CHAPTER II

LEVELS AND RATES OF GROWTH OF DISTRICT INCOME IN KARNATAKA STATE

1. INTRODUCTION

The economic inequality of a region is viewed from two angles : one, relating to productive capacity of the region and , the other, relating to the economic welfare of the population residing within the region. The productive capacity of a region is respresented by the income which is generated within the geographical boundaries of the region, and the economic welfare of the population of the region is measured through the income received by resident of the region. The first one is known as 'income originating' in a region and, the second one is referred to as 'income accuring' to the region.

At the national level, Net Domestic Product and Net National Income at factor cost correspond to the concepts of 'income originating' and 'income accruing' respectively. For a comparative study of the level of industrial and economic development of the'states' or 'regions' , it is

sufficient to have an estimate of income originating within the 'state or 'region' as pointed out by the planning commission[1]. Further, "for policy purposes, the industrial origion of income received by area residents, and record of regional production by key industries as they adopt themselves to changes in the national market , may be more helpful than the regional expenditure estimates required for accounting system".[2] Since the aim of the present work is to findout inter district variation in the levels of economic development in Karnataka State, the concept of 'income originating' rather than the 'income accruing' in different districts may be considered as an ideal measure for the said purpose. Moreover, the official estimates of district income in Karnataka available are based on the concept of income originating within the geographical boundaries of the districts.

However, the concept of 'income originating' is not free from statistical as well as conceptual problems. Mention may be made about some of the important problems which are specific to the Regional Income Estimates.[3] They are :

---

1 Government of India, "Third Five Year Plan Draft", Planning Commission, 1961.

2 W.Houchwald, "Conceptual issues of Regional Income Estimates", in NBER, "Regional Income" : (Studies in income and wealth, Vol.21),Princeton University Press,1957, pp 4.

3 Isard Walter,"Methods of Regional Analysis : An Introduction to Regional Science," The M.I.T.,Press, U.S.A.,1960,pp 86-90.

(i) Problems emerge because regions within a nation are, generally speaking, open economies. There are few, if any, barriers to their trade and social cultural interaction and they have in common many political institutions;

(ii) Difficult to acount for supra-regional transactors i.e. transport and communication and other infrastructure. It is difficult to determine what fraction of supra-regional transactor is internal to a given region ;

(iii) Since a region is not a small replica of the nation, and, in industrial and social structure, may be strikingly different from the nation, the set of sectors most useful in regional income studies is not the same as that in national income studies ;

(iv) Regional income estimates are frequently designed to permit comparisions among regions, an objective which is more common in the study of regions of nation than of the nation as a whole. This objective forces on the regional income investigator a standard set of accounts ;

(v) There are problems related to a set of general data. For example, for national income estimates, sampling is adopted. But for Regional income estimates, broad based sampling is needed ;

(vi) Finally the use of bench-mark data for interpolation, especially for inter-censul years, is generally much less justifiable for the region , than for the nation, since some

of the basic stability assumptions for interpolation tend to lose validity as the size of the pertinent area decreases.

The state income estimates in India are not free from the above difficulties. In addition to the above, the state income estimates in India involve several problems connected with sectoral income estimates. For example, non-availability of updated data on livestock, crop cutting surveys, whole sale prices, measurement of inputs are some of the problems in estimating the income from Agriculture Sector.

At this stage, it is also important to know the method of County Income Estimates in the U.S.A. as the present study is based on district income estimates of an Indian State. The County Income Estimate in U.S.A. is as follows :[4]

Firstly, total state income and its components (disaggregated into as five sectors as is feasible) is determined as accurately as possible ;

secondly, these amounts are apportioned among counties of the state by means of the best set of indicators available ; and

finally, for any given county, income is estimated

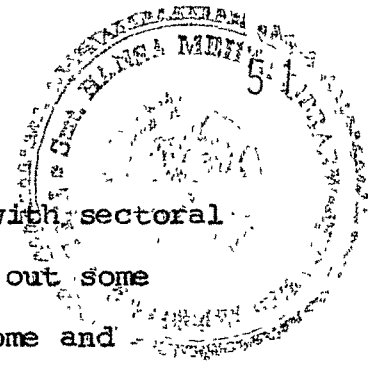
---

4 Ibid., pp 91.

by a summation of the county's dollar share of each of the component of state income.

Although the apportionment method of income estimation in the U.S.A. , has the considerable advantage of providing, rather, consistent individual regional income estimates, it suffers from some limitations. An important limitation is that the accuracy of regional estimates is heavily dependent on the accuracy and relevence of a set of particular allocators. Secondly, the accuracy of regional estimates is dependent on the accuracy in the state income estimates made by the U.S. Commerce Department. Finally, the use of national data to a major degree Strait-jakets regional income work by the imposition on such work of standard system of concepts and accounts. However, in any event, in the U.S.A., the careful investigator will utilise the excellent state income data which are available, but at the same time will increasingly supplement these data and the apportion method by a reliance on materials of a more local character which are adopted to a superior set of local accounts.

In the next section the estimates and limitations of District Domestic Product are discussed. Section three deals with the extent of inter-district income disparity and changes over the years 1960-61 to 1975-76 in Karnataka . In section four the analysis of District per Capita Income



relatives is carried out. Section five deals with sectoral composition of District Income and also carries out some exercises to correlate District per capita income and sectoral shares of District Product. The sixth section addresses itself to the study of the growth of district income which is followed by conclusion.

2. DISTRICT DOMESTIC PRODUCT : ITS ESTIMATES AND LIMITATIONS

The district income estimates in India are rarely found, unlike, the state income estimates available periodically at the official agencies i.e. State Statistical Bureaus, Central Statistical Organisation and others. The district income estimates, for the first time, were published in India for all the districts of the country for the year 1955-56 in 1963.[5] Further attempts were not made to publish the district income by NCAER and no positive steps were taken by the majority of State Statistical Bureaus in this direction. However, an attempt at estimating district originating income, which is termed as 'Net District Domestic Product at Factor Cost ' for the years 1960-61, 1970-71 and 1973-74 some where in the year 1976, was made by the Karnataka State Bureau of Economics and Statistics. The methodology, in estimating District Income in Karnataka, followed by the State Income Division of the Bureau of Economics and

---

5 NCAER, "Inter-district and Inter-state Income Differentials-1955-56", 1963.

Statistics, can be summerised as follows :[6]

The district income was taken to be the sum total of the economic value of all goods and services produced during the year, at factor cost, within the geographical boundaries of the district, irrespective of the fact whether the income is owned by persons inside the district or outside.

The district economy was divided into 16 sectors, namely, agriculture proper, animal husbandry, forestry, fishing, mining and quarring, factory establishments, small - scale establishments and construction, communications, railways, banking and insurance, other transport and commerce, professions and liberal arts, government and liberal arts, government services, domestic services and house property.

Depending on the nature of data availability , production and apportionment methods are adopted to arrive at Net District Sectoral Output. Production and Prices available at the district level are used to calculate the value of all crops and their bye-products. The input items of agriculture have been estimated, on the basis of the distribution of state income estimates, for different districts to calculate the net value added by this sector.

---

6 For details see, Government of Karnataka,"Estimates of District Income in Karnataka - 1974-75", State Income Division of Bureau of Economics and Statistics, Bangalore, 1976, (Mimeo).

However, the distribution of state income estimates to different districts is based on certain related indicators. The apportionment method is adopted to estimate incomes for forestry, small-scale establishments, construction, communications, railways, banking and insurance, other transport, and commerce, professions and liberal arts, government services, domestic services and house property sectors. Apportionment is made on the basis of a certain set of allocators from the state income . The income estimates for the factory establishment sector have been worked out on the basis of the latest data on Annual Survey of Industries available and on the basis of indicators like the number of registered factories and industrial employment . The summation of sectoral incomes thus arrived, for a given district, provides the Net District Domestic Product.

The method of income estimates as stated above cannot be free from several limitations. Important among them are ;

(i) the estimates do not take into account the inter - district price differences, since, the estimates are made on the basis of state average prices for certain sectors. There is also a problem of consistency in the estimates as some sectoral estimates are based on district-wise prices, and some sectoral estimates are based on state and national price averages;

(ii) the state income is apportioned to districts on the basis of allocators to estimate certain sectoral incomes of the districts. But the selection of the set of allocators is a difficult task. A wrong choice of allocators may lead to either overestimation or underestimation of the district income.

(iii) there is also the problem of getting upto date and full data with respect to many sectors at the district level. This is because of lack of sound statistical organisations at the district level. Even if the district statistical cells are created, they are not wedded to required trained personnel. In the absence of uptodate and full data at the district level, the national as well as state figures are used to generate district figures. Such an estimation may not reflect the true economic status of a district.

(iv) finally, these data are available only for a few years, that too, at current prices. As such these data have relatively less practical value as compared to the time-series data.

This does not mean that these estimates have no significance. Even though there are many conceptual and data problems in the construction of these estimates, even though these estimates may be shaky and somewhat fragementary, the estimates are very much useful to indicate at least

the level and trend of growth and direction of changes in the economy of the districts of Karnataka .

The new series of Net District Domestic Product (NDDP) in Karnataka for the years 1960-61, 1970-71 and 1975-76 is prepared, on the methodology prescribed by the Working Group, by the state income division of Bureau of Economics and Statistics, government of Karnataka , Bangalore . The present study had to rely only on these data, so far provided by the state Bureau at current prices. This, in fact, precludes the time series analysis. However, the period is long enough to analyse the changes in levels of development right from the Third Five Year Plan, when the country started experiencing the impact of industrialisation in different parts of the country.

At this point, it is important to note that comparision of the levels of income originating in different districts at factor cost over a period of time is meaningless unless the influence of prices in each district is taken care of . The movement of prices over a period of time may distort the whole picture. But, this problem can be solved by taking the income at constant prices with uniform base year for all the districts. For this purpose, the 1960-61 year has been selected as the base year and income data for the year 1960-61 as the base year data . Now the problem that remains is to obtain the appropriate price index

for each of the 16 sectors to convert the 1970-71, 1975-76 current price figures in to the corresponding figures at 1960-61 prices. But, the appropriate price indexes at district level are not available. However, one can make use of deflators for each sector implicit in state sectoral income by the industry of origin. By applying the sector-wise price indexes to the respective estimates of Net District Domestic Product at current prices, one can obtain sector-wise estimates of Net District Domestic Product, at factor cost, at 1960-61 prices for the years 1970-71 and 1975-76 in each district. This sort of exercise assumes that the inter-district differentials in price movements between 1960-61 and 1975-76 were negligible . The Net District Domestic product by the sixteen sectors at 1960-61 prices, thus obtained, for all the districts of Karnataka State, are presented in Appendix Tables 2.1, 2.2 and 2.3 for the years 1960-61, 1970-71 and 1975-76 respectively.

3. INTER-DISTRICT INCOME DIFFERENTIALS

Ashok Rudra rightly points out that, "there seems to be very wide agreement among economic statisticians that per capita product constitutes the most appropriate index with which to measure or compare growth, despite all the well-known and acknowledged imperfections that attended upon. It does measure, in a rough sort of way,

the average welfare of the citizens",[7] and the present study employs the ' per capita product ' as a measure of levels of economic development and rates of economic growth of the districts in Karnataka . In this context, District per capita product may be defined as the ratio of Net District Domestic product to District population for a given year. This is referred to, hereafter, as District Per Capita Income. The District per Capita Income, at 1960-61 prices, for the years 1960-61, 1970-71 and 1975-76 are presented in Table-2.1, where the districts are arrnaged from the high income to low income districts in the year 1960-61.

It is evident, from the data contained in Table 2.1, that there are wide variations in the district per capita income in the state during the years 1960-61, 1970-71 and 1975-76 . The highest district per capita income is Rs.721 in Kodagu and the lowest is Rs. 197 in Bidar for the year 1960-61 . If we take Rs. 294, the state per capita income, which is still lower than the national per-capita income of Rs. 304, as a dividing line between developed and backward districts, then Kodagu, Shimoga, Uttar-Kannada, Chikmagalur,

---

7 Ashok Rudra, "The rate of growth of Indian Economy", in E.A.G. Robinson and Michel Kindran (Eds), "Economic Development in South Asia", MacMillan and Co.Ltd., 1970.

TABLE 2.1 : District Per Capita Income, Karnataka : 1960-61 , 1970-71, 1975-76.

(At 1960-61 Prices)

Sr. No.	Districts	1960-61		1970-71		1975-76	
		(in Rs.)	Rank	(in Rs.)	Rank	(in Rs.)	Rank
1	Kodagu	721	1	963	1	1023	1
2	Shimoga	572	2.5	501	3	527	2
3	Uttar-Kannada	572	2.5	457	4	478	4
4	Chikmagalur	475	4	610	2	518	3
5	Dakshina-Kannada	354	5	410	6	457	5
6	Bellary	303	6	416	5	385	9.5
7	Hassan	299	7	352	10.5	382	11
8	Tumkur	281	8	267	16	343	12
9	Chitradurga	272	9	352	10.5	408	8
10	Belgaum	264	10	292	15	332	14
11	Mysore	257	11	388	8	433	7
12	Mandya	256	12	313	13	385	9.5
13	Dharwad	255	13	307	14	314	15
14	Bangalore	254	14	366	9	456	6
15	Kolar	236	15	253	18	302	16
16	Raichur	225	16	390	7	336	13
17	Gulbarga	221	17	325	12	288	18
18	Bijapur	201	18	250	19	270	19
19	Bidar	197	19	263	17	296	17
	Karnataka	294	-	357	-	389	-
	All India	304	-	348	-	363	-

Source : Computed from Appendix Tables 2.1, 2.2, 2.3 .

Dakshina-Kannada, Bellary and Hassan districts fall in the category of developed districts and Tumkur, Chidradurga , Belgaum , Mysore, Mandya, Dharwad, Bangalore, Kolar, Raichur, Gulbarga, Bijapur and Bidar in the category of backward districts in 1960-61. The highest per capita income district has 145 % higher per capita income than the state level per capita income of Rs. 294 and the lowest per capita income district accounts for 33 % lower than the state level.

For the year 1970-71, Kodagu as the highest per capita income district (Rs. 963) accounts for 170 % higher per capita income than the state level and Bijapur, as the lowest per capita income district , has 30 % lower per capita income than the state's per capita income. It is observed that there are as many as eleven districts showing per-capita income above the national level for the period 1970-71 , though there are only nine districts with high per capita income than the state level for the same period. This is because , state per capita income (Rs. 357) was little higher than national per capita income (Rs. 348). Mysore, Bangalore and Raichur districts have emerged as new entrants in the list of developed districts during this period, whereas Hassan, which was a developed district in 1960-61, has turnedout to be a backward district in 1970-71. Instead of Bidar, it is Bijapur which turnsout to be the least

developed district in 1970-71.

Even in 1975-76, the highest per capita income district (Kodagu with per capita income of Rs. 1023) shows the income above the state level by 163 % and the lowest per capita income district (Bijapur with per capita income of Rs. 270) shows the income below the state per capita income by 31 % . Kodagu , Shimoga, U. K., Chikmagalur, D. K., Chitradurga, Mysore and Bangalore districts showed their per capita income above the state per capita income of Rs. 389 . On the other hand, the per capita income of Bellary, Hassan, Mandya, Raichur, Tumkur, Belgaum, Dharwad, Kolar, Bidar, Gulbarga and Bijapur districts was found to be lower than state level during the year 1975-76.

To understand the magnitude of inter-district income variations for different years, the following two statistical measures of disparity are employed :

(i) Range ratio between the highest per capita income and lowest per capita income[8] ;

---

8 The Range Ratio is given by the following formula :

$$\text{Range Ratio} = \frac{L - S}{L + S}$$

where, L = highest per capita income , S = lowest per capita income.

(ii) Relative Dispersion represented by the measure of Coefficient of Variation.[9]

The statistics calculated for the district per capita income of Karnataka are given in Table 2.2 .

TABLE 2.2 : Range Ratio, Mean, S. D. and C. V. of District Per Capita Income, Karnataka : 1960-61, 1970-71, 1975-76.

Years	Range Ratio	Mean ($\bar{X}$)	Standard Deviation (σ)	Coefficient of variation ($\sigma/\bar{X}$) %
1960-61	0.57	Rs.327.00	147.49	45.10
1970-71	0.59	Rs.393.42	165.69	42.12
1975-76	0.58	Rs.417.53	165.99	38.11

Source : Computed from Table 2.1 .

The results indicate the presence of wide variations in the levels of economic development of districts in Karnataka for the years 1960-61, 1970-71 and 1975-76.

---

9 Coefficient of variation is given as ,

$$C.V. (\%) = \frac{\sigma}{\bar{X}} \times 100$$

where, σ = Standard Deviation, $\bar{X}$ = Mean and Standard Deviation is given as,

$$S.D. = \sqrt{\frac{\sum (Y_i - \bar{Y})^2}{N - 1}}$$

where , Y_i = individual value of i^{th} observation,

$\bar{Y}$ = Mean value of i^{th} series ,

N = Number of observation.

Another most striking observation emerging from the data shown in Table 2.1 is that, although the mean District Per Capita Income of State , at 1960-61 prices, has changed from Rs. 327 to Rs. 418 (at current prices from Rs. 327 to Rs. 1037) from 1960-61 to 1975-76, there is remarkable stability in the rank order of districts with respect to per capita income over the two periods. To show this stability, the Spearman - Rank Correlation Coefficient[10] is worked out for the per capita income levels for the periods between 1960-61 and 1970-71 , and between 1960-61 and 1975-76 . The Ranks are given from the highest per capita income to lowest per capita income districts. The rank correlation coefficients were +0.77 (+0.77 at current prices) between the periods 1960-61 and 1970-71 and +0.83 (+0.84 at current prices) between 1960-61 and 1975-76 . The results indicate that the ranks of districts are almost identical between 1960-61 and 1975-76 . However, there might be a few shifts, but they are not very significant as compared with the overall pattern of stability. Bangalore has improved its position from the 14th rank in 1960-61 to the 6th rank in 1975-76 . Besides Bangalore, Chikmagalur, Chitradurga, Mysore, Mandya, Raichur and Bidar have also improved their position in 1975-76 over that

---

10 Spearman Rank Correlation Coefficient is given as;

$$RK = \frac{6\sum D^2}{N(N^2-1)}$$

, where, RK denotes the Rank Correlation Coefficient, D stand for differences of ranks between paired items in two series, N indicates number of observations.

in 1960-61. In the case of other districts, reversal in their ranks is observed in the year 1975-76 from 1960-61.

A close examination of the movement of the mean, absolute and relative dispersion of district per capita income for the years under study, presented in the Table 2.2, will indicate whether the regional inequalities in Karnataka have undergone any substantial changes during the plan period.

The mean district per capita income varies from Rs.327 in 1960-61 to Rs. 418 in 1975-76 . The absolute dispersion around these means , as measured by standard deviation, tends to rise with the means. However, the relative dispersion as measured by the coefficient of variation tends to move inversely to the movements of means. The coefficient of variation has declined from 45.10 % in 1960-61 to 42.12 % in 1970-71 and has further moved down to 38.11 % in 1975-76. The decline in the coefficient of variation is not substantial. However, there is a tendency for inequality to reduce or disparity to narrowdown over the plan periods. Infact, these results indicate that the planned efforts, at least in Karnataka, have resulted in moving nearer the objective of achieving regional balance.

4. DISTRICT PER CAPITA INCOME RELATIVES

To know the definite indications either of convergence or of divergence in inter-district per capita income

inequalities in Karnataka, the district per capita income relatives as compared to the Karnataka average per capita income and their changes between the initial period and the terminal period, viz., 1960-61 and 1975-76 respectively are worked out. By expressing each of the district per capita incomes as a percentage of the state per capita income for the same year, district per capita income relatives are obtained. The district per capita income relatives and their changes between 1960-61 and 1975-76 are calculated at the 1960-61 prices and are presented in Table 2.3 .

The table reveals that the relative in terms of District Per Capita Income has moved up by more than 10 % in six districts, viz., Chitradurga, Mysore, Mandya, Bangalore, Raichur and Bidar (all of them were backward districts in 1960-61), while it has fallen by more than 10 % in three districts, viz., Shimoga, Uttar-Kannada and Chikmagalur (all of them were developed districts in 1960-61), between the years 1960-61 and 1975-76 . It is also observed that there is an inverse relationship between the District's 1960-61 Per Capita Income Relative and % percentage change between its relatives in 1960-61 and 1975-76, since the coefficient of determination[11] (R^2) between the 1960-61 income relative and changes in 1975-76

---

11 The formula for Calculating Coefficient of Determination (R^2) used is as under ,

$$R^2 = \frac{\left[\sum YX - \left(\sum Y\right)\left(\bar{X}\right)\right]^2}{\left[\sum X^2 - \left(\sum X\right)\left(\bar{X}\right)\right]\left[\sum Y^2 - \left(\sum Y\right)\left(\bar{Y}\right)\right]} .$$

TABLE 2.3 : District Per Capita Income Relatives and Their Changes, Karnataka : 1960-61 and 1975-76.

Sr. No.	Districts	District Per Capita Income Relative 1960-61	1975-76	% Change in 1975-76 over 1960-61
1	Kodagu	246.07	262.98	+ 6.87
2	Shimoga	195.22	135.47	-30.60
3	Uttar-Kannada	195.22	122.87	-37.06
4	Chikmagalur	162.11	133.16	-17.86
5	Dakshina-Kannada	120.81	117.48	- 2.75
6	Bellary	103.41	98.97	- 4.29
7	Hassan	102.04	98.20	- 3.76
8	Tumkur	95.90	88.17	- 8.06
9	Chitradurga	92.83	104.88	+12.98
10	Belgaum	90.10	85.34	- 5.28
11	Mysore	87.77	111.31	+26.82
12	Mandya	87.37	98.97	+13.28
13	Dharwad	87.03	80.71	- 7.26
14	Bangalore	86.68	117.22	+35.23
15	Kolar	80.54	77.63	- 3.61
16	Raichur	76.79	86.37	+12.47
17	Gulbarga	75.42	74.03	- 1.84
18	Bijapur	68.60	69.40	+ 1.16
19	Bidar	67.23	76.09	+13.17
	Karnataka	100	100	-

Source : Calculated from Table 2.1

district relatives expressed as percentage of the 1960-61 relatives turned out to be (-) 0.27 and significant at

5 % level. This means that the per capita incomes of the lower income districts have tended to increase, while per capita income of the higher income districtus have tended to decrease, relative to the state per capita income.[12] Thus, it can be inferred that the district per capita income disparities are, for the period 1960-61 and 1975-76, converging in Karnataka.

It is interesting to observe that the above finding is in direct conflict with J.S. Williamson's hypothesis of inverted 'U' shape of the regional inequality curve with respect to the level of the development of nations.[13] He finds the hypothesis to be valid on the basis of cross-section, cross-country and time-series analyses. Increases in the regional income inequalities have also been experienced at one time or the other in the history of economic development of countries like the U.S.A. , Canada and Brazil.

---

12 Here it is to be noted that there was a well marked inverse relationship between a state's 1929-54 average income relative and percentage change between its relatives in 1929 and in 1953 and 1954 in the U.S.A. The coefficient of determination between the state 1929-54 average income relative and the 1953 state relatives expressed as % of the 1929 state relatives is (-)0.60 for the 1954 relatives as percent of 1929 relatives, (-)0.63. See,

F.A.Hanna, "State Income Differentials : 1919-1954", Duke University Press, Durham, N.C., 1959. pp 37-42.

13 G. Williamson, op.cit.,

However, it is important to note that Monteks Ahluwalia's findings, based on the third world conntry's data, " not fully " confirm the above hypothesis.[14]

Thus, the results off the present study indicate that the inequalities need not, necessarily, increase in the early stages of development of regions. On the strength of the above observations, it can also be stated that, the objectives of equity and growth are not in conflict but in harmony with developmental plans. These observations also point to the view contrary to the general conclusion that, in the initial stages of development, the polarisation effects (back-wash effects) are stronger than the trickle-down effects (spread effects).[15]

5. SECTORAL COMPOSITION OF DISTRICT DOMESTIC PRODUCT

The understanding of the inter-district differences in the levels of economic development can be made more sharp

---

14 Monteks, Ahluwalia , "Income Inequality-some dimenstions of the problem", in H. Chenery, M. Ahluwalia, Bell, J. H. Duloy and Richard Jolly , "Redistribution with Growth," Oxford University press, 1975, pp 17.

15 For detailed analysis see, i) A.O. Hirschman, " The Strategy of Economic Development", New Haven , Yale University Press, 1960. ii) G. Myrdal, "Economic Theory and under developed regions", London, 1957.

by studying the inter-district differences in the industrial structure of district product in association with inter - district differences in product per capita. Therefore, it is of interest to study the inter-district differences in the sectoral composition of district income in Karnataka. The present work deals with three broad sectors of industrial distribution. Agriculture and such related industries as fisheries, forestry constitutes the Primary Sector. The Secondary Sector includes in it, mining , manufacturing and construction . Finally, all the service industries (inclusive of electricity, gas and water supply), transport and communication, trade and finance, professional and personal business services and government, form the Tertiary Sector. The inclusion of electricity, gas and water supply in the tertiary sector is for reasons of comparability of Census classification of workers.[16] The total distributed by major industrial sectors is, for all districts, the Net Domestic Product. The percentage share of the various sectors in the District product are calculated on the basis of the estimates at 1960-61 prices. The relative shares of different sectors for the years: 1960-61, 1970-71 and 1975-76 , are presented in Tables 2.4, 2.5 and 2.6, respectively.

---

16 Census of India - 1971, Series No. 14, Mysore, Part 1-A, Vol. II, General Report.

TABLE 2.4 : Sectoral Composition of District Domestic Product, Karnataka : 1960-61 (at 1960-61 Prices).

(Rs.in Lakhs)

Sr. No.	Districts	Primary Sector		Secondary Sector		Tertiary Sector		Net District Domestic Product
1	Kodagu	1963	(84.32)	134	(5.76)	231	(9.92)	2328
2	Shimoga	3836	(65.88)	1262	(21.68)	724	(12.44)	5822
3	Uttar - Kannada	3018	(76.52)	380	(9.63)	546	(13.85)	3944
4	Chikmagalur	2172	(76.53)	301	(10.61)	365	(12.86)	2838
5	Dakshina - Kannada	3571	(64.53)	788	(14.24)	1175	(21.23)	5534
6	Bellary	1597	(57.59)	471	(16.99)	705	(25.42)	2773
7	Hassan	1965	(73.35)	197	(7.35)	517	(19.30)	2679
8	Tumkur	2739	(71.40)	399	(10.40)	698	(18.20)	3836
9	Chitradurga	1721	(57.85)	547	(18.39)	707	(23.76)	2975
10	Belgaum	3446	(65.71)	599	(11.42)	1200	(22.87)	5245
11	Mysore	2403	(56.00)	686	(16.00)	1201	(28.00)	4290
12	Mandya	1601	(69.55)	251	(10.90)	450	(19.55)	2302
13	Dharwad	2660	(53.52)	691	(13.90)	1619	(32.58)	4970
14	Bangalore	1923	(30.21)	1785	(28.04)	2658	(41.75)	6366
15	Kolar	1615	(53.06)	648	(21.29)	781	(25.65)	3044
16	Raichur	1441	(58.20)	356	(14.38)	679	(27.42)	2476
17	Gulbarga	1689	(54.61)	478	(15.45)	926	(29.94)	3093
18	Bijapur	1711	(51.23)	632	(18.92)	997	(29.85)	3340
19	Bidar	708	(54.09)	169	(12.91)	432	(33.00)	1309
	Karnataka	41779	(60.40)	10774	(15.58)	16611	(24.02)	69164
	All India* (Rs.in Cr.)	6831	(51.23)	2615	(19.61)	3889	(29.16)	13335

Note : Figures in brackets are in percentage.

Source : i) Computed from Appendix Table 2.1 .
* National Accounts Statistics 1960-61 to 1974-75, C.S.O., Oct. 1976.

TABLE 2.5 : Sectoral Composition of District Domestic Product, Karnataka : 1970-71 (at 1960-61 prices).

(Rs.in Lakh)

Sr. No.	Districts	Primary Sector		Secondary Sector		Tertiary Sector		Net District Domestic Product
1	Kodagu	2897	(79.49)	258.5	(7.09)	489	(13.42)	3644.5
2	Shimoga	4522	(69.38)	905	(13.88)	1091	(16.74)	6518
3	Uttar - Kannada	2661	(68.51)	445	(11.46)	778	(20.03)	3884
4	Chickmagalur	3593	(80.00)	293	(6.53)	605	(13.47)	4491
5	Dakshina - Kannada	4204	(53.39)	1699.5	(21.59)	1970	(25.02)	7873.5
6	Bellary	3001	(64.22)	724	(15.49)	948	(20.29)	4673
7	Hassan	2630	(67.82)	500	(12.89)	748	(19.29)	3878
8	Tumkur	2876	(66.16)	473	(10.97)	994	(22.87)	4347
9	Chitradurga	2977	(60.48)	488	(18.04)	1057	(21.48)	4922
10	Belgaum	4053	(57.30)	1323	(18.70)	1698	(24.00)	7074
11	Mysore	4909	(60.89)	1412	(17.51)	1741	(21.60)	8062
12	Mandya	2582	(71.57)	327	(9.06)	699	(19.37)	3608
13	Dharwad	3631	(50.58)	1341	(18.68)	2207	(30.74)	7179
14	Bangalore	2684	(21.79)	5016	(40.72)	4617	(37.49)	12317
15	Kolar	2222	(57.94)	631	(16.45)	982	(25.61)	3835
16	Raichur	3893	(70.43)	647	(11.70)	988	(17.87)	5528
17	Gulbarga	3504	(61.92)	856	(15.13)	1299	(22.95)	5659
18	Bijapur	2710	(54.69)	839	(16.93)	1406	(28.38)	4955
19	Bidar	1313	(60.68)	245	(11.32)	606	(28.00)	2164
	Karnataka	60862	(58.18)	18827	(18.00)	24923	(23.82)	104612
	All India (Rs.in Cr.)	8545	(44.32)	4331	(22.46)	6406	(33.22)	19282

Note : Figures in brackets are in percentage.

Source: Computed from Appendix Table 2.2 .

TABLE 2.6 : Sectoral Composition of District Domestic Product, Karnataka : 1975-76 (at 1960-61 prices).

(Rs.in Lakh)

Sr. No.	Districts	Primary Sector	Secondary Sector	Tertiary Sector	Net District Domestic Product
1	Kodagu	3283 (76.89)	288.5 (6.76)	698 (16.35)	4269.5
2	Shimoga	4997 (64.50)	1346 (17.37)	1405 (18.13)	7748
3	Uttar - Kannada	2892 (63.39)	672 (14.73)	998 (21.88)	4562
4	Chikmagalur	3177 (75.03)	334 (7.89)	723 (17.08)	4234
5	Dakshina - Kannada	5272 (53.75)	2086 (21.27)	2450 (24.98)	9808
6	Bellary	2644 (53.22)	1082 (21.78)	1242 (25.00)	4968
7	Hassan	3163 (67.83)	579 (12.42)	921 (19.75)	4663
8	Tumkur	4343 (70.53)	565 (9.18)	1249 (20.29)	6157
9	Chitradurga	3873 (60.31)	1194 (18.59)	1355 (21.10)	6422
10	Belgaum	4852 (54.45)	1827 (20.51)	2231 (25.04)	8910
11	Mysore	5953 (59.33)	1864 (18.58)	2216 (22.09)	10033
12	Mandya	3631 (73.89)	410.5 (8.35)	873 (17.76)	4914.5
13	Dharwad	3993 (48.48)	1623 (19.70)	2621 (31.82)	8237
14	Bangalore	3478 (18.73)	9060 (48.79)	6031 (32.48)	18569
15	Kolar	2882 (56.20)	914 (17.82)	1332 (25.98)	5128
16	Raichur	3229 (60.56)	893 (16.75)	1210 (22.69)	5332
17	Gulbarga	2851 (52.15)	996 (18.22)	1620 (29.63)	5467
18	Bijapur	3135 (53.16)	990 (16.79)	1772 (30.05)	5897
19	Bidar	1659 (61.86)	260 (9.69)	763 (28.45)	2682
	Karnataka	69307 (54.15)	26984 (21.08)	31710 (24.77)	1128001
	All India (Rs.in Cr.)	9200 (41.42)	5050 (22.74)	7959 (35.84)	22209

Note : Figures in brackets are in percentage.

Source : Computed from Appendix Table 2.3 .

From Table 2.4, it is found that there are wide variations in the relative importance of different sectors in the district economies in Karnataka for the year 1960-61. It is observed, from the table, that the maximum contribution of the primary sector (84.32 %) and the least contribution of the secondary (5.76 %), the tertiary (9.92 %) sectors, to the total income is found in Kodagu for the period 1960-61. On the other hand, the least contribution of the primary sector (30.21 %) and the maximum contribution of the secondary (28.04 %), the tertiary (41.75 %) sectors to the total income is observed in Bangalore. However, the contribution of primary and secondary sectors to the total income in seven districts , viz., Kodagu, Bellary, Chitradurga, Mysore, Bangalore, Kolar and Bijapur is below and above, respectively, their corresponding state's shares. And the share of tertiary sector to the total income is above the state's share of 24.02 % in Bellary, Mysore, Dharwad, Bangalore, Kolar, Raichur, Gulbarga, Bijapur and Bidar districts.

In the period 1970-71 , the highest (80 %) and the lowest (6.53 %) contribution of primary and secondary sectors, respectively, to the District Income is found in Chikmagalur, where as the least contribution of the primary sector (21.79 %) and the maximum contribution of secondary (40.72 %), tertiary (37.49 %) sectors is observed in Bangalore . It is also interesting to observe that in as many as twelve districts, i.e., Kodagu, Shimoga, Uttar - Kannada, Chikmagalur, Bellary,

Hassan, Tumkur, Mysore, Mandya, Raichur, Gulbarga and Bidar, the share of the primary sector is higher than the state's primary sector share (58.18 %) and the share of secondary sector is lower than the state's share (18 %). But Kolar and Bijapur districts suffer from low level shares of both the sectors than the state's share. However, the share of the tertiary sector is found to be higher than the state's share (23.82 %) in Dakshina - Kannada, Belgaum, Dharwad, Kolar, Bijapur and Bidar Districts during the year 1970-71.

Table 2.6 reveals that the positions of the districts with respect to the highest and lowest shares of different sectors in 1975-76 are not at all dissimilar to the positions observed in 1960-61. An important observation is that, although there are six districts, viz., D.K., Bellary, Dharwad, Bangalore, Gulbarga, Bijapur, showing their primary sector share to be lower than state's share, only three of them, i.e., D.K., Bellary, Bangalore show their secondary sector's share above the state level. D. K., Dharwad, Bangalore, Kolar, Gulbarga, Bijapur and Bidar districts enjoy higher share of tertiary sector to their total income than the state level (24.77 %) in 1975-76. However, it is rather, an uncomfortable position to observe that there is not a single district in Karnataka with the tertiary sector's contribution being higher than the Nation's share (35.84 %) even at the beginning of the Fifth Five

Year Plan in the country. This clearly indicates the distance between district economy and national economy with respect to the contribution of tertiary sector to their total income .

To understand the magnitude of inter - district variations in the sectoral shares, coefficients of variation of the percentage contribution of primary, secondary and tertiary sector for the districts of Karnataka are worked out for the periods 1960-61, 1970-71 and 1975-76. The results are presented in Table 2.7.

It is observed from the table that the variations in the share of secondary sector are high as compared to the variations in other two sectors in all the periods of analysis . The least variations are observed in primary sector's share during 1960-61 and 1970-71, whereas in 1975-76 the tertiary sector's share has the least variations.

At this stage, one can undertake on exercise to investigate the extent of association that exists between the levels of economic development of districts and the contribution of their sectoral shares. Such an exercise helps in understanding the importance of sectoral shares in the district economies . For this purpose the coefficient of determination (R^2) can be worked out between the district per capita income and the relative shares of different sectors.

TABLE 2.7 : Mean, S. D. and C. V. of Sectoral Shares (%) In The District Income and R^2 Between Per Capita Income and Sectoral Shares, Karnataka : 1960-61, 1970-71 and 1975-76.

Statistics	Shares of								
	Primary Sector			Secondary Sector			Tertiary Sector		
	1960-61	1970-71	1975-76	1960-61	1970-71	1975-76	1960-61	1970-71	1975-76
Mean ($\bar{X}$)	61.80%	61.96%	59.17%	14.65%	15.48%	17.12%	23.56%	22.56%	23.71%
S.D. (σ)	12.27	12.61	12.85	5.44	7.37	9.07	8.20	5.90	5.04
C.V. (%)	19.85	20.35	21.72	37.13	47.61	52.98	34.80	26.15	21.26
R^2 (between per capita income and)	(+)0.46**	(+)0.22*	(+)0.12	(-)0.12	(-)0.10	(-)0.03	(-)0.61**	(-)0.38**	(-)0.30*

** Significant at 1% level
* Significant at 5% level

Source: Computed from Tables 2.1, 2.4, 2.5 and 2.6 .

The calculated coefficients of determination between the per capita income and the shares of primary, secondary and tertiary sectors are shown in Table 2.7.

An important conclusion, that emerges from the results presented in Table 2.7, is that, the district per capita income, in general, is positively correlated with the share of primary sector and negatively correlated to the shares of secondary and tertiary sectors, in Karnataka, for all the periods under examination. However, the coefficients of determination between district per capita income and the share of primary sector are statistically significant, with positive signs before them, for the 1960-61 (0.46) and 1970-71 (0.22) years. The R^2s between district per capita income and the share of tertiary sector are found to be statistically significant with negative signs before them in all the periods of study . But none of the correlations calculated between district per capita income and the share of secondary sector were found to be statistically significant at 5 % level. Therefore, it is difficult to say, with certainty, about the association between district per capita income and the share of secondary sector in Karnataka.

The above results seem to be contrary to the well-known hypothesis of negative correlation between the level

of income and the share of agriculture and positive correlation between the level of income and the share of non - agricultural commodity production . In other words, as the level of per capita income drops, the share of agriculture in national product rises. By contrast, the lower the level of per capita income, the lower the shares of the secondary and tertiary sectors in national product. Such correlations are found by S. Kuznets in his cross - sectional and time-series analysis conducted for the national (U.S.A.) and international (57 contries) data.[17] The negative correlation between the state per capita income and the share of primary sector and positive correlation between the state per capita income and the shares of secondary and tertiary sectors for India are also found out at the cross - sectional study conducted for the year 1960-61.[18] In a way, the hypothesis is about the course of development of the same economy over a period of time and hence the results of the cross - sectional studies may not be always in conformity with the hypothesis. Perhaps, when one studies the changes in the sectoral contribution over a period of time in the district domestic products in Karnataka, the understanding becomes more clear.

---

17 Simon. Kuznets, " Quantitative Aspects of Economic Growth of Nations-II, Industrial Distribution of National Product and Labour Force", Economic Development and Cultural Change, Vol.V(4),July 1957,pp 3 to 111.

18. M.M.Dadi, "Inter-State Differences in Income,Productivity and Industrial Structure", Indian Economic Association Conference Number, 1969, pp 29.

A comparative study of the data contained in Tables 2.4 and 2.5 , reveals that in as many as 11 districts of Karnataka, viz., Shimoga, Bellary, Chikmagalur, Chitradurga, Mysore, Mandya, Kolar, Raichur, Gulbarga, Bijapur and Bidar, the share of the primary sector has increased and, with the exception of Mysore, the share of the secondary sector has declined in 1970-71 over 1960-61. Between 1960-61 and 1970-71, the secondary sector's share of nine districts, i.e. Kodagu, Uttar Kannada, Dakshina-Kannada, Hassan, Tumkur, Belgaum, Mysore, Dharwad and Bangalore, has increased and the share of primary sector of these districts, with exception of Mysore, has declined. However, it is only in Kodagu, Shimoga, Uttar - Kannada, Dakshina - Kannada and Tumkur districts the share of tertiary sector spurted up.

On comparision of data provided in Tables - 2.4 and 2.6 it is found that only seven districts, viz., Chitradurga, Mysore, Mandya, Kolar, Raichur, Bijapur and Bidar, experienced a rise in their primary sector's share and of which four districts, namely, Mandya, Kolar, Bijapur and Bidar, showed a decline in their secondary sector's share between the period 1960-61 and 1975-76. On the other hand, the share of the secondary sector in 12 districts, viz., Kodagu, U. K., D. K., Bellary, Hassan, Chitradurga, Belgaum, Mysore, Dharwad, Bangalore, Raichur

and Gulbarga, has gone up and their primary sector's share, with the exception of Chitradurga, Mysore, Raichur, has declined between 1960-61 and 1975-76. However, the shares of primary and secondary sectors in the districts of Shimoga, Chikmagalur, Tumkur, Shrinked during this one - and - a - half - decade period . The share of tertiary sector has moved up between 1960-61 and 1975-76 in nine districts, namely , Bellary, Chitradurga, Mandya, Mysore, Bangalore, Dharwad, Raichur, Gulbarga and Bidar.

Thus, the temporal study reveals that, the majority of districts in Karnataka show a tendency to confirm the well-known hypothesis i.e., with the rise in product per capita, the share of the primary sector to the total product would decline and the share of the secondary sector would rise. So far as other districts are concerned, the explanation may lie in the examination of productivity and growth of output in different sectors of these districts over a period of time. This thesis agrees with the opinion that, "no definite expectation can be entertained concerning ..... the share of S-sector (tertiary).....they may remain constant or they may rise ..... and decline in others".[19] In other words, one cannot say any thing,

---

19 Simon, Kuznets, op. cit., 1957, pp 16 .

with certainty, about the association of per capita income growth and share of the tertiary sector.

The close examination of the temporal movement of various Statistics, given in Table 2.7 also goes to support the above argument . It can be observed that, although the coefficient of variation (C. V.) of the primary sector's share is on the increase, its mean value has declined over the period of 15 years from 62 % to 59 %, ofcourse with a little increase in 1970-71. The R^2 between the district per capita income and the primary sector's share has positive sign before it, but its value is continuously going down from 1960-61 to 1975-76. The statistics indicate that, as the economy of Karnataka develops , the share of the primary sector in the state income tends to fall. On the contrary, the values of coefficient of variation and the mean of the secondary sector's share have moved up in 1975-76 over 1960-61. And the value of R^2 between district per capita income and the share of secondary sector is becoming very weak, with the negative sign before it, with the passage of time. It is further observed that, the coefficient of variation though declined, the mean value of the tertiary sector's share in the state has improved in 1975-76 over 1960-61. The value of R^2 between district per capita income and the share of tertiary sector has declined with the negative

sign before it. Thus, taken in its totality, the application of the thesis, explaining the relationship between per capita product and the sectoral shares in the course of development, cannot be wholly invalidated, even in the case of Karnataka . However, there are no conclusive evidences to support the hypothesis.

6. GROWTH OF INCOME BY SECTOR AND DISTRICT

The study of growth of different sectors in the district may indicate the trend differences in their economic inequalities. And the inter-sectoral income growth differences can also explain the changing importance of different sectors in the district economies . The annual compund growth rates of sectoral and district incomes in Karnataka are worked out for the periods 1960-61 to 1970-71 and 1960-61 to 1975-76, at constant prices. The calculated growth rates of Net District Domestic Product by broad sectors for the periods 1960-61 to 1970-71 and 1960-61 to 1975-76 are given in Table 2.8 .

It is evident, from the data provided in the table, that there are significant variations in the growth of every sector and there are also differences in inter-sectoral growth rates. It is also discovered that the growth rates calculated at current prices are found to be more than

TABLE 2.8 : Growth of District Domestic Product, Karnataka : Annual Compound Growth Rates for 1960-61 to 1970-71 and 1960-61 to 1975-76 (at 1960-61 prices).

(In Percentage).

Sr. No.	Districts	Primary Sector		Secondary Sector		Tertiary Sectory		District Domestic Product	
		1960-61 to 1970-71	1960-61 to 1975-76	1960-61 to 1970-71	1960-61 to 1975-76	1960-61 to 1970-71	1960-61 to 1975-76	1960-61 to 1970-71	1960-61 to 1975-76
1	Kodagu	3.97	3.49	6.79	5.25	7.79	7.65	4.58	4.15
2	Shimoga	1.65	1.78	-3.27	0.43	4.19	4.52	1.14	1.92
3	Uttar-Kannada	-1.27	-0.28	1.59	3.87	3.60	4.10	1.15	0.98
4	Chikmagalur	5.16	2.57	-0.27	0.70	5.18	4.66	1.70	2.70
5	Dakshina-Kannada	1.65	2.63	7.99	6.71	5.30	5.02	3.59	3.89
6	Bellary	6.51	3.42	4.39	5.70	3.00	3.85	3.36	3.96
7	Hassan	2.96	3.22	9.76	7.45	3.76	3.92	3.77	3.76
8	Tumkur	0.49	3.12	1.80	2.35	3.60	3.96	1.26	3.20
9	Chitradurga	3.63	5.56	4.96	5.34	4.10	4.43	3.16	5.26
10	Belgaum	1.64	2.31	8.25	7.72	3.53	4.22	3.04	3.60
11	Mysore	7.40	6.23	7.49	6.89	3.78	4.17	4.51	5.83
12	Mandya	4.90	5.61	2.68	3.33	4.50	4.52	4.60	5.19
13	Dharwad	3.16	2.75	6.85	5.89	3.13	3.26	3.75	3.43
14	Bangalore	3.39	4.03	10.88	11.44	5.68	5.61	6.82	7.40
15	Kolar	3.24	3.94	-0.27	2.32	2.32	3.62	1.34	3.54
16	Raichur	10.45	5.53	6.16	6.32	3.90	3.98	3.36	5.25
17	Gulbarga	7.57	3.55	6.00	5.02	3.44	3.80	5.22	3.87
18	Bijapur	4.71	4.12	2.87	3.04	3.50	3.91	4.02	3.86
19	Bidar	6.37	5.84	3.78	2.91	3.44	3.87	3.16	4.90
	Karnataka State	3.83	3.43	5.74	6.31	4.14	4.40	4.22	4.19
	All India	2.26	2.00	5.17	4.49	5.12	4.39	3.76	3.46
	Coefficient of Variation (%)	59.95	44.38	79.59	55.12	29.58	21.74	0.00	35.40

Source : Computed from Tables 2.4, 2.5 and 2.6

twice the rates of growth calculated at constant prices, i.e., 1960-61 prices. The differences between the two growth rates can be attributed to price rise between the periods of study. However, the present study is interested in the real growth rates of district incomes. It may be observed that all the growth rates, except the secondary sector's growth rates, for the state are above the national growth rates.

When one looks at the individual growth rates of Net District Domestic Product, Raichur and Uttar-Kannada districts turnedout to be the fastest and the slowest (at constant as well at current prices) growing districts, respectively, in Karnataka between 1960-61 and 1970-71 . The overall growth rates of Kodagu, Chikmagalur, Bellary, Chitradurga, Mysore, Mandya, Bangalore, Raichur, Gulbarga, Bijapur and Bidar are found to be faster than State's overall growth rate of 3.76 % between 1960-61 and 1970-71 . In all the districts, except Bangalore, the primary sector grew faster than the state level. Such a trend, perhaps , may indicate the importance of primary sector in the development of these districts.

Between 1960-61 and 1975-76, Bangalore and U.K. districts emerged as the fastest and the slowest growing districts, respectively, at constant prices. The real growth rates were found to be higher than state growth rate

for Chitradurga , Mysore, Mandya, Bangalore, Raichur and Bidar districts between 1960-61 and 1975-76. It is in D. K. and Bangalore all the three sectors grew faster than state and national growth rates. However, the growth rates of all the sectors were found to be above the nation's rates in Kodagu district.

To find out the extent of variations in the three broad sectoral growth rates of Karnataka districts, coefficients of variation of the growth rates are worked-out and the results are given in the last row of Table 2.8.

The results suggest that there are wide variations in the real growth rates of the district economies in both the periods. However, variations are found to be relatively high in the growth rates of primary and secondary sectors in both the periods. It is observed that the variations are smaller for the long-period growths than for the short-period.

A comparative study of growth rates given in Table 2.8, indicates that the primary sector's growth is accelerated in the seventies in as many as nine districts, namely, Shimoga, U. K. , D. K., Hassan , Tumkur, Belgaum, Mandya, Bangalore and Kolar, of Karnataka. And in as many as eight districts, viz., Kodagu, D. K., Hassan, Belgaum, Mysore, Dharwad,

Gulbarga and Bidar, the growth rates of secondary sector are decelerated during seventies . However, in all the districts, except, Kodagu, Chikmagalur, D. K. and Bangalore, there is a remarkable increase in the growth of Tertiary sector in the seventies over that of the sixties. The growth rates of district domestic product for the two periods indicate, that the overall growth rates of ten districts, i.e., Kodagu, Chikmagalur, Bellary, Hassan, Mysore, Dharwad, Raichur, Gulbarga, Bijapur and Bidar, are decelerated during the seventies . The decelerating growth rates observed during the seventies calls for a greater attention of the Karnataka state planners.

Another observation from the two tables is that, neither the richest district grew faster than any other district, nor the poorest district grew slower than any other district in the state of Karnataka. But, the average growth rate of all the backward districts is above the average growth rate of all the developed districts in the state. These results, perhaps, indicate that the backward districts, starting at a low level of development, have ample opportunities for rapid growth than the developed districts in the state. Such a situation, however, may partly explain the reduction in the regional inequalities in Karnataka over this one and a half decade of growth experience. But, it is to be noted that,

between 1971-72 and 1979-80 imbalances in the regional development have reduced only marginally.[20]

7. CONCLUSION

i) It is observed that there are wide variations in the levels of development in the districts of Karnataka for the years 1960-61, 1970-71 and 1975-76 . The inter-district income inequality though declined, is not substantial, over the span of fifteen years period i.e., 1960-61 to 1975-76 . It is also found that the rank of districts are almost identical between 1960-61 and 1975-76.

ii) The variations in the secondary sector's share, of district incomes, are found to be high as compared to the shares of other two sectors in the years 1960-61, 1970-71 and 1975-76.

iii) The cross-sectional analysis for the years 1960-61, 1970-71 and 1975-76 reveals that the district per capita income, in general, is positively correlated to the share of primary sector to the total product and negatively correlated to the shares of secondary and tertiary sectors to the total product in Karnataka . However, the temporal study indicates that, the majority

---

20 Government of Karnataka, "Karnataka Draft Sixth Five Year Plan - 1980-85, Vol. I, Strategy, Outlays and Programmes", Bangalore, 1980, pp 11.

of Karnataka districts show a tendency to confirm the well-known hypothesis i.e., with the rise in product per capita, the share of the primary sector to the total product would decline and the shares of secondary and tertiary sectors would rise. However, there are no conclusive evidences to support the hypothesis.

iv) The results showed that there were significant variations in the intra-sectoral and inter-sectoral growth rates in Karnataka. The variations in the secondary sector's growth are found to be higher than the primary and secondary sectors.

v) The growth rates of District Domestic Product for ten districts, viz., Kodagu, Chikmagalur, Bellary, Hassan, Mysore, Dharwad, Raichur, Gulbarga, Bijapur and Bidar are found to have declerated during the seventies.

vi) The average growth rate of all the backward districts is found to be above the average growth rate of all the developed districts in the state. The results, perhaps, indicate that the backward districts have ample opportunities for rapid growth than the developed ones in Karnataka.

APPENDIX TABLE 2.1 : Sectoral Composition of District Income of Karnataka, 1960-61 (at 1960-61 prices).

(Rs. in Lakhs).

Sr. No.	Districts	Agriculture	Forestry & Logging	Fishing	Mining & Quarrying	Manufacturing		Construction	Electricity, Gas & Water Supply	Railways	Transport by other Means & Storage	Communication
						Registered	Unregistered					
	1	2	3	4	5	6	7	8	9	10	11	12
1	Bangalore	1853	59	11	-	1003	241	541	75	77	216	55
2	Belgaum	3301	144	1	-	205	255	139	7	33	65	22
3	Bellary	1481	115	1	83	81	98	209	22	38	51	5
4	Bidar	704	4	-	-	10	120	39	1	9	18	4
5	Bijapur	1645	62	4	7	118	358	149	4	19	45	9
6	Chikmagalur	2060	110	2	5	53	38	205	8	6	24	6
7	Chitradurga	1650	65	6	21	124	162	240	12	9	33	6
8	Dakshina-Kannada	3276	167	128	-	422	206	160	13	13	85	22
9	Dharwad	2573	84	3	-	224	248	219	11	103	142	21
10	Gulbarga	1656	28	5	18	108	257	95	3	70	47	8
11	Hassan	1940	19	6	5	57	57	78	9	32	24	27
12	Kodagu	1860	102	1	-	37	12	85	2	-	14	3
13	Kolar	1558	51	6	345	75	126	102	18	18	40	7
14	Mandya	1585	13	3	-	72	80	99	23	5	15	5
15	Mysore	2157	234	12	1	219	243	223	25	56	94	14
16	Raichur	1430	10	1	42	40	141	133	3	31	37	6
17	Shimoga	3713	110	13	22	186	64	990	41	17	48	5
18	Tumkur	2695	33	11	9	72	196	122	17	4	24	4
19	Uttar-Kannada	2304	627	87	29	101	88	162	5	23	30	9
	Karnataka	39441	2037	301	587	3207	2990	3990	299	563	1052	238
	All India@ (Rs.in Crs.)	6580	174	77	134	1071	785	625	68	252	261	63

Contd....

APPENDIX TABLE 2.1 (contd..)

Sr. No.	Districts	Trade Hotel & Restaurants	Banking and Insurance	Real Estate Ownership of Dwellings & Business Services	Public Administration	Other Services	Net Domestic Product	Population 1961 Census	Per Capita Income (in Rs.)
	1	13	14	15	16	17	18	19	20
1	Bangalore	1127	126	216	334	432	6366	2504462	254
2	Belgaum	532	78	170	68	225	5245	1983811	264
3	Bellary	282	43	79	44	141	2773	915261	303
4	Bidar	218	7	56	35	84	1309	663172	197
5	Bijapur	472	65	143	51	189	3340	1660178	201
6	Chikmagalur	139	15	51	46	70	2838	597305	475
7	Chitradurga	327	4	94	75	147	2975	1094284	272
8	D.K.	589	51	135	59	208	5534	1563837	354
9	Dharwad	717	126	167	76	256	4970	1950362	255
10	Gulbarga	408	10	120	70	190	3093	1399457	221
11	Hassan	152	35	76	65	97	2679	895847	299
12	Kodagu	94	2	27	36	53	2328	322829	721
13	Kolar	335	14	111	84	154	3044	1290144	236
14	Mandya	142	39	77	56	88	2302	899210	256
15	Mysore	512	24	144	128	204	4290	1671399	257
16	Raichur	279	12	94	73	144	2476	1100895	225
17	Shimoga	285	7	86	98	137	5822	1017368	572
18	Tumkur	280	15	118	85	151	3836	1367402	281
19	U.K.	223	15	59	41	141	3944	689549	572
	Karnataka	7113	688	2023	1524	3111	69164	23556772	294
	All India[@] (Rs.in Crs.)	1294	160	392	538	861	13335	438936918	304

Sources : 1. Bureau of Economics and Statistics, Government of Karnataka, Bangalore (unpublished).
@ National Accounts Statistics 1960-61 to 1974-75, C.S.O., October 1976.

APPENDIX TABLE 2.2 : Sectoral Composition of District Income of Karnataka, 1970-71(at 1960-61 prices).

(Rs. in Lakhs).

Sr. No.	Districts	Agri-culture	Fore-stry & Logg-ing	Fish-ing	Mini-ng & Quar-rying	Manufacturing		Construc-tion	Electri-city, Gas & Water Supply	Rail-ways	Trans-port by other Means & Storage	Communi-cation
						Regi-stered	Unre-gist-ered					
	1	2	3	4	5	6	7	8	9	10	11	12
1	Bangalore	2584	63	37	2	3545	338	1131	75	120	561	172
2	Belgaum	3882	157	14	14	438	329	542	13	75	116	52
3	Bellary	2890	96	15	126	223	113	262	13	72	105	23
4	Bidar	1300	8	5	1	36	80	128	6	31	47	6
5	Bijapur	2621	68	21	14	178	347	300	13	69	102	28
6	Chikmagalur	3430	143	20	7	50	54	182	5	34	38	17
7	Chitradurga	2874	70	33	8	377	149	354	11	42	74	18
8	Dakshina-Kannada	3935	198	71	0.5	633	554	512	16	6	154	39
9	Dharwad	3516	93	22	2	596	286	457	22	106	238	59
10	Gulbarga	3430	58	16	7	198	206	405	13	78	102	15
11	Hassan	2569	39	22	47	84	87	324	9	48	53	4
12	Kodagu	2777	111	9	5	29	41	188	3	-	21	10
13	Kolar	2149	57	16	0.5	144	86	212	17	83	60	24
14	Mandya	2542	19	21	189	135	66	125	19	22	34	19
15	Mysore	4613	265	31	1	457	221	731	20	42	159	43
16	Raichur	3857	27	9	3	166	137	262	13	37	78	17
17	Shimoga	4310	174	38	82	428	115	348	29	39	79	29
18	Tumkur	2810	38	28	14	47	155	256	14	31	59	21
19	Uttar-Kannada	1918	680	63	19	165	70	191	8	14	81	18
	Karnataka	58007	2364	491	554	7929	3434	6910	319	949	2161	614
	All India@ (Rs.in Crs)	8165	271	109	207	1893	1150	1081	195	391	464	127

Contd....

APPENDIX TABLE 2.2 (contd..)

Sr. No.	Districts	Trade Hotel & Restaurants	Banking and Insurance	Real Estate Ownership of Dwellings & Business Services	Public Administration	Other Services	Net Domestic Product	Population 1971 Census	Per Capita Income (in Rs.)
	1	13	14	15	16	17	18	19	20
1	Bangalore	1636	571	310	541	631	12317	3365515	366
2	Belgaum	685	86	205	176	290	7074	2423342	292
3	Bellary	323	34	105	101	172	4673	1122686	416
4	Bidar	244	13	71	76	112	2164	824059	263
5	Bijapur	558	50	179	145	262	4955	1985591	250
6	Chikmagalur	198	19	66	87	141	4491	736647	610
7	Chitradurga	417	33	118	167	177	4922	1397456	352
8	D. K.	887	212	199	132	325	7873.5	1939315	410
9	Dharwad	963	105	155	206	353	7179	2342213	307
10	Gulbarga	517	26	161	169	218	5659	1739220	325
11	Hassan	226	26	98	128	156	3878	1102370	352
12	Kodagu	138	22	135	67	93	3644.5	378291	963
13	Kolar	395	20	37	156	190	3835	1516646	253
14	Mandya	228	18	102	101	156	3608	1154374	313
15	Mysore	644	59	189	254	331	8062	2077238	388
16	Raichur	383	32	136	126	166	5528	1415740	390
17	Shimoga	411	48	110	163	183	6518	1301485	501
18	Tumkur	367	27	144	122	209	4347	1627721	267
19	U.K.	272	43	73	105	164	3884	849105	457
	Karnataka	9472	1444	2593	3022	4329	104612	29299014	357
	All India@ (Rs.in Crs.)	2066	309	4477	1144	1233	19282	547949809	348

Source : Computed from (i) Sectoral Composition of District Income of Karnataka - 1970-71 (at 1970-71 prices), (unpublished), B.E.S., Govt. of Karnataka, Bangalore. (ii)State Income for (1970-71) at 1960-61 Prices, B.E.S., Govt. of Karnataka, Bangalore.

@ National Accounts Statistics 1960-61 to 1974-75 , C.S.O., October 1976.

APPENDIX TABLE 2.3 : Sectoral Composition of District Income of Karnataka, 1975-76 (at 1960-61 prices).

(Rs.in Lakhs).

Sr. No.	Districts	Agri-culture	Fore-stry & Logg-ing	Fish-ing	Mini-ng & Quar-rying	Manufacturing		Constru-ction	Electri-city, Gas & Water Supply	Rail-ways	Trans-port by other Means & Storage	Communi-cation
						Regi-stered	Unre-gist-ered					
1	2	3	4	5	6	7	8	9	10	11	12	
1	Bangalore	3385	53	40	6	7489	353	1212	96	153	835	168
2	Belgaum	4714	125	13	9	893	343	582	17	95	175	82
3	Bellary	2555	77	12	198	485	117	282	17	134	155	23
4	Bidar	1647	8	2	1	39	83	137	8	34	70	7
5	Bijapur	3066	54	15	7	299	362	322	16	87	152	22
6	Chikmaglur	3037	117	23	3	80	56	195	7	41	56	14
7	Chitradurga	3785	56	32	10	6488	156	380	14	56	110	36
8	Dakshina-Kannada	5035	159	78	2	957	577	550	20	6	228	35
9	Dharwad	3905	73	15	2	832	298	491	28	139	353	61
10	Gulbarga	2796	46	9	21	325	215	435	17	89	151	47
11	Hassan	3110	32	21	3	137	91	348	11	54	79	17
12	Kodagu	3196	80	7	0.5	43	43	202	4	-	31	21
13	Kolar	2829	46	7	173	425	89	227	22	76	88	59
14	Mandya	3594	16	21	0.5	207	69	134	24	36	51	17
15	Mysore	5726	216	8	12	847	230	785	26	252	235	118
16	Raichur	3202	21	6	129	339	143	282	17	46	115	27
17	Shimoga	4799	148	50	9	844	120	373	37	55	117	37
18	Tumkur	4292	30	21	36	93	161	275	18	43	88	20
19	Uttar-Kannada	2198	544	150	31	362	73	206	10	19	120	18
	Karnataka	66873	1904	530	643	15344	3579	7418	409	1215	3209	829
	All India@ (Rs.in Crs.)	8716	348	136	268	2239	1365	1178	251	477	627	154

Contd...

APPENDIX TABLE 2.3 (contd..)

Sr. No.	Districts	Trade Hotel & Restaurants	Banking and Insurance	Real Estate Ownership of Dwellings & Business Services	Public Administration	Other Services	Net Domestic Product	Population Estimates From 1971 Census & 1981 Census (Provisional)	Per Capita Income (in Rs.)
	1	13	14	15	16	17	18	19	20
1	Bangalore	1943	1077	346	724	689	18569	4069136	456
2	Belgaum	813	163	228	312	346	8910	2684759	332
3	Bellary	384	64	117	155	193	4968	1292051	385
4	Bidar	290	25	79	114	136	2682	904932	296
5	Bijapur	663	93	199	248	292	5897	2182598	270
6	Chikmagalur	236	36	74	106	153	4234	818113	518
7	Chitradurga	495	62	131	225	226	6422	1574933	408
8	D. K.	1055	398	173	187	348	9808	2145362	457
9	Dharwad	1145	1977	222	88	388	8237	2624246	314
10	Gulbarga	615	50	180	225	246	5467	1899620	288
11	Hassan	268	48	110	143	191	4663	1220690	382
12	Kodagu	164	42	41	303	92	4269.5	417255	1023
13	Kolar	469	39	151	200	228	5128	1696780	302
14	Mandya	271	33	114	143	184	4914.5	1277649	385
15	Mysore	766	108	211	329	371	10033	2317145	433
16	Raichur	456	60	152	150	187	5332	1587765	336
17	Shimoga	489	90	122	228	230	7748	1471075	527
18	Tumkur	437	51	161	180	251	6157	1792735	343
19	U. K.	324	82	82	172	171	4562	953676	478
	Karnataka	11283	2718	2893	4232	4922	128001	32939464	389
	All India@ (Rs.inCrs)	2518	401	765	1583	1183	22209	61211850	363

Source : Computed from (i) Sectoral Composition of District Income of Karnataka, 1975-76 (at 1975-76 prices) (unpublished), B.E.S., Govt. of Karnataka, Bangalore (ii)State Income for 1975-76 at 1960-61 prices B.E.S., Govt. of Karnataka, Bangalore.

@ Computed from National Accounts Statistics 1960-61 to 1974-75, C.S.O., October 1976 and National Accounts Statistics 1970-71 to 1975-76 , C.S.O., January 1978.