything, lies in rainfall being poorer in the earlier three years than in the later years. Had all other things remained unchanged, the proportion of area under jowar and bajra, in 1971-72/1972-73, should have been lower than in 1951-52/1953-54. Yet, we see quite clearly that the shift over time has been in favour of jowar and bajra. If the time series of the proportion of area under jowar and bajra is seen as composed of a trend around which there are fluctuations, this evidence of rising peaks indicates a rising trend.

The shift to subsistence cropping in the face of a declining per capita foodgrains output in the district seems all the more striking when one recalls that, during the same period, per capita food production in the country as a whole rose. In particular, foodgrains availability was at an all-time high in the early seventies: the availability was certainly much higher than

in the early fifties.* The implication is that foodgrain movements are insufficient to offset regional falls in per capita output. In regions experiencing such a fall, cultivators are therefore likely to produce more for home consumption.

The pattern of shift observed in Ahmednagar between the early fifties and the early seventies, is not peculiar to that district. It has been shown that a similar shift took place in large parts of the country between 1920 and 1940 [Mody 1980, pp 44-68]. In a more recent period, between 1950 and 1975, Venkatraman and Prahladachar [1980, p 77] have observed a movement towards subsistence farming in Rajasthan. Rajasthan shares with Ahmednagar the characteristic of being a dry area. Detailed studies of other dry areas would be required to judge the generality of the experience in Rajasthan and Ahmednagar.

(ii) *Demographic pressure and labour market growth:*

On land distribution and occupational distribution of the work force, reasonably comparable data are available for 1960/61 and 1970/71. The data we present, therefore, shows only the changes that occurred in the sixties. However, demographic pressure increased even during the fifties. We would, therefore, expect that the changes observed in the sixties were a continuation of the changes in the fifties.

Table 9 gives the proportion of cultivation holdings in bottom size-groups of operational holdings. Between 1961 and 1970, there has been a significant increase in the proportion of holdings operating less than 5 acres. Even within the below-5 acres group, there has been a slide-down. The proportion of holdings operating less than one acre (approximately) has increased.

The increase in the proportion of small and marginal holdings shows itself in the higher proportion of agricultural labourers in the agricultural work force (i.e., cultivators and agricultural labourers). See Table 10. The unmodified census data for 1961 and 1971 show this increase sharply. However, the 1961 and 1971 data are not quite comparable. It has been pointed

ed out that, due to a questionnaire bias, the 1961 census tended to classify those who were primarily agricultural wage labourers as cultivators [Sundaram, 1977, p 38]. To correct for this bias, 50 per cent of the cultivators reporting agricultural labour as secondary work have been reclassified as wage labourers. Despite this change, which boosts the share of agricultural wage labourers in 1961, it will be seen that the proportion of wage labourers increases between 1961 and 1971. It may be noted further that this increase records only the increase in the proportion of those who are primarily wage labourers. Several of the households that have come down the scale are likely to have increased their participation in the wage labour market, though they may not be primarily dependant on wage labour. In addition, many households have possibly entered the non-agricultural rural wage market.

Thus far, our understanding has been that the growth of wage labour was due to the partitioning of land, leading to uneconomic holdings for large numbers of households. It seems that the growth of wage labour was also due to a shift in the compulsive market involvement of small cultivators from the commodity market to the labour market (see above, Section I). The evidence on this is not clear-cut, but is certainly suggestive. Table 11 gives data on the proportion of area allocated to jowar and bajra on different sized-holdings. The data are from two farm management surveys and the 1970-71 agricultural census. The first farm management survey data (1955-56) shows that the proportion of area under jowar and bajra follows the shape of an inverted-U: low proportion on the small-sized holdings, high on the middle-sized holdings and low once again on the large-sized holdings. This pattern, Krishna Bharadwaj argued, reflected commercial orientation of small and large farmers and, the subsistence orientation of middle farmers. The market involvement of small farmers was described by Bharadwaj as "compulsive", and explained as due to their having certain minimum cash requirements [Bharadwaj, 1974, Chapter 73].

The data for the late sixties and early seventies show that the inverted U-shape curve is gradually disappearing. By 1969-70/1971-72, the amplitude of this curve has considerably declined and, in 1970-71, the proportion of jowar-bajra even shows an in-

*Per Capita Foodgrain Availability
(in kg/years)

1951	143.8	1971	171.2
1952	140.4	1972	171.1
1973	150.3	1973	154.6

Source: India, Bulletin of food statistics.

verse relationship with the size-class. Earlier we had shown that for the district as a whole the proportion of area under jowar-bajra has increased over time. The reduced amplitude of the U-shaped curve, and the signs of an inverse relationship indicate that the increase in the proportion of jowar-bajra area has been faster on small (and to an extent on large) farms than for the district as a whole. It should be noted that we have compared only the *shapes* of the *curves* of jowar-bajra proportion across size classes, and not the actual proportions themselves. This is because the successive estimates of the actual proportions are not comparable. The two Farm Management Surveys are, to my knowledge, not drawn from the same sample, and the sample surveys are, of course different from the census. The 1955-56 survey, in particular, shows the proportion of area under jowar-bajra to be higher in *each* size-class than the *district average* (see Table 8). Therefore, the shift away from jowar-bajra in the middle size-classes is more apparent than real. Of course, it may be asked why the *shapes* of the curves are immune to the comparability problem. There is no ready answer to that. And that is why we cautioned that the evidence presented here is not clear-cut.

This shift towards subsistence farming on small farms may be seen in the context of our discussion on food availability within the district. Per capita output of foodgrains within the district has been declining. The shift in cropping pattern towards jowar-bajra suggests that imports of foodgrains into the district have not been enough to compensate for the fall in production. In the case of small farmers, the decline in foodgrain availability can be particularly critical. This would be specially so in years of low rainfall when production falls below the declining trend. In this situation, it appears from the data that small cultivators have tended to devote more area to growing food on their holdings and they meet their cash requirements by entering the labour market.

VI

Summary and Conclusions

Our purpose in this paper was to examine how growth and distribution of growth influence the commodity and labour markets.

We distinguished between the 1950s and the 1960s. Per capita agricultural

output (foodgrain and non-foodgrain) grew in the 1950s, after having declined in the previous three decades. Per capita foodgrain output grew in the 1960s. However, non-foodgrain production growth rate in the sixties fell below population growth rate. Moreover, growth was better dispersed (both as between different size-classes of farms and as between regions) in the fifties than in the sixties.

In the fifties, there was no increase in the proportion of agricultural output marketed; the proportion of *foodgrains* marketed actually declined. In the sixties, the proportion of agricultural output marketed increased, this increase was principally a function of the increase in the proportion of foodgrains marketed. The proportion of foodgrains marketed declined in the fifties and increased in the sixties, even though the all-India average per capita foodgrains output growth rate was the same in both the decades. The foodgrains market contracted in the fifties and grew in the sixties because:

- (1) growth in the fifties took place from a low base and was relatively well-distributed: at low levels of production, one may expect the output elasticity of consumption to exceed unity;
- (2) growth in the sixties took place from a higher base than in the fifties; moreover the increases in output were considerably more concentrated in the sixties than in the fifties. The growth of surpluses in a relatively few hands resulted in the growth of the foodgrain market.

The proportion of the rural work force engaged in wage labour declined in the fifties and increased in the sixties. Our understanding is that the marginal changes in the extent of wage labour market participation depended largely on the behaviour of small and marginal cultivator-households. The proportion of small and marginal cultivator households to all cultivator households increased over the fifties and sixties. In the fifties, however, the small and marginal households participated in growth to a considerable extent: This simultaneously provided more work on the family farm and reduced the need to supplement income through wage labour. In the sixties, the small and marginal households participated in the growth to a considerably less extent, and hence were forced into the labour market.

The picture we have described, so

far, is an all-India one. There were, no doubt, considerable regional differences in the patterns of commodity and labour market evolution. On the basis of our discussion in this paper, a three-fold typology may be used to classify regions:

(1) Regions where the proportion of foodgrains marketed has declined and the proportion of wage labour has also declined. The reasons for such a pattern have been discussed above. Regions of this type were of considerable importance in the fifties. In the sixties, also, there are likely to have been regions: these would be regions where extensive irrigation grew from a relatively low base.

(2) Regions where the proportion of agricultural (and foodgrain) output marketed has declined, but the proportion of wage labour in the work force has increased. Ahmednagar is one such region. With the average growth rate not increasing, and the regional distribution of output getting more skewed, the weight of such regions is likely to have increased over time.

(3) Regions where both the proportion of output marketed and the proportion of wage labour have grown. These are regions of high growth, and are also regions where growth has been concentrated on the relatively larger farms. The concentration of output in a few hands generates surpluses and hence the growth of the commodity market. Within this category of regions, these are two sub-categories:

(i) regions where the wage-labour has been mainly due to demographic pressure on the households cultivating small landholdings and

(ii) regions where in addition to demographic pressure, in-migration of labour and reverse leasing of land have contributed to the growth of wage labour. Reverse leasing of land accentuates the polarisation among agricultural households, leading to something akin to the differentiation of the peasantry described by Lenin (see above Section I). With increasing regional concentration of output gains, the weight of such region has also grown over time.

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DISCUSSION

Agricultural Labourers and Poverty

J P Mencher

K N NINAN'S comment (September 19, 1981) on my paper ("The Lessons and Non-Lessons of Kerala: Agricultural Labourers and Poverty", *EPW*, Special Number, 1980) seeks to show that the picture I have presented of the situation of agricultural labourers in Kerala is excessively "gloomy", implying that they are considerably better off than I have claimed (1981:1549-52). Ninan also accuses me of generalising beyond the limitations of my data. Before responding specifically to these criticisms, I must point out that Ninan has taken my paper completely out of context, making it seem to be primarily a critique of the Kerala government and the work of the centre for Development Studies (under whose auspices the study, on which my paper was based was carried out).¹

Actually, the paper was written to counter various statements made in development circles (mostly outside India) about the so-called "Kerala model of development", and its implications for the socio-economic develop-

ment of third world countries. I pointed out that this model is viewed by some as a "cheap" model, an easy rationalisation for ignoring the current dialogue about the need for a transfer of funds from developed to developing countries, and as a basis for the assumption that there is no need for a really radical transformation of the productive basis of society. This model (it is hypothesised) offers a blueprint for effecting significant improvements in the quality of life at an attractively low price (both financially and politically).

I tried to show in my paper that there has been a widespread misunderstanding of the Kerala situation, that the Quality of peoples' lives as observed in the field is not accurately reflected in the economists' indices, and that furthermore certain statements made by Kerala economists have been distorted beyond recognition by development economists elsewhere, in the interests of selling this money-saving model. In addition, I have tried to