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INDUSTRIAL DISTRIBUTION OF WORKING FORCE IN KERALA

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Introduction

Economic development brings about, with rising national product and income per capita, certain broad changes in the structure of production and industrial distribution of the working force. It has long been recognised that owing to differences in income elasticity of demand for different groups of goods and services, increase in per capita income leads to increased demand for manufactured products and services of various kinds compared to agricultural products like food. Colin Clark in his classic work has brought out "the most important concomitant of economic progress, namely the movement of population from agriculture to manufacture and from manufacture to commerce and services".[1] Making a cross section analysis of the data for a large number of countries, Colin Clark has demonstrated the validity of what he describes as "Sir William Petty's law", viz., that with economic development, the proportion of the working force in primary production diminishes and, obversly, the proportion in Secondary and Tertiary sectors increases. The analysis of the time series data for different countries also yields broadly similar results. Simon Kuznets, pursuing this question on a more ambitious scale and with more refined technique of analysis, has

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1. Colin Clark, "The conditions of Economic Progress", Mcmillan and Company Limited, London, 1951, p.395.

come out with similar results.[2] The results of both the cross-section analysis and time series analysis which he has carried out substantiate the hypothesis that with economic development and rising income per capita, the proportion of workers in agriculture and allied activities falls markedly, and those in manufacturing industries and services rise correspondingly; these findings are broadly similar to those brought out earlier by Colin Clark.

I. Empirical Verification of Clark-Fisher Hypothesis

Jayasankar Krishnamurty has attempted to verify the above hypothesis regarding the relationship between per capita income and sectoral distribution of working force with reference to Indian Union and the States.[3] He has carried out both a cross-section and time series-analysis on the basis of which he concludes that there is a close association between per capita income and sectoral distribution of workers in different states in India, in consonance with the Clark-Fisher hypothesis. We shall now review briefly the method and findings of Krishnamurty, as they have considerable bearing on the situation in Kerala.

(a) Cross-section view

Firstly, let us take the cross-section view. The analysis is confined to male workers only. The technique of analysis used by him is the 'association method'. Krishnamurty has put in

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2. Simon Kuznets, Economic Growth of Nations' - Total Output and Production Structure, Harward University Press, Cambridge, (Mass) 1971.

3. Jayasankar Krishnamurty, The Industrial Distribution of the Working Force in India 1901-1961: A Study of Selected Aspects. Unpublished Ph.D. Thesis submitted to the University of Delhi, 1

juxtaposition the 1960-61 per capita income in different states (as estimated by the National Council of Applied Economic Research and published in their Distribution of National Income by States, 1960-61) and the percentage distribution of male workers in different activities. The States are divided into two groups on the basis of per capita income, Group A and Group B. The rationale of this division is not clear; Kerala is included in Group A, i.e., States with higher per capita income, though Kerala is at the bottom of this list and the State income per capita in 1960-61 is below the national income per capita.

The following are the main findings of Krishnamurty: (a) the proportion of male workers in "Agriculture", that is, "cultivators", plus "Agricultural Labourers", to total male working force is lower in group A states than in Group B states; Group A states have a lower range of percentage share than the Group B States. The lowest value of the proportion of workers in "Agriculture" in Group B states is higher than the highest value in Group B states. (b) In the case of "Manufacturing", "Trade and Commerce", "Transport, Storage and Communications" and "other Services", the percentage share of workers is positively associated with the per capita income, since in each of these branches of activity the lowest percentage share in Group A states is higher than the highest percentage share in Group B States. (c) In the remaining activities, i.e., "Electricity, Gas, Water Supply and Sanitary Services" and "Construction", there is no positive association between per capita income and percentage share of workers. Though the mean values of the

proportion of workers in these activities are higher in Group A states, the ranges are overlapping.[4] "We may therefore conclude that per capita income is positively associated with the shares of "Manufacturing" and "Services" and negatively with the share of "Agriculture" (including allied activities). This is consistent with the Clark-Fisher hypothesis which holds that as an economy grows, there is a shift of workers from agriculture to manufacturing and services. The Clark-Fisher hypothesis would therefore suggest that the shares of manufacturing and services would be higher and that of Agriculture lower in relatively advanced compared to relatively backwards States."[5]

It needs, however, to be pointed out that Kerala which has the lowest per capita income among Group A States has also the lowest proportion of male workers engaged in agriculture and allied activities among all the States. It remains to be explained why the share of this sector in total labour force in Kerala is significantly lower than that in Maharashtra, West Bengal and Punjab where the per capita income is substantially higher. An equally indigestible lump in the above formulation is that the share of the Services sector in Kerala is out of all proportion to the level of per capita income here. The percentage of male workers in Trade and Commerce, Transport, Storage and Communications, and other Services to total male workers in the State is the highest in Kerala, viz., 26.5 percent, as against 19.4 per cent in Maharashtra, 21.9 percent in West Bengal and 18.3 per cent in Punjab, the three highest per capita income States. In other words, the tertiary sector in Kerala accounts for a higher proportion of workers than warranted by the

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4. Ibid, P.150; 5. Ibid. P.151.

level of economic development measured in terms of the estimated per capita income of the state. To this question we shall return later.

(b) Time Series analysis

Next we shall examine the time series analysis which Krishnamurty has attempted. He has presented the changes in different activities in the total male working force in different States over the decade 1951-1961. In the country as a whole, — after allowance is made for probable under-enumeration of unpaid family workers in agriculture, especially in a few Southern States, — the share of Agriculture in the working force declined between 1951 and 1961, though the decline was not significant. In a few States such as Rajasthan, Gujarat, Uttar Pradesh, Assam and Orissa, the share of this sector in the total working force registered an increase while in others it declined. The decline in the proportion of workers in Agriculture to total working force came to 8.7 percentage points in Bihar, 5.6 percentage points in Kerala, 3.7 percentage points in Punjab, 1.9 percentage points in Madhya Pradesh, 1.5 percentage points in Maharashtra and 1.4 percentage points in Andhra Pradesh as against 1.3 percentage points for India as a whole.[6] The differential trends in the proportion of workers in agriculture to total working force are explained by Krishnamurty in terms of differential rates of growth of agricultural output in different states.

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6. Ibid, Table 4.3 p.112

He observes:

> "There appears to be an interesting relationship between the rates of growth of agricultural output in the different States and the changes in the percentage of working force in 'Agriculture' over the period 1951-61. By and large, States with agricultural growth rates above 2.5 per cent per annum experienced decline in the relative share of 'Agriculture' in the working force, while States with growth rates below 2.5 per cent per annum experienced increase in the relative share of 'Agriculture' in the work force".7

Krishnamurty explains the relationship between changes in agricultural output and the share of 'Agriculture' in the working force as follows:

> "Rising levels of agricultural output usually lead to rising incomes and as income rise, not only does consumption rise, but the pattern of consumption may also change. A rising demand for non-agricultural products would stimulate their production, and greater availability of food and raw materials from agricultural sector may facilitate increased production. A rise in agricultural output would then be a part of the process of expansion in both the agricultural and non-agricultural sector..... Higher levels of agricultural output might increase marketed surplus, creating more work in that State in trade and commerce and transport, storage and communications and other services — not merely in transport, sale, etc. of agricultural products, but also in handling of the reverse flow of manufactured goods. Finally, we should remember that the increased purchase of durable goods in rural areas may create a whole range of repair and maintenance facilities within the State itself.....
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> "What is being suggested is that rapid agricultural growth in one region could lead to a large increase in employment opportunities in non-agriculture in the same region. So the decline in the share of "Agriculture" in the working force in States where agricultural output has grown by 2.5 percent or more per annum, could reflect increased employment in "Manufacturing" and "Services" in that

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7. Ibid. P.111

> State itself. Of course, some part of the effect of the increased demand may be exported to other States or even go into the purchase of imports".[8]

The above propositions are but an alternative version of the generalisation earlier referred to as Clark-Fisher hypothesis, viz., that as a region's economy grows with attendant increase in national and per capita income, the share of agriculture and allied activities in total working force declines while that in non-agricultural activities increases. At the same time, should a moderate rate of growth in agricultural output, say, 2.5 per cent, necessarily lead to a decline in the proportion of workers engaged in agriculture and allied activities? An increase in growth in agricultural output would conceivably be accompanied by stagnation in manufacturing, so that the national income per capita does not rise by the same extent as growth rate in agricultural output, or remains at the same level as before, or even registers a decline. In the event of any of these, the impact of a moderate rate of growth of output in agriculture on employment opportunities outside agriculture could be negligible or negative. On the other hand, a rise in the output of agriculture may be the result of introduction of new technology which is more labour-intensive so that employment within agriculture increases, though the opposite, viz., labour-displacing technology, is also possible. A more relevant or meaningful variable in this connection would be growth of national and per capita income. Presumably, Krishnamurty has used this variable

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8. Ibid. Pp.114-115

for want of data on growth of regional income and per capita income in different states, but the relationship he has attempted to bring out is extremely tenuous.

Another set of questions arising from this analysis may also be mentioned in passing. What is the sanctity of the critical valu of 2.5 per cent? Is it implied that 2.5 per cent rate of growth of agricultural output is adequate enough to stimulate expansion in other sectors and draw workers away from agriculture? If gross agricultural output grew at the rate of 2.5 per cent, and given the rate of growth of population during the decade under review, would not the rate of growth of per capita output in agriculture be so negligible as to make very little impact on income and consumption of the vast majority of the population? Given the year to year fluctuations in agricultural output in this country, would a linear growth of output of 2.5 per cent or so per annum call for all the chain sequences envisaged by the author?

Let us now proceed to examine the facts. The Table presenting the growth rate of agriculture and percentage share in the tot working force in different states is reproduced below.(4.14.)

Table 1 Rate of Growth of Agricultural Output and Share of Agriculture in the Work Force 1951 and 1961 - Statewise

States	Rate of growth agricultural output (% per annum)	Percentage share of agriculture in the work force (Males only)		Absolute r in % share between 19 and 1961
		1951	1961	
1. Punjab	5.14	67.4	63.7	-3.7
2. [illegible]	4.07	77.3	75.4	-1.9
3. Rajasthan	4.20	71.8	73.9	2.1
4. Kerala	4.08	57.0	45.4	-5.6
5. Gujarat	4.53	59.7	64.1	4.4
6. Maharashtra	3.07	61.7	60.2	-1.5
7. Bihar	2.42	84.9	76.2	-8.7
8. Uttar Pradesh	2.20	74.0	75.7	1.7
9. Assam	1.24	69.3	70.6	1.3
10. Orissa	1.05	79.2	81.7	2.5
11. W. Bengal	0.21	54.0	56.3	2.3
12. Madras	5.12	60.7	61.1	0.4
13. Andhra Pradesh	3.05	67.1	65.7	-1.4
14. Mysore	4.36	68.6	68.6	0
INDIA	3.57	69.3	68.0	-1.3

There are certain obvious incongruities in the relation between the rate of growth of agricultural output and decline in the proportion of workers in agriculture between 1951 and 1961. The interesting relationship involved is that, by and large, States with agricultural growth rates above 2.5 per cent per annum experienced decline in the relative share of agriculture in the working force.

States like Madras, Andhra Pradesh, Mysore, Gujarat and Rajasthan do not fit into the pattern expounded by the author. But three southern States are treated as a separate class by itself, and the departure from the general pattern is explained away by an assumed underenumeration of household workers in agriculture. But in the case of Gujarat, the author throws up his hand in despair.[9] On the other hand, the highest fall in the proportion of workers in agriculture in the intercensal period is recorded in the case of Bihar where rate of growth of agricultural output is slightly lower than the magic figure of 2.5 per cent. In seven States, viz., Madras, Punjab, Gujarat, Mysore, Rajasthan, Kerala and Madhya Pradesh, the annual rate of growth of agricultural output exceeded the national average of 3.57 per cent; of these only in three States — Punjab, Madhya Pradesh and Kerala — a decline in the proportion of workers in agriculture was recorded, and in the other three States was a rise in the proportion and in one State the proportion in 1961 remained the same as in 1951 !

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9. Ibid, p.113.

(c) Secular Trend

Finally, Krishnamurty examines the secular trend in the sectoral distribution of the working force. The analysis covers male workers and the period, 1911-1961. He prefers 1911 to 1901 as the initial period for "there is adequate reason to believe that 1911 was farily normal year and that the 1911 census an effective one"[10] The percentage distribution of the male working force in the different States among three sectors, Agriculture including allied activities, Manufacturing, and Services which include electricity, gas and water, trade and commerce, transport, storage and communications, and other services is built up for a span of fifty years from 1911.[11] The main findings are as follows: (a) It is only in 6 out of the 14 States sustained changes in the distribution of working force are discernible, the States being Kerala, Madras, Maharashtra, Orissa, Rajasthan and West Bengal. In the remaining 8 States, viz., Andhra Pradesh, Assam, Bihar, Gujarat, Madhya Pradesh, Mysore, Punjab, and Uttar Pradesh, no long-term trend in the distribution of workers between the three major categories is discernible. (b) Out of the six States in which there are long-term trends, in four, viz., Kerala, Madras, Maharashtra, and West Bengal, there is a decline in the share of "Agriculture" and a rise in the share of "Manufacturing" and "Services", while in Rajasthan and Orissa there is the opposite trend, that is, a rising share of "Agriculture" and falling share of "Services".[12]

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11. Ibid, Table 6.1, The Percentage Distribution of the Working Force 1911-61: The Indian Union and the States, pp.152-183.

12. Ibid. P.181

Krishnamurty proceeds to relate these long-term trends with the results of the cross-section analysis referred to earlier. It may be recalled that in the Group A, higher per capita income, States, "Agriculture" had a lower share and "Manufacturing" and "Services" a higher share of the working force than the corresponding proportions in Group B, lower per capita income, States. In four out of the six Group A States, viz., Maharashtra, West Bengal, Madras and Kerala there is a shift away from agriculture, the share of workers in agriculture falling by 6.2, 9.2, 9.1 and 10.2 percentage points respectively over 1911-1961. In the above four States, the share of both Manufacturing and Services in the working force registered an increase. In the other two Groups A States, Punjab and Gujarat, the share of Agriculture increased, though slightly, and the shares of Manufacturing and Services decreased a bit. In most of the Group B States, one observes a higher share of agriculture in 1961 compared to 1911, but only two States show any clear trend.

True there is some association between per capita income level and industrial distribution of working force. But can we expect, as Krishnamurty seems to do, any relation between per capita income during a single year, 1960-61, and the sectoral distribution of workers over half a century? A comparison of the rate of growth of agricultural output in different States during 1951-61 with changes in the industrial distribution over 1911-61 should have been analytically less objectionable than the procedure adopted by the author. Therefore, the association which is observed by the author between per capita income levels in 1960-61 and changes in

the industrial distribution of workers during 1911-61 is apt to be more statistical and illusory than based on any causal relationship

(d) Focus on Kerala

Coming to the particular case of Kerala, Krishnamurty observ "A remarkably low proportion engaged in 'Agriculture' marks out Kerala as a State worthfurther study. It is a State which through out the period has had a lower share of 'Agriculture' in working force than the rest of Indian Union and this share has itself tended to fall over the period while the share of 'Manufacturing and 'Services' tended to rise"[13] It is argued that her unique resource endowments such as forests and fisheries, and agro-climat conditions favouring the cultivation of plantation crops, etc., stimulated the growth of processing industries, foreign trade, and a variety of service activities, thereby expanding employment opportunities outside of agriculture.[14] Thus, the decline in the proportion of workers in agriculture is induced by the growth of manufacturing, trade and commerce, transport and communication, and other services needed by the industrialisation of the state and commercialisation of her agriculture.

II. An Alternative Appraoch

We shall argue that in Kerala neither the share of agricult in total working force is too low nor the share of manufacturing too high. On the other hand, a remarkably high proportion of the

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13. Ibid., P.205
14. Ibid., Pp.206-211

working force in the services sector marks out Kerala from the rest of India. Colin Clark and Fisher associated a high proportion of workers in the tertiary sector with high real income per capita. According to Colin Clark:

> " Studying economic progress in relation to the economic structure of different countries, we find a very firmly established generalisation that a high average level of real income per head is always associated with a high proportion of the working population engaged in tertiary industries..... Low real income per head is always associated with a low proportion of the working population engaged in tertiary production and a high percentage in primary production, culminating in China, where 75-80 per cent of the population are primary producers. High average real income per head compels a large proportion of producers to engage in tertiary production".

Fisher had observed that "the shifts of employment towards secondary and tertiary production revealed by the census are the inescapable reflection of economic progress".[15] The share of the services sector in the total working force in Kerala is higher than warranted by the Clark-Fisher hypothesis. And it is this phenomenon that calls for an explanation.

(a) Formulation of the Problem

(i) In the first place, the share of agriculture in total working force in Kerala is not very low. True, agriculture's share of total workers in Kerala is much lower than the all-India average; but this is not saying much, for India is an underdeveloped country characterised by a high proportion of workers engaged in agriculture

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15. Quoted by P.T. Bauer and B.S. Yamay, "Economic Progress and Occupational Distribution", The Economic Journal, December 1951, p.747.

and allied activities. As noted before, agriculture and allied activities accounted for 55 per cent of total male workers in Kerala in 1961. If the total working force, including female workers also, is considered, the share of agriculture in 1961 would work out to 46.90 per cent.[16] The corresponding proportion the share of the A(Agriculture) sector, in some of the presently developed countries is given below:

Table 2 The Share of Agriculture in Total Working Force in Selected Countries

Country	Percent of workers in the A Sector				Absolute Charge (%age points)
	Initial Period		Terminal Period		
Great Britain	1801/11	34.4	1961	3.7	-16.0
France	1856	52.7	1962	20.0	-31.7
Belgium	1846	50.9	1964	5.9	-45.0
Netherlands	1849	45.3	1960	11.0	-34.4
Germany	1852/58	54.1	1964	11.3	-32.9
Switzerland	1880	42.2	1960	11.2	-31.2
Denmark	1874-75	51.1	1960	17.8	-25.3
Norway	1865	63.7	1960	19.6	-30.5
Sweden	1860	64.0	1960	13.8	-50.2
Finland	1880	71.2	1960	35.6	-35.6
Italy	1861/71	57.5	1964	25.2	-33.2
Japan	1872	85.8	1920	54.6	-31.2
Canada	1871	52.9	1964	27.6	-27.0
United States	1839	64.3	1965	5.7	-15.7
Australia	1901	33.0	1961	11.1	-27.6
New Zealand	1896	37.0	1961	14.5	-55.9

Simon Kuznets, Economic Growth of Nations, op.cit. Table 38, pp.250-253.

It may be noted that the proportion of workers in agricult to totalworkers in Kerala in 1961, viz., 47 per cent, was as high a

16. Census of India 1961, Vol.VII, General Report P.446

or even higher than, the corresponding proportion in many of the present day developed countries before they entered the phase of modern economic growth. Comparison with other States in India, on the basis of which it is asserted that Kerala has a remarkably low proportion of workers in agriculture, is misleading. A better perspective is gained when the share of agriculture in total working force in Kerala is viewed in juxtaposition with the situation in developed countries in their pre-take-off stage. When this is done, we are led to the conclusion that the proportion of workers in agriculture in Kerala is not too low after all.

(ii) The fall in agriculture's share of total workers in Kerala over the decades may be considered next. The rate of decline in Kerala happens to be higher than that in all other States in India. The following Table gives the proportion of male workers engaged in agriculture and allied activities in different States during the period 1911-1951.

Table 3 Proportion of Male Workers in Agriculture and Allied Activities, 1911-1961

State	Percentage of workers in Agriculture and allid activities				
	1911	1921	1931	1951	1961
Andhra Pradesh	69.4	70.7	66.0	70.0	72.2
Assam	87.8	88.8	87.4	82.2	85.5
Bihar	84.1	86.4	87.0	85.6	79.5
Gujarat	65.9	65.4	67.7	62.9	67.3
Kerala	65.7	63.0	60.3	57.5	55.0
Madhya Pradesh	75.6	78.2	80.1	79.3	78.8
Madras	73.6	74.1	72.1	63.3	64.5
Maharashtra	70.7	69.4	70.0	63.3	64.5
Mysore	74.0	72.2	82.6	71.0	73.4
Orissa	81.1	82.2	83.3	71.2	84.2
Punjab	63.2	63.8	66.3	68.7	66.6
Rajasthan	63.3	65.7	69.1	75.0	78.4
Uttar Pradesh	77.2	79.8	78.0	75.4	77.4
West Bengal	68.7	68.7	67.9	57.2	59.5
India	73.6	74.4	74.0	71.7	71.7

Source: The Industrial Distribution of the Working Force in India op.cit., Table 6.1, pp.182.183

Judged in terms of the long period involved, viz., half a country, or compared with the decline of agriculture's share in total working force in the advanced countries over a comparable period, the decline in Kerala is not very impressive. In the developed countries, the share of agriculture is seen to have registered a decline ranging from 16 percentage points in Great Britain to 56 per centage points in the U.S.A. But as noted earlier the share of this sector had already declined to around 50 per cent even before these countries entered the era of modern economic growth. Against this backdrop, the fall in agriculture's share of working force in Kerala, viz., 11 percentage points, is not very substantial though a comparison with the trends in her sister States gives a contrary, but misleading, impression.

(iii) The proportion of workers in manufacturing industries to total workers in Kerala in 1961 came to a little over 18 per cent as against all India average of 11 per cent. As mentioned earlier, this is the highest among all States in India, The proportion of male workers in manufacturing industries to total male workers in Kerala has been estimated at 14.6 per cent as against 10.1 per cent for the country as a whole.[17] The corresponding proportion of Maharashtra, West Bengal and Madras, which also had comparatively high figures, was 14.7, 15.1 and 13.7 per cent respectively. Kerala had a significantly higher proportion of male workers in manufacturing than in all other states, except

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17. Industrial Distribution of Working Foce in India, op.cit. Table 5.4 p.156.

West Bengal and Maharashtra; even in the case of these two States, the difference was just marginal. Here again, comparison with other states in India gives a false impression, viz., that Kerala has reached a fairly high level of industrialisation, which is not really true as we find on a closer scrutiny. As Kuznets has shown, almost all the presently developed countries had a higher proportion of workers in manufacturing before they entered the phase of modern economic growth. The share of manufacturing in selected countries is given in Table 4.

Table 4 Share of Manufacturing in Total Working Force (Adjusted) in Selected Countries

Country	Period	Percentage of workers in Manufacturing
Great Britain	1851/61	40.6
France	1856	23.0
Belgium	1846	32.6
Netherlands	1849	21.5
Germany	1882	29.4
Norway	1920	23.9
Italy	1936	22.9
Japan	1920	19.2
U.S.A.	1969/79	18.2

Kuznets, Economic Growth of Nations, op.cit, Table 39,Pp.259-260

Thus, the proportion of workers in manufacturing in some of the above countries by the middle of the last century exceeded the proportion in Kerala as of 1961. Viewed against this background, by no stretch of imagination can one say that Kerala has even started on the road to industrialisation nor that the share of manufacturing in the working force was any high in this State.

(iv) Certain economic activities like mining and quarrying, construction of buildings, electricity, gas and water supply, transport and communication are closely related to manufacturing. Hence the convention of grouping manufacturing with these allied activities, as adopted by Kuznets under the rubric I sector, which is broadly similar to Colin Clark's secondary sector. The proportio of total working force engaged in the I sector in Kerala would work out to 22.47 per cent in 1961. Of this, manufacturing accounts for 18.08 per cent; mining and quarrying, 0.42 per cent; construction, presumably including electricity, gas and water supply, 1.26 per cen and transport and communication, 2.71 per cent. As against this, the share of the I sector for the country as a whole comes to 13.77 per cent only. The share of all the subdivisions, except mining and quarrying, which understandably has a slightly lower share, in total working force are higher in Kerala than the national average. Howe let us compare the relative size of the I sector in Kerala with the same in some other countries.

Table 5 The Share of the I sector in Total Working Force in Selected Countries

Country	Percent of workers in the I Sector			
	Initial period		Terminal period	
Great Britain	1801/11	30.0	1961	55.0
France	1856	28.5	1962	43.6
Belgium	1846	37.1	1964	52.4
Netherlands	1849	29.4	1960	50.5
Germany	1852/58	26.8	1964*	54.6
Switzerland	1880	45.5	1960	55.9
Norway	1865	19.9	1960	48.6
Sweeden	1880	18.8	1960	52.7
Finland	1861/71	25.8	1964	46.4
Itlay	1911	37.4	1965	41.1
Canada	1839	16.2	1869/79	29.0
U.S.A.	1869/79	29.0	1965	38.0
Australia	1901	33.9	1961	48.9
New Zealand	1896	34.5	1961	46.8

Source: Economic Growth of Nations, op.cit. pp.250-252

* Federal Republic of Germany.

In the countries listed above, manufacturing accounted for [illegible] lion's share of the working force in the I sector both in the initial period and in the terminal period. It has already been noted that the share of manufacturing in working force in the above mentioned countries in the initial period was higher than that in Kerala in 1961. The share of the I sector in most of the above countries was higher even in the initial period than the corresponding proportion in Kerala to-day.

Further, it may be mentioned that the shares of the subdivisions like construction, transport and communication, electricity, gas and water supply were higher in the initial period than the respective shares in Kerala in 1961. For instance, construction accounted for 6.7 per cent of total workers in Great Britain in 1851-61, 5 per cent in France in 1856, 2.6 per cent in Belgium in 1846, 5.9 per cent in Netherlands in 1849, 6.4 per cent in Germany in 1882, etc. Similarly, transport and communication, electricity, gas and water absorbed 6.4 per cent of total workers in Great Britain, 3.7 per cent in Netherlands, 2.9 per cent in Germany and so on during [illegible][18] the corresponding proportion in Kerala in 1961 were 1.21 per cent and 2.71 per cent respectively.

(v) The share of the S sector, comprising 'Trade and Commerce' and "Other services", the industrial categories number VII and IX, in the total working force in Kerala came to about 31 per cent, as

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18. Economic Growth of Nations, op.cit, Table 39. Pp.259-60.

against 14.43 per cent for the country as a whole. The proportion of workers in this sector in different States is given in Table 5 below:

Table 6 Share of the Service Sector in Total Working Force in different States (1961)

State	Percent of workers in the sector
Andhra Pradesh	13.56
Assam	11.85
Bihar	10.30
Gujarat	14.44
Jammu-Kashmir	11.51
Kerala	30.99
Madhya Pradesh	8.87
Mysore Madras do. do.	13.02
Orissa Maharashtra 13.39	15.32
Punjab	18.55
Rajasthan	10.09
Uttar Pradesh	13.07
West Bengal	20.91
All India	14.43

Estimated from Census of India 1961, Paper No.1 of 1962, op.cit.

It is noted that the proportion of workers in the services sector in Kerala is more than twice the average for the country as a whole. Further, even in West Bengal and Madras, which come next to Kerala, the proportion of workers in the services sector is only about two-thirds of that in Kerala. In this respect, the difference between Kerala and other states is not a matter of degre but of kind.

Significantly enough, the proportion of workers in the S sec in Kerala is considerably above the same in most of the developed countries of to-day on the eve of their entry into the era of moder

economic growth. Further, the share of the services sector in total working force in Kerala in 1961 is not far below the corresponding proportion in the developed countries in recent periods. This may be seen from Table 6 below:

Table 6 Share of the Service Sector in Total Working Force in Selected Countries

Country	Proportion of workers in the S sector			
	Initial period	Percent	Terminal period	percent
Great Britain	1801/11	35.6	1961	41.3
France	1856	19.8	1962	36.4
Belgium	1846	12.0	1964	41.7
Netherland	1849	25.2	1960	38.5
Germany	1852/58	19.1	1964	34.1
Switzerland	1880	12.1	1960	32.9
Denmark	1911	27.5	1860	37.7
Norway	1865	16.4	1960	31.8
Sweeden	1860	17.2	1960	33.5
Finland	1880	15.5	1960	26.6
Italy	1861/71	16.7	1964	28.4
Japan	1972	8.6	1964	35.0
Canada	1911	25.5	1965	49.4
U.S.A.	1839	19.5	1965	56.3
Australia	1901	33.1	1961	40.0
New Zealand	1896	28.5	1961	38.7

Economic Growth of Nations, op.cit., pp.250-252

It may be recalled that the proportion of workers in the A sector in Kerala in 1961 was as high as the same in the developed countries on the eve of their entry into the era of modern economic growth. On the otherhand, the proportion of workers in the I sector in Kerala in 1961 was lower than the corresponding proportion in the developed countries a century or so before. As against these, the share of the S sector in Kerala in 1961 was higher than that in the

developed countries during the initial period in the 19th century, and is not very much below the proportion in most of the developed countries for a recent period. This strikes one as a curious phenomenon.

According to the analysis of cross-section shares in labour force in fifty nine selected countries carried out by Kuznets, the share of the S sector rises steadily with per capita income. The results are summarised in Table 7 elow:

Table 7 Share of Production Sectors in Labour Force, fifty nine countries grouped by 1958 GDP per capita about 1960

	Groups of countries in increasing order of 1958 GDP per c							
	I	II	III	IV	V	VI	VII	VIII
Number of countries	5	6	6	18	6	6	6	6
GDP per capita $	72.3	107	147	218	382	588	999	150
Shares of Manor Sectors								
A	79.7	63.9	66.2	59.6	37.8	21.8	18.9	11.6
I	9.9	15.2	16.0	20.1	30.2	40.9	47.2	48.1
S	10.4	20.9	17.8	20.3	32.0	37.3	33.0	40.1
Subdivisions of I								
Mining and quarrying	1.2	1.2	0.9	1.1	1.2	0.8	1.5	1.0
Manufacturing	5.7	7.5	9.0	11.6	17.4	24.2	29.3	29.7
Construction	1.4	2.9	2.8	3.9	6.0	8.5	8.3	8.5
Electricity, gas, water	0.2	0.5	0.6	0.4	0.9	1.4	0.8	1.4
Transport, storage and communication	1.4	3.1	2.7	3.1	4.7	6.0	7.3	7.5
Subdivisions of S								
Commerce	4.7	6.9	8.4	7.4	11.8	14.5	13.7	17.8
Services	5.7	14.0	9.4	12.9	20.2	22.8	20.2	22.5

Economic Growth of Nations, op.cit., Table 28, p.200

The share of the S sector in Kerala, viz., 31 per cent of the working force, corresponds, to the proportion of Group V countries with in average per capita GDP of $382 in 1960. The share of the I sector for this group of countries is, on the average, 30 per cent of total workers, as against 22 per cent in Kerala. The proportion of total workers in the A sector, on the otherhand, viz., 38 per cent, is considerably lower than that in Kerala, viz., 47 per cent.

In 1960-61, the per capita income of Kerala was estimated at Rs.255.06 which at the then prevailing exchange rate would work out to less than $70. The share of the S sector in the Group I countries with per capita GDP of $72.3 on the average was only 10.4 per cent of the total working force. Assuming that there was a downward bias in the estimate of State income, still it would not be as high as that of Group II countries. Even for these countries, the share of the S sector was only about 21 per cent. As against this, the share of the S sector in Kerala came to 31 per cent. Therefore, we conclude that Kerala has a far higher share of workers in the services sector than found in countries with comparable level of economic development.

(b) An Alternative Hypothesis

Bauer and Yamey have questioned the validity of the Clark-Fisher hypothesis concerning the relation between the share of the tertiary sector in working force and per capita real income. According to them there is neither a sound analytical basis nor a strong empirical foundation for the generalisation of Clark and Fisher. On the one hand, there is no a priori reason to believe that as real income per capita increases, a greater proportion of income will be spent on products

of tertiary activities; on the other hand, in countries at an early stage of development, a large proportion of labour may be involved in tertiary activities.

Kuznets also points out the possibility of a large proportion of the working force in low income countries being engaged in servic activities.

> "The pressure of population on land and the surplus labour force in the less developed countries may mean a movement into service activities since some of them demand little capital and yet provide some modicum of living (peddling, cart transport, personal services of various description) and since the employment of this surplus in the M sector is inhibited partly by capital scarcity and partly by competition of the M sector in the more developed countries"[19]

Kuznets proceeds to elaborate this theme:

> " In the developed countries, a rise in the share of the S sector in the labour force may be viewed as due largely to demand originating because of a shift toward more highly productive organisation in the A and M sectors and is, in a sense, necessary for the latter. In other words, the shift of the labour force toward the S sector is an indispensable concomitant of the movement toward higher productivity levels throughout the economy. In the less developed countries, there may be long periods of rise in the share of the S sector in the labour force, not because it is a necessary complement to increasingly higher levels of technology and productivity in the A and M sectors, but also because population pressure on land and limitations of employment opportunities in the M sector drive the surplus labour into low-paid service activities"[20]

The situation in Kerala seems to be a copy book version of the foregoing hypothesis.

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19. Similar Kuznets, Six Lectures on Economic Growth, The Free Press of Glencsa, Illinois, 1959, p.61

20. Ibid. p.63, see also Economic Growth of Nations, op.cit., p.226

(c) Empirical Evidence

In the course of the present century the population of Kerala has more than doubled. Per capita area of cultivable land has shrunk from 0.61 hectare in 1901 to 0.23 hectare in 1961; by 1966-67 it was further reduced to 0.11 hectare, as against 0.29 hectare for the country as a whole. Among all the states, Kerala has the highest proportion of the households owning no land; the proportion of households neither owning nor operating any land is, next to Madras, the highest in Kerala. As noted before, Kerala has the lowest proportion of workers in agriculture and allied activities. Kerala also has the lowest worker participation rate in India in 1961; the participation rate has been falling over the years. The low overall participation rate in Kerala, compared to other States, may perhaps be due to, among other factors, lower proportion of workers in agriculture here than in the rest of India;[21] cultivators and agricultural labourers together constituted 38.30 per cent of total workers in Kerala as against 69.53 per cent in India. Evidently, agricultural resources have been strained to the utmost. In consequence, the share of agriculture and allied activities in total working force tended to fall steadily and more rapidly here than in other States.

A certain proportion of the new entrants into the labour force turned to manufacturing. As of 1961, a little over 18 per cent of the total workers were engaged in manufacturing. Of this, nearly one-half were in household industries; and 43 per cent of working force

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21. P.G.K. Panikar, "Worker participation Rates in Kerala", Indian Journal of Labour Economics, Vol.X, No.3, October 1967.

in manufacturing were females, as against 27 per cent in India as a whole. Within manufacturing, the dominant activities were 'Food Stuff', 'Tobacco and Tobacco Products', 'Cotton Textiles', 'Miscellaneous Textiles', 'Wood and Wooden Products' and 'Non-metalic mineral products', which together formed 75.6 per cent of the male working force in manufacturing. "If one examines these activity one finds that 98% of the work force in 'Tobacoo....." were engaged in Bidi production, 75% in 'cotton textiles' were engaged in Handloom weaving and 60% of Miscellaneous textiles were in 'coir manufacture'[22] The industries are characterised by traditional technology, low productivity and meagre earnings. Daily earnings of factory employees in Kerala are lower than that in all other States; the average daily earnings of factory employees (earning less than Rs.400 per month) in 1961 came to Rs.2.89 as against an average of Rs.4.79 for all States.[23] The earnings in household industries were lower still, and often compared unfavourably with daily wages of agricultural labourers. The foregoing facts do not give the impression about manufadturing industries in Kerala as a dynamic 'leading sector' with expanding employment opportunities. As mentioned before, the share of manufacturing in total working force has been fluctuating around a low figure. According to current indications, the share of this sector, if anything is on the decline. The major traditional industries of Kerala like cashew, coir, handloom weaving, etc. are in dolrums. Employment in these activities tends to be erratic and unremunerative. From the

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22. "Indutrial Distribution of the Working Force in India", op.cit pp.206-208.

23. Indian Labour Journal, September 1971, quoted in Industries and Infrastructure, Statistics for Planning, State Planning Board and Bureau of Economics and Statistics, p.5.

point of view of employment, manufacturing sector in Kerala had remained stagnant and like agriculture, reached saturation point for quite some time.

Over the years, the services sector in Kerala has grown considerably, accommodating an increasing number and proportion of working force. It may be argued that the growth of tertiary activities is the logical consequence of the unique patterns of development of the State's economy. The predominance of commercial crops like tea, rubber, coffee, cardamom, pepper, other spices, coconut, arecanut, cashew, etc., and forestry and fishery in the economy of Kerala has led to the growth of tertiary sector. Production of commercial crops, forest and marine products snd growth of exports have called forth a network of agencies engaged in their collection, storage, transportation and trade; in the process, supporting institutions like banks, commission agents, hotels and restaurants sprang up all over the State. Therefore, the expansion of tertiary sector is but the legitimate response to the particular direction of growth of the primary and secondary sectors in Kerala. To be sure, there is some truth in this reasoning. But on a closer scrutiny it can be seen that the above developments do not fully explain the growth of the services sector.

The S sector, comprising 'Trade and Commerce' and 'Other Services' accounted for 31 per cent of total workers in 1961. Of this, the share of the former came to 5.72 per cent, and that of 'other services' to 25.27 per cent. During 1951-61, the share of 'other services' almost doubled; from 13.81 per cent in 1951 it went up to 25.27 per cent in 1961. It is possible that the number of

workers in this sector, especially 'other services' is over enumerated though in 1961 the labour force concept was used. However, we cannot indicate the extent of this over estimate. In the 1971 census, the proportion of labour force in other servic is only 13.57 per cent.[24] It is significant to note that during this decade, the percentage share of the A sector in total working force dropped from 56.07 per cent to 46.96 per cent; and that of th I sector declined from 23.51 to 21.54 per cent. The shares of all the subdivisions of the I sector such as manufacturing, constructi and transport and communications registered a decline, from 6.61 to 5.72 per cent. The combined fall in the share of the A and I sectors, and of trade and commerce between 1951 and 1961 added upto 12 percentage points. The rise in the proportion of workers in 'other services' came to as much. In the light of the above it is difficult to believe that the remarkable growth of tertiary activi in Kerala is in response to the growth of primary and secondary sectors in the State. On the contrary, as Panikar observed in an earlier article, "an overcrowded primary sector and a rudimenta secondary /sector have continued to accomodate substantial numbers of new entrants; but they have begun to show signs of saturation. The residue spills over into the tertiary sector which, somehow, accom increasing numbers without showing symptom of saturation, because entry into some of the activities in this sector is comparatively easy, which can be organised on a small scale with modest investme

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24. See a forthcoming paper by A.V. Jose, Centre for Development Studies.

Retail distribution trade is a typical example. Initial investment needed for a panshop or teashop is small. In Kerala the number of independant workers engaged in such activities is quite large. Personal and domestic service is another division which has been developed out of all proportion"[25] This fact is exemplified by the level of earnings of the tertiary workers in the State.

Finally, let us compare the shares of working force and domestic product among different sectors. The relevant estimates are given in Table 8.

Table 8 Sectoral Shares in Working Force and Product and Inter-Sectoral Differences (1960-61)

Major sectors and sub-divisions	Percent of workers		Percent of Net Domestic Product		Sectoral Product per worker	
	Kerala	India	Kerala	India	Kerala	India
A	46.54	71.80	54.94	51.03	1.18	0.71
I	22.47	13.77	17.87	24.37	0.79	1.77
S	30.99	14.43	27.19	24.60	0.88	1.70
Sub-divisions of I						
Mining and quarrying	0.42	0.48	0.55	1.08	1.31	2.25
Manufacturing	18.08	10.81	12.18	13.89	0.67	1.28
Construction	1.26	1.09	1.57	4.64	1.24	4.26
Transport, communication, electricity, gas and water	2.71	1.59	3.57	4.77	1.32	3.00
Sub-divisions of S						
Trade and Commerce	5.72	4.05	12.29	9.73	2.15	2.40
Other services	25.27	10.38	14.90	14.87	0.59	1.43
Intersectoral ratios						
(I S)/A					0.71	2.45
S/I					1.11	0.96
Trade/Services					3.64	1.68

Note: These ratios are derived from the estimates of National Income, and State Income of Kerala, published respectively in Reserve Bank of India Bulletin, August, 1971. "Estimates of National Product (Revised Series) 1960-61 to 1969-70", and Government of Kerala, Bureau of Economics and Statistics, State Income of Kerala, 1960-61 to 1968-69.

25. P.G.K. Panikar, "The Tertiary Sector in Kerala", Labour and Industries Review, Labour and Industries Bureau, January 1964. pp.14-15

The foregoing Table brings out many interesting facts. (a) Kerala, the share of A sector in working force is less than that o the State Domestic Product. Therefore, the product per worker (wh is the ratio of the percentage share of product to the percentage share of workers) in the A sector is higher than the overall produ per worker in the regional economy. The product per worker in the sector is considerably higher than that of India as a whole. It i a well-known fact that agriculture and allied activities in Kerala have a relatively high productivity, per unit of land or per unit labour. (b) The share of the I sector in working force is higher the share of State Domestic Product. The product per worker in th I sector in Kerala is less than one-half of the same for the count as a whole. (c) The share of the S sector in working force is gre than the share in State Domestic Product. The product per worker in this sector comes to 0.88, as against 1.70 per India as a whole (d) Among the subdivisions of the S sector also, the product per worker in Kerala is less than the national average. (e) The secto product per worker in 'other services' is only 0.59 here, as again 1.43 for India. This is very much lower than the product per wor in all the other subdivisions in Kerala; it is nearly one-third of the corresponding ratio for the country as a whole. (f) The prod per worker in the I sector in Kerala is lower than the same in the A sector; this is a unique phenomenon, for generally, the product per worker in the I sector exceeds that in the A sector in most countries irrespective of levels of economic development and incom per capita. The product per worker in the S sector in Kerala is

higher than that in the I sector, again departing from the general pattern observed elsewhere in the world.[26]

Conclusion

The very low product per worker in the S sector in general, and that in 'other services' in particular, is incompatible with the view that the growth of tertiary sector in Kerala is a natural concomitant of the growth in the A and I sectors of the State's economy. On the contrary, available evidence reviewed in this section appears to conform to the observation of Kuznets that in some less developed countries "population pressure on land and limitations of employment opportunities in the M sector drive the surplus labour into low paid service activities".

P.G.K. Panikar

27-2-1973 Grace Sunny

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26. Economic Growth of Nations, op.cit, p.209.