



STRUCTURAL CHANGE: AN EXPERIENCE OF INDIAN ECONOMY

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ABSTRACT

KEYWORDS:

Structural change, Indian Economy, Gross Domestic Product, Employment

The two tripartite divisions of any economy, primary- secondary- tertiary and agriculture- industry- services are closely related to each other. This division has been used the typical pattern of structural change in any economy. This is the most common phenomenon which hold true in all counties which is experiencing the path of development. In these countries the share of primary sector has registered a steady decline in the total output, whereas that share in secondary sector is showing a increasing trend for a long time and after that it has declined and finally services sector has hold as economy developed in every economy as a common path of structural change. The aim of this study is to analyze the structural change process in Indian economy using secondary data based on various parameter of structural change as share of different sector in Gross Domestic Product, performance of their growth parts at aggregated and disaggregated level and employment scenario in Indian economy.

INTRODUCTION

The major structural shifts in output and employment always accompany a sustained and rapid growth of per capita output of a nation has been established truism after the studies of economic growth by Fisher and Clark (1940) and Kuznets (1971). The two tripartite divisions of any economy, primary- secondary- tertiary and agriculture- industry- services are closely related to each other. This division has been used the typical pattern of structural change in any economy. There are many ways to define structural change and most commonly used is (a) final demand (b) the inter industry division of labour and (c) inter industry productivity. According to structuralist Fisher (1935), Clark (1960), Kuznets (1966, 1972), Chenery and Syrquin (1970), as the process of economic development proceeds, the share of agriculture sector in national income and employment will be high in early stage of development and begins to decline and share of secondary and tertiary sector starts to rise. This is the most common phenomenon which hold true in all counties which is experiencing the path of development. In short, there is no doubt that economic development has been defined in the terms of structural change but nature of structural change is different in different countries from time to time. Kuznets (1966) has explored the experience of economic development in developed countries. In these countries the share of primary sector has registered a steady decline in the total output, whereas that share in secondary sector is showing a increasing trend for a long time and after that it has declined. However, the share of tertiary sector has steadily increased throughout, but rate of increase is fast in later half of twentieth

century, Moreover industry has started to decline in terms of its share in GDP and there is dominance of tertiary sector. The tertiary sector has experienced a continuous rise in its share in all developed countries except few as United Kingdom, France, and German initially. In the United Kingdom the share crossed fifty percent mark in 1901 and started to decline till mid 1950s and then again crossed fifty percent, by 1960 and followed by other countries as France, German, Italy, and Japan. On the other hand in poor countries the contemporary meaning of development is different in terms of a structural change in the redistribution and utilization of the GNP, for some in favor of the poor society section of the society.

REVIEW OF LITERATURE

In recent years, there is phenomenal growth in services across all countries. In advance industrial economies the path of structural change reveals that while agriculture share in national income or output declined and secondary and tertiary sector reflect the increasing trend in output share and workforce, since with the increase of income of people their demand for basic goods food, clothes and shelter matured and they begin to demand relatively more industrial good and as result momentum of growth became fast in secondary sector and as income continue grow people start demanding less material good and more services especially in entertainment, health, education, banks and insurance etc and this increase share of services sector in GDP. **Bhattacharya and Mitra (1997)** analyzed the nature of transformation of employment in the tertiary sector in relation to economic development and

trade and openness. The main findings of the study show among four industry divisions, community social and personal services account for the largest proportion of tertiary employment in all income categories similarly occupation wise bureaucratic services turn out to be single largest category especially among middle and rich income countries. The average share of sales worker is higher in the case of middle income countries than the poor countries. **Gorden and Gupta (2003)** analyzed the factor behind the growth of the service sector in India. The results show that growth in services in 1990s was mostly due to growth in communication, financial, business and community services. **Papola (2005)** has explored the structural change in Indian economy in comparison to other developed countries. The study found that with the experience of developed countries, the share of agriculture in GDP has continuously declined in all Asian developing countries. But for industry sector this growth is not so more. The share of service sector has increased in all these countries in same period. In Indonesia it increased from 25 percent to 38 percent. **Mitra (2009)** made an attempt to assess the impact of trade liberalization on services sector employment elasticity of organized services. The growth in employment in different activities in the organized sector show that wholesale, retail, trade, hotels, financing and business services is increasing marginally from 2001 to 2005. The total organized sector employment is also revealing a decline during same period although above services grew a little but services sector value added grew very fast and added a new dimension in structural shift from transformation of economy from agrarian to service-led. **Banga et al. (2011)** found that the service sector accounted for around 88 percent of the growth rate in the real gross domestic product in 2008-09. This study examined both the demand side and supply sector factors that have contributed to this growth. The main finding of study is that, growth in service sector is mainly due to growth in domestic demand for services not growth in export of services. The contribution of the growth of the export of services is only 22 percent and remaining came from domestic demand. High domestic demand and high productivity growth explain the growth of this sector. **Mukherjee (2013)** discussed service sector growth in India. The study shows that service sector is the largest and fastest growing sector in India and has the highest labour productivity, but employment has not kept pace with the share of the sector in gross domestic product and has not produced the number or quality of jobs needed. There is no policy leading to inclusive growth, and multiple, uncoordinated governing bodies adversely affect the growth of the sector. **Bandral (2014)** made an analysis of Indian services sector through its contribution in GDP, employment and FDI inflow for the period 1950-51 to 2009-10. Study explores that Indian economy follow a unique path as services sector has grown at a rapid rate in comparison to industry and agriculture sector since independence. Agriculture sector contributed 56 percent in GDP and industry and agriculture have a share of 14 percent and 30 percent in 1950-51 and agriculture share fell to 14.6 percent and industry sector share rose to 28.1 and services have share of 57.3 percent in 2009-10. Reforms paved the way for manufacturing which resulted in demand of services

at one hand and financial producer sector reform at other hand and reached the share of services sector 61 percent in 2012-13. With this sector also occupies an important place in employment generation with second next to agriculture with share 26.7 percent in 2009-10. **Pahuja (2015)** presented an overview of the Indian services sector and made a comparison of this sector with world economy. Findings of the reveal that services sector is contributed 57 percent share in Indian GDP at factor cost in 2013-14 and make an increment of 6 percent from 2000-01. The sub-sectors as financing, insurance, real estate and business services is second place after trade hotels and restaurants with share 24 percent and 18.5 percent respectively. **Tariyal (2016)** explored structural change with changing composition of growth of Indian economy during 1981-2012 using data source National Account Statistics, CSO. The main findings of the study are that three sub sectors namely trade, restaurants and hotels, transport, storage and communication is consistently growing sub sectors of services sector. On the other hand agriculture despite failing in growth is major contributor of employment and provides employment to more than half of the work force of the country.

OBJECTIVES OF THE STUDY

The main of study is to analyze trend and pattern in structural change in Indian economy. To achieve main objective following is supportive objective of study.

1. To examine the sectoral share in GDP and employment in developed, developing and underdeveloped countries.
2. To analyze the share of different three broad sector of economy in GDP at aggregated and disaggregated level and their growth parts.
3. To analyze share of employment, their growth parts in all broad sector of economy at aggregated and disaggregated level.

METHODOLOGY OF STUDY

To capture the above objective, the study is based on secondary data collected from Statistical Abstract of Indian Economy Various Issues from 1991-2017, Economic Survey Various Issues, World Development Indicator Report 2017, Various Round of NSS. Supportive objective is also analyzed through sectoral share, ratio and percentage of different variables of structural change.

Model Specification

Compound Growth Rate:

We have the following model to compute the compound growth rate of trade at aggregated and disaggregated level an exponential trend equation is defined as:

$$Y = a b^t$$

Y = Gross domestic product of all three broad sector of economy at constant prices

b = 1+g and g is the compound growth rate

t = Time Period (1991, 1992, 1993, 1994, ----- 2016)

The logarithmic transformation of this function gives:

$$\log Y_i = \log a + t \log b$$

The compound annual rate of growth (CARG) is computed by using the following formula:

$$\text{CARG (g\%)} = (\text{Anti-log } b - 1) \cdot 100$$

ANALYSIS AND INTERPRETATION

Table1: Percentage of Sectoral Shares in GDP of Selected Developed, Developing and Under Developed Countries in 2016

Developed Country	Sector		
	Agriculture	Industry	Services
United Kingdom	1	19	80
United States	1	21	78
Japan	1	27	72
Developing Country			
India	17	30	53
Pakistan	25	20	55
China	9	41	50
Under Developed Country			
Benin	36	14	50
Comoros	34	11	56
Ethiopia	41	16	43

Source: World Development Indicator Report, 2017, World Bank, Table 4.2

Table 1 represents the percentage sectoral shares of some of selected developed, developing and under developing countries of world in 2016. One of notable thing is that in 2016 all selected developed countries is showing all most similarly production structure of their economies as agriculture sector is contributing only 1 to 2 per cent in GDP whereas service sector is around 68 to 80 percent, in all of them. But this similarity in pattern is not following in developing countries since at one end agriculture sector in china is contributing only 9 percent in GDP whereas in Pakistan this share is 25 percent. In developing countries

agriculture sector is contributing around 30 percent to 40 percent in Gross Domestic Product of these nations whereas secondary sector have the share of 10 percent to 15 percent on an average and services sector attained 40 percent to 50 percent in average. What is remarkable in production structure of developing and underdeveloped countries is that, they are not following the traditional path of development as primary to secondary to tertiary sector growth. *In short, transition secondary sectors by passed in both strata of world and put a question on sustainability of service sector in developing economies.*

Table 2: Percentage of Sectoral Shares in Employment of Selected Developed, Developing and Underdeveloped Countries in 2016 (In Percent)

Developed Country	Sector					
	Agriculture		Industry		Services	
	Male	Female	Male	Female	Male	Female
United Kingdom	2	1	29	8	69	91
United States	4	1	34	14	62	85
France	4	2	31	10	65	88
Developing Country						
India	43	60	26	21	31	19
Pakistan	34	74	26	14	40	12
China	-	-	-	-	-	-
Under Developed Country						
Ethiopia	80	65	7	8	14	27
Sierra Leone	-	-	-	-	-	-
Nepal	75	91	4	1	20	8

Source: World Development Indicator Report, 2017, World Bank, Table2.3

Note -* Represent no Information Available

Table 2 explores the percentage sectoral shares in the employment of some developed and developing and underdeveloped economies in the year 2016. Interesting thing is that most of developed economies are showing similar structure in employment as in production like agriculture sector is contributed less than 5 per cent and male participation is almost double in comparison to female participation in these economies whereas industry range is 30 to 40 percent and services around 67 to 70 percent in all of them but if we observed the employment pattern of developing economies

then thing is different. In developing economies employment structure is on the path of primary to tertiary to secondary in comparison to developed countries it is primary to secondary to services, with this figures also reveal that in all strata of world female participation in services sector is more than agriculture and industry. Most of underdeveloped countries do not have information regarding employment share except Nepal and Ethiopia. *Thus, the share of each sector in employment is moving in line with the GDP share of that sector is only developed economies.*

CONTRIBUTION OF THREE BROAD SECTOR OF ECONOMY IN GROSS DOMESTIC PRODUCT

Table 3: Sectoral Composition of GDP (Average Share in Percent) and Growth Rates at Aggregated Level

Period	Primary Sector		Secondary Sector		Tertiary Sector	
	Share in GDP	Growth Rates per Annum	Share in GDP	Growth Rates per Annum	Share in GDP	Growth Rates per Annum
1950-60	55.53	2.71	16.0	5.82	28.09	4.14
1960-70	47.37	1.48	21.10	5.48	31.33	4.48
1970-80	42.68	1.78	22.88	4.50	34.56	4.61
1980-90	36.06	2.91	25.13	6.46	38.80	6.63
1990-2000	28.66	3.18	27.12	6.21	44.22	7.71
2000-10	21.23	2.21	25.92	4.45	52.85	7.23
2010-16	16.3	1.6	28.1	4.9	55.6	9.2

Source: Central Statistical Organization, NAS, Various Issues

Table 3 shows that share of agriculture in real GDP has declined from 55.53 per cent in 1950s to 28.66 per cent in 1990 and 16.3 percent in 2016 which is representing almost thrice decline in its share. The share of secondary sector and services increased from 16 percent to 28.11 per cent and 28.09 per cent to 55.6 per cent respectively having the increase of 0.5 and 2 times from independence respectively. In 1950s, it was the primary sector which is dominating sector of the economy and accounted for the largest share in GDP, but the whole scenario changed subsequently and especially in the 1980s. The service sector output increased the rate of 6.63

per cent per annum in 1980-1990 and 7.71 from 1990 to 2000. The tertiary sector emerged as a major sector of the economy both in terms of share in GDP and growth rates. *It is also being noted that while primary and secondary sector have phase of declaration and marginal increase respectively service sector is showing increasing trend continuously.*

Sectoral Share of Tertiary Sector in GDP

The nature and quantum of growth also alters the sectoral shares in economy. Following tables represents the sectoral share and growth rates per annum of tertiary sector at disaggregated level.

Table 4: Sectoral Percentage Shares of Tertiary Sector in GDP in Percent

Sector	Year					
	1972-83	1983-94	1993-94	2004-05	2009-10	2014-16
Trade, Hotels and Restaurants	10.39	11.51	12.18	15.54	15.53	11.8
Transport Storage and Communication	5.05	5.99	6.62	10.25	14.00	6.9
Financing, Insurance, Real Estate and Business Services	7.35	8.31	12.17	13.53	15.64	14.9
Community, Social and Personal Services	12.97	12.75	13.86	14.25	13.67	7.2
Tertiary sector	35.75	38.56	44.84	53.56	58.64	52.6

Source: Calculated from NAS, CSO, Various Issues

Table 4 reveals the sectoral share of tertiary sector at disaggregated level. As already mentioned that tertiary sector of Indian economy started on 1980s, within services sector, a look on the sub-sectors is indicative of the fact that transport, storage and communication share has improved very fast up to 2009-10, and it has become almost thrice during the last four decade but declined more than half in 2014-16 and followed by finance, insurance, real estate and business

services which is almost thrice in same period. The share of sub-sector, trade, hotels and restaurants has improved marginally from 10.39 per cent to 11.8 percent. *The analysis of sectoral shares in GDP is indicative of the fact that Indian economy is not followed classic root of structural change. The services sector emerged as a dominant sector is capturing more than half share in GDP.*

Table 5: Sectoral Average Annual Growth Rates (Percent) of Tertiary Sector at Factor Cost in India (Base Year 1999-00 and 2011-12)

Sector	Year				
	1972-83	1983-94	1994-05	1999-10	2010-15
Trade , Hotels and Restaurants	5.74	5.58	8.64	8.47	9.5
Transport Storage and Communication	6.48	6.03	10.57	14.50	10.9
Financing, Insurance, Real Estate and Business Services	5.95	9.07	7.29	9.47	10.3
Community, Social and Personal Services	4.49	5.86	6.53	6.58	6.9
Tertiary sector	5.46	6.58	8.00	9.35	9.2

Source: Calculated from NAS, CSO, Various Issues

Table 5 shows the average annual growth rates of tertiary sector in India with the base year 1999-00 and 2011-12. Tertiary sector growth accelerated in 1980s and reach to 9.2 percent in 2015. Within tertiary sector sub -sectors financing, insurance, real estate and business services having more than double growth rate and followed by transport, storage and communication sector which has also have registered more than double growth rates up to 2009-10 but decline after that whereas transport, storage and communication and community, social and personal services are showing an increasing trend at their parts. *On the whole, the tertiary sector experienced a continuous rise in average annual growth rates at aggregated level and a mixed scenario at disaggregated level.*

EMPLOYMENT SCENERIO

Accelerated growth and expanding employment opportunities are two basic goals of any economic policy and

providing productive employment for ever growing labour force has been integral part of the Indian economy. The single biggest challenge for Indian planners and policy makers is to create decent employment opportunities for ever expanding labour force. The focus on the employment generation in Indian economy has initiated around the second half of 1970s and 1980s when economy is facing high unemployment rates during the planning period. With the initiation of reform in post 1990s, it has generally been realized whether reforms driven growth of Indian economy has been job creating or not. The process of rapid growth in the awake of economic reforms was expected to generate more enough and more rewarding jobs through increasing productivity of workers. Despite robust economic growth in some years of reforms, economy is failing to deliver significant number of additional jobs.

Table 6 Sector-Wise Percentage of Employment (PS+SS) Shares in India

Sector	Year				
	1972-73	1983-84	1993-94	2004-05	2014-15
Primary Sector	73.92	68.59	63.98	56.30	51.30
Mining& Quarrying	0.43	0.61	0.69	0.56	0.64
Manufacturing	8.87	10.66	10.63	12.27	11.50
Utilities	0.16	0.28	0.40	0.27	0.28
Construction	1.84	2.24	3.24	5.69	9.60
Secondary Sector	11.30	13.78	14.96	18.78	22.02
Trade, Hotels and Restaurants	5.11	6.35	7.59	10.89	11.38
Transport, Storage and Communication	1.77	2.49	2.87	4.08	4.48
Financing, Insurance, Real Estate and Business Services	0.51	0.83	0.97	1.71	2.25
Community, Social and Personal Services	7.39	7.96	9.64	8.24	8.57
Tertiary Sector	14.78	17.63	21.07	24.92	26.67
All Non-Agriculture	26.08	31.41	36.02	43.70	48.70
Total	100	100	100	100	100

Source: Various Rounds of NSS

Table 6 describes the sector –wise share in employment at the industry of origin level in Indian economy and showing that traditionally an agrarian economy is gradually undergoing structural change in employment. Initially primary sector is the dominating sector which has the share 73.92 per cent in total employment and tertiary and secondary sector is following it with share 11.30 percent and 14.78 percent respectively but it shrinks down to 68.59 percent in the year 1983-84 and 63.98 per cent in 1993-94 and to 51.30 per cent in the year 2014-15. Share of secondary sector is almost

double in last four decade due to growth of construction sector. Tertiary sector share has also increased to double in the same period. Sub- sector like trade, hotels and restaurants and financing, insurance and real estate also represents increasing trend in this period but this is not compatible to share in GDP. Thus during the reform period tertiary sector is contributing more in GDP in comparison to employment. *In short primary sector share in employment generation is decreasing whereas secondary sector share is full of ups and down but tertiary sector is representing a steady path after independence.*

Growth Profile of Employment

With sectoral shares in employment, the employment growth is again one of the dimensions of structural

change in the economy. So growth of employment of different sector is given in below table.

Table 7: Sectoral Growth Profile of Employment (PS+SS) Shares in Different NSS Round of Survey in India (in percent)

Sector	Year			
	1972-83	1983-94	1994-05	2014-15
Primary Sector	1.70	1.35	0.67	-0.13
Mining & Quarrying	5.92	3.24	-0.08	2.70
Manufacturing	4.28	2.00	3.17	1.95
Utilities	7.86	5.58	-1.86	2.11
Construction	4.43	5.57	7.19	9.72
Secondary Sector	5.38	4.4	3.7	7.3
Trade, Hotels and Restaurants	4.62	3.77	5.24	2.54
Transport, Storage and Communication	5.88	3.39	5.16	3.68
Financing, Insurance, Real Estate and Business Services	7.43	3.58	7.23	7.68
Community, Social and Personal Services	3.18	3.91	0.40	1.85
Tertiary Sector	4.21	3.77	3.41	2.83
All Non-Agriculture	4.30	3.36	3.64	3.61
Total	2.44	2.02	1.84	1.50

Source: Various Rounds of NSS

Table 7 represents the growth of employment between various year among different sector of Indian economy at aggregated and disaggregated level. Figure in table shows that average annual growth of employment in India is 2.44 in 1972-73 and it came down to 1.50 in 2014-15. With this primary sector which is registering a positive growth of employment in pre-reform period is reached to negative growth rate that is -0.13 in 2014-15. Growth of employment of mining and quarrying has decreased to more than double in same period. Employment growth in secondary sector has not only increased but it is also above the national benchmark. Construction is growing more than double rate in this period. Tertiary sector is showing a mixed trend as some sub-sector like financing, insurance, real estate and business services is showing increasing trend but growth rate is decreased in community, social and personal services at disaggregated level in this period.

CONCLUSION

In short in the process of economic development in different economies of world exhibit the different form of structural change. As economy progress and gross domestic product basket enlarges, a shift in economic activity occurs away from agriculture toward secondary to tertiary sector which is followed by most of developed economies of the world. This process leads to structural shifts and consequent diminishing significance of primary activities and growing dominance of secondary and tertiary activities. This process brings the change in production consumption pattern in any economy. But many developing economies is violating the standard literature of structural change as excess growth of tertiary sector in these economies is following the path of agriculture to tertiary to secondary or by pass the secondary sector in development process and put a question marks on the sustainability of service sector growth and Indian economy is one of them

In the last 68 years, the Indian economy has experienced a gradual structural change, although the pace of structural transformation was slow throughout the pre-reform period. The main turning point was in 1980, after which Indian economy appears to have a higher trend of growth of 5.5- 6

percent per annum. Whereas in pre-reform era, the contribution of the primary sector in GDP at factor cost was largest followed by tertiary sector and secondary sector respectively, In post reform era share of primary sector share has declined and share of secondary and tertiary sector has increased. The share of primary sector in GDP at factor cost declined from 54.56 percent in 1950-51 to 27.87 percent in 1990-91 while the share of secondary sector was 16.11 percent in 1950-51 and increased to 25.98 percent in 1990-91. The share of the tertiary sector increased from 29 percent to 46 percent in 1990-91 and again increased to 58 percent in 2016-17. This underlines a major structural shift in the Indian economy as economic growth becoming more vulnerable to the performance of the industrial and services sector and less to performance of primary sector. When the larger role of services in Indian economy was first noted, then this trend is to be described as a disproportionately or an excess growth of this sector but after that it was realized as a services revolution in Indian economy. There is lot of debate on the growth and sustainability of services sector and are many issues on how much growth of services sector is real since larger share of services in output is not matched by employment generation in the sector.

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