2010 International Conference on Business and Economics Research
vol.1 (2011) © (2011) IACSIT Press, Kuala Lumpur, Malaysia

Employment Intensity of Service Sector in India: Trend and Determinants

Falguni Pattanaik
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur
West Bengal, India
Email: falguni@hss.iitkgp.ernet.in

Narayan Chandra Nayak
Department of Humanities and Social Sciences
Indian Institute of Technology Kharagpur
West Bengal, India
Email: ncnayak@hss.iitkgp.ernet.in

Abstract— **A well-functioning service sector is the key to the economic performance of the contemporary developing countries. India is no exception, where service sector grows at a faster rate. What is, however, critical is the capacity of the service sector to create new jobs. This study investigates the employment intensity of service sector growth in India and examines the role of fundamental macroeconomic factors in determining the same. The results indicate that over the years, while output growth rate in service sector has increased, employment growth rate has decelerated significantly leading to considerable fall in employment elasticity. Coupled with this, there is predominance of low productive and unskilled labour based activities in service sector. Regression results based on the time-series data from 1960-61 to 2004-05 further indicate that investment friendly environment, better public expenditure management, effective labour policies and proper structural transformation are the key to achieve higher employment elasticity in service sector.**

Keywords- growth; employment; structural change; service sector

I. INTRODUCTION

In today's modern economies, service sector performs many important roles. First, it represents a major share of the developed economies and is increasingly integrated in the overall production system. Second, it plays an active role in market integration and globalization. Third, the creation of employment, value added and income is increasingly related to the good performance of the services [1]. In India, the service sector has evolved continually over the past thirty years, modifying the structure of employment and the composition of value added. Currently, service sector accounts for over 50 percent of the value added. However, despite its growing weight, the share of the working-age population employed in services remains low [2, 3, 4]. This variation in the growth and employment performance of the service sector can be attributed to growing globalisation of services and rapid technological change and differences in policies and institutions in the country [2, 4].

There are thus serious doubts about the capacity of the Indian economy to create new jobs. In the face of the challenges of globalisation, which is now affecting a large and growing part of the economy, there are new questions about the ability of Indian service sector to adjust to structural change and how to foster a more dynamic and competitive environment that encourages service sector to enhance productivity, offer new services and create new employment [5]. It is, in this context, imperative to understand the growth potential of the service sector in India and identify the structural factors that have become increasingly apparent in the service sector. Unleasing this potential, by a combination of structural policies, can help create more employment, enhance productivity and increase aggregate incomes.

The present study thus attempts to develop a set of stylized facts characterizing the service sector in India with respect to economic growth and employment, and their inter-linkages. Accordingly, the paper is divided into six sections. Section II presents a brief review of literature on economic development and the importance of service sector. Section III outlines concept, database and methodology of the study. The rates of change in services, the analytical structure, development and dynamics of major economic activities of the services through the employment intensity of this sector are presented in section IV and section V respectively. Section VI draws implications from the findings and concludes the study.

II. ECONOMIC DEVELOPMENT AND SERVICE SECTOR: A BRIEF REVIEW

The researchers have put in great efforts in their attempts to explain the dynamics of structural change in the process of economic growth. Rapid changes in production structure are inevitable from the perspective of macroeconomic growth and development of a country [6]. The observation that the structure of production and employment changes during the process of development and that the rise of certain sectors at the expense of others is a hallmark of modern economic growth traces back to the works of Fisher, Clark, Fourastié and Kuznets [7,8, 9, 10]. A well accepted proposition is that the shares of individuals' expenditures on food tend to decline as their incomes go up. A decline in demand for food should follow in a shift of resources away from agriculture. Non-unitary income elasticities of demand for industrial goods or services may also account for the shift of resources between these sectors [9, 10]. Both the above references [9, 10], using historical time series data for industrialized economies, establish decline in the importance of agriculture, rapid rise in industrial sector and gradual increase in the activities in the services as a stylized pattern of development of an economy. Reference [11] is the first to test for the existence of stylized development patterns using a large cross-country data set. On the supply side, productivity may grow at different rates across sectors. Sectors experiencing rapid productivity growth require increasingly fewer resources for a given level of demand [12].

Studies have attempted to develop a better understanding of the expansion of service employment by reclassifying service industries according to purposes of services. Recent studies indicate that the increasing service employment is caused by shift in intermediate demand [13]. Another way of investigating the changing size of services is by dividing the economy on the basis of occupations rather than industries, thereby capturing the increasing tertiarization of production processes [14]. Technology and innovation are the key elements for boosting the economy and bringing revolution in the service sector [15]. Internationalization and competitive pressures associated with market globalization, contribute to the increase in demand for services [16, 17]. State, institutions and social changes also influence service sector in various ways [18, 19]. To summarize, changes in the production factors, productive systems, markets, income and institutional system have significant bearing on the changes in service sector of an economy.

III. CONCEPTS AND DATABASE

A. *Defining Employment*

The data used for the present study are annual and cover the period from 1960-61 to 2004-05. Employment is measured as the number of persons employed in India according to usual activity status approach (UPSS). A person is considered employed in the usual status approach if s/he had pursed gainful economic activity for a relatively longer time period immediately preceding one year prior to the date of NSS survey. This is known as 'Usual Principal Activity Status'. On the contrary, if a person had spent relatively shorter time span immediately preceding one year prior to the date of survey, s/he is accounted under 'Usual Subsidiary Activity Status'. Both the statuses together constitute UPSS [20].

B. *Concept of Employment Intensity of Growth and its uses*

It is important to measure the employment content of growth or what is otherwise called the "employment intensity of growth" in order to find out whether the growth of the national economy is of the type that creates adequate and decent jobs, or it is "jobless growth" thereby intensifying the problems of unemployment and informal labor. The concept of employment intensity of growth is mainly used in analyzing how economic growth and employment growth develop together, and the extent of labor market sensitivity to changes in overall economic conditions (represented by GDP growth)[21]. The relevant formula is

$$E = \frac{\Delta L / L}{\Delta Y / Y} \qquad (1)$$

where L stands for employment, Y denotes gross domestic product (GDP) – aggregate or sectoral. The numerator can be interpreted as the percentage change in employment, while the denominator refers to the percentage change in income representing the growth rate of GDP. Sectoral elasticities are used to identify whether a structural change has occurred in employment over time in the economy i.e. whether employment intensity has changed in the three major sectors (agriculture, industry and services) at different points in time. Additionally, econometric models are built to measure employment elasticities with respect to GDP, which help us understand the primary determinants that affect elasticities themselves [22]. The primary determinants include factors like labor supply, economic stability, openness to the outside economies, the tax system, and the degree of rigidity/flexibility of the labor market. Furthermore, using employment elasticity with respect to GDP sheds light on an important aspect of growth strategy, and particularly the tradeoff - or conversely the compatibility - between employment growth and productivity growth, and whether growth is largely attributed to either of them or to both equally, and the impact thereof on achieving the objective of poverty reduction.

C. *Database*

Data on employment were collected from the 10-sector database of the Groningen Growth and Development Centre (GGDC), University of Groningen, The Netherlands [23]. As no continuous year-wise data were available on employment, interpolation was done on the basis of average growth rate of employment during the gap years to create a continuous time series. Data on economic structure (share of employment of the secondary and service sector) are taken from the 10-sector database. GDP, investment and public expenditure data at factor cost and at constant prices are collected from the Central Statistical Organization (CSO) considering 1999-00 as the base year. Economic openness is measured as export plus import as a ratio to GDP and labour productivity is calculated as total employed person to GDP. Inflation, as a proxy for price uncertainty, is calculated from the GDP deflator taking the data on GDP from CSO. Labour market reform is measured by tax-GDP ratio, and the requisite data to that effect are taken from the statistical handbook of Reserve Bank of India.

IV. TRENDS IN EMPLOYMENT AND OUTPUT GROWTH OF SERVICE SECTOR IN INDIA

During the process of growth over 1960-61 to 2004-2005, the Indian economy has experienced a change in the production structure with a shift away from agriculture towards industry and the tertiary sector [2]. During the 1960s it was the primary sector that was the dominant sector of the economy and that accounted for the largest share in GDP. But the entire scenario changed subsequently and more particularly, in the 1980s. Service sector output increased at a rate of 7.05 per cent per annum in the period 1981 to 1990 (i.e. pre-reforms period). In the post-reforms period, beginning with 1991 till 2000, the service sector output rose at 7.21 per cent per annum. Especially in the 1990s, the tertiary sector emerged as the major sector of the economy both in terms of growth rates and share in GDP. It is to be noted here that during the period 1960-61 to 2004-05, while the agriculture and manufacturing sectors have experienced phases of deceleration, stagnation and growth, the tertiary sector has shown a uniform growth trend. However, contrary to the requirements, there is almost an inverse relationship between the growth of employment and GDP growth in this sector (table 1). The growth rate of GDP in tertiary sector has increased from 7.05 percent in 1981-90 to 8.21 percent during 2001-04, while employment growth in this sector has decelerated from 4.69 percent to 1.94 percent during the same period. As a result, employment elasticity of this sector has fallen from 0.66 in 1981-90 to 0.24 in 2001-04. The decrease in employment elasticity in tertiary sector in the wake of high growth of GDP may suggest that the growth of GDP is the resultant effects of gains in productivity rather than employment growth.

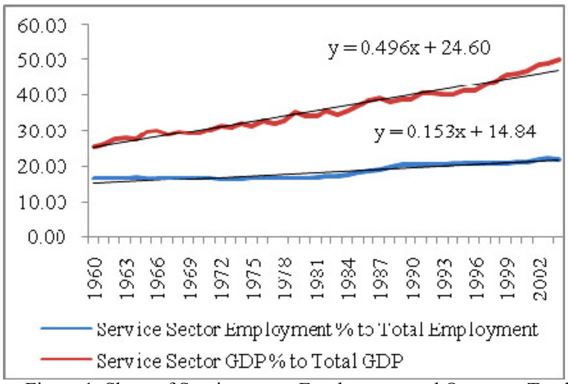

Figure 1: Share of Service sector Employment and Output to Total Employment and Output

TABLE 1: Output Growth, Employment Growth and Employment Elasticity of the Service Sector

Year	Employment Growth	GDP Growth	Employment Elasticity
1961-70	0.88	5.27	0.17
1971-80	3.23	4.72	0.68
1981-90	4.69	7.05	0.66
1991-00	2.73	7.22	0.38
2001-04	1.94	8.21	0.24

Source: Estimated from the data obtained from NSSO and CSO

A. *Changes in the Nature and Sectoral Distribution of Employment and Output of Service Sector*

Added to the above, the service sector of India is confronted with increasing casualisation throwing up questions regarding the nature, quality and heterogeneity of this sector. Some glimpses of the heterogeneity within the service sector can be traced from an investigation of the sub-sectoral dynamics. Keeping in view the diversified nature of the service sector, the present study proposes to analyze the service sector employment at a disaggregate level. The major industry divisions comprising of the total service sector are: (i) wholesale, retail trade, hotels and restaurants; (ii) transport storage and communication; (iii) financing, insurance, real estate and business services; and (iv) community, social and personal services.

Among the major four industry divisions of service sector, wholesale, retail trade, hotels and restaurants accounted for the largest proportion of service output (43.45 percent) in 1961. This has, however, decreased gradually and reached 34.03 percent in 2004. However, in case of employment share, it was 29.24 percent in 1961 and has increased to 39.27 percent accounting for the largest share in 2004 (table 2). Needless to say, increase in the share of employment in wholesale, retail trade, hotels and restaurants results in increase in the unskilled and low productive employment in India's service sector. In case of transport, storage and communication, there is a gradual increase both in employment and output share over the periods, but the increment is very slow. The share of financing, insurance, real estate and business services to service output has increased remarkably from 6.43 percent in 1961 to 16.55 percent in 2004. It is interesting to note that this increment has shown a clear division - period from 1961-1990 witnessed an average of 7 percent share, which jumped on to an average of 16 percent in the period 1991-2004. In terms of employment, the performance of this sector is, however, disappointing. It has shown a significant increment only in the period 2001-2004, which is 8.5 percent only in 2004. Community, social and personal services which accounted for the largest proportion of employment (58.10 percent) in 1961, has shown a gradual decrease and has come down to 37.74 percent in 2004. Similar trend is followed in its share of output to total service sector output (table 3).

TABLE 2: Distribution of Service Sector Employment

Year	Trade, Hotels Restaurants	Transport, Storage, Communi	Finance, Insurance, Real Estate	Community, Social Personal Services
1961	29.24	11.13	1.53	58.10
1971	30.14	14.43	2.84	52.60
1981	31.83	14.66	2.25	51.26
1991	36.10	13.66	2.25	48.00
2001	37.21	15.65	7.56	39.59
2004	39.27	14.47	8.51	37.74

Source: Estimated from the data obtained from NSSO and CSO

TABLE 3: Distribution of Service Sector Output

Year	Trade, Hotels Restaurants	Transport, Storage, Communi	Finance, Insurance, Real Estate	Community, Social Personal Services
1961	43.45	16.37	6.43	33.75
1971	40.79	16.56	7.21	35.44
1981	39.90	18.93	8.71	32.47
1991	34.88	18.96	15.48	30.67
2001	33.87	19.10	16.86	30.16
2004	34.03	21.48	16.55	27.95

Source: Estimated from the data obtained from NSSO and CSO

From the above findings, it is evident that India's service sector is dominated by wholesale, retail trade, hotels and restaurants and community, social and personal services both in terms of output and employment. As more than three-fourth of service sector employment in India constitutes wholesale, retail trade, hotels and restaurants and community, social and personal services, the types of labour employed are mostly unskilled and these activities tend to be low productive in nature. The high productive sectors viz. transport, storage and communication and financing, insurance, real estate and business services are unable to create employment in the service sector as they contribute only about 40 percent of the service output.

V. Determinants of Employment Intensity of Service Sector

Addressing the challenges and strengthening the potential of services towards promoting employment, productivity and innovation need sound macroeconomic fundamentals and combination of structural policies. The employment intensity of this sector is considered to depend upon the structural characteristics of the economy, including the potential for technological change and productivity growth, the current degree of regulation and inherent scope for domestic and international competition [22]. Among the fundamental macroeconomic factors, service sector employment intensity is found to have been affected by investment, public expenditure, economic structure (share of employment of the secondary and service sector) and labour market reforms (tax-GDP ratio).

The above findings corroborate with the existing literature on the determinants of employment intensity of the service sector. There are evidences that there are elements that act as driving forces on services by bringing changes in the production factors, system and markets. These changes are related to factors such as investment, public expenditure and economic structure [24] and finally through labour market regulations [18].

Investment in services is significant in raising employment intensity of the service sector in India. It may thus suffice that markets should remain open to international competitions, e.g. by reducing barriers to foreign direct investment. At the same time, multilateral action is needed to ensure a broad opening of markets and a wide distribution of benefits. It is perhaps important to consider how existing public expenditure can better address the needs of the service sector and improve the links between service sector firms and public expenditure. Effective labour policies are also essential to help Indian economy to adjust to globalization, structural change and the shift to services. To strengthen employment creation in services, labour taxes that affect the job prospects for low-skilled workers and the development of personal services in the country need to be rationalized. Employment protection legislation needs to be reformed in the country to help improve the capacity of the economy to create employment and enhance productivity growth in services.

TABLE 4: Estimation of relationship between Service Sector employment elasticity and selected macroeconomic variables

Variables	Estimated Coefficients
Investment	0.005** (2.039)
Public Expenditure	0.053** (2.404)
Growth Rate of GDP	0.262 (1.297)
Economic Openness	-0.208 (-0.348)
Labour Productivity	-0.017 (-1.347)
Workforce Secondary Sector	-0.001** (-2.108)
Workforce Service Sector	-0.001** (-2.378)
Inflation	-0.103 (-0.594)
Tax GDP Ratio	0.025***(9.009)
Constant	0.006 (0.705)
F-stat	67.785*** (9,34)
DW-stat	2.03 (0.396)
BG-Stat	0.050 (0.824)
Adj. R-squared	0.75

Note; Numbers in the parentheses are the values of t-statistics

***indicates parameters are significant at 1% probability level and

** indicates parameters are significant at 1% probability level

VI. Implications and Conclusions

From the preceding analysis, it is evident that Indian economy is becoming a service driven economy more in terms of output than employment. The pre-reforms period was a period of high employment growth and rapid economic progress. The tertiarization process was dynamic and growth driven. However, in recent years, much of the rise in the service sector is because of lack of employment opportunities in other sectors of the economy. As a result, a large proportion of the service sector jobs created during this period are of distress in nature - petty jobs taken up by the workers in the sectors like trade, hotels and restaurants - pushed out by agriculture and not absorbed by manufacturing. There has also been creation of a handful of high-income jobs in the sectors like financing, insurance, real estate and business services that has been growth driven leading to accentuation of inequalities. A clear hierarchy exists within the service sector not only in terms of employment growth or output growth but also in terms of the dynamism of the growth process. Moreover, high-productive and high-income segments like financing, insurance, real estate and business services within the services are experiencing faster growth in terms of output. On the other hand, low-productive and low-income segments viz. trade, hotels and restaurants are experiencing rise in terms of employment. These factors should be kept in mind while drawing policy for the development of the service sector.

Having found out the factors affecting the service sector, it is important to note that priorities are essential. While trying to move rapidly towards more open and competitive service markets, at both national and international levels, it is necessary to foster new employment opportunities in the service sector. A conducive fiscal environment and improvements in the functioning of labour markets and institutions are essential to adjust to globalization and the shift to services in the Indian economy. A well functioning service sector provides important opportunities to strengthen employment and productivity. It also helps in strengthening the capacity of the country to adjust to economic globalization and to the growing importance of services and to its future growth. A comprehensive strategy is thus required to address the service sector challenges, which is well suited to the Indian economy.

REFERENCES

[1] A. Maroto-Sanchez, "Growth and productivity in the service sector, the state of the art", Institute of Social and Economic Analysis, WP No.07/2010, 2010, http;//www.iaes.es/iures sp/publications.htm.

[2] S. Joshi, "Tertiary sector-driven growth in India", Economic and Political Weekly, vol. 39(37), 2004, pp. 4175-4178.

[3] J. Unni and G. Raveendran, "Growth of employment (1993-94 to 2004-05): Illusion of Inclusiveness?" Economic and Political Weekly, vol.42(3) ,2007, pp. 196-199.

[4] D. Mazumdar and S. Sarkar, "Growth of employment and earnings in tertiary sector, 1983-2000", Economic and Political Weekly, vol. 42 (11), 2007, pp. 973-981.

[5] R. Majumder and D. Mukherjee, "Tertiarisation of Indian Labour Market: New Growth Engine or Distress Signals?", Journal of The Asia Pacific Economy, vol.13 (4), 2008, pp. 387-413.

[6] S. Kuznets,"Modern economic growth: findings and reflections," American Economic Review, vol. 63(3), 1973, pp. 247-258.

[7] A.G.B Fisher, The Clash of Progress and Security, New York, Augustus M Kelley, 1935.

[8] C. Clark, The Conditions of Economic Progress, MacMillan and Co. Ltd., London, 1951.

[9] J.Fourastié, 'Le Grand Espoir du XXe Siècle: Progrès Technique, Progrès Économique, Progrès Social', Presses Universitaires de France, Paris, 1949.

[10] S. Kuznets, "Quantitative aspects of the economic growth of nations: industrial distribution of national product and labour force", Economic Development and Cultural Change, vol. 5(4), 1957, pp.1-111.

[11] H. B. Chenery and L. Taylor, "Development patterns: among countries and over time", The Review of Economics and Statistics, vol. 50(4), 1968, pp. 391–416.

[12] W. Baumol, "Macroeconomics of unbalanced growth: the anatomy of urban crisis", American Economic Review, vol. 56(5), 1967, pp. 415–426.

[13] T. Elfring, "New evidence on the expansion of service employment in advanced economies", Review of Income and Wealth, vol. 35(4), 1989, pp. 409-440.

[14] R. B. Freeman and R. Schettkat, "Differentials in service industry employment growth in Germany and the US", Comparable German American Structural Database, European Commission, Brussels, 1999.

[15] C. Freeman and L.Soete, "Technical change and full employment", Eds. Oxford: Basil Blackwell, 1987.

[16] M. Baily and R. Solow, "International productivity comparisons built from the firm level", Journal of Economic Perspectives, vol. 15(3), 2001, pp. 151-173.

[17] A. Wolfl, "The service economy in OECD countries", Directorate for Science, Technology and Industry, Working paper no. 2005/3, OECD, Paris, 2005.

[18] R. J. Gordon and P.Gupta, "Understanding India's service revolution", IMF Working paper no. WP/04/171, IMF Washington DC, 2003.

[19] R. Banga and B. Goldar, "Contribution of services to output growth productivity in Indian manufacturing: pre and post reform", ICRIER working paper no. 139, 2004.

[20] National Sample Survey Organisation (NSSO), Employment and Unemployment in India, 2004-05, NSS Fiftieth Round, NSS Report', No 516, NSSO, New Delhi, 2006.

[21] R. Islam, "The nexus of economic growth, employment and poverty reduction: an empirical analysis", ILO Report, Recovery and Reconstruction Department, Geneva, 2004.

[22] S. Kapsos, "The employment intensity of growth: trends and macroeconomic determinants", Employment Strategy Paper, No. 12, Employment Policy Unit, Employment Strategy Department, ILO, Geneva, 2005.

[23] M. P. Timmer, and G. J. de Vries, "A cross-country database For sectoral employment and productivity in Asia and Latin America, 1950-2005", 10-sector database, Groningen Growth and Development Centre, Research Memorandum GD98,Groningen:UniversityofGroningen,2007,web:http://www.ggdc.net.

[24] R. Schettkat, and L. Yocarini, "The shift to services: A review of literature", Structure Change and Economic Dynamics, vol. 17, 2006, pp. 127-147