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DOES THE CLARK-FISHER HYPOTHESIS HOLD FOR THE INDIAN ECONOMY?

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Abstract

This paper aims to present a simplified overview of the application of the Clark-Fisher hypothesis in the Indian economy. The Clark- Fisher hypothesis is of particular importance for a developing economy like India. The paper uses secondary data for the period 1951 to 2001 to investigate whether the hypothesis is fully satisfied in the context of the Indian economy. The inferences drawn from the study based on the data hope to be sufficient for drawing a conclusion about the objective of the paper. The secondary data used has been represented diagrammatically to present a lucid picture of the scenario with respect to the context. References pertaining to the relevant topic have been listed at the end of the term paper.

Index Terms— Clark-Fisher Hypothesis, Engel's Law, Primary sector, Secondary Sector, Tertiary Sector, Splintering, National Income and Liberalization.

I. INTRODUCTION

Economic activities can be classified as primary (agriculture, forestry, fishing); secondary (mining, manufacturing, construction) and tertiary (finance, trade, services and government).Allen G. B. Fisher of Great Britain and Colin Clark of Australia put forward the same proposition independently known as the Clark-Fisher Hypothesis. It states that a redistribution of the labor force among the three sectors in the economy is prominent in the process of economic development. With the progress of development there is a shift of labor from primary to secondary and then from both these sectors to the tertiary sectors. The Clark-Fisher hypothesis relates economic structure to a level of attainment. The Three Sector economy which was popularized by this thesis appeared consistent with cross country evidence. Countries which start as primary producers meet the basic necessities of life with the resources which are available initially. Later these resources are shifted for activities in the secondary sector. Rising income, increased leisure and a saturated market with an increase in the number of manufactured goods contribute to the transfer of resources to the tertiary sector.

The Clark Fisher hypothesis holds true for most developed countries i.e.-the countries which are in the third stage of economic development. High income countries like UK, USA, France, Canada etc. exhibit a rise in the service sector share of GDP.

Consistent with this development pattern, the occupation structure also was compatible with the Clark Fisher Hypothesis.

For low income or underdeveloped countries, the composition of GDP changes according to the hypothesis but these changes occur very slowly. The pattern in the distribution of labor force as propounded in the hypothesis is not observed. The changing inter-sectoral pattern of GDP does not reflect an equally paced change in the distribution of labor force.

India is a developing economy. The Indian economy in recent years has witnessed a sharp increase in the service sector share of GDP. But the occupation structure is still dominated by people participating more in primary activities than tertiary. India's manufacturing sector has had a very slow flight compared to other Asian neighboring countries. The share of value of manufacturing in GDP has not improved much over the past three decades and export of Indian goods has remained below 1% of the related world trade. On the other hand the trade in services has expanded rapidly and the fall in the share of agriculture has been compensated by an increase in the share of services rather than manufacturing.

The results of the Indian economy are contradictory to the literature on economic development which hypothesizes that production shifts from first from agriculture to manufacturing and then from manufacturing to services only at a later stage. The Indian economy can be said to have "leapfrogged from agriculture to services."

The paper consists of the following sections:

Section 1 shows a select survey of literature discussing about the Clark Fisher Hypothesis and the state of the Indian economy with respect to contribution of different sectors to GDP and the occupational distribution. Section 2 shows the tabular and diagrammatic representation of data so as to establish the findings. Section 3 analyses the sources that have led to boom in the service sector of India as well as the impediments that decelerate changes in the occupational structure as against the pattern exhibited in the Clark- Fisher hypothesis along with the reasons for stagnancy in manufacturing output.

II. LITERATURE REVIEW

A.P.Thirlwall in the book "Growth and Development" (7th ed.) the Clark Fisher thesis can be explained from both demand and supply side.

The demand side explanation borrows from microeconomics the concept of Engel's Law which determines that income elasticity of necessary goods is less than unity. A rise in income in the economy implies that the demand for necessities rises at a lesser rate than income. With an increase in income, there is a rapid increase in the demand for secondary sector products. Products of the tertiary sector like education, health, recreation are demanded rapidly at an even higher per capita income. Thus with rising income the importance of each sector gradually increases.

The supply side explanation concentrates its basis on use of capital intensive technology in agriculture. An increased use of capital in agriculture is observed with the progress of economic development. Per capita consumption does not rise as fast as the increase in agricultural productivity per head. With rising per capita income, the proportion of workers engaged in agriculture falls and shifts to other secondary or tertiary activities.

Misra-Puri in "Indian Economy" (28th ed.) help identify the trend in occupational structure during 1951-2001 in India. Post-Independence, India had opted for a planned development and

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industrialization was given utmost priority. Such a step was to ensure that proportion of labor force engaged in agriculture would fall to 60% by middle of 1970s. However, the expectations were not fulfilled and 72.1 % of labor force was engaged in agriculture in 1971. It continued to remain as high as 66.8% in 1991. The distinct change was noticed in the decade 1991-2001 when the percentage fell to 56.7% in 2001.

The process of industrialization was accelerated after Independence and thus a substantial increase in the absolute number of people getting employment in the industrial sector was noticed.

With a high rate of population growth and a lackluster performance of the industrial growth rates, the transfer of labor force from agriculture to industries and service sector did not take place.

In the industrial sector in 1991, 12.7% of the labor force was employed as against the 10.7% in 1951. The 1991 situation in comparison cannot be said to be very satisfactory. Under the strategy of planned development, basic and heavy industries were attributed high priority and the changes in occupational structure reflect this policy. Services have helped accelerate the overall growth rate of the economy by being the fastest growing sector. India has integrated with the world economy through trade and capital flows in services during the post liberalization period. India ranks as one of the major suppliers of knowledge based services as is evident from the remarkable growth and export performance witnessed in services like technology and business process outsourcing (BPO).

The high growth rate in the service sector contributed to the growing share of this sector in the overall economy. Agriculture's share in GDP declined by around 25% with the corresponding increase in the share of services and industry being more or less evenly distributed. Since post liberalization the decline in them share of agriculture from 32% to 22% of GDP has been linked by a corresponding rise in the share of services in the economy. The proportion of workers employed in the service sector increased from 17.2% to 25.1% in the period from 1951 to 2001.Such a change reflects improvement in the infrastructure. Infrastructural improvement is a stepping stone for economic development.

The service sector dominates the Indian economy in terms of both of shares and growth. It has transformed itself into a growth engine for the national economy. It provides a gamut of opportunities ranging from unskilled to highly skilled in various activities. The overall employment can be pushed forward with the help of services and a revival in the industrial sector. The exports of some services have seen an exponential growth earning net foreign exchange. The services sector is a major FDI attracting sector in the economy. The growth in the Indian economy has been classified to be a 'service led growth' i.e. the growth in the Indian economy has been majorly propelled by growth in the service sector. In the Ninth plan (1997-2002) even with the receding of the growth rate of the Indian economy, service sector continued to rise. Agriculture grew at about 2.5 % per annum, industry by 4.3% and services at 7.9% per annum**.** The expansion of services accelerated further in years after 2002-2003 due to the high growth rates in communication, business services specially IT and finance. (Economic survey 2010-12, chap.10)

The rapid growth of service sector in India reflects structural transformation in accordance with the Clark fisher thesis. Some economists argue that this service led growth is not sustainable as this growth in the service sector alone cannot sustain overall growth. According to Sunil Jain and T.N. Ninan in "Servicing India's GDP growth", there is sustainability in the service sector growth. This is because an expansion of the network of existing services substantially will add many more new services.

However, in India even though the service sector contributes most to the GDP the labor force is predominantly occupied in agriculture. Agriculture's poor growth need to be pushed up to sustain India's growth trend.

III. DATA AND METHODOLOGY

The study presented in the paper is mainly based on secondary data. The data for study has mainly been extracted from certain books on Indian economics, different government economic surveys and other research journals. From these sources, time series data relevant to the study has been gathered and exhibited in the paper. The data set includes the occupational distribution of working population in India, contribution of economic sectors in rural and urban India. The time period taken into analysis is 1951-2001. This period is important in analyzing the validity of the Clark Fisher's Hypothesis in the first 50 years of planning period in India, after Independence. The gathered data has been tabulated and diagrammatically represented, so that lucid picture of the study can be presented. From these diagrams and table, an attempt has been made in the paper to check whether the famous Clark Fisher's Hypothesis of sectoral transformation is valid in Indian Context, during the stated time period. This analysis has been continued with theoretical explanations based on empirical data.

IV. ANALYSIS OF DATA

This section begins with lending eyes to the parameters which form the base of the study. Though these parameters have been stated in the previous section, here an elaboration has been provided. The parameters are:

1. Occupational distribution of working population in India helps us investigate whether the pattern of change in the occupational distribution is consistent with the sectoral shares of GDP.(Table1)
2. The contribution of the economic sectors to GDP growth of India. It indicates the percentage share of each sector to the GDP of India. This helps us to analyze which sector has grown rapidly and which sector's contribution has reduced indicating the trend of Indian GDP.(Table 2)
3. Employment in different sectors in rural and urban India shows the distinction between rural and urban employment in the different sectors.(Table 3)

A clear picture of the parameters stated above can be provided by means of the tables and the diagrammatic representations characterized below.

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TABLE 1: Occupational distribution of working population in India

Occupation	1951	1961	1971	1981	1991	2001
Primary sector	72.1	71.8	72.1	68.8	66.8	56.7
Secondary sector	10.7	12.2	11.1	13.6	12.7	18.2
Tertiary sector	17.2	16.0	16.8	17.6	20.5	25.1

Source: Indian Economy by Misra – Puri (28th edition)

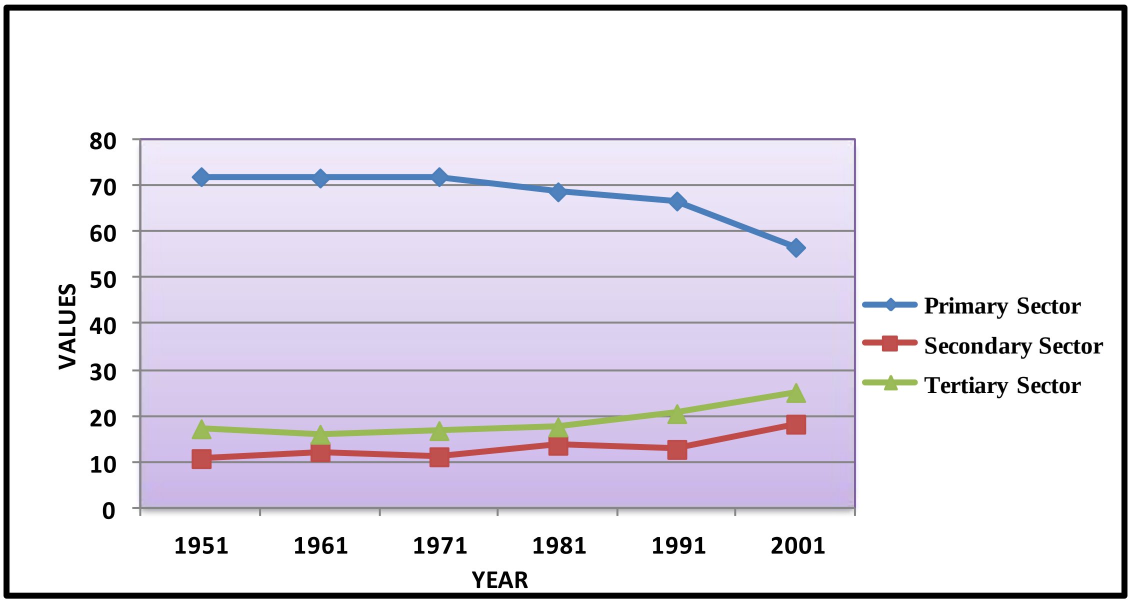

Figure 1: Occupational Distribution of Working Population in India (1951-2001)

From the multiple line diagram used we can see that the proportion of workforce engaged in the primary sector has decreased while that in the tertiary sector has risen. But this increase is not as high as the contribution of services to GDP.

TABLE 2: Contribution to GDP (in percentage)

Year	Agriculture	Industry	Services
1950-51	57.2	14.8	28
1960-61	54.7	16.6	28.7
1970-71	48.1	19.9	32.1
1980-81	41.8	21.6	36.6
1990-91	34.9	24.5	40.6
2000-01	24.2	27.3	48.5

Source: S.Hansda: Sustainability of services in India

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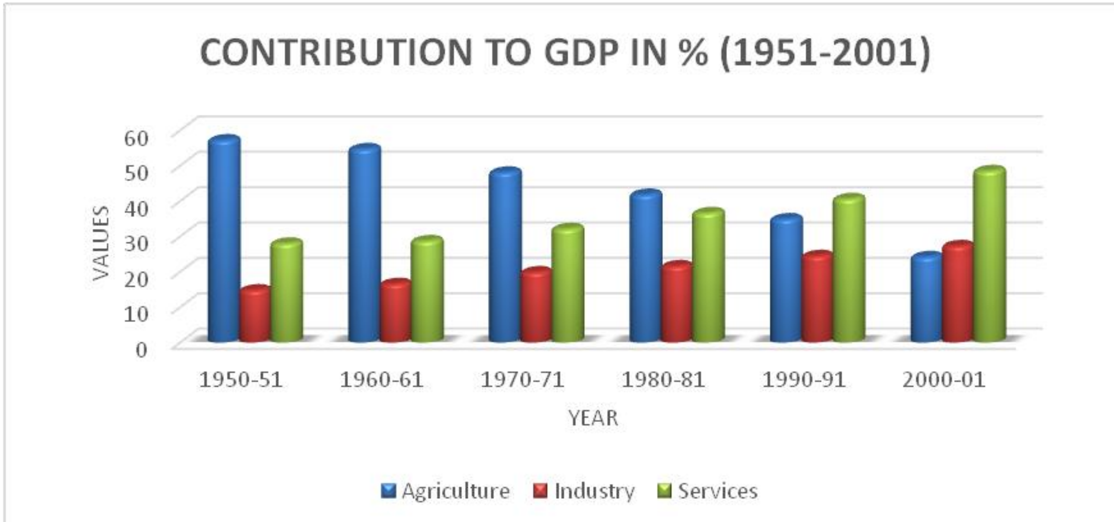

Figure 2: Contribution to GDP in Percentage

The component bar diagram has been used to show the contributions of the three sectors to the GDP. It is clearly seen that the contribution of agriculture has declined while that of the service sector has increased at a significant pace. This is consistent with the Clark-Fisher Hypothesis. The recent employment scenario in rural and urban India is taken into consideration to show that agriculture is the dominant occupation in rural India whereas services dominate the employment structure in the urban areas. From the divided bar diagram used, it is evident that the rural population is mostly engaged in agriculture. The employment situation for industries is lagging behind but a remarkable growth is observed in the service sector. Particularly the level of employment in the service sector is quite high for the urban population.

TABLE 3: Employment in Different Sectors in Rural and Urban India in 2009-10

Occupation	**Rural**	**Urban**
Agriculture	679	75
Industry	80	242
Services(with construction)	241	683
Services(without construction)	147	582

Source: Economic Survey 2010-2012: Chapter 10

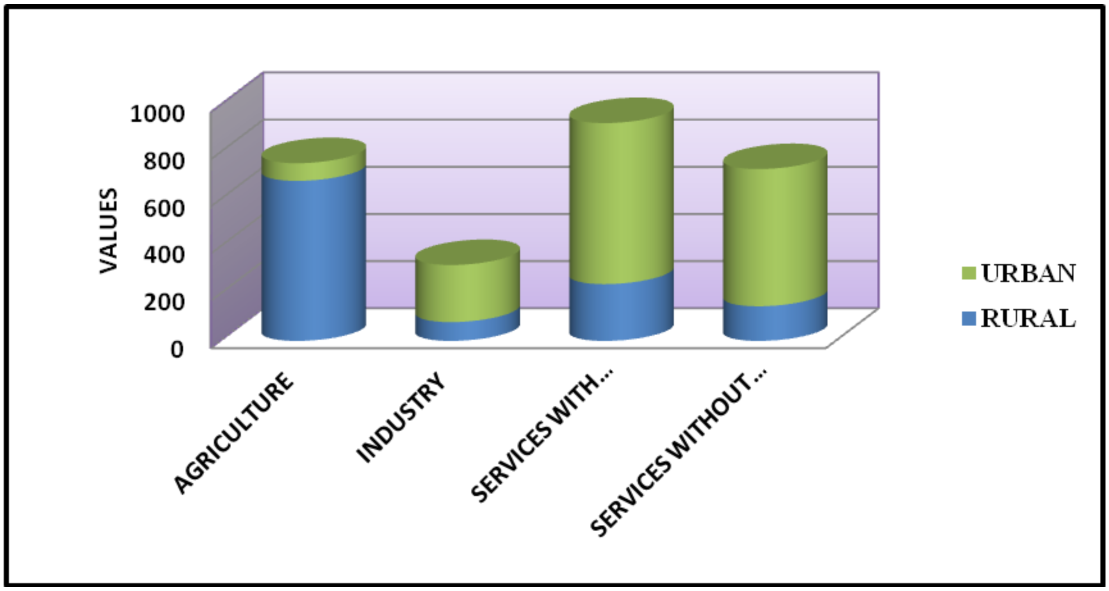

Figure 3: Employment in different sectors in Rural and Urban India in 2009-2010

In India, though the service sector contributes most to the GDP, the employment scenario in the service sector is not that bright .In terms of labor employment, agriculture still occupies the dominant position. This is against the postulates of the Clark- Fisher Hypothesis. The satisfaction of the hypothesis manifests itself in twofold ways. Firstly, the relative importance of each of the primary, secondary, tertiary sectors change, i.e. – the primary sector's share in the GDP is gradually overwhelmed by that of the secondary sector and then the tertiary sector. This change marks the process of economic development. Corresponding to this change, the Clark-Fisher hypothesis aims to satisfy that there is a redistribution of labor force, i.e. – the occupational distribution of working population changes in favor of the tertiary sector.
In India, though the first condition is satisfied, the second condition fails to hold. Thus, the Clark-Fisher hypothesis does not satisfy in the context of the Indian economy.

1. **Reasons for slow change in occupational structure**

We can analyze four major reasons which inhibit changes in India's occupational structure as discussed in "Indian Economy"

- **Rapid growth of population**: It was assumed that keeping the rate of population growth below 2% per annum would bring down the proportion of agricultural labor force in the total labor force. But such calculations were offset by population explosion. Such rapid population growth arrests changes in the occupational distribution of the population. Rapid population explosion defers the change of the traditional economy into one which is dominated by the manufacturing sector. The growth of the secondary and tertiary sectors fails to keep pace with the high values of population growth and thus employment opportunities are not created fast enough. This leads many people to continue with agriculture as an occupation. Thus the problem persists in a labor surplus economy like India.

- **Traditional agriculture**: The productivity of labor in Indian agriculture is exhibited by very low levels due to the use of traditional equipments and methods. Productivity increase in agriculture needs to be ensured so that labor released from agriculture can seek employment in manufacturing or service sectors. This brings about a change in the occupational structure. Land reforms are an effective measure to increase productivity. Land must be redistributed from absentee landlords to landless farmers. Modern technology needs to be implemented to raise agricultural productivity. Again, a high level of labor productivity broadens the market for manufactures in rural areas providing incentives for industrialization but land reforms were not carried out significantly in the Indian economy. The introduction of modern technology was not initiated all over the country due to lack of resources and infrastructural constraints. Thus, the full potential of the new technology was not realized.
- **Slow pace of industrialization**: The approach to planned development in the Indian economy led to the stagnation of the industrial sector. Emphasis given on capital intensive large scale industry was correct and it would have affected the growth trend of the economy had a suitable redistributive policy been formulated instead of relying on trickle down effects. The benefits derived from economic growth were not distributed properly, income and wealth were concentrated and the industrial goods market remained confined to the elite class. Thus consumer goods industries producing luxury items developed rapidly whereas public sector enterprises failed to maintain their earlier pace of development.

The national market for industrial products should have been expanded in such a way such that productivity would be raised and national income would be redistributed. The market for industrial goods and services would be expanded resulting in larger employment in industrial and service sectors.

- **Low levels of education in rural areas**: Agriculture is the major occupation of the people living in rural areas. This is mainly because of the prevailing social structure based on superstitions, age old dogmas that sometimes prevent the people to take up opportunities outside the sphere of agriculture. Educational attainment is not of supreme importance in rural areas. The skills needed to be employed in the service sector are mostly absent in the rural labor force. They continue to remain engaged in agricultural and allied activities with low productivity levels. The low productivity levels again result in low produce triggering low incomes for the farmers. Such low purchasing power is used to meet basic consumption needs. Education being a product of the tertiary sector does not find a high demand within the rural population.

This might not have posed a problem if the major portion of the population in India was urban. According to the 2011 Census, the rural population accounts for 68.84% of the total population while the urban population accounts for only a meager 31.16%. Thus, the major thrust upon the

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occupational structure is directed by the rural population. So, no shift of labor force from agriculture to services is noticed.

2. **Causes of slow growth of manufacturing output**

The reasons that can be attributed to the slow growth of manufacturing output and employment are- regulations over private sector enterprises and the regulations governing labor employment conditions (as cited by Krueger in The Missing Middle). These factors have also been responsible for the failure of unskilled labor intensive manufacturing to grow at a faster pace. A strong inter linkage between these two causes can also be observed. If labor regulations were more flexible, some firms that do not even commence in the current environment would prosper. However regulations governing business reduce incentives for starting and expanding businesses.

- **Regulations governing business*:*** In India, unnecessary requirements of registration and licensing raise the costs of all firms. Potential new entrants and small firms are more affected by such regulations as the costs are distributed over a smaller volume of economic activity and due to their lack of experience. The bureaucracy and redtapism have been reduced to a large extent by the initiation of reforms since 1991. However India is ranked very low in a list of countries where regulatory climate is conducive for business. There are high costs associated with the regulations and thus they account for the failure of the growth of the organized sector and for the large size of the unorganized sector.

- **Regulations over labor market**: As stated by the World Bank ,"Restrictive labor laws thus end up creating a bias to protect the already employed formal sector workers at the expense of creating more and better jobs for workers outside the formal manufacturing sector or encouraging firms to enter the formal sector. These laws create massive inequality. They divide a tiny enclave of relatively better-paid salaried formal sector workers, who have good job security and benefits, from the vast majority of informal or unorganized sector workers who work for much lower wages and with little or no social protection."

Employment has not grown for the organized sector of the Indian economy even with rise in output and investment.

Thus, the labor laws affecting the organized sector have an adverse effect. There are large differences in estimates of productivity between the informal and formal sector. The World Bank reported that the productivity of labor of informal sector is about one fifth of the formal sector. Firms in the unorganized sector are not affected by labor regulations. Wages are lower in the unorganized sector, though the World Bank reports that there is no significant difference in wages for rural and urban informal workers.

The shift from industrial to service employment which has advanced furthest in the US, but is evident in all developed economies has proceeded more quietly, but it too has implications for society, and for economic analysis of revolutionary proportions."(Fuchs 1968:2).(Ronald

Schettkat, Lara Yocarini: A Shift to Services)The 21st century has witnessed the rise of all highly industrialized countries as 'service economies' in terms of employment in service industries. The major reasons that can be attributed as sources of service sector growth according to Misra-Puri(Indian Economy) are:

- **Splintering**: As the economy progresses, there is an increase in specialization. Certain activities which were previously undertaken by industrial units are outsourced to the service sector. Greater services of specialist subcontractors to provide accounting, research and development, legal and security services are used by industries. Bhagwati (1994) identified this process of specialization as splintering.

For India, we need to distinguish between cross country splintering and domestic splintering. Cross-country splintering implies a real shift in economic activity to India, whereas domestic splintering implies an accounting change. However a positive economic change may be reflected when specialization leads to efficiency improvements in the case of domestic splintering also.

- Demand side impetus to growth: With liberalization the share of services in total consumption basket increased significantly. Pre-liberalization ,the share of services in the total consumption basket increased by about 3 percentage points each decade ,from around 8% in 1950-51 to 11% in 1960-61 ,14% in 1970-71,17% in 1980-81,20% in 1990-91. After liberalization, it increased to as much as 31% in 2000-01 and by 2006-07, it increased by another 8%. This data shows a demand side impetus to growth of services.
- Role of policy liberalization: The post reform period has liberalized industrial and trade policies and thus the banking, insurance, transport and communication sectors have been introduced to private participation. Sunil Jain and T.N.Ninan have shown that the fast growth areas in services in the post reform period are the ones that have experienced a considerable proportion of liberalization. E.g.: The share of communication services in GDP increased from 1% in 1991 to as high as 5.7% in 2007-08 mainly due to telecom liberalization.
  For the banking sector, the share in GDP was almost doubled in the post reform period. With the liberalization policy, the private banks have initiated an important role in the spread of banking facilities giving a push to the growth of the banking sector.
- Technological advances: New activities or products emerge a result of technological breakthrough and thus service sector growth is stimulated by technological advances. Gordon and Gupta estimate a 1.25% points contribution of policy liberalization and technology progress to service sector growth in India.
- Role of foreign demand: Services can be delivered at a reasonable cost with the advent of the IT revolution. Thus, there has been a worldwide expansion of trade in services. Due to advantageous costs, many companies in the developed world have started outsourcing certain services to Indian companies on a large scale. This has accounted for a rise in the exports of services from India. In India, the export of services (in US dollars) grew by 15 % p.a. on an average in the 1990s. There has also been advancement in export of transport and travel services.

India has a thriving service sector industry. The challenges that the Indian economy faces is to accelerate the rate of growth of its service sector given it's picked up speed. The domestic economy serves underlying unutilized potential in the software telecom sectors. The combination of these sectors is a growth accelerating force and extends their positive externalities to other sectors. Such spillovers make the domestic economy capable to develop the competitive edge in the international market. The rural economy can be strengthened by a combination of the retail trade and software telecom. Financial services, health care, education are sectors with external potential and internal opportunities which can be tapped to achieve the aim of inclusive development. Business and financial services need to be stabilized and insulated against external global shocks. Independent efforts need to be consolidated to address data problems in the service sector. The diverse sub sectors of the service sector can be coordinated strategically leading to exponential gains for the economy as a whole. (Economic Survey 2010-12, chapter-10)

V. CONCLUSION

In the primary stages of growth, while the proportion of workforce engaged in agriculture falls, the absolute number rises. In spite of a growth in industry and service sectors, the growth is not so fast such that the absolute number in agriculture immediately falls.

From the development experiences of most countries, we can say that:

- National income rises in spite of an increase in absolute number in agriculture. The absolute number declines when the higher stage of development is achieved by the economy. Thus, industrial and service sectors have to be developed to the maximum extent possible and simultaneous absorption of new entrants of labor force as well as of the existing unemployed persons must take place. This will gradually reduce the proportion of workforce in agriculture. Such reduction will be conducive for a rise in the proportion of work force engaged in the secondary and tertiary sectors.
- Changes in the occupational structure in the Indian economy are very much desired with the scenario being agriculture predominant and industry and service sector occupying secondary positions. Changes in the occupational structure are brought about as a consequence of economic development and not as a cause of economic development. Thus changes in the occupational structure must be included as part of a bigger picture with respect to growth of national income.

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