As already said, the main objective of the work is to explore the pattern of structural change and dynamics of tertiary sector in India. The direction and magnitude of such a change is very useful for any kind of economic planning and policy formulations both at micro and macro levels. The present chapter briefly reviews the available economic literature on structural change in general and dynamics of tertiary sector in particular. The studies available on tertiary sector may be classified into four broad categories. First, the nature, structure and the growth of tertiary sector have been analyzed by most of the studies. Second category of studies relate to the analysis of relation of tertiary sector and economic growth. Third set of studies deals with analysis of employment and labour productivity in the tertiary sector. Another set of studies relates to the Baumol’s productivity paradox, wherein the relation of technology input and productivity in the service sector has been explored. Accordingly, the chapter has been divided into four sections. The first section reviews the studies related to structural changes in various economies with special reference to India. Next section deals with employment related aspects of tertiary sector. Next section reviews the studies related to the implications of excess growth of tertiary sector particularly in India. Last section covers the studies done in input-output framework approach in relation to tertiary sector. At the end, the basic issues for further research have been identified.
2.1 Structural Change in Different Economies

Large number of studies has been done to capture the structural change in different economies. Following is the synoptic review of such studies.

**R.N. Khera and B.B. Mathur (1984)** analyze the place of tertiary sector in Indian economy and in some developing countries of Asia. It draws its database from the reports of Central Statistical Organization, International Labour Organization and World Bank. The two main objectives of the study are (a) to compare the relative place of tertiary producing sector with the goods producing sector of India; and (b) to compare the relative importance of tertiary sector in the economies of some selected developing countries of Asia. The study has been divided into two parts.

First part of the study examines the changing shares in net domestic product (NDP) and employment distribution in the Indian economy coinciding with Five Year Plan periods from 1950-51 to 1979-81 at 1970-71 prices. A close examination of sector-wise distribution showed that the percentage share of services in total Net Domestic Product (NDP) increased appreciably from 24.2 percent in 1950-51 to 24.4 percent in 1951-56, to 25.9 percent in 1956-61, to 28.7 percent in 1961-66, to 30.9 percent in 1966-69, to 31.2 percent in 1969-74, to 33.3 percent in 1974-79 and to 36.7 percent in 1979-81. In comparison to tertiary sector, the percentage share of goods producing sector in NDP has been correspondingly declining mainly due to fall in the share of primary sector. The percentage share of NDP in goods producing sector showed a continuous decline from 75.8 percent in 1950-51, to 75.6 percent in
1951-56, to 74.1 percent in 1956-61, to 71.3 percent in 1961-66, to 69.1 percent in 1966-69, to 68.8 percent in 1969-74, to 66.7 percent in 1974-79 and to 63.3 percent in 1979-81, respectively.

While having look at the growth rates of different Five Year Plans it has been found that the Fifth Five Year Plan had the highest growth rate as compared to other Plans. During this Plan, the annual growth rate of the economy as a whole was 6.12 percent in relation to 4.92 percent, 7.42 percent and 6.95 percent for primary, secondary and tertiary sectors respectively. Annual growth rates for the entire period showed that by the terminal end of the study period 1980-81 the tertiary sector grew at an annual rate of 4.96 percent as compared to 3.57 percent for the Indian economy as a whole. During the same time, the primary and secondary sectors grew at a rate of 2.29 percent and 5.02 percent respectively.

A decade wise examination of the sectoral distribution of workforce at different points of time: 1951, 1961, 1971 and 1981 does not reveal any significant change in its composition. In 1981, the tertiary sector provided employment to 18 percent workers as compared to 69 percent by the primary and 13 percent by the secondary sector. The above analysis shows that during the Five Year Plan period of 1950-51 to 1980-81, the tertiary sector has gained the importance and its share in NDP may further increase in the Indian economy in the near future.

Second part of the study deals with the comparison of tertiary sector of eight selected developing countries of Asia including India by the end of 1970's. These selected countries
include middle income countries of Indonesia, Malaysia, Thailand, Philippines, South Korea and the low income countries like India, Pakistan and Sri Lanka. By the end of 1970's the percentage sector share of primary, secondary and tertiary sectors in GDP respectively: in Indonesia has been found to be 50.1 percent, 15.3 percent and 34.6 percent; in Malaysia 32.8 percent, 25.5 percent and 41.7 percent; in Thailand 29.5 percent, 25.7 percent and 44.8 percent; in Philippines 27.6 percent, 33.4 percent and 39 percent; in South Korea 23.2 percent, 37.7 percent and 39.1 percent; in India 39.8 percent, 24.0 percent and 36.2 percent; in Pakistan 31.6 percent, 24.1 percent and 44.3 percent; and in Sri Lanka 40.6 percent, 21.6 percent and 37.8 percent. It is quite obvious from the above analysis that the percentage of GDP generated by the tertiary sector in these entire countries well exceeded the GDP generated by their secondary sectors. Further, in all of these countries except Indonesia, India and Sri Lanka, the value added by the tertiary sector was higher than the value added by their primary sector.

Similarly, by the end of 1980's the percentage sectoral share of labour force in employment of tertiary sector was almost one-third in all the countries examined except in Thailand, India and Pakistan. In Philippines and South Korea the proportion of employment in tertiary sector has been as high as 37 percent of their total employment. It is interesting to note that in all of these selected countries, the share of the labour force employed in tertiary sector has been more than that of the labour employed in their secondary sectors.

Thus, from the above analysis, it may be concluded that during 1970's the tertiary sector occupied an important place in the
developing countries of Asia. In almost all of the countries the growth of tertiary sector was more than the growth of the economy as a whole.

S.S. Suryanarayana (1995) explored the structure, characteristics and role of service sector in economic development of India. The study uses the National Sample Survey Organization data (32nd and 43rd rounds) for the period of 1977-78 to 1987-88. The study found that the share of service sector has increased from 34 percent of the total GDP generated by the economy in 1977-78 to 40 percent in 1987-88. However, the structure of service sector has broadly remained the same over this period except for a small shift from trade, hotels and restaurants to transport, storage and communication. Almost all the sub-sectors have registered high growth rates over the period 1977-78 to 1987-88, except railways, real estate and other business services. During this period, the GDP from service sector has grown at a rate well above that of the economy as a whole.

The share of service sector in total employment also increased from 16 percent in the year 1977-78 to 19 percent in 1987-88 in the economy. The employment structure of the service sector has remained more or less the same except for a slight shift from community, social and personnel services to transport, storage and communication. The service sector as a whole, as well as almost all of its component sub-sectors except railways, has registered fairly high rates of growth of employment which are well above that of the average annual rate of growth of overall employment.
Productivity has been measured by GDP per worker. During 1977-78 to 1987-88 at 1980-81 prices, the labour productivity per worker in the service sector increased from Rs. 10056 to Rs. 12194 as compared to Rs. 2803 to Rs. 2999 in the primary sector and Rs. 9086 to Rs. 9845 in the secondary sector respectively. Thus, the labour productivity per worker in service sector alone is roughly double of what it was in the primary and secondary sectors taken together.

In terms of certain other characteristics, the employment structure of service sector reveals that during the entire period of study from 1977-78 to 1987-88; its percentage share in organized sector employment registered an increase from 55 percent to 58 percent, while its percentage share in total rural employment grew from 9 percent to 12 percent. The percentage share in total women employment recorded a marginal improvement from 10 percent to 11 percent.

R.K. Sharma and A. Jayakumar (1995) explored the structural shifts and the growth of tertiary sector in India. It is based on data drawn from Census of India, Central Statistical Organization and World Development Reports. The main objective of the study is: (a) to analyze the changing sectoral share of employment and income in the Indian economy from the period 1950-51 to 1990-91; (b) to compare the Indian and international experience of the relative share of income and workforce in various sectors from the year 1980 to 1993; and (c) to compare the performance of various sectors at regional level in India from the period 1980-81 to 1990-91.
First part of the study examines the changing share of employment and income in the Indian economy for the period 1950-51 to 1990-91. The study observed that in 1950-51 the Indian economy had all the features of an agrarian subsistence base with a very high proportion of 73 percent of its workforce with 58 percent NDP employed in the primary sector. A small proportion of 10 percent of its workforce with 15 percent NDP was employed in secondary sector, while 17 percent of its workforce with 27 percent NDP was employed in tertiary sector. Thus, both in terms of employment and national income, the percentage share of tertiary sector was higher than that of secondary sector. But in 1990-91 the tertiary sector emerged as a dominant sector of the economy with a share of 39 percent in NDP with 20 percent workforce. The share of primary sector in NDP reduced to 34 percent with 68 percent of the workforce still employed in that sector, while the share of secondary sector in NDP increased to 27 percent with 12 percent of the workforce employed in it.

The above analysis clearly reveals that the share of national income contributed by the primary sector was lower than that of the proportion of workforce employed in that sector, while the tertiary and secondary sectors contributed more than their workforce share to the income. This resulted in lower than average relative product in the primary sector and more than average in the tertiary and secondary sectors. Thus, the inter-sectoral inequalities have risen over the years due to the fact that sectoral income shares have changed more sharply than the workforce.

Second part of the study deals with the comparison of the relative shares of income and workforce in various sectors of India.
with 14 other selected countries of the world from the year 1960 to 1993. The selection of these countries gives fairly good representation to countries experiencing different stages of economic development. The selected countries include the industrialized countries of U.S.A., U.K., France, Japan and Italy and some of the developing countries of Asia like India, Pakistan, Indonesia, Thailand, Philippines, Malaysia and Republic of Korea and also the two developing Latin American countries of Brazil and Mexico.

The study has found that in 1960’s the Asian developing economies had a very high contribution from the agriculture sector, whereas in industrialized countries the contribution of agriculture was the least. India, Indonesia and Pakistan registered the highest share of 50 percent, 50 percent and 46 percent respectively, in their GDP, while both Brazil and Mexico recorded a share of 16 percent each. On the other hand, the share in U.K. ranged from merely 3 percent to that of 13 percent in Italy. In the distribution of labour force of agriculture sector, Thailand has the highest share of 84 percent, whereas U.K. had the least share of 4 percent. During the same year the share of industrial sector in GDP of Japan is 45 percent, the highest. It is the lowest, only 16 percent, in the developing Asian economy of Pakistan. The share of this sector in labour force ranged from a meager 4 percent in case of Thailand to 18 percent in Pakistan which shows the industrial backwardness of these developing economies of Asia. While among the industrialized countries it was found to be highest in U.K. at 48 percent and lowest in Japan at 30 percent.

But in the year 1993 tertiary sector has emerged as a
dominant sector both in the developing and developed economies with the highest share in GDP of industrialized countries, ranging from 69 percent in France to lowest of 57 percent in Japan. While among the developing countries, this share ranged between 63 percent in Brazil to 41 percent in India. The corresponding share of labour force in tertiary sector of industrialized countries ranged between 71 percent in U.S.A. to 59 percent in Japan, while in developing economies it was 53 percent in Brazil to 22 percent in Thailand. In India also, it merely accounted for 23 percent.

Thus, in developed countries the difference between income and employment shares is very low for various sectors as compared to those of developing countries. Another important finding of the study is that the share of income generated by the tertiary sector has no relationship with the rate of inflation. The developed countries had a very high share of tertiary sector in their GDP, but the least rate of inflation which is generally related to other deformities in an economic system.

Third part of the study deals with the comparison of the relative shares of income and workforce in the 14 major states of India and all India from the period 1980-81 to 1990-91 at 1980-81 prices. These major states include Maharastra, Gujarat, Punjab, Haryana, Rajasthan, Madhya Pradesh, Karnataka, Kerala, Andhra Pradesh, Tamil Nadu, Orissa, Bihar, Uttar Pradesh, West Bengal and also India as a whole. The relative percentage share of state domestic product of various sectors shows that in 1980-81 the share of tertiary sector, although lower than that of primary sector, was higher than that of the secondary sector in all the states of the country except that of Maharastra, West Bengal and Tamil Nadu.
where already the share of tertiary sector was higher than that of even the primary sector. In comparison to primary sector the percentage share of state domestic product in tertiary sector was found to be 36 percent to 28 percent in Maharasstra, 36 percent to 33 percent in West Bengal and 33 percent to 25 percent in Tamil Nadu.

However, the percentage of relative share of state domestic product in tertiary sector increased since 1980-81 to 1991-91 in the states of Andhra Pradesh from 36 percent to 41 percent, in Gujarat from 31 percent to 40 percent, in Karnataka from 33 percent to 40 percent, in Kerala from 36 percent to 40 percent, in Madhya Pradesh from 25 percent to 29 percent and in Tamil Nadu from 40 percent to 44 percent, whereas in the remaining states the share of tertiary sector continued to be less prominent than the primary sector, but higher than that of the secondary sector.

In 1980-81 the highest proportion of workforce in primary sector was found in the poor states with a percentage share of 84 percent in Bihar, 78 percent in Madhya Pradesh, 77 percent in Orissa, 75 percent in Uttar Pradesh and 72 percent each in Rajasthan and Andhra Pradesh. The state of Karnataka had almost the same proportion of workers employed in primary sector as that of all India at 69 percent. Again these same poor states have the least employment share in both their secondary and tertiary sectors with the lowest share of Bihar at 7 percent and 11 percent and highest of Andhra Pradesh at 11 percent and 16 percent meaning thereby that generally tertiary sector has overshadowed the secondary sector.
However, it is interesting to observe that since 1980-81 to 1990-91 the absolute share of the primary sector in workforce at all India level declined from 69 percent to 67 percent. However, the most distressing fact is that the contribution of secondary sector also marginally declined at the all India level from 12.96 percent to 12.13 percent which concludes that industry never became a leading sector in Indian economy as well as in any of its federal states. On the contrary, it is the tertiary sector which has gained at the all India level in employment generation from 17 percent to 20 percent. In fact, during the entire period of study from 1980-81 to 1990-91 the percentage share of workforce in tertiary sector increased in the state of Punjab from 22 percent to 27 percent, in Kerala from 29 percent to 33 percent, in Uttar Pradesh from 14 percent to 18 percent, in Karnataka from 14 percent to 19 percent and in Tamil Nadu from 19 percent to 22 percent as compared to all India level of 17 percent to 20 percent respectively. Finally, the study concluded that the relative income shifts in the sectoral shares have not been matched by the occupational shifts at the all India level as well as state level which has further led to increase in inter-sectoral inequalities.

A.S. Sethi and P.S. Raikhy (2000) analyzed the structure of Punjab economy from the period of 1970-71 to 1997-98 on the basis of various issues of Statistical Abstract of Punjab by statistically applying the coefficient of variation to different Indices. The main objective of the study is to analyze the structural change in Punjab economy so as to bring out imbalances in the pattern of growth.

The relative share of different sectors in the net state
domestic product (NSDP) indicates that the structural changes are taking place in the state economy at a rapid rate. The share of primary sector at constant prices decreased from 60.33 percent in 1970-71 to 43.24 percent in 1997-98, while that of secondary sector increased from 13.98 percent to 27.29 percent and that of tertiary sector from 25.70 percent to 29.48 percent over the same period. Moreover, in case of tertiary sector the share of all its sub-sectors except that of real estate and dwellings increased. However, the maximum increase was observed in case of banking and insurance, public administration and defence. While a rapid increase in the share of banking and insurance is a welcome sign, but that of relatively unproductive segment of public administration and defence is rather unfortunate.

During the entire period of study from 1970-71 to 1997-98 the growth rate of workforce indicates that the overall employment in the state increased at a rate of 2.26 percent per annum. However, these rates of workforce were not at all uniform in respect of workers engaged in different industrial activities. In case of agriculture sector, though the number of cultivators has experienced a low, but positive rate of growth. The number of agricultural labourers has increased at a rate of more than 3 percent. This increase is mainly due to a rapid increase in female agricultural labourers. However, the tertiary sector has absorbed the labour force to a significant extent as the growth rates of workforce in all the classifications falling under it have been well above 3 percent.

The study concluded that both for NSDP and workforce the index of structural change experienced a little decline during
eighties as compared to seventies. However, during the nineties the structural change has been quite rapid for NSDP, but fairly slow for workforce. The index of Imbalanced Growth (R) which was worked out on the basis of structural changes in NSDP and workforce indicated that the degree of imbalance in the Punjab economy became much higher during nineties (i.e., the period of liberalization). This may be termed as structural distortion and calls for suitable measures to correct it.

Seema Bathla (2003) explored the inter-sectoral growth linkages in India on the basis of Economic Survey Report and National Accounts Statistics (2002) by using F-test and Granger Causality test in a log linear specification. The main objective of the study is to examine the nature and direction of linkages between primary, secondary and tertiary sectors and their long-run equilibrium relationship in the post-independence period from the year 1950 to 2000 respectively. The study is primarily based on two hypotheses: (a) the growth in specialized services of the tertiary sector can enhance higher rates of economic growth and are also likely to strengthen primary-secondary linkage; and (b) a greater integration of the Indian economy with world markets has a positive and significant implications for inter-sectoral relationships.

During the entire period of study from 1950 to 2000 the causality between primary and secondary sectors was found to be independent which indicates a weak linkage between these two sectors in the growth process. It is quite interesting to find that during the initial period of 1950 to 1979, this sectoral linkage is significant at 10 percent level of significance. However, when agricultural sector linkage was seen exclusively with
manufacturing the results displayed a statistically significant uni-direction linkage from manufacturing segment to primary sector at lag 3 and from primary sector to manufacturing segment at lag 9. This may be explained by a strong dominance of agriculture over the early years of economic development. The period before eighties witnessed a progressive growth in crop output and productivity as a result of initiation of Green Revolution and hence adoption of high yield varieties. This fuelled manufacturing segment through increased demand for agricultural inputs such as good quality of seeds, fertilizers, pesticides and other farm machinery being produced by it. However, during the later period of 1980 to 2000, particularly from eighties onwards inadequate technological progress, declining productivity of food crops and low rate of public investment again led to weak linkage between the primary and secondary sectors.

In case of primary and tertiary sector services the estimates demonstrated uni-directional causality (i.e., causality runs in one direction from primary to various services that fall under the tertiary sector) for the period of 1950 to 2000. Here the F-test was found to be significant at 5 percent level of significance for the sub-sector trade-hotel-restaurant as well as financial-insurance-real estate-business services. However, in case of the other two sub-sectors of ‘transport, storage and communication’ and ‘social and community services’ there was existence of an independent relationship with the primary sector. During the period 1950-79 there was found to be an independent relationship between primary sector and sub-sector ‘transport, storage and communication’ followed by a significant 5 percent level of significance uni-
directional linkage over 1980 to 2000. Thus, a greater diversification and modernization of agriculture in the nineties had accelerated the demand for specialized services such as retail trade, transport, storage and communication etc. The sub-sectors ‘trade, hotels and restaurant’ and ‘financial, insurance, real estate and business services’ shared a positive and significant one way relationship with primary sector over the initial period of 1950 to 1979 and thereafter reported independence from 1980 to 2000. It is quite surprising to find primary sector to be completely unassociated with ‘social, community and other services’ over the entire period of study from 1950 to 2000.

The empirical results of secondary sector with tertiary sector are very well in tune with growth patterns as experienced in developed countries. By and large these showed a bi-directional causation (i.e., causation running in both directions between two sectors). However, in the Indian context not all services showed bi-directional linkage with the secondary sector. During the entire period of 1950-2000 here the estimated equations reported independent relationship of secondary sector with the sub-sector ‘transport, storage and communication’. However, strong linkages between those were visible when time period is bifurcated into two. It is interesting to find bi-directional causation between secondary sector and sub-sectors ‘trade, hotels and restaurant’ as well as ‘financial, insurance, real estate and business services. Here the results suggest a mixed picture, i.e., causation running from sub-sectors ‘trade, hotels and restaurant’ and ‘financial, insurance, real estate and business services’ to secondary sector at lag length 9 and 4 for the first period of 1950 to 1979 at 5 percent and 10 percent
levels of significance respectively. However, in comparison to sub-sector ‘trade, hotels and restaurant, the sub-sectors ‘transport, storage and communication’ and ‘financial, insurance, real estate and business services’ have come out to be more important over the second period of 1980 to 2000. The following two elements may partly explain a limited association between secondary sector and some of the activities of tertiary sector: (a) there had been negligible growth in the manufacturing over the period 1980 to 2000; (b) The process of economic growth had taken place in varied form and magnitude over the period 1980 to 2000. It had initiated growth in some of the manufacturing sectors like automobile, consumer durables, information technology industries and financial sector, while neglecting investment in other traditional industries. Similarly, in tertiary sector also the concentration had been relatively more on promotion of financial, insurance, business and communication services.

The study suggests that with the expanding world market the critical areas of economic reforms which focus on reorientation of internal trade, polices in tune with export-import measures, farm price, legislative and other policies need to be activated to take advantage of export potential of agro-products. This will provide incentives towards higher production of farm commodities and value added agro-products that would necessitate development of specialized infrastructure services and industrial inputs. These changes alongwith an increase in per capita income would accelerate demand for industrial and consumer products thereby reinstating a bi-directional growth linkage between primary and secondary sectors.
Anju Bala (2005) analyzed the structural change with special reference to tertiary sector in India. The main objective of the study is to examine the nature, structure and out-stretched growth of tertiary sector at 1993-94 prices. The study found that in 1950’s the primary sector was the dominant sector of the economy and accounted for 59.21 percent in GDP. But after that its share in GDP has been continuously declining from 56.13 percent in 1960-61 to 48.12 percent in 1970-71 to 41.83 percent in 1980-81 to 34.94 percent in 1990-91 to 26.24 percent in 2000-01 to 24.05 percent in 2003-04. Thus, over a span of 54 years the share of agriculture in particular and primary sector in general has been reduced to less than half. This decline in the share of primary sector with every increase in GDP is an indication of healthy economic development which is also in line with the historical experience of developed countries.

During the same period the secondary sector has not shown much change. Rather it has grown at a slow pace. The share of secondary sector has shown a marginal change from 13.29 percent in 1950-51 to 17.02 percent in 1960-61 to 19.92 percent in 1970-71 to 21.59 percent in 1980-81 to 24.49 percent in 1990-91 to 24.90 percent in 2000-01 to 24.53 percent in 2003-04. Thus, the percentage share of secondary sector in GDP has remained stagnant at 24 percent over nearly the last one and a half decade (i.e., 1990-91 to 2003-04). But the share of tertiary sector in GDP has increased significantly from 27.50 percent in 1950-51 to 26.85 percent in 1960-61 to 31.96 percent in 1970-71 to 36.58 percent in 1980-81 to 40.57 percent in 1990-91 to 48.86 percent in 2000-01 to 51.42 percent in 2003-04. The most striking change in share of
tertiary sector in GDP has been observed since 1990’s (i.e., post-reform period). Thus, now the tertiary sector has emerged as a dominant sector of the economy with more than half share in GDP.

The growth rate of GDP remained above 3 percent during the fifties, sixties and seventies, but after that it increased to 5.52 percent in the eighties to touch 5.97 percent in the nineties. The primary sector has a growth rate of 2.86 percent in the fifties, but it continued to decline to 2.09 percent in sixties to touch an all time low of 1.94 percent over the seventies. But it again improved to 3.40 percent during the eighties to roll back to 2.75 percent over the nineties. Thus, the response of primary sector in terms of latest percentage growth rate is even less than what it was in the fifties. On the other hand, the secondary sector has shown quite a consistently good performance. It has a growth rate of 6.36 percent in the fifties which reduced to 5.50 percent in sixties to further decline to 4.40 percent in the seventies. However, it again picked up to 6.80 percent in eighties to roll back to 6.20 percent in the nineties. In contrast to general expectations, the percentage growth rate of secondary sector is slightly lower during the nineties as compared to eighties. However, it should have improved due to the impact of changed economic regime of the nineties. The percentage growth rate of tertiary sector has remained consistent around 4 percent during the first three decades of economic planning. However, after that it picked up to 6.87 percent during the eighties (i.e., pre-reform period) to touch an all time high of 7.96 percent in the nineties (i.e., post-reform period). Thus, the tertiary sector has responded positively, the primary sector has responded adversely to the process of economic reforms of the
nineties, whereas the secondary sector is still in its transitional phase of making adjustments among different factors of labour, capital and technology etc. in the economy.

Almost all the sub-sectors of the tertiary sector have registered an increase in relative percentage share of GDP over the entire period of 1950-51 to 2003-04. The most consistent and highest share has been observed in the sub-sector trade, hotels, transport and communication from 11.94 percent in 1950-51 to 25.55 percent in 2003-04. Thus, its latest share has more than doubled as compared to what it was during the beginning. The sub-sector finance, insurance, real estate and business services have opened a new vista especially after opening up of the Indian economy in 1990’s. The percentage share of this sub-sector in GDP after remaining constant around 6 percent up to 1980-81 increased to 9.66 percent in 1990-91 and it further improved to 12.84 percent in 2003-04. In comparison to real estate and insurance, it is the finance and business services segment that has registered a major share in this sub-sector. Due to the encouragement given by the Government to the policy of liberalization and privatization in the area of banking and finance many new business services like tele-banking, event management and advertising (both print and media) have now emerged on the surface. The relative percentage share of sub-sector public administration, defence and other services has also shown almost consistent increase in GDP from 9.40 percent in 1950-51 to 13.03 percent in 2003-04. This may be attributed to the fact that the process of economic development involves rapid expansion of social and economic welfare services such as education, public health and family welfare etc.
Almost all the sub-sectors of tertiary sector have recorded high rates of percentage growth over the entire period of study from 1950-51 to 2003-04. In the sub-sectors, trade, hotels, transport and communication, the growth rate remained around 4 to 5 percent up to first four decades and then increased to 8.52 percent in the nineties. During the first three decades the sub-sector finance, insurance, real estate and business services grew at a rate of around 3 percent to 4 percent and then all of a sudden touched the percentage growth rate of 10 percent in the eighties to again fall down to 7.69 percent per annum in the nineties. The growth rate of the sub-sector, public administration, defence and other services, fluctuated between 3 to 5 percent over the first three decades and then it improved to 6.40 percent in the eighties and to 7 percent in the nineties.

The study concluded that the Indian economy is now passing through a transitional phase, to ultimately culminate into a tertiary sector led economy. But the long-term sustainability of such a tertiary sector led economy, with a weak primary and secondary sectors, is a million dollar question.

T.S. Popola (2005) made a comparative study of the changes in path of economic transformation of India with some other developing Asian countries viz., China, Indonesia, Thailand, Philippines, Malaysia, Republic of Korea and Pakistan on the basis of World Development Report (2004) for the year 1960 and 2002. The study found that in consonance with the historical experience of developed countries the share of agriculture in GDP has continuously declined in all of these developing Asian countries including India. During the study period of 1960 to 2002, in terms
of percentage it declined sharply in China from 30 percent to 15 percent, in Indonesia from 50 percent to 18 percent, in Thailand from 40 percent to 9 percent, in Philippines from 26 percent to 14 percent, in Malaysia from 36 percent to 9 percent, in Republic of Korea from 37 percent to 4 percent, in Pakistan from 46 percent to 23 percent and in India from 55 percent to 24 percent respectively. Thus, the largest decline in share of agriculture has been registered for Republic of Korea.

In China, Indonesia and Malaysia industry remains the most important sector. During the same period the percentage share of industry in GDP increased in China from 49 percent to 51 percent, in Indonesia from 19 percent to 43 percent and in Malaysia from 18 percent to 47 percent. In contrast to that in Thailand, Philippines, Republic of Korea, Pakistan and India service sector has emerged as the dominant sector of the economy. During the year 1960 to 2002 the percentage share of services in GDP increased in Thailand from 41 percent to 48 percent, in Philippines from 46 percent to 53 percent, in Republic of Korea from 43 percent to 55 percent, in Pakistan from 38 percent to 54 percent and in India from 29 percent to 51 percent respectively. Thus, India registered the fastest growth in services as compared to all other developing countries of Asia under study. In 2002, the corresponding percentage share of employment in these service sector dominating countries was 33 percent in Thailand, 47 percent in Philippines, 62 percent in Republic of Korea, 34 percent in Pakistan and 22 percent in India.

The study concluded that during these two comparative years under analysis the percentage share of agriculture in GDP has
sharply declined in all these developing countries of Asia including India. On the other hand, their percentage shares in industry and services have shown a significant rise. The industry remains the most important sector in China, Indonesia and Malaysia, while in Thailand, Philippines, Republic of Korea, Pakistan and India services has emerged as a dominant sector of the economy. Most interestingly the two neighbouring countries of India and Pakistan remarkably share almost similar structure of economic development. However, in comparison to other service sector dominating countries, the corresponding employment generation potential of services in India has been very low.

Rudder Dutt (2006) explored the emerging structure of Indian economy on the basis of Central Statistical Organization data for a fairly long period of 1960-61 to 2000-01. The main objective of the study is to examine the changing economic structure of 17 main states in the process of economic development of India. These states include Punjab, Haryana, Maharastra, Gujarat, Tamil Nadu, Karnataka, Himachal Pradesh, Kerala, Andhra Pradesh, West Bengal, Rajasthan, Madhya Pradesh, Jammu and Kashmir, Assam, Orissa, Uttar Pradesh and Bihar.

The study found that over the period 1960-61 to 2000-01 except in the state of Punjab where there was a relatively slower decline in the share of net state domestic product (NSDP) in agriculture, most of the other states indicated a sharp decline in the share of agriculture. In 2000-01 Punjab and Haryana, the main beneficiaries of Green Revolution still have higher shares in agriculture in the range of 33 percent to 40 percent. In contrast to that the industrialized states like Maharastra, Gujarat and Tamil
Nadu experienced steep fall in the share of agriculture to a level of 13 percent to 18 percent which is much lower than the all India figure of 24 percent. Now coming to very poor states like Assam, Bihar, Orissa and Uttar Pradesh, their share of agriculture in NSDP declined, but still ranged between 32 to 38 percent.

During the same time period, the share of industry in NSDP indicates a significant increase in Maharastra, Gujarat and Tamil Nadu to a level of 32 percent to 38 percent, thus, enabling these to switch over to service sector. On the other hand, there has been a little increase in the share of industry in states such as Jammu and Kashmir and Orissa where it merely accounted for 12 percent and 18 percent. In the state of Jammu and Kashmir the disturbed political climate, restrictions on Indian businessmen to invest in Kashmir and the growing terrorism were the factors restricting the industrial development of the state. However, tourism and other services allied with tourism did lead to a big jump in the share of service sector.

By 2000-01 the service sector became the driver and magnet for several states like Maharastra, Gujarat, Karnataka, Kerala, Tamil Nadu and West Bengal where its share ranged around 50 percent. In relatively poor states like Rajasthan, Madhya Pradesh, Assam, Orissa, Bihar and Uttar Pradesh the tertiary sector became a leading sector, but not to the same extent as in forward and richer states.

Further, the study analyzed emerging employment pattern of these states on the basis of various issues of National Sample Survey Organization (1983, 1993-94 and 1999-2000) by using
statistical figures of NSDP (2000-01) and employment (1999-2000) at 1993-94 prices. The study found that so far the relative shift in the percentage share of employment in various sectors of these states is concerned; there is no uniform pattern that abides by the experience of developed countries. However, Kerala showed a singularly different pattern with NSDP derived from agriculture declining to 25 percent accompanied by low level of employment share of 40 percent. This was accompanied by 20 percent share of NSDP in industry with 25 percent employment and also 55 percent share of NSDP in services with 33 percent employment. The pattern of development in West Bengal followed more or less similar to that of Kerala. The Maharastra is another state which has shown asymmetry in its relative share of three sectors. This state enjoyed a second place in terms of per capita income in 2000-01 with a small proportion of 14 percent of NSDP being generated from agriculture, but it carried a heavy burden of labour employed at around 57 percent in agriculture. This was followed by 33 percent share of NSDP in industry with barely 17 percent employment. In case of services, its proportion in NSDP was 53 percent with a labour absorption of around 26 percent. This implies that output-labour ratio in Maharastra was only 0.24 of agriculture, 1.85 for industry and 2.1 for services. The state of Gujarat has also followed the similar pattern like Maharastra.

Finally, there is a group of economically backward states like Andhra Pradesh, Rajasthan, Madhya Pradesh, Jammu and Kashmir, Assam, Orissa, Uttar Pradesh and Bihar which have a very high proportion of labour force dependent on agriculture with Assam accounting for 60 percent, whereas both Bihar and Madhya
Pradesh account for nearly 75 percent. The share of industry in NSDP ranges from as low as 12 percent in Jammu and Kashmir to 18 percent in Orissa and 29 percent in Rajasthan. As against this, the share of tertiary sector in NSDP ranges from 40 percent in Assam to 51 percent in Jammu and Kashmir. In view of high share of employment in agriculture, the shares of employment in industry and services taken together fluctuate between 25 to 40 percent. Obviously, the situation in these states is of a low level of equilibrium in both NSDP and employment. The low level of productivity in agriculture along with failure to move towards industrial or post-industrial economy has been experienced in these states.

The study concluded that there is need to analyze the production and employment pattern of every state and evolve suitable policies to strengthen agriculture in the first instance which provides livelihood or employment to nearly two-thirds to three-fourths of the labour. A breakthrough in agriculture will provide a push to industry and services as a consequence of the increase in labour and land productivity in agriculture. The industry has lagged behind the growth of services. This transition witnessed in most of these states to a post-industrial service economy without passing through a process of industrialization has been noted as a major weakness of the outcome of the development process undertaken in the country over the last 50 years.

Deepita Chakravarty (2006), explored the growing services in 16 major states of India on the basis of CSO data for a period of 1980-81 to 1992-93 (i.e., initial phase of liberalization) at 1980-81 prices and the period 1993-94 to 2002-03 (i.e., later phase of
liberalization) at 1993-94 prices by using Durbin-Watson statistics. The main objective of the study is to find out the determinants of service sector growth in India during recent years.

Basically this study is a demand side analysis where the service sector output of a specific state is not only a function of the outputs of that state's own agriculture and industry, but also the output of the commodity producing sector of the rest of Indian economy. The selected states include Rajasthan, Maharastra, Haryana, Karnataka, Gujarat, Himachal Pradesh, Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Orissa, Andhra Pradesh, Bihar, Kerala, West Bengal, Assam and Punjab. Further, these states have been classified into high, medium and low growth states on the basis of their performance of service sector growth rates during the period 1980-81 to 1992-93 (i.e., initial phase of liberalization).

The high growth states with a service sector growth rate of above 6.5 percent, includes Rajasthan, Maharastra, Haryana, Karnataka and Gujarat. In all of these states while agriculture showed an insignificant elasticity, the responsiveness with respect to industry was generally significant in both the periods. During the initial phase of liberalization, the corresponding elasticity for industry varied from 0.76 in Haryana to 1.17 in Maharastra. However, Maharastra showed an interesting trend of insignificant elasticity for industry in the later phase with a significantly high elasticity for the rest of the economy. The rest of the economy played a significant role only in case of Haryana and Gujarat in the initial period, but in the later period this trend persists only for Haryana.
Some marginal changes can be seen in the elasticity with respect to industry in the second period when compared to first one in the states of Rajasthan and Gujarat, but none of these were found to be statistically significant. Even then in the second period the industrial sector of both these states have performed reasonably well and comparatively much better than their agricultural sectors. The presence of serial correlation for both the specifications in Karnataka rules out the possibility of any discussion. Incidentally, the value of elasticity with respect to rest of the economy was quite high and above one in all of these high growth states.

Among the medium growth states with service growth rates in between 5.5 to 6.5 percent include Himachal Pradesh, Tamil Nadu, Madhya Pradesh, Uttar Pradesh, Orissa and Andhra Pradesh. These states showed insignificant elasticity with respect to agriculture for both periods as well except for Andhra Pradesh in the later phase. Moreover, the elasticity with respect to industry showed a significant increase in the numerical value only for the state of Orissa in the later period when compared to the first.

In the initial phase of liberalization the equation for Tamil Nadu showed indications of multicolinearity for the specification with 3 independent variables. For this state the same specification indicated a strong relationship in the later period between the state's industry and the rest of the Indian economy. A similar relationship was also suggested in case of Madhya Pradesh. While the Orrisa results suggest the existence of multicolinearity in the initial phase of liberalization, the later phase of liberalization indicates the same for Himachal Pradesh and Uttar Pradesh.
The low growth states with a service growth rate of below 5.5 percent include Bihar, Kerala, West Bengal, Assam and Punjab. In most of these states service sector performed reasonably well in the later phase of liberalization except for the state of Assam. The industrial sector once again turned out to be significant in most of these states in generating demand for services in their economies. However, in some of these states agriculture also does play a significant role, yet not considerably in both the periods. Incidentally, the rest of the Indian economy was found to be significant in both the periods only in the state of Bihar.

In the initial phase of liberalization, agriculture was insignificant in generating demand for services in Bihar, but it became significant in the later phase. There was a marginal improvement in the rate of growth of agriculture in Bihar in the second period over the first from a low base of 1.6 percent per annum. However, the change was still statistically insignificant. Incidentally, the improvement in the industrial growth rate in Bihar was considerable and statistically significant in the later phase of liberalization leading to no significant change in corresponding elasticities. On the contrary the state of West Bengal showed a significant elasticity for agriculture in the initial period and an insignificant one in the later period. Although the rate of growth of agriculture had decline significantly in the second period as compared to first it was still around 3.4 percent. West Bengal showed a significantly higher elasticity for the industrial sector in the second period as compared to the first. This state had also achieved significantly high rate of growth in service sector in the second period. While both agriculture and industry were
insignificant in generating demand for services in Kerala over the initial period, yet the commodity producing sector of the rest of the Indian economy played a significant role. However, the situation changed somewhat in the second period when the state's own industrial growth rate improved marginally and the elasticity for services with respect to industry turned out to be significant. The state of Punjab almost shared a similar experience.

The study concluded that while a state's own industry turns out to be the most important determinant of service sector growth, the commodity producing sector outside the state does play a significant role as well in determining service sector's performance under certain conditions that basically relate to supply side.

Most of the studies on structural change are indicative of the fact that structural change in most of the economies is characterized by lopsided growth of tertiary sector.

2.1: Employment Generation in Tertiary Sector

Outstretched growth of tertiary sector has its own implication for employment. In India, the commonly held view is that the tertiary sector share has grown faster than the employment generated by this sector. Following section is a brief review of studies on employment generation aspect of tertiary sector with special reference to India.

Rajinder Kumar (1995) has analyzed the growth and employment potentiality of tertiary sector in India for a period of 1950-51 to 1996-97. In India, there is a no planned development of some sectors. The tertiary sector has always been considered as a
residual sector and its growth merely a byproduct of development in agriculture and industry and their supporting infrastructural services like irrigation, power, transport, the normal expansion of state administration and other social services etc. The twin objective of the study is: (a) to examine the role of tertiary sector in economic growth; and (b) to work out its employment potentiality.

The study based on Inter-Industry Transaction Table (1973-74), prepared by the RBI, found that primary sector consumed about 39 percent of the inputs generated by it and secondary sector had provided about 15.38 percent and the rest 45.62 percent came from the tertiary sector. The secondary sector used its own input accounting for 49.29 percent and primary sector provided to the extent of 25.88 percent, while the tertiary sector had contributed 24.83 percent. Thus, both in primary and secondary sectors, a major part of the total input came from the tertiary sector.

The simple and compound growth rates of different sectors have been worked out and a regression equation model has been used. During the Seventh Five Year Plan the realized growth rate was 3 percent as against 2.5 percent in agriculture. In manufacturing, the realized growth rate was 7.5 percent as against the target of 5.5 percent. In transport, communications and trade, the realized growth rate was 6.4 percent, but in community and personal services it was 7.2 percent. Thus, it is evident that the growth rate in tertiary sector has been higher in comparison to agriculture.

Further, the study revealed that between the years 1951 to 1971, the workforce in the primary sector was constant at 72
percent and in 1991 it was about 67 percent. Since 1951 the heavy investment in manufacturing sector had made no impact with regard to pattern of occupational distribution which marginally declined from 13.5 percent in 1981 to 12.7 percent in 1991. In fact, from the year 1951 to 1981, around 17 percent of the workforce was employed in the tertiary sector. However, in 1991 there was an increase in workforce in tertiary sector from 17 percent to 20 percent. Thus, the shift in workforce from the primary sector to the tertiary sector was more than that in the secondary sector. There was enough scope for labour absorption in this sector. Therefore, considering high potentiality of both employment and growth it concluded that the tertiary sector could play a very crucial role in the Indian economy.

**Sudama Singh and Shyam Sunder Prasad Sharma (1995)** examined the employment generation in the service sector of India for the period of 1950-51 to 1993-94. The study mainly focused on widely held Clark-Fisher hypothesis that an economy on its path to development would have a progressive shift of labour from agriculture and allied activities to secondary and tertiary sectors. The United Nations Statistical Year Book (1977) and World Development Report (1988) depicted that during the period of 1960 to 1986 the percentage of labour force employed in agriculture declined in U.S.A. from 7 percent to 4 percent, in U.K. from 4 percent to 3 percent, in West Germany from 14 percent to 6 percent and in Japan from 33 percent to 11 percent. Although the employment in industry had a mixed trend, yet the service sector witnessed a change of employment in its favour. During the same period the percentage of labour force engaged in service sector
increased in USA from 57 percent to 65 percent, in the UK from 48 percent to 59 percent, in West Germany from 38 percent to 50 percent and in Japan from 37 percent to 55 percent. Such an experience of developed countries supported the Clark-Fisher hypothesis about the shift of labour force from primary to secondary and tertiary sectors.

In case of India also, the share of primary sector in GDP continuously diminished from 56.5 percent in 1950-51 to 52.1 percent in 1960-61, to 45.8 percent in 1970-71, to 39.6 percent in 1980-81, to 33.5 percent in 1990-91 and to 31.8 percent in 1993-94. But the share of secondary and tertiary sectors in GDP has continuously increased. The share of secondary sector increased from 15 percent in 1950-51 to 27 percent in 1993-94. The share of tertiary sector increased from 28.5 percent in 1950-51 to 29.2 percent in 1960-61, to 31.9 percent in 1970-71, to 36 percent in 1980-81, to 38.7 percent in 1990-91 and to 41.2 percent in 1993-94. This experience of India partially satisfied the Clark-Fisher hypothesis. But this partial validity of the hypothesis was challenged when one scrutinizes the trend in workforce deployment. Ever since 1951 there has not been any meaningful change in this respect from primary to secondary and tertiary sectors in the country. Between 1951 and 1981, the share of secondary and tertiary sectors taken together in the workforce had stagnated around 28 percent. However, this share in workforce employment increased to 31.2 percent (the share of secondary sector in employment being 13.5 percent and that of tertiary sector 17.7 percent) in 1981 and then it rose to 33.2 percent in 1991 (secondary sector being at 12.7 percent and tertiary sector, at 20.5
percent). But this change is very slow and does not conform to the experience of developed countries.

Moreover, especially since 1980’s, elasticity of employment in various sub-sectors of the tertiary sector had been generally less than unity (i.e., 0.34 in transport, storage and communications and 0.37 in trade and commerce sub-sectors) which clearly reveals a lagging trend of employment growth rate of this sector as compared to its income growth rate. The study attributed three main factors responsible for this low elasticity of employment in the service sector. Firstly, it was the outcome of falling labour-capital ratio due to use of labour saving technology. The capital-output ratio for the entire economy has been 2.89 in 1961-62, 3.70 in 1971-72 and 4.58 in 1979-80, whereas that of tertiary sector had been 4.09, 4.72 and 5.23 for the same period. Secondly, the indirect contribution of the secondary sector to employment generation in the tertiary sector had definitely become weaker. During 1960-88 the secondary sector itself presented a record of declining employment elasticity (i.e., 0.23 in industrial sector and 0.20 in manufacturing sector). Thirdly, the wage orientation of bargaining instead of employment orientation of the trade unions was also responsible for low elasticity of employment in the service sector.

Vijaya Katti (1998) explored the relationship between service sector and employment in India for a period of 1980 to 1996. The main objective of the study is to compare the growth of employment in the organized public and private sectors of the service sector of India. At the outset the study highlighted the fact that service sector was contributing about half of the world GDP. The advanced countries have become predominantly service
economies in the sense that these were producing on an average about 60 percent of the GDP and generating about 60 percent of total employment. Even in low income countries, the service sector is contributing more than one third of their total GDP.

In India, during the years 1980 to 1995, the percentage share of agriculture sector in GDP declined from 38 percent to 29 percent, while during the same period the percentage share of industrial sector increased from 26 percent to 29 percent and that of service sector from 36 percent to 42 percent. The study found that unlike developed world where the shift from agriculture to industry and then much later from industry to services took place, in India, it appeared to be directly shifting from an agricultural oriented economy to be dominated by service sector.

In India only, about 10 percent of the working population was employed in organized sector. Out of this, more than 55 percent were employed in service sector and less than 30 percent in the industrial sector. So far as the composition of employment in both organized public and private sectors with reference to service sector is concerned in 1989 the percentage share of organized public sector was much higher at 72.05 percent as compared to organized private sector with just at 27.95 percent. Out of this in organized public sector, the share of sub-sector local bodies was the highest at 7.73 percent. The average annual rate of growth in organized public sector was higher at 14.2 percent between the years 1981 to 1986 as compared to 1986 to 1991 at 7.8 percent. It was just marginal since 1991 to till 1995 and then experienced a marginal decline in 1996 over 1995. However, the employment in organized private sector of the service sector did not experience
any significant increase since 1981 to 1995. Only in 1996 it increased quite significantly over the previous year. Thus, organized public sector played an important role in providing employment in service sector of the economy.

The study concluded that in future the investment and creation of employment will not be mainly driven by the industrial sector. The service sector will soak in the bulk of investment and this will generate huge employment. The Government needs to shift its thinking to create those institutional structures which encourage private investment in the service sector and must also remove any other delays and roadblocks. It will lead to generation of far more employment opportunities as compared to investment in public sector of the economy.

Bishwa Nath Singh (2000) analyzed the employment generation in India’s service sector for a period of 1981 to 1998. The main objective of the study is to examine the changing sectoral share of employment and the role of service sector in the provision of employment in Indian economy. The study compares the occupational structure of some major industrialized and developing countries for a period of 1960 to 1993. During this period, the share of service sector in employment increased: from 48 percent to 69 percent in U.K.; from 57 percent to 71 percent in U.S.A.; from 39 percent to 65 percent in France; from 37 percent to 65 percent in Japan; from 25 percent to 49 percent in Mexico; from 12 percent to 22 percent in Thailand and from 15 percent to 23 percent in India. Thus, the share of service sector in total employment varied from country to country. In industrialized economies, nearly two-third of labour force was engaged in services, whereas in
developing countries, only about one-fourth catered to the service sector.

Further, the study found that the share of service sector in total organized employment is much higher in public sector as compared to private sector. During the period 1981 to 1998 the total employment in public sector increased from 154.84 lakh to 194.18 lakh, while in the private sector it only increased from 73.95 lakh to 87.48 lakh respectively. However, with growing privatization, in future the private organized sector too was expected to generate more employment opportunities related to service activities.

Lastly, the study recommended that for further growth and development of service sector there is need to make rapid progress in telecommunications, strong encouragement to venture capital, provision of easy availability of finance and liberal approach to law and regulations for electronic commerce. So far, the provision of employment opportunities by the public sector is concerned; there is more scope in social services like education, health, child and family welfare, care of the handicapped and old. These areas of social services, if properly developed, will absorb a large proportion of unemployed human resources.

S.S. Suryanarayanan (2000) examined the relationship between service sector and employment in India on the basis of Input-Output Table (1991-92). The main objective of the study is to examine the capacity of generating direct and indirect employment and quality of employment in service sector. It uses the input-output model. The broad finding of the study is that for
every additional employment in the service sector there is 1.7 times opportunity in the economy as a whole (i.e., every direct job in the service sector led to an additional 0.7 opportunities indirectly in the economy). The indirect employment generation appeared to be highest in the sub-sector of rail transport service (with an employment multiplier of 4.244) because of its strong linkages with the rest of the economy as indicated by its high output multiplier of 2.02 and low employment intensity relative to the employment intensity of the economy. However, these estimates do not take into account the induced effects of wage flows to labour households which could be substantial.

Another important finding of the study is that in case of organized sector, employment in the service sector, the quality of employment is better than the total workforce with the sole exception of sub-sector trade which had a large unorganized sector. The average daily earnings of regular employees and that of illiterate workers in the sub-sector trade were below the poverty line earnings. Moreover, the average daily earnings of female regular employees in all the sub-sectors of the service sector were also well below the poverty line earnings.

Silvia Maria de M.N. (2000) has analyzed the tertiary sector and employment generation for the pre-reform and post-liberation period in Goa. The main objective of the study is: (a) to examine the trend in the work force employment in the tertiary sector of Goa; (b) to examine the trend in each of the sub-sectors of the tertiary sector; and (c) to study the inter-sectoral shift in workforce and its implications for economic development of Goa. The study analyzes the widely held Clark-Fisher-Kuznets hypothesis that in
the path of economic development there would be a progressive shift of labour from agriculture and allied activities to the secondary and tertiary sectors. In Goa, the percentage of total workforce employed in primary sector showed a continuous decline from 70 percent in 1961, to 49 percent in 1971, to 45 percent in 1981, and then to 36 percent in 1991. Simultaneously, the secondary and tertiary sectors showed a consistent rise in their respective shares of total workforce in Goa. The share of secondary sector increased from 9 percent in 1961, to 17 percent in 1971, to 19 percent in 1981, and then to 21 percent in 1991. With regard to the tertiary sector there was a significant increase from 21 percent in 1961, to 34 percent in 1971, to 36 percent in 1981 and then to 43 percent in 1991.

So far as the sub-sectors of the tertiary sector are concerned, the trade and commerce (i.e., wholesale or retail trading activity, commercial transactions related to imports and exports, real estate and properties, insurance, money lending and banking etc.) registered a consistent growth of 24 percent in 1961 to 28.4 percent in 1971 to 30 percent in 1981 and then to 33 percent in 1991. Similarly, in the sub-sector of transport, storage and communications (i.e., transport activities related to air, water and road, posts, telegraphs, telephone, wireless, signaling, information and broadcasting etc.) there was decrease in workforce from 31 percent in 1961 to 26.4 percent in 1971 to 20 percent in 1981 and then to 18 percent in 1991. In case of sub-sector other services (i.e., public utility services like electricity, gas or water supply and sanitary services, central, state, quasi-government or municipal administrative departments, trade or labour associations and
recreational activities etc.) showed that the total workforce remained unchanged at 45 percent from 1961 to 1971. However, it increased to 50 percent in 1981 and then marginally declined to 49 percent in 1991. This implied that on the whole there was a shift of workforce in the tertiary sector in favour of other services which also emerged as the largest employer.

The study concluded that in Goa, in consonance with Clark-Fisher-Kuznets hypothesis, the tertiary sector has played a vital role in employment generation of workforce migrating from the primary sector of Goa. Within the tertiary sector, the sub-sector other services had been the largest employer followed by trade and commerce. The transport, storage and communications have been growing rather slowly in this respect. Thus, economic growth has occurred in Goa, but it has been more 'consumption oriented’ rather than ‘production oriented’ which is undesirable. What was needed in Goa was a real faster growth of the productive sectors which, unfortunately, had been slow.

Seema Joshi (2004) has analyzed the tertiary sector driven growth in India and its impact on employment and poverty for a comparatively longer period of 1950-2000. The main target of the study was to bring out the fact that in India during the process of economic development a growing 'tertiarisation' of the structure of production and employment had taken place. Over the years, the Indian economy has experienced a change in the production structure with a shift away from agriculture towards industry and tertiary sectors. The study shows that the share of agricultural sector in real GDP has declined from 55.91 percent in 1950s to 28.66 percent in 1990s, whereas during the same period the share
of industrial and tertiary sectors has increased from 16 percent to 27.12 percent and 28.09 percent to 44.22 percent respectively. During 1950s the primary sector was the dominant sector of the economy and it accounted for largest share in GDP. But the whole scenario changed especially in 1980s. During the period 1980-81 to 1989-90 (i.e., pre-reform period) the service sector output increased at the growth rate of 6.63 percent per annum as compared to 7.71 percent per annum in the period 1990-91 to 1999-2000 (i.e., post-reform period). Thus, during 1990s the tertiary sector emerged as a major sector of the economy both in terms of share in GDP as well as growth rates.

However, the sectoral distribution of workforce during the period 1983-2000 revealed that structural changes in terms of employment had been slow in India as the primary sector continued to absorb 60.5 percent of the total workforce in 1999-2000 followed by the tertiary and industrial sectors at 22.7 percent and 16.8 percent respectively. Thus, there had been disproportionate growth of the tertiary sector as its share in employment had been far lower as compared to its contribution in GDP. But this disproportionate growth of the tertiary sector brought out two patterns of employment generation. The first pattern roughly pertained to period 1983-93 (i.e., pre-reform period) in which the primary sector was the main source of additional employment at 50.5 percent followed by the tertiary and secondary sectors at 30.2 percent and 19.3 percent respectively. The second pattern which developed during the period 1994-2000 (i.e., post-reform period) was that the tertiary sector accounted for 73.2 percent of additional employment generated followed by the
secondary and primary sectors at 50.4 percent and –0.23.6 percent. Thus, a negative growth in employment in case of primary sector is clearly visible.

From the year 1993-94 to 1999-2000 (i.e., post-reform period) there was a sharp drop in the labour absorptive capacity of growth (i.e., elasticity of employment) in the economy reflecting the phenomenon of jobless growth. Barring some sub-sectors of the tertiary sector (i.e., transport, storage, communication and finance, insurance, real estate and business services) all the other sub-sectors exhibited a declining trend in overall elasticity of employment from 0.62 to 0.16. The study concluded that the tertiary sector can play a 'catalytic' role, at least in the medium term, in employment generation and poverty alleviation. However, in the long-run the simultaneous growth of all the three sectors is desirable.

**G.L. Gaur (2006)** analyzed the changing employment scenario in service sector of India for the period of 1989 to 2001. The main objective of the study is to statistically test the hypothesis that whether there exists any correlation between trend of employment and GDP growth rate in the service sector of India. The analysis shows that in India primary sector provided employment to 24.75 lakh persons in 1989 which decreased to 23.87 lakh persons in 2001, whereas the secondary sector provided employment to 88.05 lakh persons in 1989 which increased to 95.58 lakh persons in 1998 and then it decreased to 87.31 lakh persons in 2001. An increasing trend in total employment in secondary sector was recorded up to 1998 and after that it continuously declined.
The total number of workers engaged in service sector of India in 1989 was 144.22 lakh which increased to 163.33 lakh in 2001. In the service sector, the public sector provided more employment as compared to private sector. The public sector provided employment to 129.08 lakh persons in 1989 which further increased to 141.53 lakh persons in 2001, whereas in private sector it was 15.14 lakh persons which increased to 21.80 lakh persons during the same period. Out of the sub-sectors of the service sector, the highest increasing trend in total employment was observed in the sub-sector finance, insurance and real estate with 13.59 lakh persons in 1989 to 16.52 lakh persons in 2001, while the sub-sector transport, storage and communications showed the lowest increasing trend in employment from 30.25 lakh persons in 1989 to 31.18 lakh persons in 2001.

The study found mainly the three factors responsible for growth of employment in the service sector: (a) the Government launched many schemes for poverty alleviation and employment generation; (b) the demonstration effect in India with that of foreign countries created new demand patterns which justified the dominance of service sector in recent years; (c) when income in manufacturing sector increased, then the demand for services had also increased.

One of the most interesting finding of the study is that there is no uniformity in changes between GDP in service sector and employment in service sector. Statistically, the value of correlation between GDP and employment in service sector has been 0.11. That is to say, statistically there is an insignificant co-relation between GDP and employment in service sector. The study
concluded that after the adoption of the policy of trade liberalization, the importance of primary sector remained more or less constant, but the role of service sector has increased day by day. Still the public sector provided more jobs in this sector. It is a paradox that even though the policy of privatization has been adopted, yet the public sector played an important role in providing employment in service sector. However, the pattern of services has changed vastly due to foreign demonstration.

The study suggested that India should create demand for its services in domestic as well as foreign markets. Being a member of WTO, it should avail the opportunity of open trade with trade partners. It is the need of the hour that service sector be developed for competing in the world market.

In the current phase, the studies show that the tertiary sector growth has generated a high wage employment, but it has not been able to reduce the agriculture sector share in employment where a major chunk of labour force is crowding in India.

2.3: The Excess Growth of Tertiary Sector

Right from the days of Adam Smith, there has been a long debate on the implications of excess growth of tertiary sector. Following section briefly captures the current contributions to this debate.

B.B. Bhattacharya and Arup Mitra (1990) explored the excess growth of tertiary sector in India on the basis of National Accounts Statistics including new series data. The study investigates the pattern of growth of the tertiary sector and its
implications on growth and distribution in India in the post-

The study found that the percentage share of primary sector in NDP has come down from 58 percent in 1950-51 to 35 percent in 1986-87. The share of secondary sector increased initially from 15 percent in 1950-51 to 22 percent in 1965-66 and remained around that level in the next 15 years. In the eighties it again started rising and stood at about 26 percent in 1986-87. However, the relative share of all broad groups of tertiary sector have recorded continuous rise over the years and together these account for nearly 40 percent of the national income in 1986-87.

Thus, the fall in the relative share of agriculture in NDP has been due to rise in relative share of tertiary rather than that of manufacturing sector. The share of manufacturing (including registered manufacturing) has recorded very slow growth over a long period. Even at the end of three and a half decades of planned economic development it stands well below that of agriculture. The share of services in contrast has increased steadily and crossed that of agriculture by early eighties. The tertiary sector has, therefore, become the major sector in the economy even before the economy could become highly industrialized one. This is in sharp contrast to the general pattern observed in present day developed countries. The sectoral disaggregation of national income shows that it has grown relatively faster than other sectors throughout the post-independence period of the Indian economy from 1950-51 to 1986-87.

But when we compare change in production structure with
occupational structure then the contrasting mode of development in India becomes even more prominent. Between the years 1960 to 1981, the share of services in output has gone up by 7 percent, whereas its share in occupation has marginally increased by only 3 percent. Thus, the change in production structure in India has not resulted in corresponding change in occupational structure. The Indian process of growth in this respect is not only in contrast to developed countries, but also iniquitous because of differential growth of income and employment across sectors.

Further, the employment elasticity (defined as the ratio of employment growth rate to income growth rate) of the service sector over the period 1971 to 1981 at 0.66 was lower than that of the commodity sector (i.e., agriculture and industry) at 0.71 which had more implications on employment. The average annual compound growth rate of employment in public sector services and private organized sector services over the period 1976-77 to 1986-87 were 2.61 percent and 1.96 percent, whereas the overall tertiary sector employment growth rate from 1971 to 1981 has been 2.71 percent per annum which infers that the growth rate of employment in the informal tertiary sector is higher than that of the organized tertiary sector.

The average annual growth rates of income from commodity and service sectors in 1970’s were 2.8 percent and 4 percent which changed to 4 percent and 6.1 percent from 1981-82 to 1987-88 respectively. So the gap between the growth rates of services and commodity sector has widened in the eighties as compared to seventies. The study warned that this wide disparity between the growth rates of income originating from services and commodity
production would result in inflation and/or higher imports and adverse balance of trade.

R. Nagraj (1991) questioned the excess growth of tertiary sector in India on the basis of CSO data for the period 1989 to 1990. The main objective of the study is to challenge the Bhattacharya and Mitra’s (1990) assertion that the tertiary sector has grown relatively faster than other sectors throughout the post-independence period of the Indian economy from 1950-51 to 1986-87. At the outset the study owned that in 1987-88 the share of tertiary sector at 39.7 percent in NDP was higher than not only of the secondary sector at 26.3 percent, but as well that of primary sector which was at 34 percent. However, it needs to be appreciated that even in 1950-51, the share of tertiary sector in NDP was higher at 26.6 percent than that of the secondary sector at 15.1 percent, though both of these were lower than that of the primary sector at 58.3 percent. But when the changes in share as percentage of their initial values are compared then over the entire period of study the secondary sector has come to acquire greater share of 74.2 percent as compared to 49.2 percent of tertiary sector. However, the change in the share of primary sector has become negative at - 41.7 percent. Moreover, in the sub-periods of 1950-51 to 1959-60, 1960-61 to 1969-70, 1970-71 to 1979-80 and 1980-81 to 1987-88 the secondary sector has almost shown a higher percentage growth rate of NDP at 5.6 percent, 5 percent, 4.5 percent and 6.9 percent as compared to 4.2 percent, 4.4 percent, 4.6 percent and 6.4 percent of the tertiary sector.

The study concluded that the statistical evidence suggests that it is the secondary sector which has grown at a faster rate than
the tertiary sector over the entire period of 38 years under consideration. However, the growth rate of the secondary sector witnessed drastic slowing down with considerable fluctuation during the period 1965-66 to 1979-80, whereas the tertiary sector has displayed a much steadier growth since 1950-51. Therefore, as a result of a higher initial share and steadier, though at a lower rate, growth rate of tertiary sector has come to acquire a relatively higher share in NDP as compared to the other two sectors by the end of the time period. However, if we accept that domestic product has expanded at a faster rate in this period, the secondary sector has witnessed a higher growth rate as compared to tertiary sector.

Krishna Mazumdar (1995) analyzed the disproportional growth of service sector in India for a period of 1960 to 1990. The main purpose of the study is to find out the possible explanations for the dis-proportionality in the growth of service sector in India. The general pattern of structural transformation of the production and employment structure from agriculture to industry and then from industry to services as perceived by Clark, Fisher, Kuznets and others does not seem to be valid for India and some other developing countries. It has been observed that in many of these countries there is a rapid transition from agriculture to services with industry lagging behind. Consequently, the service sector has become the principal contributor in GDP of these developing low income countries like India, Pakistan, Sri Lanka, Kenya and Zambia etc.

The Indian economy over the period 1960-90 has experienced a change in production structure with a shift of
emphasis from agriculture to services. The sector shares of primary, secondary and tertiary sector respectively being 50 percent, 20 percent and 30 percent in 1960; 45 percent, 22 percent and 33 percent in 1970; 37 percent, 26 percent and 37 percent in 1980; and 31 percent, 29 percent and 40 percent in 1990. During this period the service sector witnessed a very high rate of growth of its share in GDP from 4.6 percent in 1960-70 to 5.2 percent in 1970-80 to further 6.5 percent in 1980-90. But the employment structure has remained almost stagnant from 74 percent, 11 percent and 15 percent in 1960 to 73 percent, 12 percent and 15 percent in 1965 to 70 percent, 13 percent and 17 percent in 1980 and 67 percent, 12 percent and 21 percent in 1990 for agriculture, industry and service sectors respectively. Thus, despite the increasing contribution of the service sector in GDP over the period under study, increase in the share of labour absorbed in the sector is insignificant.

The study has made an attempt to provide the possible explanations for this disproportionate growth of service in India. Foremost the political factors have influenced the extent of expansion of service sector in India. Here the governments have a significant role to play in the planning and production of the economy as a whole. The expansion of service sector may be attributed to the operation of demonstration effect in India as a consequence of the growing mobility of masses due to expanding foreign trade, tourism, cultural and educational tours etc. Increasing urbanization may be regarded as another factor for expansion of service sector. In fact, urbanization has been closely associated with arise in demand for infrastructural services such as
communications, public utility and distributive services etc. A substantial change in the private consumption pattern of the economy has been observed with increasing urbanization. Many new goods and services have entered into the Indian consumption basket.

On the other hand, the lag of labour force growth in proportion to growth in share of GDP of service sector in India may be attributed most importantly to the adoption of use of capital intensive and labour saving imported technology. Its introduction has tended to produce a much stronger effect on production rather than on employment. For example, the introduction of computers has led to reduction of employment in sub-sectors like banking, insurance, telecommunications and railways etc. The other point worth mentioning in this regard is that the share of the service sector in GDP seems to get inflated to some extent by the very nature of the accounting system used in this sector which is that of income approach. One major sub-sector of the service sector is public administration and defence. The increasing expenditure of the Government in this sub-sector in the form of increasing salary etc. gets reflected as increasing income share of the service sector even without any new entry in the services.

The study concludes that in most of the countries of world the service sector plays a significant role in the expansion of both GDP and employment. But in India the service sector has failed to play any significant role in employment generation. Therefore, the policies are required to be adopted so that the service sector in India may play a role in the expansion of employment opportunities along with the expansion of GDP.
Satya Sundram (2002) analyzed the excess growth of tertiary sector in India from the period of 1950-51 to 1999-2000. The main objective of the study was to examine the emerging pattern of over-tertiarization in Indian economy. The study found that the share of agriculture and allied activities in India declined from 55 percent of the GDP in the early fifties to 25 percent in 1999-2000. However, in terms of employment this sector absorbs two-third of the total labour force. The share of secondary sector including manufacturing has remained stagnant in GDP around 27 percent in 1999-2000. On the other hand, the service sector in Indian economy accounted for 28 percent of the GDP at constant prices in 1960-61. This share increased to 31 percent in 1970-71 and almost 37 percent in 1980-81. This was as high as 47 percent in 1999-2000 which means that the service sector has been the main beneficiary from the falling share of the agriculture sector. During the nineties the service sector as a whole was growing at the rate of more than 7 percent to 8 percent per annum. In 1997-98 the sub-sector public administration and defence alone recorded a growth of 20 percent which was largely the result of the rise in pay and allowances of the workers in public administration and defence following the implementation of the Pay Commission recommendations.

Thus, the service sector has become predominant even before the economy has become highly industrialized. In India, the fall in share of agriculture has been mainly due to a rise in the relative share of tertiary rather than manufacturing sector. The growth of the service sector has not been propelled by high income elasticity of demand as in the case of developed countries, but by
the decisive and dominant role played by the intervention of public sector. In India, the service sector has grown faster than the commodity sector (i.e., agriculture and industry) and its growth rate also appears to be independent of the commodity sector even during the high growth phase of eighties.

But this excess growth of tertiary sector in India has produced some deleterious effects. The production structure has not resulted in a change in the occupational structure. There has been no corresponding shift in the occupational structure of the labour force from the agriculture sector into the service sector in the eighties and nineties.

The study recommends that due encouragement may be given to small-scale sector in the service sector. With its greater flexibility in location and low capital intensity the small-scale sector is ideally suited to take up ventures in the services areas. The potential of small-scale industries to render services of a personal nature in close proximity to their customer must be recognized and suitably encouraged. The Government must restrict its activities in this sector and promote private sector to expand the range of services. Strengthening of the service sector should focus on human capital formation through the development of knowledge intensive service which requires an efficient infrastructure. Moreover, the service and manufacturing sectors should become mutually more supportive and complementary. In other words, the service sector must act as a catalyst for improving the efficiency and productivity in the industrial sector. In general it may be concluded that it is high rate of growth that the service sector should follow, not precede, high growth rates of agriculture and
industry, if growth has to generate lasting benefits. After all, what the Indian economy urgently requires is rise in productive employment.

Synoptic review of studies is indicative of the fact that excess growth of tertiary sector, that too, by bypassing the secondary sector in India, is a matter of concern about its sustainability in the long run.

2.4: Input-Output Approach in relation to Tertiary Sector

Very few studies have been done at the disaggregated or sector level to capture the dynamics and linkage patterns of tertiary sector, especially in the input-output framework. Following section is a brief review of such studies.

Sudama Singh and Yamini Joshi (1989) analyzed the structural changes in the economy of Uttar Pradesh. The study is based on input-output tables for the years 1970-71 and 1977-78 as prepared by State Planning Institute, Lucknow on behalf of the state Government. The main purpose of the study is to find out the structural changes in the state economy by statistically using well known Chenery-Watanabe U-W classification and Leontief method. The findings of the study are important because these coincide with the Fourth and Fifth Five Year Plan periods which laid greater emphasis on eradication of poverty and the attainment of economic self-reliance.

In the comparison, the non-ferrous metals and cement sectors remain the only sector with high forward and backward linkages. In the year 1977-78 iron, steel, metallic products,
fertilizers and chemical products have moved from intermediate manufacture to intermediate primary production which indicates that the intermediate demand for the products of these sectors has increased over the years. The transport has also shifted from final primary production to intermediate primary production. Thus, keeping in view the structure and nature of development of the state economy of Uttar Pradesh this seems to be quite logical.

Further, in order to compare the time period of 1970-71 to 1977-78 the study has been divided into three sub-heads i.e., agriculture, industry and all sectors. Although the decline in input coefficient of all sectors is hardly by 0.08 percent, yet it may be treated as a healthy sign for poor and developing economy like Uttar Pradesh. It clearly indicates that the state economy over the period of analysis has moved slowly towards a better, efficient and economical utilization of various inputs. The mean of the industry shows that input coefficients have decreased by 7.6 percent. This marginal improvement in the utilization of inputs in industrial sector is encouraging for an economy oriented towards rapid industrialization. However, the agriculture sector which is the backbone of the state economy presents a dismal picture. The input coefficients for agriculture sector have increased by 23.5 percent. This phenomenal increase in input coefficients may be attributed to costly inputs like chemical fertilizers, pesticides, diesel oil and other petroleum products whose prices shot up due to oil shock in 1973-74.

The study concludes that during seventies the structural changes in the economy of Uttar Pradesh did not have uniform pattern of development of different sectors i.e., agriculture,
industry and all sectors. The input coefficients in case of industry have marginally gone down, whereas the same in case of agriculture which is the pacesetter of economy have markedly increased. These types of changes are bound to create sectoral imbalance of a severe nature.

Inderjeet Singh (2000) analyzed the structural change in Punjab economy on the basis of input-output tables for the years 1969-70 (Alagh, Bhalla and Kashyap, 1980) and 1983-84 (Saluja, 1990). The main objective of the study is to examine the structural change that have taken place in the state economy during the Green Revolution era of 1969-70 to 1983-84 by using Chenery-Watanabe U-W classification and basic Leontief formalism.

Traditionally, the Punjab economy has been dominated by the agriculture and its allied sectors. The share of primary sector in the total net state domestic product has come down to 43.24 percent in 1997-98 as against 49.50 percent in 1980-81. On the other hand, during the same period the share of secondary sector has improved from 18.47 percent to 27.29 percent respectively. The major contribution in this improvement has been due to manufacturing related sector. The share of tertiary sector in the net state domestic product depicts a marginal decline from 32.02 percent to 29.49 percent over the entire period of analysis.

A look at the sectoral linkage pattern is indicative of the fact that in agriculture related sector backward linkages are confined to a few number of sectors, but a high forward linkage is a general phenomenon. It implies that agriculture sector generates a below average input requirement from other sectors, while its own output
is widely used by other sectors. On the industrial front, the economy is dominated by small-scale units. The low forward linkage is limited to a few number of manufacturing sectors of the Punjab economy. Without import leakage in 1969-70, cotton ginning and textiles, rubber, leather and plastics and non-metal mineral products were the sectors with both high backward and high forward linkage. In 1983-84 cotton and textile, rubber, leather and plastics are still the key sectors. Other sectors which have joined this key sector category are edible oils and food processing, chemical and fertilizers, basic metal industries and miscellaneous industries.

While at the all India level it may be seen that over the years 1973 to 1978 input coefficients of all commodities increased by about 11.63 percent per annum. This increase is 15.09 percent for the period 1973-74 to 1989-90. For Punjab the input coefficients have increased on an average at 10.64 percent per annum through the years 1969-70 to 1983-84. This again confirms that input structure has experienced a change in the positive direction. Again at the all India level with the passage of time as we move forward from 1973-74 to 1989-90 the pace of technological progress is picking up. But the state of Punjab has shown technological change index of 0.5783 against 0.8234 for the all India which implies that overall technological change is slower in Punjab state.

The study concluded that the Punjab model of capitalist development has developed the agriculture and its allied sectors well, but it has failed to integrate it with rest of the sectors. In spite of being so developed, the agriculture is still characterized by low backward and low forward linkage pattern. The proportion of inter-
industry use to total output has registered a negligible improvement since the year 1969-70. A slight shift has occurred in favour of intermediate manufacturing characterized by high forward and backward linkage. Overall technological pace is picking up. The study suggested that further development of the state is possible only if secondary and tertiary sectors are developed and their integration with the agriculture is strengthened.

**Rita Bhowmik (2000)** explored the role of service sector in Indian economy on the basis of Input-Output Table (1991-92) by using Leontief framework. The main objective of the study is to examine the role of service sector by identifying the service intensive industries and its relationship with the rest of the economy. At the outset the study found that the service sector has grown faster than primary and secondary sector in the Indian economy. The share of service sector in GDP has shown a rising trend from 28.49 percent during the period 1950-51 then it started mounting in the eighties and has now become closer to 43 percent of GDP in 1996-97. It has grown progressively from 1950-51 to 1996-97 except for the seventies when its rate of growth has slowed down a bit. Thus, it may be said that service sector is playing an important role in the Indian economy.

The model has been empirically prognosticated by using the input-output Table (1991-92). It is interesting to see how the service sector is being used by other sectors of the Indian economy i.e., services intensity for the production of different industries in the economy. The services intensity of different industries have been calculated by two different methodologies viz., (1) direct services intensity and (2) direct plus indirect services intensity. It is
found that 25 industries and 31 industries out of 60 industries are with more than equal to the average i.e., 11.6 percent direct services intensity and 22.5 percent direct plus indirect services intensity respectively. It means that about 50 percent industries in the economy are direct and direct plus indirect services intensive. Thus, the importance of the services intensity was found to be remarkable in the Indian economy.

Further, in order to measure the expansionary potential of service industries on non-service industries, an index of vertical integration has been constructed. In this index, trade provides the strongest stimulus on the rest of the economy and its value added indirectly induced is more than fourteen times higher than the direct value added of its own. Other services exercises next strong effect on the rest of the economy and its value added indirectly induced is more than nine times higher than their direct contributions. Other transport services, crude petroleum and natural gas, railway transport services, electricity, railway equipments, communication, other chemicals, construction, other manufacturing provide next high stimulus on the rest of the economy. The leather and leather products, coffee, woolen textile etc., in fact, provide much lower stimulus in the rest of the economy. In general, it may be concluded that service industries appear to be the most growth inducing and generate a higher value added in other industries than in their own.

Aditya Patra (2007) explored the change in interrelatedness of different sectors of Indian economy on the basis of input-output tables for the year 1980-90 (pre-reform year), 1993-94 (intervening period) and 1998-99 (post-reform period) by using static Leontief
type model as suggested by Yan and Ames in 1965. The main objective of the study is to examine the change in interrelatedness of various segments in the production process during the pre-reform and post-reform situation.

The study found that the interrelatedness index is more or less same for the entire period. The R (interrelatedness value) was 0.743 in 1989-90 which increased marginally to 0.753 in 1993-94, but again rolled back to 0.747 in 1998-99. For the entire period indirect interrelatedness is the same at 0.07. However, the index of diversification has a variation as that of index of interrelatedness. During the same period it varied from 0.673 to 0.684 and further to 0.677.

The three individual segments viz., transport, trade and commerce and producer and personal services are very important ones. The value of their interrelatedness is equal to unity for the entire period of study which implies that these segments are most important to other sectors as the supplier of intermediate inputs to them. Next to these four other individual segments viz., petroleum product, electricity, non-electrical machinery and metal industry except machinery have interrelatedness value hovering around 0.99 which implies that these segments are supplying inputs to almost all sectors of the economy. The seven other individual segments viz., forestry, animal husbandry, food processing, coal tar product, non-metallic mineral products and crude oil and natural gas are included under middle order category with a value of their interrelatedness less than 0.79. The six more individual segments like fishing, iron ore, beverages, leather, fertilizers and tobacco product lie under weak order category with their value of
interrelatedness less than 0.49 for the entire period of study.

The cement is the only segment which improved its position from weak to middle order in 1998-99. Its interrelatedness improved from a very low level of 0.36 in 1989-90 to 0.56 in 1998-99. The two other segments like paint and varnish and other minerals for the time being improved their position from middle order to strong order interrelatedness in 1993-94, but again rolled back to their original position in 1998-99. However, the interrelatedness of non-marketable social service declined heavily during the concerned period from a value of 0.42 in 1989-90 to 0.36 in 1993-94 and further to a record low level of 0.11 in 1998-99.

The study found that so far the interrelatedness of the economy as a whole is concerned, no significant change has occurred over the entire period under consideration. Therefore, it may be concluded that no major change is noticed in the production process between pre and post-reform situation in India.

Most of the studies done in input-output framework depict that the tertiary sector has a weak linkage with the primary and secondary sector in India.

2.5: Conclusion

The above review of studies is indicative of the fact that most of the studies done so far are too aggregative or even if the desegregation has been achieved, the coverage is too small. Most of the studies have dealt with individual sub-sectors or the overall economy-wide aggregates and have failed to capture the
underlying structure, dynamics and linkage pattern of the tertiary sector. A study fortified with disaggregated data, going rigorously into structure, dynamics and linkage pattern of the tertiarization of Indian economy is need of the time. This work is an attempt into that direction.