CHAPTER 2

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In the present chapter an attempt has been made to have a brief overview of some of the important works relating to economic progress and structural changes. The available literature can be divided into two parts. The first section deals with the studies on the comparison of structural changes among countries. The second section relates to Indian Economy.

I

International Scenario

At International level the pioneering work was done by Clark (1940), Kuznets (1956-57-58 and 1971), Chenery and Syrquin (1975); Chenery (1979 and 1986). Clark tried to analyse the structural change and he attributed the pattern of structural transformation to underlying changes in the composition of demand as an outcome of increasing incomes and to inter-sectoral variations in the rate of growth of labour productivity. Urata (1986) also shares this view. Clark argues that as income per capita increases "... the relative demand for agricultural products falls all the time, and ..... the relatively demand for manufacture first rises, and then falls in favour of services," and that "...real product per man-hour in manufacture .... nearly always advances at a greater rate than real product per man-hour in other sectors of the economy," (Clark, 1957, pp.493-94). This implied that once the process of structural changes takes
place it reinforces itself. In the process high per capita product or level of income played a facilitating role. Clark noticed that the per-capita product in countries within the western orbit was fairly high even before industrialisation which was an important factor in initiating structural changes in these countries. Thus, in international units per worker, the product in Great Britain was 516 in 1901 and 456 even in 1688 (for England and Wales); 604 in 1830 in U.S.A.; 304 in France in 1804-49; 326 in Belgium in 1846; 406 in Germany in 1854; 353 in Sweden in 1861-69; 914 in Australia in 1886. For all these countries he was using either the earliest available figure, or one for the period just prior to industrialization; and interestingly, all these countries had per capita product above 300 units. In contrast, Clark's estimate for Japan is 100 units in 1887, and even by 1920 it was only 190 units; for China, 138 units in 1935; for British India between 230 and 250 units (in the 1930's and the 1940's); for Brazil 163 in 1928, but rising rapidly to 297 in 1946.

After the pioneer study by Clark, Kuznets examined the process of structural changes through a series of papers i.e., ten in total. However, the framework was laid down in the first two papers. The first paper (1956) dealt with the levels and changes over time in the overall rates of growth of population, national product, and product per capita. A cross-section of nineteen countries has been considered for this purpose. Kuznets highlighted a positive relationship between rates of growth of population and the total product; and a positive relationship...
between rates of growth of total product and product per capita. All the coefficients of rank correlations between rates of population growth and of growth of product per capita were positive, suggesting that, within the sample of countries covered, relatively high rates of population growth also had higher rates of growth of total product and of per capita product and vice versa. Kuznets work strongly suggested that unlike the current thinking, population growth had a positive influence on the overall rate of growth.

In the second paper in the series, Kuznets (1957) dealt with the levels and trends in the shares of major economic activity in national product and associated labour force. The paper established a negative relationship, through the use of international differences, between product per capita and the share of labour force engaged in the agriculture sector. On the other hand there was a distinct positive correlation in product per capita and labour force in the manufacture sector. Similarly, there was a distinct positive relationship between per capita product and the share of labour force in the service sector.

Kuznets (1958) in his third paper in the series discussed the sectoral distributions of the income and labour force of different states within the United States. The purpose of the analysis was to see whether the findings suggested by international comparisons were confirmed or modified by comparison for areas within a country. More or less, the cross-section relationship between the sectoral shares in terms of
income and labour force, and the relative sectoral levels of income per worker, on the one hand, and per capita income on the other were the same in the inter-state comparisons as in the international comparisons, as observed in the earlier papers. In both the comparisons, the association of per capita income with the shares of the agricultural sector in income and labour force was negative and for the manufacture sector it was positive. However, the relationship of per capita income and share of the service sector was positive but weak.

Kuznets' (1966) work on measurement of economic growth laid considerable stress on the need to examine the relationship between growth and structural changes over long period of time. Periods of several decades were a common unit of measurement in his work. He pointed out that the cycles common to countries experiencing modern economic growth could easily result in declines of 20 per cent in real output in a short period of time. Therefore, unless there was sustained underlying growth, a sharp cyclical decline could wipe out past gains and return the economy to its original economic level. This seemed particularly important in analysing the experience of the primary goods exporting countries. Viewed in this perspective, it is possible that structural changes, if any, by the oil exporting countries may prove to be transient in nature.

In addition to the experience of individual countries over time, it is possible to gain considerable insight into the development process through examining the countries at different levels of
Income at a particular time, and also by pooling cross-section and time-series data. Studies carried out by Kuznets (1966) and by Chenery (1975) both have used cross-section comparisons. Chenery's work, including collaborative studies of Chenery and Syrquin (1975, 1989), and Chenery and Taylor (1968) have led to significant insights into the development process by using pooling techniques. The basic structural changes during a long period of development from the lowest to the highest levels of per capita income typically involve the following kinds of shifts: a decline in the share of primary sectors from over 70 per cent of the labour force, over half of GDP, and over 90 per cent of commodity exports in countries with the lowest level of per capita income, to primary shares in the western industrial countries of around 15 per cent of the labour force, 12 per cent of GDP, and 33 per cent of commodity exports (Chenery and Syrquin, 1975).

The time-series data compiled by Kuznets (1967) for the industrialized countries revealed that changes in the structure occurred first in the composition of production followed by labour force composition and lastly in the structure of foreign trade. Chenery and Syrquin (1975, 1989) work supports this conclusion. They estimated the income levels at which about half of each major structural shift had taken place. They found that half of the decline in the primary share in production occurred much lower level of income ($700 per capita in 1980 dollars) compared to that in the labour force ($1300 per capita). The declining share of primary exports in visible exports occurred at much higher levels of income (around $3500 per capita).
The income level at which half the shift in primary export share in GDP has been reached ($ 515 per capita) was the highest of any of the 22 structural variables for which Syrquin and Chenery (1989) made calculations. Thus, while the structural changes away from the primary sectors are all large, most of the change in the structure of production and employment - indeed, in all other major structural variables - takes place well before primary exports decline substantially in relative importance. Syrquin's and Chenery's calculations also show a monotonic increase in the ratio of primary exports to value added in primary sectors from 0.208 to 0.275 as income rose from less than $ 300 to over $ 500 per capita (in 1980 dollars). Not only does the share of primary exports in total GDP retain its importance well through the development process, but its importance relative to GDP originating in the primary sectors rises during development. All these findings and observations re-confirmed for a large sample of countries and longer time periods the results from earlier study by Chenery and Syrquin (1975).

The size of a country plays an important role in determining both the overall degree of openness and the extent to which primary exports continue to play a major role once the development process commences. Large national incomes and large populations generate relatively large domestic markets, making possible gains from economies of scale in serving the domestic markets; large geographic area is also likely to be associated with a diversified natural resource base. Consequently, the potential gains from specialisation and trade may not be very crucial. The
Inverse relationship between population and the ratio of foreign trade to GDP is strong and well established for cross-section studies (e.g. Chenery (1960) and Kuznets (1966)). One would also expect the role of specialization and trade, to be greater for small countries than for large countries, a result confirmed by Chenery and Syrquin (1975, 1989).

Countries also differ in their resource endowments, past accumulation of reproducible capital (both human and physical), and other characteristics that contribute to different patterns of production and trade at given levels of development. But, countries also differ in their policies towards foreign trade and domestic markets. At any time, the differences in economic structure would be due to both past policies and resource endowments. Chenery and Syrquin (1975, 1989) developed a classification system for the "orientation" of countries in both their production and their trade structures that assisted in disentangling the issues. The "trade orientation" of countries was defined by Chenery and Syrquin as the extent to which the relative importance of primary and manufactured exports was greater or less than would be predicted on the basis of the standard pattern of production or trade in primary and manufactured goods as determined from econometric estimates.

Trade orientation measured like this was the result of both "natural" factors and policy influences. Chenery and Syrquin further analysed country experiences, particularly by distinguishing the countries into large and small country groups.
to reflect the importance of size in determining economic structure. It was noted that large and small countries both exhibited the effects of natural resource endowments in their trade structures. The two groups of countries had different development patterns, with changes in the composition of production and trade occurring later in the development process for small countries with a primary orientation and earlier for small countries with an industry orientation. The large countries showed the tendency more towards the average pattern of transformation.

In an important study Panchamukhi, Nambar and Mehta (1979) have examined the validity or otherwise of the earlier hypotheses about the sources of structural changes for a group of developing countries. They notice that the general pattern of structural transformation from agriculture sector to industry and then to services sector observed by Clark, Kaldor, Perroux, Chenery, Syrquin and others did not seem to be valid when judged by the experiences of developing countries during 1970's. Panchamukhi et.al observed that there was faster change from agriculture to services, with industry lingering marginally behind. Secondly, they found that Kaldor's thesis that industry was the engine of growth, as observed for the Britain and other developed economies, was not found valid for the developing countries, at least in the seventies and part of the eighties. In fact, they found a strong relationship between the growth of the services sector and overall growth of GDP.
Indian Context

There have been very few attempts on this subject in the past but recently this topic has attracted some researcher. Among all studies by Shetty (1978), Rao (1979 & 1983), Sandesara and Bisnoi (1986) are important. In his paper, Shetty (1978) has tried to study the structural retrogression in the Indian economy. He had considered almost all macro and micro parameters to analyse the condition of the economy. The paper was using secondary data from several sources. Data used here was upto 1975-77. The overall finding of the paper was that there had been structural retrogression in the Indian Economy since the mid-sixties. This was evident from the aggregative level in the CSO's data on sectorwise distribution of national income. As he says, "The share of the 'secondary' sector in net-domestic product (at 1961 prices), which had continuously risen and reached the peak of 23.3 per cent in 1965-66 and 23.4 per cent in 1966-67 and 21.9 per cent in 1975-76, has instead thereafter remained almost always below those peak levels; in 1975-76, it stood at 22.8 per cent. This share has in fact moved against the commodity producing sectors and in favour of the tertiary sector. And within the 'tertiary sector' it is the share of 'Public administrative and defence which has risen the fastest in the last decade". Further the paper pointed out that "within the industrial sector, the structural retardation has taken place at two stages: first, the growth of basic and capital goods industries has been slower than in the past and also slower than even the meager average growth
in industrial output; and secondly, where growth has been moderately high, a majority of the industries belonged either directly or indirectly to elite-oriented consumption goods sectors. Output of industries catering to the requirements of mass consumption like cotton textiles has gone up only marginally. Even within cotton textiles, the share of coarser varieties of cloth has declined drastically. While pointing out the causes of these structural retrogression during mid sixties the paper pointed that it was primarily the results of a series of policy actions and inactions including the downgrading of the planning process; this was reflected in many policy-controlled variables and manifested in significant distortions in the functioning of the economy. Saving and investment efforts particularly in the public sector plan outlays were slashed initially and thereafter their growth was arrested, funds for the maintenance of past plan projects were not allocated adequately, resource mobilisation efforts were both inadequate and iniquitous, deficit financing was resorted to indiscriminately, and finally, a significant proportion of the total public outlays was frittered away in non-development expenditure in the form of higher subsidies of various sorts from the national exchequer, transfers to the state governments on such pretexts as drought reliefs, and in many other forms.

Rao (1979) in his paper pointed out the weaknesses of Shetty's study, according to him it did not take into consideration the worst years. Paper further pointed out that while doing this Shetty should have dropped the best year before reaching the
conclusion. Rao tried to identify changes in the Indian economy on the advent planned economic development by the use of National Accounts Statistics. It covered a period of 27 years, namely 1950-51 to 1976-77. This analysis of National income data highlighted important structural changes which had taken place in the Indian economy during the period 1950-51 to 1976-77, and these were in the direction of modernization and an increasing role for the secondary and tertiary sectors. Nevertheless, the Indian economy continued to be dominated by the primary sector and unorganised enterprises. The startling feature of the structural change was the failure of the occupational structure to coincide with the sectoral NDP structure and it is this which needed a further probe and quest for remedial measures. Rao (1983) tried to show the structural changes under three main headings. First was fluctuations in year to year rate of growth which ranged between -4.9536 to 9.2071. The second parameter was the sectoral and occupational distribution, the share of primary sector had declined from 56.27 per cent in 1950-51 to 35.44 per cent in 1979-80. The share of secondary sector had increased from 16.87 to 25.68 per cent and that of the tertiary sector had increased from 26.86 per cent to 38.88 per cent during the above mentioned period. On the other hand occupational distribution as such had shown a meager change. Here Primary sector was still dominating. The third type of the structural change related to alteration in the organisational patterns. The organisational patterns were divided into three categories i.e., organised, unorganised and self-employed. Here the percentage share of
organised sector in the total identifiable factor income had increased from 51.45 per cent to 58.49 and the share of unorganised sector has decreased from 48.55 per cent in 1960-61 to 1964-65 to 41.51 per cent in 1975-76 to 1979-80.

The paper by Sandesara and Bisnoi (1986) examined the trend in the factor income share by sectors over twenty years i.e., starting from 1960-61 to 1981-82. The paper showed that the share of primary sector had gone down quite sharply. So far as the secondary sector was concerned there was a slight increase whereas there was a rapid gain in tertiary sector. Secondly, the paper also considered the organised and unorganised sectors and found that the share of organised sector had increased and that of unorganised sector had declined. Thirdly, the case of Public and Private sectors was examined and it was shown that the share of public sector had increased from 41.65 per cent in 1960-61 to 62.38 per cent in 1981-82 and that of private sector had decreased from 58.35 per cent to 37.62 per cent. These results were quite similar to those by Rao (1979 and 1983). The other study made in this regard was by Saxena (1986). This study tried to interpret the structural changes in the economy through certain factors like the role of the Government in economic sphere, occupational composition of workforce, structural variations in the working force in various sectors of the economy, share of various sectors in the national income etc. Saxena's findings were similar to Rao, Sandesara and Bisnoi.
Broad Conclusions

1. Structural changes occur due to changes in composition of demand (Clark, 1940 & Urata, 1986).

2. The relationship were highlighted between growth of population and total product (positive) and also between rate of growth of total product and product per capita (positive). Similarly, relationships between shares of major economic activities (sectors) and labour force compositions were also estimated. Except agriculture sector, the relationships were positive. The criteria was applied for the US economy and similar result were visualised (Kuznets 1956, 1957 & 1958).

3. The importance of cycles common to countries had been noted in the sense that the countries which were experiencing modern economic growth might face the decline to the magnitude of 20 per cent in their real output in a short span unless sustainable growth was attained. Moreover, the sharp cyclical decline could wipe out the past gains and may bring the economy to the original level (Kuznets, 1966).

4. It was noted that the decline in the primary share in production occurred at much lower level of income ($700 per capita in 1980 dollars) compared to that in the labour force ($1300 per capita). On the other hand, the decline in share of primary exports in visible exports occurred at much higher level of income ($3500 per capita) (Kuznets 1967, Chenery and Syrquin, 1975, 1986).
5. The size of the country was also found to be playing an important role. Large economies had advantage because relatively large domestic market and also a diversified natural resource base.

6. The inverse relationship between population and the ratio of foreign trade to GDP was found to be strong and well-established for the cross-section studies (Chenery, 1960 and Kuznets, 1966).

7. While examining the case of developing countries, Panchmukhi et al refuted the earlier general pattern of structural changes i.e. from agricultural sector to industry and from industry to services sector as observed by previous studies (Clark, Kuznets, Chenery, Syrquin and others).

Most of the studies on Indian economy apart from highlighting structural retrogression, do not follow the tradition of research in this area. We aim at overcoming this lacuna to some extent and also place Indian economy in an inter-country perspective to have a better feel of ongoing structural transformation.