

**Working Paper  
376**

**LONG TERM TRENDS IN THE  
GROWTH AND STRUCTURE OF THE  
NET STATE DOMESTIC PRODUCT  
IN KERALA**

**P. Mohanan Pillai  
N. Shanta**

October 2005



**LONG TERM TRENDS IN THE GROWTH AND  
STRUCTURE OF THE NET STATE DOMESTIC PRODUCT  
IN KERALA**

**P. Mohanan Pillai  
N. Shanta**

October 2005

---

An earlier version of this paper was presented in a Seminar organised by the Department of Economics of the Cochin University of Science and Technology and also at the Botswana Institute for Development Policy Analysis.(Bidpa), Gaborone, Botswana.

We place on record our sincere thanks to the referee for his constructive comments. We are also grateful to Professors K.Pushpangadan, K.K.Subrahmanian, P.R.Gopinathan Nair and D.Narayana for their useful suggestions in revising the paper. We acknowledge the excellent research assistance provided by Sri. Jayachandran, Sri. Suresh and Sri. Nixon. The usual disclaimers remain.

## ABSTRACT

Kerala has been a model to other states for her achievements in social development. But in terms of economic growth her performance has for long been very poor and a matter of deep concern. In this context the turnaround in growth that has occurred in Kerala in the nineties, in contrast to the earlier decades needs to be looked at in detail. This study is an attempt in that direction. It is an analysis of the long term trends in the State Domestic Product of Kerala for the period 1970-2000. It is concerned with the growth of the different sectors of the economy, the changes in the sectoral composition of output and other related issues such as the sources of growth. What is observed is that in the eighties and more so in the nineties both in terms of rates of growth and share in net state domestic product the tertiary sector has dominated and this has been due to the growth of the producer's services. Income responsiveness of producer services is also found to be the highest. However, it is observed that this has not resulted in any linkages with the production sector within the economy suggesting that the linkages may be with productive sectors of other states. Nevertheless there are some intersectoral linkages with the consumer services and intra sectoral-linkages between banking and insurance and transport by other means. In conclusion the leading and lagging sectors of the economy and in the nineties the sectors propelling growth are identified. The sectors which have lost their position when compared to the previous decades are Registered Manufacturing, Construction and Public Administration. The emerging sectors in the economy are transport by other means, and trade, hotels and restaurants while banking and insurance is the leading sector. Analysis of structural transformation in the economy suggests that although structural change has been there, it was found to be very moderate and has not been strong enough to bring about a major change either in terms of the growth centres of the economy or the main contributors to the growth of the economy. In conclusion one feels that we continue to remain a consumer/trading state and not a producer state. Is this socially desirable and sustainable is a question that needs to be addressed.

**Key words:** SDP growth rates, sectoral shares, service sector, producer services, consumer services, income and price elasticity, structural transformation

**JEL Classification:** O11, O18

## The Background

In recent years there has been increasing euphoria among the academicians and policy makers over the fact that the nineties have ushered in a high growth path for Kerala compared to the previous decades. This is because, while Kerala has been a model to other states for her achievements in social development, in terms of economic growth her performance has for long been very poor and a matter of deep concern. This turn around in growth rates is all the more significant because it is higher than even some of the advanced states like Karnataka<sup>1</sup>. However, the prospect for long term economic growth as well as its sustainability depends significantly on the changes in the structure of an economy and its evolution over time- economic structure defined as the sectoral composition of output, employment and labour productivity<sup>2</sup>. While a few studies have addressed the Kerala's nineties growth phenomenon in isolation<sup>3</sup>, and in the context of the new spate of literature on convergence and divergence of growth rates across states<sup>4</sup>, there are not many studies

---

1 Subrahmanian and Azeez, (2000), Ahluwalia, (2002.)

2 Kuznets (1959)

3 Subrahmanian (2005), Subrahmanian (2003), Pushpangadan (2003), Jeromi (2003) Harilal and Joseph (2000)

4 Subrahmanian (2003), Shetty (2003), Ahuliawala (2002), Reserve Bank of India (2002) among others.

which have specifically examined in depth the long-term trends in the growth of the Kerala economy particularly at a disaggregated level<sup>5</sup>. This study tries to fill this gap. It is an attempt to study the growth of the Kerala economy over the period 1970-2000. More specifically it is an analysis of the growth of the different sectors of the economy, the changes in the sectoral composition of output and other related issues. This study seems particularly relevant in the context of the recent debate on whether there has been a turnaround in the growth of Kerala economy<sup>6</sup>.

The paper is divided into three sections.

Section 1 begins with a discussion of concepts, data and methods used in the study and proceeds to analyse the overall and sectoral growth rates in the Net State Domestic Product (NSDP) and its changes over time since 1970. Section 2 tries to understand the nature and significance of the service sector growth, Section 3 deals with the sources of growth, structural transformation and the broad conclusions emerging therefrom.

## **Section 1**

### **Long Term Trends in NSDP**

As a background to the study of the long terms trends in the net state domestic product in Kerala, we provide a broad overview of the concepts, methods, and data used for the analysis.

#### ***a) Concepts***

The estimates of the income of a state have for long been accepted as an important indicator of the overall performance of its economy. These aggregates can be further broken down to obtain the sectoral

---

5 Pushpangadan (2003), Pillai (1994), Pushpangadan's study analyses the service sector alone at the disaggregated level. Pillai's study of long term trends is not at a disaggregated level.

6 For a recent debate on this issue see K.P.Kannan (2005), M. A. Oomen (2005), Suresh Babu (2005) among others.

estimates, their contributions, their growth etc. While the estimates of state income covering a long period of time reveal the magnitude and direction of growth of a state, its sectoral composition throws light on the relative position of the different sectors in the economy. An analysis of the changes in the growth and contribution of the sectors over time provides a measure of structural changes in the pattern of production and services<sup>7</sup>.

### **Concept of state income**

In any analysis of state income, it is necessary to clarify the concept of state income employed. Conceptually, the estimates of state income can be prepared either by the income originating approach or the income accruing approach. In the income originating approach, the measurement corresponds to income originating to the factors of production physically located within the geographical boundaries of a state and represents gross/net value of goods and services produced within that state during a given period of time usually a year. On the other hand, the income accruing approach relates to the income accruing to the normal residents of the state. For this one needs data on flows of factor income to/from the boundaries of the state as well as flows to/from abroad. For want of requisite data, presently estimates of SDP prepared by the State Statistical Bureaus follow the income originating approach although income accruing to the residents of a state is a better measure of welfare<sup>8</sup>. The state income estimates available and used in this paper are therefore a

---

7 The state income estimates are useful not only for the study of economic performance of any state, but are also an important tool for planning. For example, the Planning Commission, the Finance Commissions appointed from time to time etc have all made use of the estimates of state domestic product along with other indicators for allocating resources among the states, Khanna (1990). Economic and Political Weekly Research Foundation (EPWRF) (2003) among many others.

8 Kumar, Singh & Kar (2003).

measure of income originating within the boundaries of the state and are termed as Net State Domestic Product at factor cost<sup>9</sup>.

***b) Data and Methodology***

The first and foremost issue in any study of the long-term trends is the choice of an appropriate base year. More so in the case of National Accounts data which changes the base year every ten years. Ideally, it should be a normal year and somewhere near the middle of the series. It does not seem appropriate to use the last base year 1993-94<sup>10</sup> as done in most studies to project backwards to the seventies. This is because the commodity composition and relevance of commodities may be changing over time. Hence we use 1980-81 as the base year for our analysis covering the period 1970-71 to 1999-2000.<sup>11</sup>

It is important to note that the periodical revision of base year for the estimation of SDP at constant prices makes it very difficult to combine the different series and work out the growth rate for a long term period. Added to this, the revision of the methodology, concepts and the use of new sources of data etc from time to time and along with the base year changes results in significant differences between the estimates as per the old and new series. Hence the strict comparability of the different growth rates of SDP at constant prices are questionable and therefore

---

9 Although both gross state domestic product and net state domestic product can be used for the analysis taking into consideration the nature and availability of data it is held that conceptually net state domestic product is a better parameter than gross domestic product. For these reasons we also use the concept of net state domestic product for our analysis See Subrahmanian (2003), p48.

10 See Kannan (2005), K.K.Subramaniam (2005) among others.

11 Although the Directorate of Economics and Statistics has been publishing data since 1955-56 we begin our analysis only from 1970. This is because we have chosen 1980-81 as a base year for our analysis and stretching the analysis backward to a very long period may not be very meaningful. We have stopped the analysis with the year 2000, because we may get firm estimates perhaps for a year or more only and the rest would be provisional estimates. From our experience we have found provisional estimates to differ very much from revised estimates and interpretations based on them can be misleading.



should be interpreted with caution. This point is particularly more important when the sectoral shifts in the SDP and the relative growth rates of sectoral SDP at constant prices are interpreted<sup>12</sup>. It is for these reasons and since our focus is on a disaggregated analysis that we have developed a linked series for the analysis.

For the compilation of a linked series the available two standard concepts are (i.) The splicing method and (ii) reworking the estimates as per the current series methodology at the component or detailed item level<sup>13</sup>.

In the absence of availability of detailed backseries of SDP from all the states, an exercise to prepare the back series of aggregated estimates of GSDP, NSDP and per capita NSDP in respect of different states of the country, has been carried out using the method of splicing by the Economic and Political Weekly Research Foundation<sup>14</sup>. Source of the basic data used in this exercise has been the publications of respective State Directorates of Economics and Statistics. We make use of these

---

12 Pillai(1994)

13 To quote “the major problem in compiling back series estimates is in maintaining the growth rates of earlier series(volume movements in the case of constant price estimates) at not only the component level, but also at each level of aggregation. If the growth rates are maintained at component level and at each level of aggregation, the components may not add up to the aggregate level, which means that there is loss of additivity between the components and the estimates at the aggregate level. On the other hand, if the growth rates are maintained at the component level, and the aggregate is derived as a sum of the components, the growth rates of the aggregates in the linked series will be different from those in the earlier series. This is because the weighting diagram in the new series is the prices of different components in the new base year. The growth rates of the aggregates in the back years in the new series are now influenced by the price structure of the components of the new base year. “Back Series of SDP estimates by Kumar and Chandra (2003), p.93. It is also stated that only a few of the Departments of Economics and Statistics have so far been able to prepare a combined series of regional accounts statistics linking the estimates prior to 1993-94 with the new series.

14 Economic and Political Weekly Research Foundation (2003)

estimates. For years for which data are not available we make our own estimates using the splicing method<sup>15</sup>.

The growth behaviour of the state domestic product is the single most important indicator available for measuring overall performance of the state economy both for short and long term periods and for spatial comparisons. Different methods have been used by various scholars for calculating the growth of the economy ranging from average of annual percentage change to exponential fits.<sup>16</sup> Some researchers distinguish between growth rates to be used for short periods and long periods, and for states and the nation as a whole<sup>17</sup>. A review of all these methods suggest that a simple growth rate, namely the average of annual percentage change would be ideal for this study. We also find that studies on similar lines have adopted this method<sup>18</sup>. We now proceed to the analysis of the long term trends in the structure and composition of the net state domestic product in Kerala for the period 1970-71 to

15 In the compilation of its back series, the C.S.O. mainly reworked its estimates back up to 1980-81 and applied the splicing method for linking the estimates prior to 1980-81 EPWRF (2002), p.22.

16 For instance Subrahmanian (2003) preferred the use of growth rates estimated by fitting a semi-log trend. The growth rates for the sub periods were estimated by using a kinked exponential fit.

17 Growth rates for short periods are mostly computed using the two end observations of a period. ie first the base year (year before the commencement of the period) and second the terminal year of the period. The method of computing the growth rate for the short term period by using two end observations may be suitable at the national level since the abnormal variations in the performance of the economy of the different states get more or less smoothed over the larger area of the country and as a result the trend of the national economy over time may not reveal any significant distortion. However in the case of states especially where the economy witnesses large fluctuations, the method of computing growth rates by using end years only is not found to be suitable. Considering therefore the erratic pattern in the movement of the state economy, it becomes imperative that the value of each year of the intervening period is taken into consideration in computing the short period growth. It is also suggested that the growth rates over long periods could be worked out by fitting a trend-line to logarithm of the SDP at constant prices. Thus one has to make a rational choice of a rate from among several rates Patel and Pandya (1990).

18 Choudhury (1995), Sivasubramonian (2000).

1999-2000 with 1980-81 as the base year dividing it into three sub periods, 1970-71- 1979-1980,1980-81-1989-90, 1990-91-1999-00, and for the whole period 1970-2000. In the recent discussion on Kerala's turnaround in growth, 1987-88 has been identified as the year (based on a kink in the NSDP data) when Kerala entered into the high growth phase. An important point which we would like to stress in this context, is that exercises on locating kinks using rule of thumb methods can lead to arbitrary conclusions. They have also been found sensitive to the choice of the base year<sup>19</sup>. Hence we go for a decadal analysis.

### **Overall and Sectoral Growth Rates in Net State Domestic Product**

An analysis of the simple growth rates (average annual percentage change in NSDP) for the periods 1970-71 to 1979-80, 1980-81 to 1989-90 and 1990-91 to 1999-2000 and for the three main sectors viz. primary, secondary and tertiary in constant prices provides a profile of the decadal growth experience of the Kerala economy (See Table 1 and figure 1).

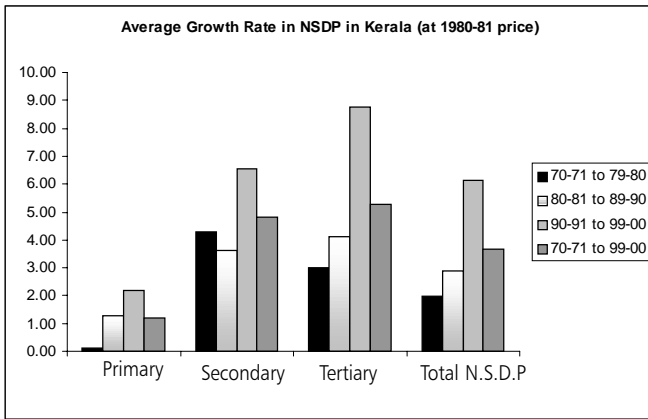
**Table 1. Average Growth Rate in NSDP in Kerala (1980-81 Prices)**

Period	Primary Sector	Secondary Sector	Tertiary Sector	Total N.S.D.P
70-71 to 79-80	0.14	4.28	3.01	1.97
80-81 to 89-90	1.28	3.62	4.11	2.87
90-91 to 99-00	2.17	6.53	8.75	6.12
70-71 to 99-00	1.20	4.81	5.29	3.65

Source: EPWRF-Domestic Product of States of India (2003)

Source: Department of Economics and Statistics (2004)

<sup>19</sup> Hence where it is necessary to test for the existence of two distinctly different phases in growth, recent literature suggests the best way to do it would be to test for the existence of a structural break. (See Hansen (2001).



**Figure 1**

The analysis of the long-term trend in NSDP of Kerala shows that in the seventies and the eighties the rate of growth of NSDP, although slowly increasing, was very low. In contrast to this the nineties or the period of the economic reforms witnessed a sharp increase in the growth rate of the economy. That is the growth rate, which was 1.97 percent during 1970-71 to 1979-80 increased to 2.87 percent during the period 1980-81 – 1989-90 but rose to 6.12 percent during the period 1990-91 - 1999-2000. For the period as a whole the growth rate was only 3.65 percent. Sector wise growth rates also present some interesting results. While the primary sector registered a low growth rate during the first period it recovered during the second period and third period, the growth rates moving from 0.14 to 1.28 and 2.17 percent respectively. For the period as a whole, the growth rate was a low of 1.20 percent suggesting that the primary sector is not a promising sector for the economy. As for the secondary sector growth rates have been fluctuating, the first phase recording 4.28 percent followed by a decline in the second period to 3.62 percent and a good recovery to 6.53 percent during the third period. On an average over the whole period the sector recorded only a growth rate of 4.81 percent. Thus the two commodity producing sectors do not

seem to have been doing on an average well although in the nineties they show some recovery. In contrast to these two sectors, the tertiary sector growth rates steadily increased from 3 percent during the 1970's to 4.11 percent in the 1980's and to 8.75 percent in the 1990's with an average growth rate of 5.29 percent for the period as a whole, recording the highest average growth among the three sectors, during the eighties, nineties and for the period as a whole. Thus as against the commodity sectors it is the tertiary sector, which has been the high growth sector of Kerala's economy since the eighties. While this has been the historical profile of growth it must be observed that during the period of the economic reforms all the three sectors have experienced better growth rates.<sup>20</sup> One important factor which needs to be examined in this context is to see whether the sectoral growth rates are uniformly spread across the sub-sectors. In other words, are there leading and lagging sectors within each sector?

### **Pattern of Sectoral and Sub-Sectoral Growth Rates**

We may now look at the growth of sub sectors within sectors in order to gain more understanding of the sectoral performance. Table 2 gives the details. Two types of analysis are carried out here (1) Sectoral growth rates are compared with SDP growth rates to identify growing sectors in each period and (2) sub-sector growth rates are compared with sectoral growth rates to identify the lagging and leading sectors within sectors or intra sectoral variations in growth.

As is evident from Table 2 over the entire period of study, 1970-71 to 1999-2000 NSDP has registered on an average only a growth rate of 3.65 percent. For the same period the primary sector registered a

---

20 A quick analysis of the average growth rates in terms of current prices brings out the following. (1) Broad trends are the same between current and constant growth rates except in one or two cases (2) Price increase has been high and also varies across sectors. In the interests of brevity we do not present the details here

**Table 2. Average Growth of Sub Sectors (1980-81 prices) (Percentage)**

Industry of origin	70-71 to 79-80	80-81 to 89-90	90-91 to 99-00	70-71 to 99-00
Agriculture	0.46	2.24	2.23	1.64
Forestry & logging	-1.28	-10.76	6.60	-1.81
Fishing	-0.86	-1.70	0.04	-0.84
Mining & quarrying	8.18	18.13	3.92	10.08
<b>Sub-total primary</b>	<b>0.14</b>	<b>1.28</b>	<b>2.17</b>	<b>1.20</b>
Manufacturing - Registered	5.84	8.58	7.22	7.21
Manufacturing Unregistered	2.45	2.42	3.72	2.87
Electricity, Gas & Water supply	11.27	34.89	18.84	21.67
Construction	4.26	1.20	7.32	4.26
<b>Sub-total secondary</b>	<b>4.28</b>	<b>3.62</b>	<b>6.53</b>	<b>4.81</b>
Trade, Hotels & Restaurants	0.96	2.48	5.97	3.13
Railways	2.45	9.17	9.33	6.99
Transport by other means	5.64	7.33	13.98	8.98
Storage & Communications	8.21	6.74	18.17	11.04
Banking & Insurance	11.11	13.59	12.70	12.46
Real estate, ownership of dwelling and Business services	2.95	-13.84	-4.48	-5.12
Public administration	7.44	8.01	7.39	7.61
Other Services	2.88	1.93	6.55	3.79
<b>Sub-total tertiary</b>	<b>3.01</b>	<b>4.11</b>	<b>8.75</b>	<b>5.29</b>
<b>Total N.S.D.P</b>	<b>1.97</b>	<b>2.87</b>	<b>6.12</b>	<b>3.65</b>

Source : Same as Table 1

still lower growth rate (1.20), lower than SDP and lowest among the sectors. During the decade of the seventies the primary sector registered a growth rate of (0.14) only as against a low but positive SDP growth rate (1.97) again the lowest among the sectors. In the eighties though

the primary sector recorded a higher growth rate (1.28) it was still lower than the SDP growth rate (2.87) and that of secondary and tertiary sectors ie, 3.62 and 4.11 respectively. Primary sector showed highest growth rate during the nineties (2.17) yet far lower than the SDP growth rate (6.12) and lowest among the three sectors.

Thus the primary sector has consistently recorded both the lowest rates of growth among the three sectors, and always below that of SDP. All these suggest that the primary sector has never been a fast growing sector of the economy, However, one can categorically say this only after examining the sub-sectoral growth rates within the primary sector.

Coming to the secondary sector, for the period as a whole the sector recorded a slightly higher rate (4.81) than that of SDP (3.65), but on an average lower than the tertiary sector (5.29). During seventies, it recorded the highest growth rate (4.28) compared to all other sectors and more than double that of NSDP (1.97). But in the eighties the growth rate of the secondary sector not only declined sharply to 3.62 but even became lower than the growth rate of the tertiary sector (4.11). In the nineties the secondary sector growth rate increased sharply to 6.53 and was slightly higher than that of SDP (6.12) and much lower than that of the tertiary sector with 8.75. Thus in the seventies Kerala economy was driven by the high growth of the secondary sector while in the eighties it was pulled down by a low growth secondary sector when it gave way to the tertiary sector. This trend continued in the nineties despite a good recovery of the secondary sector in this period.

As for the tertiary sector, for the period as a whole it recorded a rate higher than that of SDP and the highest among the sectors, 5.29%. In the seventies the tertiary sector recorded a growth rate of 3.01, a growth rate lower than the secondary sector (4.28), yet higher than that of NSDP (1.97). In the eighties also the service sector increased its growth rate to 4.11, the highest among the sectors and higher than the growth of NSDP (2.87). In the nineties the tertiary sector has registered the highest growth rate ever

achieved in the past as well as across the sectors (8.75), and much above the SDP growth rate (6.12).

Thus the tertiary sector has maintained growth rates consistently higher than the SDP throughout the three decades and higher than the other sectors (except for the seventies) implying the significance of this sector in the economy as the main propeller of growth. This only affirms our analysis relating to the commodity, and non-commodity sectors. However, this needs to be confirmed by examining the sub-sectoral growth rates as well. First we identify the leading sub-sectors within sectors and the changing patterns over time and then within the economy.

Decadal analysis of the sub-sectoral growth rates within the primary sector shows (Table 2) that mining and quarrying have been doing well in the seventies (8.18) and the eighties (18.13) both in relation to the sectoral growth rate as well as the SDP. In the nineties forestry and logging have been doing well (6.60). While agriculture has been doing well during the seventies and eighties relatively to fishing and forestry and logging which have been displaying negative growth rates, the picture changes in the nineties with agriculture growth rate being only 2.23 while mining sharply declined to 3.92 and fishing showed small improvements from a negative growth rate to a positive (0.04%) growth rate. Thus while mining was a lead sector within the primary sector in the seventies and eighties, in the nineties it is forestry and logging. In the nineties both agriculture, forestry & fishing show signs of recovery and have achieved the highest ever-recorded growth rate during the entire period.

To summarize, there are sub-sectors within the primary which have done well, and the overall growth rate is low because of negative growth rates of certain subsectors, like forestry and logging and fishing. A consistent lead sector in the primary sector is mining & quarrying. In the nineties one finds a general buoyancy in the primary sector with forestry showing growth rates greater than the sectoral growth rates and the SDP growth rate. We do not intend to discuss the impact of the above trends on the economy of Kerala as it is beyond the scope of this paper.



Coming to the secondary sector in the seventies the high growth sub-sectors were electricity, gas and water supply, (11.27) and registered manufacturing (5.84) both in relation to the secondary sector (4.28) as well as the economy, (1.97). With respect to the eighties, again registered manufacturing (8.58) and electricity gas and water supply (34.89) alone witnessed high growth. In the nineties in sharp contrast to the eighties growth rates slightly declined for registered manufacturing (7.22) but unregistered manufacturing showed an increase in growth rates. Electricity continued to show high growth rates (18.84) both in relation to the sector and to the economy in the nineties also. In the nineties growth rates have risen for construction (7.32). Overall, that is for the period (1970-2000) electricity and registered manufacturing show high growth rate. But there are definite signs of the secondary sector growing in the nineties.

Regarding the tertiary sector in the seventies, while on an average the sector recorded only a growth rate of 3%, growth within the sector, was widespread with banking, and insurance (11.11%), public administration (7.44%) and lastly storage and communications (8.21%) showing good growth rates. In the eighties the order became banking and insurance (13.59%), railways (9.17%), public administration (8%) and transport by other means (7.33%), while real estate showed negative growth rates. The nineties saw a sharp change with storage and communication (18.17%), transport by other means (13.98%), banking and other services (12.70%) and railways (9.33%) accounting for high growth rates, while real estate showed negative growth rates. Thus there are wide fluctuations in the growth of sub-sectors, with a few showing consistently high growth rates - banking and insurance, storage and communications, transport by other means and public administration. Clearly the tertiary sector is the sector propelling the growth of the economy since the eighties, and more so during the nineties.

Coming to long term growth rates for the period as a whole, sub-sector components like mining and quarrying (10.08%) in the primary

sector, registered manufacturing (7.21%), electricity, gas & water supply (21.67%) in the secondary sector, on an average, registered a much higher growth rate than the growth rate of SDP. Coming to the service sector all the sub sectors other than trade, hotels and restaurants and real estate and the category 'other services' registered higher growth rates than the SDP growth rate. It is interesting to note that negative growth rates were also recorded in the sub -sectors of forestry & logging and fishing in the primary sector and real estate ownership of dwelling and business services in the tertiary sector. None of the sub sectors in the secondary sector however registered negative growth rates.

Summarizing the long term trends in growth that is for the period as a whole, it is observed that the tertiary sector has the highest average growth rate (5.29%), followed by secondary sector (4.81%) and a low 1.20 for the primary sector and a growth rate of 3.65% for the SDP. Sub-sector wise two digit high growth rates are seen only in mining, and quarrying, electricity, banking and insurance and storage and communications. Registered manufacturing, railways, transport by other means, and public administration follow with greater than 5% growth rates.

Sectoral and sub- sectoral analysis in current prices shows that both in terms of magnitude as well as trends there are some differences between the current and constant series and such differences vary across sectors implying that price rise differs across sectors.

### **The Relative Shares of Sectors in NSDP**

The relative shares of three sectors during the period 1970-71 to 1999-2000 (See table 3) shows that for the entire period tertiary sector has been the major contributor (39.20 %) followed closely by the primary sector with 37.61%. However, the decadal trends demonstrate interesting patterns. In the seventies, it was the primary sector that dominated (45.10%) followed by the tertiary with 34.37%. The picture changed since then. In the 1980's it was the tertiary sector (39.85%) that became

**Table 3. Share of Sub- Sectors in NSDP (80-81) Prices (Percentage)**

Industry of origin	70-71 to 79-80	80-81 to 89-90	90-91 to 99-00	70-71 to 99-00
Agriculture	38.41	33.23	29.24	33.63
Forestry & logging	3.93	1.44	0.54	1.97
Fishing	2.66	1.60	1.33	1.87
Mining & quarrying	0.10	0.15	0.19	0.15
<b>Sub-total primary</b>	<b>45.10</b>	<b>36.42</b>	<b>31.32</b>	<b>37.61</b>
Manufacturing Registered	6.53	8.52	8.13	7.73
Manufacturing Unregistered	6.62	6.33	7.08	6.68
Electricity, Gas & Water supply	0.92	0.74	1.44	1.04
Construction	6.45	8.14	8.65	7.75
<b>Sub-total secondary</b>	<b>20.52</b>	<b>23.73</b>	<b>25.31</b>	<b>23.19</b>
Trade, hotels & Restaurants	15.81	15.04	13.53	14.80
Railways	0.10	0.18	0.17	0.15
Transport by other means	2.34	3.73	7.25	4.44
Storage & Communications	0.44	0.81	1.32	0.86
Banking & insurance	2.32	4.86	8.75	5.31
Real estate, ownership of dwellings & business services	3.12	2.29	0.11	1.84
Public administration	2.33	5.08	5.51	4.31
Other services <sup>21</sup>	7.91	<b>7.87</b>	<b>6.67</b>	<b>7.49</b>
<b>Sub-total tertiary</b>	<b>34.37</b>	<b>39.85</b>	<b>43.36</b>	<b>39.20</b>
<b>Total N.S.D.P</b>	<b>100.00</b>	100.00	100.00	100.00

Source: Same as Table 1

21 Other services includes educational services, research and scientific institutions, medical and health services, veterinary services, sanitary services, recreation and entertainment services, international and other extra territorial services and rest of the services covering personal services, community services and services NEC and tailoring services (EPW 2003, p87-88).

dominant followed by the primary (36.42). That pattern gained strength in the nineties when the tertiary sector share grew to a high of 43.36 percent while that of the primary declined to 31.32%. It is disturbing to note that in all the three decades the share of secondary sector has been the lowest and has marginally increased from 20 to 25 percent.

Thus the increase in the share of the tertiary sector has been at the expense of the primary sector. Alternatively one could say that the decline in the share of the primary sector has been offset both by the increase in the share of the tertiary sector and to a smaller extent increase in the share of the secondary sector.

Sub-sectoral analysis shows that for the period as a whole agriculture is the major sub-sector within the primary sector (33.63 %) and continues to be so even today in terms of its contribution (29.24%) to the state domestic product. The decline of the primary sector share thus also can be attributed to the decline in agriculture' share.

Within the secondary sector construction's contribution is 7.75% while registered manufacturing with 7.73% and unregistered manufacturing with 6.68% contribute more or less equally. Except for electricity, gas etc (1.04%) there seems to be a more or less equal distribution of the state domestic product within this sector.

For the period as a whole within the tertiary sector trade hotels and restaurants predominate with 14.80% while other services contributed 7.49%, banking 5.31%, transport by other means 4.44% and public administration 4.31%. From seventies to eighties and to the nineties trade, hotels and restaurants share declined from 15.81%, to 15.04% and to 13.54 % respectively while transport by other means has increased its contribution from 2.34% to 3.73% and 7.25% and banking from 2.32% to 4.86% to 8.75%. Public administration's share increased from 2.33% to 5.08% and further to 5.51%

It is interesting to note that all the sectors (except trade, hotels and restaurants, real estate and other services which showed decline in shares)

showed steady increase in shares and the increase in the share of the tertiary sector can be attributed to these sub-sectors.

Over the three decades agriculture, which contributed about 29-38%, trade 13-16% continues as major contributors even today. In the seventies registered manufacturing with 6%, unregistered manufacturing with 6%, construction 6% and other services with 8% followed them. The eighties saw some shift in the industrial composition of the state domestic product with transport by other means, and storage and communication and banking and insurance and public administration increasing their share from the seventies to the eighties and also in the nineties.

Thus since the eighties there are some signs of change and this movement has strengthened in the nineties but the major contributors to SDP continue to remain the same suggesting that the changes have not been strong enough to bring about a marked change in the structure of output in terms of income originating in the economy.

Thus our analysis shows that both in terms of rates of growth and share of NSDP the tertiary sector has predominated since the eighties and this has further strengthened in the nineties.

The implications of this growth pattern for the economy's medium and long-term growth would depend very much on the pattern of growth of the tertiary/ service sector. Section 2 looks into these issues.

## **Section 2**

### **Pattern of Growth of the Service Sector**

Two major views that exist on the growth and predominance of the service sector in an economy are:

- 1) It is an engine of growth or necessary concomitant of growth resulting from the growth of skill intensive, high value added sectors such as software, communications, financial services etc.

- 2) It is reflective of a mutation of growth- it is a sector, which absorbs the shocks of the agricultural and industrial sectors leading to the growth of low skilled service activities.

How to categorize an economy's service sector growth in relation to the above-mentioned views would very much depend on the specificities of the growth of the sector. Service sector covers a broad spectrum of activities; some conducive to production, some for consumer satisfaction or an amalgam of the two. For a proper understanding of the possible linkages the exact growth centres within the service sector needs to be identified.

It is pertinent in this context to decompose the various segments in the service sector and see in which segment growth has occurred. For empirical analysis<sup>22</sup> sub sectors such as trade transport and communication, banking and insurance, real estate and business services can be categorized as producer services, while Hotels, restaurants and other services are treated as consumer services. (Other service category includes those services offered by government and private agencies in various areas such as health care, education etc.) Government services comprise public administration. We have adopted this classification with minor variations. In this analysis we have treated the category 'Other services' as a separate group given its importance in the economy while the Reserve Bank of India study puts it under consumer services. Again since no separate data on trade is available, it gets clubbed with hotels and restaurants and would be treated as consumer services. The average share of these sub sectors groups in value added is given in Table 4.

---

22 Reserve Bank of India, Report on Currency and Finance 2000-01(2002) Ch. III, pp 39.

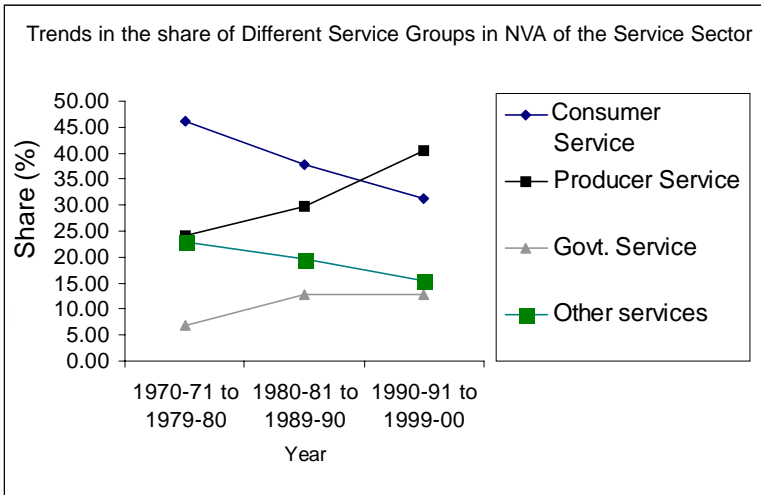
**Table 4. Percentage Share of Different Service Groups in Net Value Added of the Service Sector**

Sectors	Period		
	1970-71 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-00
Consumer Service	46.10	37.83	31.39
Producer Service	24.12	29.69	40.37
Govt. Service	6.77	12.68	12.78
Other Service	23.01	19.79	15.46
Total Service Sector	100.00	100.00	100.00

Source: Same as Table 1.

It is interesting to see from table 4 that consumer services dominated in the seventies and constituted around 46 % followed by producer services and other services. The share of consumer services came down to 38 % in the 80's and further to 31% in the 90's. Producer services witnessed steady increase in its share from 24.12 % in the seventies to 30 % in the 1980's and still further to 40 % in the 1990's. As for government services, its share increased from 7 % in the 1970's to 13 % in the 1980's and stagnated at that level in the 1990's. Other services' share steadily declined from 23 % during the 1970's to 20% in the 1980's and 15 % in the 1990's. Thus in the 1990's it is the producer services which have contributed most to value added in the service sector as a whole. This broadly corresponds to the all India pattern though there are minor definitional differences.

Graphical illustration of the data clearly brings out the trends. (Figure 2)



**Figure 2**

It would be interesting to see which of the producer services' share contributed the most. Producer services comprise of the sectors of railways, transport by other means, storage and communications, banking and insurance, real estate and ownership of dwellings.

Table 5 shows that in the 70's transport by other means (28.12%), real estate (37.82 %) and banking and insurance (27.59%) were the major contributors. Communication and railways were low and negligible respectively. This structure remained even during the 80's but the share of real estate sharply came down to 20%, transport rose to 31%, while banking and insurance increased to 40. In the 90's the major contributors decreased to two i.e, banking and insurance with nearly 50 per cent and transport by other means with 41%. The big change was with respect to real estate whose share fell to 0.74. Railways and communications continued to maintain their position through out the period. Thus the sharp increase in the share of the producer services in the total value added in the economy may be largely attributed to the increases in the shares of the banking and insurance sector and to a lesser extent to

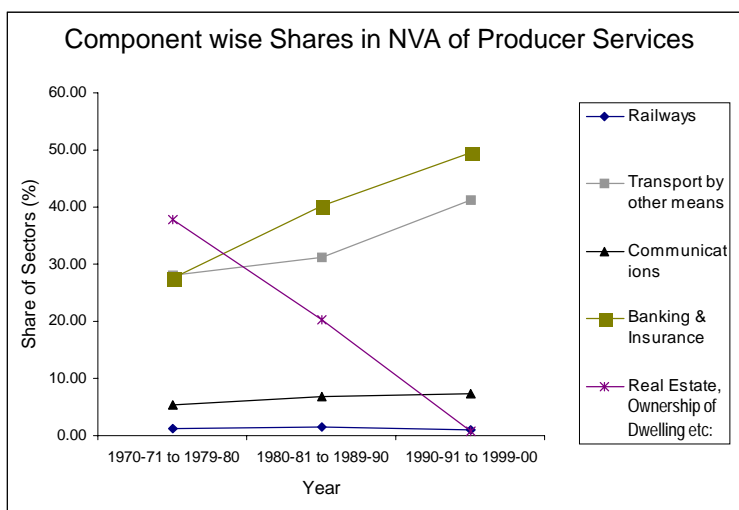


**Table 5. Share of Various Components in Net Value Added of Producer Services**

	1970-71 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-00
Railways	1.19	1.50	1.06
Transport by other means	28.12	31.19	41.21
Storage & Communications	5.28	6.83	7.38
Banking & Insurance	27.59	40.23	49.61
Real Estate, ownership of Dwelling etc	37.82	20.25	0.74
Total	100.00	100.00	100.00

Source: Same as Table 1

transport by other means in the eighties and to the sector of banking and insurance and transport by other means in the nineties. Graphical illustration of the data shows the trends more clearly.



**Figure 3**

### Income and Price Elasticity of Demand for Services

A rising share of the service sector in NSDP is very often attributed to rising income and in Kerala it has very often been attributed to the increasing remittances leading to increasing demand for services. Two issues that need to be examined in this context are 1. Is the service sector as a whole income/price elastic 2. Does this differ across various service groups. Following the earlier classification and using the formula<sup>23</sup>

$$\text{Log RNSDP}_s (\text{s is subscript}) = a + a_1 \text{ logRNSDP} + a_2 \text{ log(PDEFs/PDEF nsdp)}$$

Income and price elasticities of the various groups within the service sector are estimated.

Where RNSDPs = Real NSDP (or net value added) of service sector as a proxy for expenditure on services.

RNSDP = Real NSDP

PDEFs = Price deflator in services sector and

PDEF nsdp = Price deflator of overall NSDP.

**Table 6. Income and Price Elasticity for the Service Sectors in Kerala (1970-71 to 2000-01)**

Sector	Income elasticity	Price elasticity
Service Sector	1.33	-0.48
Consumer service	0.79	0.01
Producer service	1.74	-0.65
Government service	1.11	-1.49
Other service	0.75	-0.19

Statistically significant at 1% level.

<sup>23</sup> We use the methodology followed by the Reserve Bank of India, except that we use net domestic product instead of gross domestic product Reserve Bank of India (2002)

Table 6 shows that for the service sector as a whole income elasticity is greater than 1, while price elasticity is negative and less than one. Income elasticity is also greater than one for producer services as well as government services. For both sectors price elasticity is negative, and greater than one for government services. Thus overall for tertiary sector and for these two groups the demand for services increases with increase in income but decreases with increase in prices. The responsiveness of producer services to changes in income is the highest amongst all. This together with its high share in total services suggests that the service sector growth has linkages to production sector. It is interesting to note that income elasticity for consumer services is less than one while price elasticity is positive but is very small and not significant. As for the group “other services” income elasticity is less than one and price elasticity is negative.

Thus our analysis of the service sector suggests the following. The main source of value added in the services sector has been the producer services and within the producer services the sector of banking and transport by other means suggesting that the services sector growth has strong linkages with the production sector. Producer services largely cover infrastructure industries. It is also possible that services like advertising, publicity, marketing, IT related activities, repair and maintenance shops, etc have become important services industries. But what becomes a matter of concern to the economy would be whether these service activities are related to production within the state.

### **Section 3**

#### **Sources of Growth**

Hitherto we have analysed the behaviour of the regional economy in terms of either growth rates or share. However, to get a clear picture of the contribution of a sector to the economy’s growth, it is important to consider the growth rate and its sectoral contribution taken together.

By taking the shares of each sector weighted by its growth rate it is possible to get the weighted growth rate of each sector<sup>24</sup>. The contribution

**Table 7. Contribution of different sectors to NSDP growth (%)**

Industry of origin	1970-71 to 1979-80	1980-81 to 1989-90	1990-91 to 1999-00	1970-71 to 1999-00
Agriculture	8.42	21.58	10.05	13.93
Forestry & logging	-2.38	-4.48	0.56	-0.90
Fishing	-1.09	-0.79	0.01	-0.40
Mining & quarrying	0.39	0.80	0.12	0.38
<b>Sub-total primary</b>	<b>5.34</b>	<b>17.10</b>	<b>10.73</b>	<b>13.01</b>
Manufacturing Registered	18.10	21.19	9.05	14.05
Manufacturing Unregistered	7.70	4.44	4.07	4.82
Electricity, Gas & Water supply	4.90	7.52	4.21	5.66
Construction	13.04	2.82	9.77	8.32
<b>Sub-total secondary</b>	<b>43.74</b>	<b>35.98</b>	<b>27.10</b>	<b>32.85</b>
Trade, hotels & Restaurants	7.19	10.80	12.46	11.69
Railways	0.11	0.48	0.26	0.27
Transport by other means	6.24	7.92	15.64	10.05
Storage & Communications	1.71	1.58	3.73	2.39
Banking & insurance	12.23	19.14	17.15	16.69
Real estate, ownership of dwellings & business services	4.37	-9.19	-0.08	-2.38
Public administration	8.23	11.79	6.29	8.27
Other services	10.82	4.40	6.74	7.14
<b>Sub-total tertiary</b>	<b>50.92</b>	<b>46.92</b>	<b>62.17</b>	<b>54.13</b>
<b>Total N.S.D.P</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

Source: Same as Table 1

24 It is to be noted that since the individual items do not add up, probably due to averaging, the data has been normalized.

to NSDP growth of each of these sectors can then be estimated Table 7 below gives the results of such an exercise.

It is interesting to note that since the seventies, the tertiary sector has been the biggest contributor to growth contributing on an average about 54% for the whole period. In the nineties its contribution is as high as 62% clearly indicating that the nineties growth phenomenon can be attributed to the growth of this sector.

As for the commodity sectors, the secondary sector followed the tertiary sector with a contribution of 33% on an average. However, it is disturbing to note that the secondary sector's share has steadily declined from 43.74% in the seventies to 35.9% in the eighties and to 27% in the nineties. Primary sector, which showed some promise in the eighties recording an increase in its share from 5.34% in the seventies to 17% in the eighties, has reduced its contribution to 10% in the nineties. On an average its contribution to the economy's growth is only 13%.

Thus the rise in the contribution of the primary sector in the eighties has been at the expense of the secondary sector and to a smaller extent the tertiary sector. In the nineties the rise in the contribution of the tertiary sector has been at the expense of the secondary sector and the primary sector

Sub-sector wise we have observed some interesting patterns. In the seventies main contributors were registered manufacturing (18.10%), and construction (13.04%) within secondary sector, and banking with 12.23%, other services with 10.82% and public administration with (8.23%) in the tertiary sector. Unregistered manufacturing with 7.70% and trade, hotels and restaurants with 7.19% and transport by other means with another 6.24% followed. Except for agriculture with 8.42% primary sector was a poor contributor to growth. 94.66% of the growth of the economy came from the secondary and tertiary sectors with the latter having a higher share.

In the eighties some major shifts occurred with agriculture contributing 21.58%, registered manufacturing (21.19%) banking

19.14%, public administration 11.79%, and trade, hotels and restaurants with 10.80%, followed by Electricity with 7.52% and transport by other means with 7.92%. While registered manufacturing and banking increased their contributions, and continued as important sources of growth, agriculture and trade, hotels and restaurants and public administration emerged as two important new propellers of growth. In contrast both construction and other services lost their positions.

The nineties saw the sudden emergence of transport by other means (15.64%) as the second largest contributor to growth next to banking (17.15%) followed by trade, hotels and restaurants increasing their contribution to 12.46%. Agriculture with 10.05%, registered manufacturing with 9.05%, and construction with 9.77% followed. Sharp declines are seen in the nineties with respect to the contribution to growth of agriculture from 21.58% in the eighties to 10.05% in the nineties, and registered manufacturing which fell to a mere 9.05%, from 21.19% in the eighties and public administration's from 11.79% to 6.29% for the same period.

Regrouping the tertiary sector by type of services (See Table 8) shows that producer services always contributed the most - the contribution to growth of the producer's services being the highest in the nineties viz, 37%. Producer's services was followed by other services and government services in the seventies, and government services and consumer services in the eighties. In the nineties the order was producer services, followed by consumer services and other services.

Within producer services the main contributors in the seventies were banking, transport by other means and real estate. In the eighties it was banking and transport by other means. This has continued in the nineties with transport by other means emerging as a large contributor (15.64%) both within producer services and in the whole of the tertiary sector, contributing almost equally as banking and insurance (17.15).

**Table 8. Contribution to growth of different service groups (%)**

Year	1970-80	1980-90	1990-00	1970-00
<b>Consumer Service</b>				
Trade, hotels & Restaurants	7.19	10.80	12.46	11.69
<b>Producer Service</b>	24.66	19.92	36.69	27.02
Railways	0.11	0.47	0.26	0.27
Transport by other means	6.24	7.92	15.64	10.05
Storage & Communications	1.71	1.58	3.72	2.39
Banking & insurance	12.23	19.14	17.15	16.69
Real estate, ownership of dwelling etc	4.37	-9.19	-0.08	-2.38
<b>Govt. Service</b>				
Public administration	8.23	11.79	6.29	8.27
<b>Other Services</b>	10.82	4.40	6.74	7.14
<b>Total Services</b>				
<b>Contribution to NSDP</b>				
<b>Growth rate</b>	<b>50.92</b>	<b>46.92</b>	<b>62.18</b>	<b>54.13</b>

Source: same as Table 1 Totals do not add up exactly because of rounding

One sharp deviation from the earlier trend is the decline of public administration in the nineties as a source of growth compared to the eighties and the rise of consumer services in the eighties and nineties. Other services which was a major contributor in the seventies (10.82) also lost its place over the years with a contribution of only 6.74% in the nineties.

A priori the growth of producer services which can be largely categorised as infrastructure industries seems to have both intra -sectoral and intersectoral and perhaps interregional linkages. What insights does this provide for the nineties growth phenomenon?

Within the service sector producer's services, more specifically banking and insurance, transport by other means and to a certain extent communications seems to have provided the stimulus for the growth of the consumer services, such as trade<sup>25</sup>, hotels and restaurants. The growth of the two producer services namely banking and transport by other means itself could be related. However, its linkages to the domestic productive sectors seem weak, construction alone being a sector which has shown some recovery in the nineties, most of the other sectors recording declining contributions over the years. This suggests that the growth of the services sector is related to the growth of the productive sectors elsewhere; if not in Kerala.

To summarize it is the noncommodity sectors that have contributed to the recent nineties growth. The newly emerging growth centres in Kerala in the nineties are transport by other means, trade, hotels and restaurants while banking continued as a lead sector. It is disheartening to note that registered manufacturing has lost its role in the economy's growth. It is quite possible that the development of the service sector in Kerala and in particular the producers's services is having strong linkages with the production sector in other regions while Kerala continues to remain a consumer/ trading state.

### **Structural Transformation in Kerala**

The preceding discussion raises certain issues on what constitutes structural transformation? Some changes in sectoral contributions have undoubtedly taken place yet the main contributors to SDP continue to remain the same. Do these changes indicate structural transformation?

---

25 Here a note of caution is warranted. It would be useful to remember that trade forms part of producer's service. Since no separate data is available for this sector, it had to be put under consumer services. The results have to be interpreted bearing this in mind. In other words, it implies producer services are underestimated while consumer services are overestimated.



We use three indicators to test for structural transformation in the economy. We estimate rank correlation coefficients for a) sectoral shares, b) growth rates and c) sectoral contributions to growth. (growth rates are weighted with their sectoral shares and their contribution to growth of the economy estimated) for period I and II (1970-71 to 1979-80 and 1980-81 to 1989-90) and periods I and III (1970-71 to 1979-80 and 1990-91 to 1999-2000). Our results showed that rank correlation coefficients in the case of sectoral shares have declined from 0.88 to 0.62 and are significant at 1% and 5% level respectively. These results are further subjected to the t test and the difference in the correlation is found to be significant. This suggests that there has been structural transformation (It is important to note that the second coefficient value is as high as 0.62 and perhaps is indicative of only a moderate structural change over a long thirty year period. See table 9). Given this, it becomes important to see whether this has any implications for the growth centres of the economy or the contributors to growth. In the case of growth rates, coefficients have declined from 0.71 to 0.65 but the differences are not found to be significant, implying no change in growth centres. Again, when we consider the contributors to growth, the coefficients show no change. The decline is from 0.75 to 0.74 only. This suggests that although structural change has been there it has been very moderate

**Table 9. Rank Correlation Coefficients**

	70-71 to 79-80 / 80-81 to 89-90		70-71 to 79-80 / 90-91 to 99-00	
	Rank Correlation	Significance level	Rank Correlation	Significance level
Share of subsectors	0.88	0.01	0.62	0.05
Growth of sub sectors	0.71	0.01	0.65	0.05
Contribution of different sectors to NSDP growth	0.75	0.01	0.74	0.01

and has not been strong enough to bring about a major change either in terms of the growth centres of the economy or the main contributors to the growth of the economy.

### **Summary and Conclusions**

This paper is an enquiry into the long-term growth process of the regional economy of Kerala for the period 1970-71 to 1999-2000. Analysis of the growth and structure of the economy reveal the following.

In terms of income originating in the economy, agriculture and trade continue as major contributors even today although their shares together has declined from 54% in the seventies to 42% in the nineties. Individually also their shares have declined. Since the eighties there are some signs of change and this movement has strengthened in the nineties, but the changes in the composition of output do not seem to have been strong enough to bring about a marked change in the structure of the economy. Nevertheless, these are some strong indicators of the emerging trends.

What is observed is that in the eighties and more so in the nineties, both in terms of rates of growth and share in NSDP the tertiary sector has predominated which has largely been brought about by the growth of the producer services. The increase in the share of producer services in the eighties can be largely attributed to the sectors of banking and insurance and in the nineties to banking and insurance and transport by other means. It is also seen that for the tertiary sector as a whole as well as for the different service groups within it, the demand for services increases with increase in income but decreases with increase in prices. Income responsiveness of producer services is found to be the highest 1.74.

Growth of producer services presupposes linkages with the production sector. The sharp and steady decline in the contribution of the secondary sector to growth and particularly that of registered manufacturing suggests that the linkages with production are not within

the state and may be with the productive sectors of other states. So is the case with the primary sector. Nevertheless our analysis of the sources of growth suggests that there are some intersectoral linkages with consumer services and intra sectoral linkages between banking and transport by other means.

Analysis of structural transformation in the economy suggests that, although structural change has been there, it was found to be very moderate and has not been strong enough to bring about a major change either in terms of the growth centres of the economy or the main contributors to the growth of the economy.

---

***P. Mohanan Pillai** is Fellow at the Centre for Development Studies, Thiruvananthapuram. His main areas of research interests are Industrial Economics and Regional Economics.*

*E.mail: mpillai@cds.ac.in*

***N. Shanta** is Associate Fellow at the Centre for Development Studies, Thiruvananthapuram. Her main areas of research interests are Industrial Economics and Applied macro Economics.*

*E.mail: shanta@cds.ac.in*

## References

- Ahluwalia, Montek Singh (2002) "State Level Performance under Economic Reforms in India" in *Economic Policy Reforms and the Indian Economy* (ed) Anne O. Krueger, Oxford University Press N.Delhi.
- Babu, M.Suresh (2005), "Kerala's Growth Trajectory" *Economic and Political Weekly*, July 23.
- Bruce, E. Hansen (2001), "The New Economics of Structural Change: Dating Breaks in U.S productivity", *Journal of Economics Perspective*, Vol. 15, No.4.
- Chen, P.Y. and Popovich, P.M. (2002) "Correlation : Parametric and Non parametric Measures" Sage Publications Ltd. USA.
- Dandekar V.M. (2000) "Gross Domestic Product and Regional Disparities in Development In India," *Journal of the Indian School of Political Economy*, Vol.12, No.1.
- Economic and Political Weekly Research Foundation (2002) *National Accounts Statistics of India 1950-51 to 2000-01, New Linked Series with 1993-94 as the Base Year*, July.
- Economic and Political Weekly Research Foundation(2003) *Domestic Product of States of India 1960-61 to 2000-01*, June.
- Government of Kerala, (2004), *Kerala Economic Review*.
- Harilal K.N. and Joseph K.J. (2000) "Stagnation and Revival of Kerala Economy: An Open Economy Perspective," *Working Paper No. 305*, Centre for Development Studies, Thiruvananthapuram.
- Jeromi P.D.(2003) "What ails Kerala Economy: A Sectoral Explanation" *Economic and Political Weekly*, Vol.38, No.16, April-June.
- Kannan, K.P (2005), "Kerala's Turnaround in Growth, Role of Social Development, Remittance and Reforms", *Economic and Political Weekly*, Feb. 5.

- Khanna P.C.(1990) “Structural Changes in the Economies of States”  
*Journal of Income and Wealth*, Vol.12, No.1, January.
- Kumar Jitendra, Singh Gulab and Kar Alope (2003) “On Compilation of the Estimates of State Domestic Product in India- A Treatise” in  
*Domestic Product of States of India 1960-61 to 2000-01*, Economic and Political Weekly Research Foundation (EPWRF) June.
- Kumar, Jitendra and Chandra, Chakresh (2003) “Back Series of SDP Estimates” in *Domestic Product of States of India 1960-61 to 2000-01*, Economic and Political Weekly Research Foundation (EPWRF) , June.
- Kuznets, Simon (1960) *Modern Economic Growth*, Yale University Press, New Haven.
- Mathew, P.M (2005), “Kerala’s Turnaround in Growth – A Note”,  
*Economic and Political Weekly*, July 23.
- Nair, K.R.G (2005) “Kerala’s Development Experiment”, *Economic and Political Weekly*, July 23.
- Ommen, M.A (2005), “Is Kerala changing from Crisis to a Turnaround”,  
*Economic and Political Weekly*, April 30.
- Patel S.P and Pandya P.S. (1990) “Some Issues in Determining the Short Term and Long Term Growth Rates of State Domestic Product”  
*Journal of Income and Wealth*, Vol.12, No.1, January.
- Pillai M. and Shanta. N (1997), *Industrialisation in Kerala: Status of Current Research and Future Issues*, Occasional papers series Centre for Development Studies, Thiruvananthapuram.
- Pillai PP (1994) *Kerala Economy: Four Decades of Development*, Institute of Planning and Applied Economic Research, Dr. John Mathai Centre, University of Calicut, Aranattukara, Thrissur.
- Pushpangadan K(2003) “Remittances, Consumption and Economic Growth in Kerala 1980-2000”. *Working Paper No. 343*, Centre for Development Studies, Thiruvananthapuram.

- Reserve Bank of India (2002) "Regional Dimension of Economic Growth in India", *Report on Currency and Finance 2000-01*.
- Roychoudhury, Uma Datta (1990) "Regional Pattern of Development in India", *Journal of Income and Wealth*, Vol.12, No.1, January.
- Roychoudhury, Uma Datta (1995) *National Income Accounting*.
- Shetty S.L. (2003) "Growth of GDP and Structural Changes in State Economies Interstate Comparisons" *Economic and Political Weekly*, December 6.
- Shetty S.L. (2003) "Growth of State Domestic Product and Structural Changes in State Economies. Inter -State Comparisons" *Economic and Political Weekly*, December 6.
- Sivasubramonian S.(2002) *The National Income of India in the Twentieth Century*, Oxford University Press, New Delhi.
- Sood V.K.(1990) "Long Term Trends in State Income Estimates" *Journal of Income and Wealth*, Vol.12, No.1, January.
- Subrahmanian K.K. and Azeez Abdul (2000) "Industrial Growth in Kerala : Trends and Explanations", *Working Paper No.310*, Centre for Development Studies, Thiruvananthapuram.
- Subrahmanian K.K.(2003) *Regional Industrial Growth under Economic Liberalisation*, Manak, New Delhi.

**CENTRE FOR DEVELOPMENT STUDIES**  
**LIST OF WORKING PAPERS**  
*[New Series]*

The Working Paper Series was initiated in 1971. A new series was started in 1996 from WP. 270 onwards. Working papers beginning from 279 can be downloaded from the Centre's website ([www.cds.edu](http://www.cds.edu))

- W.P. 375 R. MOHAN, D. SHYJAN** *Taxing Powers and Developmental Role of the Indian States: A Study with reference to Kerala.* August 2005.
- W.P. 374 K. C. ZACHARIAH, S. IRUDAYA RAJAN.** *Unemployment in Kerala at the Turn of the Century: Insights from CDS Gulf Migration Studies.* August 2005.
- W.P. 373 SUNIL MANI,** *The Dragon vs. The Elephant Comparative Analysis of Innovation Capability in the Telecommunications Equipment Industry in China and India.* July 2005
- W.P. 372 MOTKURI VENKATANARAYANA** *On The Non-Random Distribution of Educational Deprivation of Children in India.* July 2005
- W.P. 371 DIBYENDU S. MAITI** *Organisational Morphology of Rural Industries in Liberalised India: A Study of West Bengal.* June 2005
- W.P. 370 SUNIL MANI,** *Keeping Pace with Globalisation Innovation Capability in Korea's Telecommunications Equipment Industry.* March 2005.
- W.P. 369 V.R. PRABHAKARAN NAIR,** *Determinants of Fixed Investment: A Study of Indian Private Corporate Manufacturing Sector.* March 2005.
- W.P. 368 J. DEVIKA,** *Modernity with Democracy? : Gender and Governance in the People's Planning Campaign, Keralam.* February 2005
- W.P. 367 VINEETHA MENON, ANTONYTO PAUL, K N NAIR** *Dynamics of Irrigation Institutions: Case study of a Village Panchayat in Kerala.* February 2005
- W.P. 366 VIJAYAMOHANAN PILLAI N.** *Causality and Error Correction in Markov Chain: Inflation in India Revisited.* December 2004.

- W.P. 365 R. MOHAN.** *Central Finances in India - Alternative to Procrustean Fiscal Correction.* November 2004.
- W.P. 364 SUNIL MANI.** *Coping with Globalisation Public R&D Projects in Telecommunications Technologies in Developing Countries.* November 2004.
- W.P. 363 K C ZACHARIAH, S IRUDAYA RAJAN.** *Gulf Revisited Economic Consequences of Emigration From Kerala, Emigration and Unemployment.* September 2004.
- W.P. 362 M. VENKATANARAYANA.** *Educational Deprivation of Children in Andhra Pradesh, Levels and Trends, Disparities and Associative Factors.* August 2004.
- W.P. 361 K. P. KANNAN, VIJAYAMOHANAN PILLAIN.** *Development as a Right to Freedom: An Interpretation of the Kerala Model.* August 2004.
- W.P. 360 VIJAYAMOHANAN PILLAIN.** *CES Function, Generalised Mean and Human Poverty Index: Exploring Some Links.* July 2004.
- W.P. 359 PRAVEENA KODOTH,** *Shifting the Ground of Fatherhood: Matriliney, Men and Marriage in Early Twentieth Century Malabar.* May 2004.
- W.P. 358 MRIDUL EAPEN.** *Women and Work Mobility: Some Disquieting Evidences from the Indian Data.* May 2004.
- W.P. 357 K. RAVI RAMAN.** *The Asian Development Bank Loan for Kerala (India): The Adverse Implications and Search for Alternatives,* March 2004.
- W.P. 356 VIJAYAMOHANAN PILLAI N.** *Liberalisation of Rural Poverty: The Indian Experience,* March 2004.
- W.P. 355 P.L.BEENA** *Towards Understanding the Merger-Wave in the Indian Corporate Sector: A Comparative Perspective,* January 2004.
- W.P. 354 K.P. KANNAN AND R. MOHAN** *India's Twelfth Finance Commission A View from Kerala,* December 2003.
- W.P. 353 K.N. HARILAL AND P.L. BEENA** *The WTO Agreement on Rules of Origin Implications for South Asia,* December 2003.
- W.P. 352 K. PUSHPANGADAN** *Drinking Water and Well-being In India: Data Envelopment Analysis,* October 2003.
- W.P. 351 INDRANI CHAKRABORTY** *Liberalization of Capital Inflows and the Real Exchange Rate in India : A VAR Analysis,* September 2003.



- W.P. 350 M.KABIR** *Beyond Philanthropy: The Rockefeller Foundation's Public Health Intervention in Thiruvithamkoor, 1929-1939*, September 2003.
- W.P. 349 JOHN KURIEN** *The Blessing of the Commons : Small-Scale Fisheries, Community Property Rights, and Coastal Natural Assets*, August 2003.
- W.P. 348 MRIDUL EAPEN,** *Rural Industrialisation in Kerala: Re-Examining the Issue of Rural Growth Linkages*, July 2003.
- W.P. 347 RAKHE PB,** *Estimation of Tax Leakage and its Impact on Fiscal Health in Kerala*, July 2003.
- W.P. 346 VIJAYAMOHANAN PILLAI N,** *A contribution to Peak load pricing theory and Application*. April 2003.
- W.P. 345 V.K. RAMACHANDRAN, MADHURA SWAMINATHAN, VIKAS RAWAL** *Barriers to Expansion of Mass Literacy and Primary Schooling in West Bengal: Study Based on Primary Data from Selected Villages*. April 2003.
- W.P. 344 PRADEEP KUMAR PANDA** *Rights-Based Strategies in the Prevention of Domestic Violence*, March 2003.
- W.P. 343 K. PUSHPANGADAN** *Remittances, Consumption and Economic growth in Kerala: 1980-2000*, March 2003.
- W.P. 342 D NARAYANA** *Why is the Credit-deposit Ratio Low in Kerala?* January 2003.
- W.P. 341 MRIDUL EAPEN, PRAVEENA KODOTH** *Family Structure, Women's Education and Work: Re-examining the High Status of Women in Kerala*. November 2002.
- W.P. 340 J. DEVIKA,** *Domesticating Malayalees: Family Planning, the Nation and Home-Centered Anxieties in Mid- 20<sup>th</sup> Century Keralam*. October, 2002.
- W.P. 339 M PARAMESWARAN,** *Economic Reforms and Technical Efficiency: Firm Level Evidence from Selected Industries in India*. October, 2002.
- W.P. 338 PRAVEENA KODOTH,** *Framing Custom, Directing Practices: Authority, Property and Matriliney under Colonial Law in Nineteenth Century Malabar*, October 2002.
- W.P. 337 K.NAVANEETHAM,** *Age Structural Transition and Economic Growth: Evidence From South and Southeast Asia*, August 2002.
- W.P. 336 PULAPRE BALAKRISHNAN, K. PUSHPANGADAN, M. SURESH BABU,** *Trade Liberalisation, Market Power and Scale Efficiency in Indian Industry*, August 2002.

- W.P. 335 J. DEVIKA**, *Family Planning as 'Liberation': The Ambiguities of 'Emancipation from Biology' in Kerala* July 2002.
- W.P. 334 E. ABDUL AZEEZ**, *Economic Reforms and Industrial Performance an Analysis of Capacity Utilisation in Indian Manufacturing*, June 2002.
- W.P. 333 K. PUSHANGADAN** *Social Returns from Drinking Water, Sanitation and Hygiene Education: A Case Study of Two Coastal Villages in Kerala*, May 2002.
- W.P. 332 K. P. KANNAN**, *The Welfare Fund Model of Social Security for Informal Sector Workers: The Kerala Experience*. April 2002.
- W.P. 331 SURESH BABU**, *Economic Reforms and Entry Barriers in Indian Manufacturing*. April 2002.
- W.P. 330 ACHIN CHAKRABORTY**, *The Rhetoric of Disagreement in Reform Debates* April 2002.
- W.P. 329 J. DEVIKA**, *Imagining Women's Social Space in Early Modern Kerala*. April 2002.
- W.P. 328 K. P. KANNAN, K. S. HARI**, *Kerala's Gulf Connection Emigration, Remittances and their Macroeconomic Impact 1972-2000*. March 2002.
- W.P. 327 K. RAVI RAMAN**, *Bondage in Freedom, Colonial Plantations in Southern India c. 1797-1947*. March 2002.
- W.P. 326 K.C. ZACHARIAH, B.A. PRAKASH, S. IRUDAYA RAJAN**, *Gulf Migration Study : Employment, Wages and Working Conditions of Kerala Emigrants in the United Arab Emirates*. March 2002.
- W.P. 325 N. VIJAYAMOHANAN PILLAI**, *Reliability and Rationing cost in a Power System*. March 2002.
- W.P. 324 K. P. KANNAN, N. VIJAYAMOHANAN PILLAI**, *The Aetiology of the Inefficiency Syndrome in the Indian Power Sector Main Issues and Conclusions of a Study*. March 2002.
- W.P. 323 V. K. RAMACHANDRAN, MADHURA SWAMINATHAN, VIKAS RAWAL**, *How have Hired Workers Fared? A Case Study of Women Workers from an Indian Village, 1977 to 1999*. December 2001.
- W.P. 322 K. C. ZACHARIAH**, *The Syrian Christians of Kerala: Demographic and Socioeconomic Transition in the Twentieth Century*, November 2001.

- W.P. 321 VEERAMANI C.** *Analysing Trade Flows and Industrial Structure of India: The Question of Data Harmonisation*, November 2001.
- W.P. 320 N. VIJAYAMOHANAN PILLAI, K. P. KANNAN,** *Time and Cost Over-runs of the Power Projects in Kerala*, November 2001.
- W.P. 319 K. C. ZACHARIAH, P. R. GOPINATHAN NAIR, S. IRUDAYARAJAN** *Return Emigrants in Kerala: Rehabilitation Problems and Development Potential*. October 2001
- W.P. 318 JOHN KURIEN, ANTONYTO PAUL** *Social Security Nets for Marine Fisheries-The growth and Changing Composition of Social Security Programmes in the Fisheries Sector of Kerala State, India*. September 2001.
- W.P. 317 K. J. JOSEPH, K. N. HARILAL** *India's IT Export Boom: Challenges Ahead*. July 2001.
- W.P. 316 K. P. KANNAN, N. VIJAYAMOHANAN PILLAI** *The Political Economy of Public Utilities: A Study of the Indian Power Sector*, June 2001.
- W.P. 315 ACHIN CHAKRABORTY** *The Concept and Measurement of Group Inequality*, May 2001.
- W.P. 314 U.S.MISHRA, MALA RAMANATHAN** *Delivery Compli-cations and Determinants of Caesarean Section Rates in India - An Analysis of National Family Health Surveys, 1992-93*, March 2001.
- W.P. 313 VEERAMANI. C** *India's Intra-Industry Trade Under Economic Liberalization: Trends and Country Specific Factors*, March 2001
- W.P. 312 N. VIJAYAMOHANAN PILLAI** *Electricity Demand Analysis and Forecasting –The Tradition is Questioned*, February 2001
- W.P. 311 INDRANI CHAKRABORTY** *Economic Reforms, Capital Inflows and Macro Economic Impact in India*, January 2001
- W.P. 310 K. K. SUBRAHMANIAN. E. ABDUL AZEEZ,** *Industrial Growth In Kerala: Trends And Explanations* November 2000
- W.P. 309 V. SANTHAKUMAR, ACHIN CHAKRABORTY,** *Environmental Valuation and its Implications on the Costs and Benefits of a Hydroelectric Project in Kerala, India*, November 2000.
- W.P. 308 K. P. KANNAN, N . VIJAYAMOHANAN PILLAI,** *Plight of the Power Sector in India : SEBs and their Saga of Inefficiency* November 2000.
- W.P. 307 K. NAVANEETHAM, A. DHARMALINGAM,** *Utilization of Maternal Health Care Services in South India*, October 2000.

- W.P. 306 S. IRUDAYA RAJAN**, *Home Away From Home: A Survey of Oldage Homes and inmates in Kerala*, August 2000.
- W.P. 305 K. N. HARILAL, K.J. JOSEPH**, *Stagnation and Revival of Kerala Economy: An Open Economy Perspective*, August 2000.
- W.P. 304 K. P. KANNAN**, *Food Security in a Regional Perspective; A View from 'Food Deficit' Kerala*, July 2000.
- W.P. 303 K. C. ZACHARIAH, E. T. MATHEW, S. IRUDAYA RAJAN**, *Socio-Economic and Demographic Consequenes of Migration in Kerala*, May 2000.
- W.P. 302 K. PUSHPANGADAN, G. MURUGAN**, *Gender Bias in a Marginalised Community: A Study of Fisherfolk in Coastal Kerala*, May 2000.
- W.P. 301 P. L. BEENA** *An Analysis of Mergers in the Private Corporate Sector in India*, March, 2000.
- W.P. 300 D. NARAYANA** *Banking Sector Reforms and the Emerging Inequalities in Commercial Credit Deployment in India*, March, 2000.
- W.P. 299 JOHN KURIEN** *Factoring Social and Cultural Dimensions into Food and Livelihood Security Issues of Marine Fisheries; A Case Study of Kerala State, India*, February, 2000.
- W.P. 298 D. NARAYANA, K. K. HARI KURUP**, *Decentralisation of the Health Care Sector in Kerala : Some Issues*, January, 2000.
- W.P. 297 K.C. ZACHARIAH, E. T. MATHEW, S. IRUDAYA RAJAN** *Impact of Migration on Kerala's Economy and Society*, July, 1999.
- W.P. 296 P.K. MICHAEL THARAKAN, K. NAVANEETHAM** *Population Projection and Policy Implications for Education:A Discussion with Reference to Kerala*, July, 1999.
- W.P. 295 N. SHANTA, J. DENNIS RAJA KUMAR** *Corporate Statistics: The Missing Numbers*, May, 1999.
- W.P. 294 K. P. KANNAN** *Poverty Alleviation as Advancing Basic Human Capabilities: Kerala's Achievements Compared*, May, 1999.
- W.P. 293 MRIDUL EAPEN** *Economic Diversification In Kerala : A Spatial Analysis*, April, 1999.
- W.P. 292 PRADEEP KUMAR PANDA** *Poverty and young Women's Employment: Linkages in Kerala*, February, 1999.
- W.P. 291 P. K. MICHAEL THARAKAN** *Coffee, Tea or Pepper? Factors Affecting Choice of Crops by Agro-Entrepreneurs in Nineteenth Century South-West India*, November 1998
- W.P. 290 CHRISTOPHE Z. GUILMOTO, S. IRUDAYA RAJAN** *Regional Heterogeneity and Fertility Behaviour in India*, November 1998.

- W.P. 289 JOHN KURIEN** *Small Scale Fisheries in the Context of Globalisation*, October 1998.
- W.P. 288 S. SUDHA, S. IRUDAYA RAJAN** *Intensifying Masculinity of Sex Ratios in India : New Evidence 1981-1991*, May 1998.
- W.P. 287 K. PUSHPANGADAN, G. MURUGAN** *Pricing with Changing Welfare Criterion: An Application of Ramsey- Wilson Model to Urban Water Supply*, March 1998.
- W.P. 286 ACHIN CHAKRABORTY** *The Irrelevance of Methodology and the Art of the Possible : Reading Sen and Hirschman*, February 1998.
- W.P. 285 V. SANTHAKUMAR** *Inefficiency and Institutional Issues in the Provision of Merit Goods*, February 1998.
- W.P. 284 K. P. KANNAN** *Political Economy of Labour and Development in Kerala*, January 1998.
- W.P. 283 INDRANI CHAKRABORTY** *Living Standard and Economic Growth: A fresh Look at the Relationship Through the Non- Parametric Approach*, October 1997.
- W.P. 282 S. IRUDAYA RAJAN, K. C. ZACHARIAH** *Long Term Implications of Low Fertility in Kerala*, October 1997.
- W.P. 281 SUNIL MANI** *Government Intervention in Industrial R & D, Some Lessons from the International Experience for India*, August 1997.
- W.P. 280 PRADEEP KUMAR PANDA** *Female Headship, Poverty and Child Welfare : A Study of Rural Orissa, India*, August 1997.
- W.P. 279 U.S. MISRA, MALA RAMANATHAN, S. IRUDAYA RAJAN** *Induced Abortion Potential Among Indian Women*, August 1997.
- W. P. 278 PRADEEP KUMAR PANDA** *The Effects of Safe Drinking Water and Sanitation on Diarrhoeal Diseases Among Children in Rural Orissa*, May 1997.
- W. P. 277 PRADEEP KUMAR PANDA** *Living Arrangements of the Elderly in Rural Orissa*, May 1997.
- W. P. 276 V. SANTHAKUMAR** *Institutional Lock-in in Natural Resource Management: The Case of Water Resources in Kerala*, April 1997.
- W.P. 275 G. OMKARNATH** *Capabilities and the process of Development* March 1997.
- W.P. 274 K. PUSHPANGADAN, G. MURUGAN** *User Financing & Collective action: Relevance sustainable Rural water supply in India*. March 1997.
- W.P. 273 ROBERT E. EVENSON, K.J. JOSEPH** *Foreign Technology Licensing in Indian Industry : An econometric analysis of the choice*

*of partners, terms of contract and the effect on licensees' performance* March 1997.

- W.P. 272** **SUNIL MANI** *Divestment and Public Sector Enterprise Reforms, Indian Experience Since 1991* February 1997.
- W.P. 271** **SRIJIT MISHRA** *Production and Grain Drain in two inland Regions of Orissa* December 1996.
- W.P. 270** **ACHIN CHAKRABORTY** *On the Possibility of a Weighting System for Functionings* December 1996.

## **BOOKS PUBLISHED BY THE CDS**

### **Biodiversity, Sustainable Development and Economic Analysis**

J. Hans B. Opschoor

CDS, 2004, Rs. 100/\$11

### **Plight of the Power Sector in India: Inefficiency, Reform and Political Economy**

K.P. Kannan and N. Vijayamohanan Pillai

CDS, 2002, Rs. 400/\$40

### **Kerala's Gulf Connection: CDS Studies on International Labour Migration from Kerala State in India**

K.C. Zachariah, K. P. Kannan, S. Irudaya Rajan (eds)

CDS, 2002, pp 232, Hardcover, Rs. 250/\$25

### **Performance of Industrial Clusters: A Comparative Study of Pump Manufacturing Cluster in Coimbatore (Tamil Nadu) & Rubber Footwear Cluster in Kottayam (Kerala)**

P. Mohanan Pillai

CDS, 2001, pp 158, Paperback, Rs. 175/\$18

### **Poverty, Unemployment and Development Policy : A Case Study of Selected Issues With Reference to Kerala**

United Nations, 2000 (reprint), pp 235

(available for sale in India only), Rs. 275

### **Land Relations and Agrarian Development in India: A Comparative Historical Study of Regional Variations**

Sakti Padhi

CDS, 1999. pp 335, Hardcover, Rs. 425/\$48

### **Agrarian Transition Under Colonialism: Study of A Semi Arid Region of Andhra, C.1860-1900**

GN Rao

CDS, 1999. pp 133, Paperback, Rs. 170/ \$19

### **Property Rights, Resource Management & Governance: Crafting An Institutional Framework for Global Marine Fisheries**

John Kurien

CDS & SIFFS, 1998. pp 56, Paperback, Rs. 50/ \$10

**Health, Inequality and Welfare Economics**

Amartya Sen

CDS. 1996. pp 26, Paperback, Rs. 70/ \$ 10

**Industrialisation in Kerala: Status of Current Research and Future Issues**

P Mohanan Pillai &amp; N Shanta

CDS. 1997. pp 74, Paperback, Rs. 110/ \$ 12

**CDS M.Phil Theses (1990/91-1993/94): A Review Vol.II**

T T Sreekumar

CDS. 1996. pp 99, Paperback, Rs. 120/\$ 14

**Trends In Agricultural Wages in Kerala 1960-1990**

A A Baby

CDS. 1996. pp 83, Paperback, Rs. 105/ \$ 12

**CDS M.Phil Theses (1975/76-1989/90): A Review Vol.1**

G N Rao

CDS. 1996. pp 162, Paperback, Rs. 155/ \$ 18

**Growth of Education in Andhra - A Long Run View**

C Upendranath

CDS. 1994. pp 158, Paperback, Rs. 135/ \$ 15

**Growth of Market Towns in Andhra: A Study of the Rayalseema Region C 1900-C.1945**

Namerta

CDS. 1994. pp 186, Paperback, Rs.125/ \$ 14

**Floods and Flood Control Policies: an Analysis With Reference to the Mahanadi Delta in Orissa**

Sadhana Satapathy

CDS. 1993 pp 98, Paperback, Rs. 110/\$ 12

**Growth of Firms in Indian Manufacturing Industry**

N Shanta

CDS. 1994. pp 228, Hardcover, Rs. 250/ \$ 28

**Demographic Transition in Kerala in the 1980s**K C Zachariah, S Irudaya Rajan, P S Sarma, K Navaneetham,  
P S Gopinathan Nair & U S Mishra,CDS. 1999 (2<sup>nd</sup> Edition) pp 305, Paperback, Rs.250/ \$ 28



**Impact of External Transfers on the Regional Economy of Kerala**

P R Gopinathan Nair &amp; P Mohanan Pillai

CDS 1994. pp 36, Paperback, Rs.30/ \$ 10

**Urban Process in Kerala 1900-1981**

T T Sreekumar

CDS. 1993. pp 86, Paperback, Rs.100/ \$ 11

**Peasant Economy and The Sugar Cooperative: A Study Of The Aska Region in Orissa**

Keshabananda Das

CDS. 1993. pp 146, Paperback, Rs.140/ \$ 16

**Industrial Concentration and Economic Behaviour: Case Study of Indian Tyre Industry**

Sunil Mani

CDS. 1993. pp 311, Hardcover, Rs. 300/ \$ 34

**Limits To Kerala Model of Development: An Analysis of Fiscal Crisis and Its Implications.**

K K George

CDS. 1999 (2<sup>nd</sup> edition) pp 128, Paperback, Rs. 160/ \$ 18**Indian Industrialization: Structure and Policy Issues. (No Stock)**

Arun Ghosh, K K Subrahmanian, Mridul Eapen &amp; Haseeb A Drabu (EDs).

OUP. 1992. pp 364, Hardcover, Rs.350/ \$ 40

**Rural Household Savings and Investment: A Study of Some Selected Villages**

P G K Panikar, P Mohanan Pillai &amp; T K Sundari

CDS. 1992. pp 144, Paperback, Rs. 50/ \$ 10

**International Environment, Multinational Corporations and Drug Policy**

P G K Panikar, P Mohanan Pillai &amp; T K Sundari

CDS. 1992. pp 77, Paperback, Rs.40/ \$ 10

**Trends in Private Corporate Savings**

N Shanta

CDS. 1991. pp 90, Paperback, Rs. 25/ \$ 10

**Coconut Development in Kerala: Ex-post Evaluation**

D Narayana, K N Nair, P Sivanandan, N Shanta and  
G N Rao

CDS. 1991. pp 139, Paperback, Rs.40/ \$ 10

**Caste and The Agrarian Structure**

T K Sundari

Oxford & IBH. 1991. pp 175, Paperback, Rs.125/ \$ 14

**Livestock Economy of Kerala**

P S George and K N Nair

CDS. 1990. pp 189, Hardcover, Rs. 95/ \$ 10

**The Pepper Economy of India (No Stock)**

P S George, K N Nair and K Pushpangadan

Oxford & IBH. 1989. pp 88, Paperback, Rs. 65/ \$ 10

**The Motor Vehicle Industry in India  
(Growth within a Regulatory Environment)**

D Narayana

Oxford & IBH. 1989. pp 99, Paperback, Rs. 75/ \$ 10

**Ecology or Economics in Cardamom Development  
(No Stock)**

K N Nair, D Narayana and P Sivanandan

Oxford & IBH. 1989. pp 99, Paperback, Rs. 75/ \$ 10

**Land Transfers and Family Partitioning**

D Rajasekhar

Oxford and IBH. 1988. pp 90, Hardcover, Rs. 66/ \$ 10

**Essays in Federal Financial Relations**

I S Gulati and K K George

Oxford and IBH. 1988. pp 172, Hardcover, Rs. 82/ \$ 10

**Bovine Economy in India**

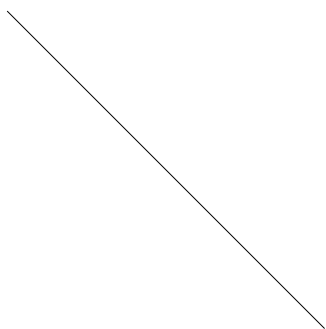
A Vaidyanathan

Oxford & IBH. 1988. pp 209, Hardcover, Rs. 96/ \$ 11

**Health Status of Kerala**

P G K Panikar and C R Soman

CDS. 1984. pp 159, Hardcover, Rs.100/ \$ 11 & Paperback, Rs. 75/ \$ 10



This work is licensed under a  
Creative Commons  
Attribution – NonCommercial - NoDerivs 3.0 Licence.

To view a copy of the licence please see:  
<http://creativecommons.org/licenses/by-nc-nd/3.0/>