

**GROWTH, STRUCTURAL CHANGE AND EMPLOYMENT
PRODUCTIVITY OF SERVICE SECTOR IN INDIA**

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Certificate

This is to certify that the dissertation entitled '**Growth, Structural Change and Employment Productivity of Service Sector in India**' submitted to the Department of Economics, Central University of Haryana for the award of the Degree of Master of Philosophy in Economics, is appearing as the record of original work done by Miss. Ruchita Tripathi (Enrolment No. CUH/20/2015, Roll No.6020), under my supervision and guidance. The matter presented in this dissertation has not been submitted in part or full, for any other award of any degree/diploma of this university or any other university/institution.

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DECLARATION

I hereby declare that the research work embodied in this dissertation entitled “**Growth, Structural Change and Employment Productivity of Service Sector in India**” has been carried out by me at the Department of Economics, Central University of Haryana for the partial fulfilment of the requirement for the award of the degree of Master of Philosophy in Economics, is a record of original research work done by me under the supervision of Dr. Ranjan Aneja, Assistant Professor Department of Economics, Central University of Haryana. The manuscript has been subjected to plagiarism check and the work is submitted to consideration of award of M.Phil Economics. The content of this dissertation has not been submitted so far in part or in full for any degree or diploma in other institution.

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CHAPTER 1

INTRODUCTION

1.1 Background

Service sector is the fastest growing sector around the world, which provides more than 60 per cent output of world. The worldwide expansion of service sector led to services being considered as an engine of growth. In developing countries, the service sector can lead to inclusive growth through backward and forward links (Bangas 2005), by confirming equitable access to basic services at low prices (Deloitte 2011), by creating employment opportunities, and by developing human capital. In India, the contribution of service sector is about 57 per cent to the GDP and it is continually rising. In India 10.5 per cent service sector growth rate has observed in 2010 as compared to overall average growth rate of 7.5 per cent in emerging and developing economies. Although in 2011 overall growth rate of service sector of India has decreased to 7.2 per cent but it was still higher than the average growth rate of developing economies which was 6.2 per cent.¹

The service sector has been a major catalyst to India's GDP and to its growth. Its employment's share is second largest after agriculture. In India trade of services has increased overtime and its share in FDI inflow and outflow is largest. The growth of service sector of India has drawn international consideration. The pattern of development is different in India where there has been a shift from agriculture to the service sector while on the other hand other countries led to a shift from agriculture to industries. In this respect , India has been considered as an outlier among South Asian and other developing countries (Ansari 1995), Gordan and Gupta (2003) and Jain and Ninan (2010) have however, pointed out that with the increase in per capita income, the service's share in GDP increases. The increase in urbanization, privatization and extra demand for intermediate and final consumer services caused the growth of service sector. Availability of quality services is important for the wellbeing of the economy. India has achieved the position of one of the five exporters of services amongst developing countries in less than two decades with a market share of 9.2 per

¹Ashish Kumar "Retail Sector in India"

cent in 2012-13 as against 2.6 per cent in 2007. The contribution of service sector in employment and total trade is 35 per cent and 25 per cent respectively and over half of the foreign investment inflows.

The services especially comprise a set of highly heterogeneous economic activities. It includes different types of services either those which are more complex services like IT or some financial services to those services offered by Barber, Rickshaw puller or by plumber etc. The service sector is an aggregate term, a large group of activities that include trade, hospitality (hotels, restaurants), transportation, communication, entertainment, health education, public services and so on are involve in service sector. It has been seen, that at aggregate level service sector is more heterogeneous than the other two sectors of economy i.e. agriculture and industry. Thus if the goods produced directly from natural resources (agriculture, fishing, hunting, mining, and so on) comes in primary sector and secondary sector involves modifying material goods into other more useful products and commodities, then the tertiary sector the service sector includes all activities that do not produce or modify material goods (Iieris, 2007). The output of services sector such as teaching, cleaning, selling, curing and entertaining have no physical form and therefore they are immaterial or intangible while on the other hand the output of agriculture , mining or manufacturing are material and tangible (Noon, 2003).

The classification of service sector can be done by using the country's own definition or by the United Nations Central Product Classification (UNCPC). National Industrial Classification provides the classification for India's services which incorporates trade, hotel and restaurants; transport, storage and communication; financing, insurance, real estate and business services; and community, social and personal services. Construction is also included in World Trade Organisation (WTO) and Reserve Bank of India (RBI) classification. Since the sector is evolving, both the UNCPC and NIC have undergone changes.² At present the NIC 2008 classification is under use. Large variation has been seen among the sub sectors of service sector either in terms of their share in GDP or in terms of their growth rate. Few services are increasing much faster than others. Banking, insurance and telecommunication are the sub sectors that witnessed massive improvement in the post-reform period. At present two sub

²Arpita Mukherjee, "The service sector in India."

sectors trade, hotels and restaurant and financing, insurance, real estate and business services are dominant in services.

The existing literature shows that the share of service sector increases when economy matures. This process starts from the increasing share of industry. Thereafter services grow more rapidly, associated by a stagnant or decreasing share of the secondary sector. Cross country suggests that the first stage occurs unless the country reaches lower middle income status, while the second stage starts once it becomes an upper middle income country.

It has been noted that the share of agriculture sector is decreasing in GDP of Indian economy while the share of industry and service sector are increasing but the share of service sector is increasing faster so it is right to say that the movement of workforce is more towards the service sector as compare to industry, it is not commensurate to the case of total output. Nature of employment being created in the service sector in terms of wage and nonwage attributes is affected by the productivity of services. For some analysts, the tremendous growth of the services in India reflects rapid pace made by educated professionals employed in software, business process outsourcing, financial and telecommunication services. Whether, some other see that the expansion of unorganised sector as an employer is the reason of growth of services because sufficient employment opportunities has not being created through economic growth. Hence it can be seen that the nature of employment generated by service sector is likely to vary across different sub-sector of services at large extent.

1.2 Stages of Economic Development

Economic development is a normative concept. Economic development is an increase in quality of life, improvement in self-confidence needs and freedom from repression as well as a greater choice (Michael Todaro). It refers to both more output or production and changes in the technical and official arrangements through which factors of production are produced and distributed.

Economic development is a continuous process so it involves different stages. Many economists gave their theories on economic development but Rostow and Marx talked about stages of economic development. They have talked about five stages but their stages' perspectives are different. Marx talked in a social perspective while on the

other hand Rostow focused on economic perspective. Mostly, Rostow's stages of economic development are followed.

But here the concern is broadly about sector theory of economic development which argues that there are three stages of economic development which are primary, secondary and tertiary. A.G.B Fisher was the first who introduced the concept of primary, secondary and tertiary sector.³ The expansion of sectoral shares in output, consumption and employment as economies growth has been studied by economists since 1950. Primary sector is incorporated with agriculture, postoral production, fishing, forestry, hunting and mining. Secondary sector is consists of manufacturing and construction. By many economists mining is also included in this category. Finally tertiary sector is defined as different services which are transportation, communications, trade, government and personal services. According to Fisher an economy can be characterized with respect to the proportion of its labour force employed in three sectors.⁴Kuznets (1966) and Chenery (1975) also suggests that development would be associated with a sharp fall in the proportion of GDP created by the primary sector counter balance by a significant rise in industry, and by a more moderate rise in sectors also follows same pattern . For any economy it is essential that it should move on the path of growth smoothly and for this it is important and the development pattern should be followed by an economy as suggested by Kuznets. Every sector has its own relevance and it varies according to the process of development.

Primary sector also known as agriculture sector plays a vital role in the process of economic development of a country. The history of England, USA and Japan is clear proof of the fact that agricultural development has assisted to a greater extent in the process of their industrialization. When an economy shifts to secondary sector, new farm techniques are used and industrialisation changed in to the process of transformation, distribution and selling of goods.

1.3 Economic Development and Indian Economy

The picture of economic development of India is much different till mid 1980's as compare to present scenario. It followed socialist policies. In the three decades after

³Service Management: An integrated approach to supply chain management and operations.

⁴CengizHaksever and Barry Render(2013), 'The important role services play in an economy.'

independence India's per capita income increased only around 1 per cent annualised rate and it was agrarian economy. Economic liberalisation was the way through which India has slowly opened up its market in 1990; afterward the country faced a balance of payments crisis. Privatization, the removal of FDI limitations and rationalization of approval procedures among others have led by reform and the impact of reform was also observed in service sector. India has progressed towards a free economy after economic reforms of 1991. Growth of Indian economy reached at 7.5 per cent in 2000s which will double the average income in a decade. India has placed as a 7th largest economy in the world and the 3rd largest by purchasing power parity adjusted exchange rates (PPP). It has 140th rank in terms of per capita income and 129th rank in terms of Purchasing power parity in the world ranking. Expansion of services worked as a catalyst in the economic growth of India. Services have been growing consistently faster than other sectors. It is argued that the pattern of development of Indian economy is unique and different from rest of economies; it has skipped the intermediate industrialization led phase in the transformation of its economic structure. Serious concerns have been focused about the jobless nature of economic growth.

1.4 Historical Perspective

Several turns and twists have been observed in economic development of India in post-independence period. The period of economic reforms has been observed as the sole of turning points, which broke the concept of Hindu growth rate from the low growth to extraordinary growth and divide the post-independence economic history into two clear phases: The pre reform period and the post-reform period.

The post-independence period took a major break in history of economic development of India. The commencement of economic planning in 1950, when Britishers had not even leave country was the outcome of this turning point. Period of 1980s also noticed as a structural break period when growth rate of GDP accelerated from about 3 to 3.5 per cent to between the ranges of 5 per cent to 6 percent. In this context, introduction of economic reform in early 1990 was not a break as the growth rate in the post-reform period was not significantly higher than the period of 1980. In fact, Growth rate, backed off in the early years of 21st century, yet fundamentally grabbed after 2004. The period since 2004, even in the wake of representing moderate down

during the financial crisis in 2008-09 speaks to a unique period of high development in the post-reforms period.⁵

Same time pattern has been followed by structural changes in the share of agriculture, industry and services as the changes in the growth rate but the contents of change have varied from period to period. It has been recorded that the share of agriculture sector is continually decreasing over the past six decades. The share of agriculture was 57 per cent in 1950-51 and it decreased to 40 per cent in 1980-81. It has further declined to 24 per cent in 1995-96 and 16 per cent in 2009-10. As availability of current data its share is 17 per cent (2013-14). The share of industries and services have increased but at different pace and in different period. Their importance and share to the growth as varied over different periods. The pattern of structural changes in the post-independence period of India can be divided into the following four phases.

1.4.1 Phase 1: Independence to Mid 1960s

This is a period of high growth rate of industry and a significant large increase in the share of non-agricultural sector, particularly of the industry in the national output. Growth rate acceleration had recorded in this decade. (Papola, 2008).

1.4.2 Phase 2: Mid 1960s to 1980.

Sharp decline in growth of industry had found in this period with a slower growth of GDP. This period was accompanied by slower step of structural shift from agriculture to non-agriculture and a very small increase in the industry's share. (Papola, 2008).

1.4.3 Phase 3: 1980 to early 1990s.

Growth rate had accelerated in this period which was due to services. This was the phase when the structural change had placed at very large extent. Share of agriculture decreased drastically with a very little increase in the share of industry- services picking up the major share of the shift. (Papola, 2008).

⁵ T S Papola, 'Structural Changes in the Indian Economy', Working paper 2012/02 (June 2012)

1.4.4 Phase 4: 1990s onwards:

During the period of 2000 to 2004 the growth declined, before this growth continued at similar rate as 1980s. Structural change continued at an accelerated step with the declining share of agriculture. Service sector has emerged as the major sector and the share of industry was small. The period of 2005 to 2010 within this phase has been a sharp acceleration in growth rate, despite a slowdown in 2008-09. Industry has stagnated and agriculture share has declined from 20 to 16 per cent while the service's share increased from 54 to 59 per cent. (Papola, 2008).

Hence in the initial three decades, rate of economic growth took after that of the industrial sector. Since 1980's it has been primarily services led. The industry's share has remained at nearly the same level (around 25 for each penny) since 1987-88. Inside industry, share of manufacturing has been consistent at 15 per cent; construction has expanded its share fundamentally at the expense of mining. Gross domestic product was evaluated to be 24 per cent during 1950-51 to 1979-80 and just 18 per cent during 1980-81 to 2007-08. Construction has seen a little decrease in its contribution from 10 to 9 for every penny. Industry including development saw a decrease in its commitment from 40 per cent in prior period to 31 for each penny in the letter.⁶

Acceleration took place since 1980s when the growth rate of services was 4.6 per cent during 1950-51 to 1979-80, 6.5 per cent during 1995-96 to 2007-08. Share of services to the growth of non-agricultural GDP was 78 per cent during 1979-80 to 2007-08, as compared to 69 per cent in 1950-51 to 1979-80. Growth of Indian economy was primarily services drive over the last 30 years this growth pattern of Indian economy pointed out two questions, First, is the growth pattern of Indian economy follows the normal process of development? And second, is whether such services led growth is sustainable. Service sector is a group of heterogeneous services and it is essential to look at the composition of the services sector to observe which services have contributed to the growth and dominance of the sector.

Since 1980 the increase in the growth of services was led by transport, communication and financial services. In the latter part of period 1995-96 to 2007-08

⁶ T S Papola, 'Structural Changes in the Indian Economy', Working paper 2012/02 (June 2012)

trade also joined as the fast growing group except community, social and personal services, and public administration and defence all other services showed a sharp acceleration in growth rate.

1.5 Sectoral Composition of GDP

Share of agriculture has been declining since 1960's. Share of industry and services has increased. In the last decade, the share of services had compressed the combined share of agriculture and industry making it the most essential contributor to the country's output. In fiscal year 2014, services accounted for 57 per cent of India's GDP which was less than that of countries such as United Kingdom (UK) at 78.4 per cent and United States 78.3 per cent but higher than that of the China at 41 per cent.

Table 1.1 depicts the share of different sectors in economy since 1999-2000 to 2014-15. It can be easily seen that share of services has beaten the combined of agriculture and industry. In 2015 the share of agriculture, industry and service sector are 19 per cent, 28 per cent and 52 per cent respectively.

Initially the growth rate of secondary sector was high when transition had been took place during the period of 2000-01 but after this year growth of service sector has started increasing with high rate.

Fig. 1: Sectoral Composition of Economy

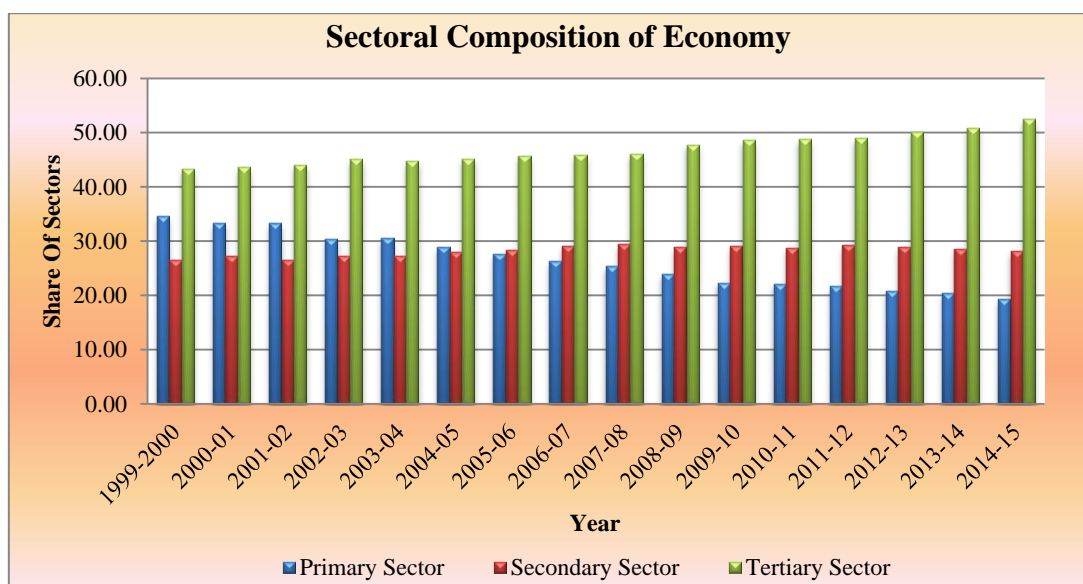


Table 1.1. Sectoral Composition of Economy at Constant Base Price (2011-12)			
Year	Primary Sector	Secondary Sector	Tertiary Sector
1999-00	34.58	26.65	43.35
2000-01	33.28	27.25	43.63
2001-02	33.33	26.56	43.99
2002-03	30.51	27.37	45.09
2003-04	30.58	27.35	44.80
2004-05	28.89	28.12	45.21
2005-06	27.62	28.42	45.73
2006-07	26.36	29.23	45.83
2007-08	25.44	29.48	46.19
2008-09	23.92	28.91	47.82
2009-10	22.35	29.14	48.66
2010-11	22.23	28.80	48.79
2011-12	21.75	29.28	48.97
2012-13	20.87	28.89	50.23
2013-14	20.43	28.61	50.96
2014-15	19.33	28.15	52.51
Source: Economic Survey of 2015-16. Note: Gross Value Added at base Prices 2011-12			

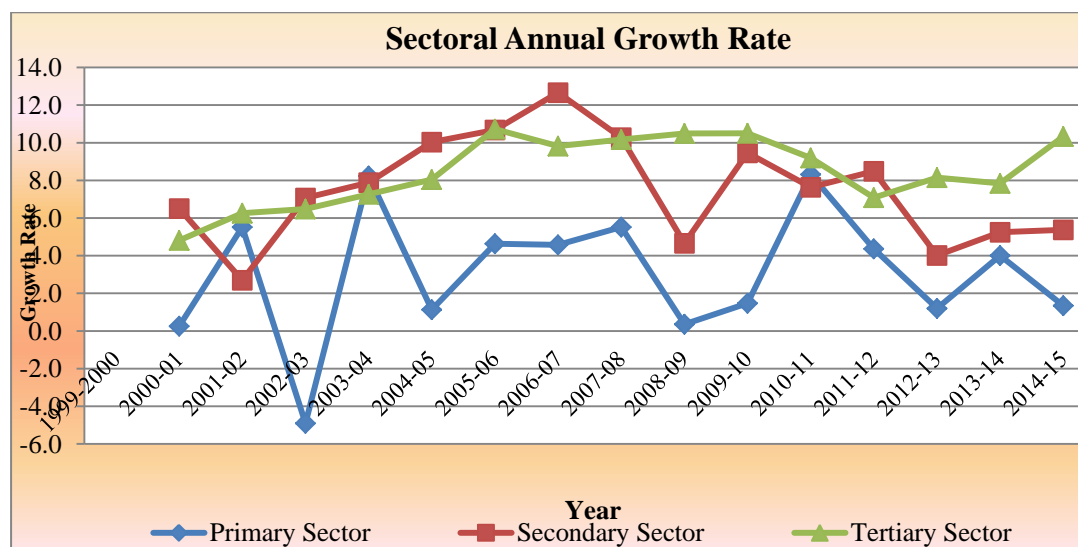
Table 1.2 represents the GVA annual growth rate of all sectors separately. So much fluctuations has been seen in the growth rate of these three sectors only primary sector is the one which also got through a negative growth rate. After financial crisis the growth rate of secondary sector didn't reach at two digit level of growth rate and this was the period when service sector grew with two digit level of high growth rate. Industries grew at high rate during the period of 2004-05 to 2007-08.

Year	Primary Sector	Secondary Sector	Tertiary Sector	Year	Primary Sector	Secondary Sector	Tertiary Sector
1999-00	–	–	–	2007-08	5.5	10.3	10.2
2000-01	0.3	6.5	4.8	2008-09	0.4	4.7	10.5
2001-02	5.5	2.7	6.3	2009-10	1.5	9.5	10.5
2002-03	-4.9	7.1	6.5	2010-11	8.3	7.6	9.2
2003-04	8.2	7.9	7.3	2011-12	4.4	8.5	7.1
2004-05	1.1	10.0	8.0	2012-13	1.2	4.0	8.1
2005-06	4.6	10.7	10.7	2013-14	4.0	5.3	7.8
2006-07	4.6	12.7	9.8	2014-15	1.3	5.4	10.3

Source: Economic Survey of 2015-16.
Note: Gross Value Added at base Prices 2011-12.

Now in 2015 the growth rate of service sector is highest with 10.3 per cent followed by secondary and primary sector with the growth rate of 5.4 and 1.3 respectively (Table 1.2).

Fig. 2: Sectoral Annual Growth Rate



1.6 Classification and Governance

Classification of service sector in every country is purely depends on country either it use its own definition and classification or classification provided by United Nations Central Product Classification (UNCPC). CPC is a product classification for goods and services disseminated by the United Nations Statistical Commission This classification is of international negotiations for establishing and analysing data on industrial production, national accounts trade, prices etc.⁷ National Industrial Classification has used in India for classification of Services. NIC 2008 is being used at present. The classification of NIC and UNCPC is much different. In India construction isnot a part of classification while it takes place in UNCPC.NIC 2008 of services with their code is as follows.⁸

BOX 1: Services Included in the Service Sector in the National Industrial Classification 2008⁹.	
NIC Code	Services
G	Wholesale and retail trade; repair of motor and motorcycles
H	Transport and Storage
I	Accommodation and food service activities
J	Information and Communication
K	Financial and Insurance activities
L	Real estate activities
M	Professional, scientific and technical activities
N	Administrative and support services
O	Public administration and defence; compulsory social security
P	Education
Q	Human health and social work activities
R	Arts, entertainment, and recreation
S	Other service activities
T	Activities of household as employers; undifferentiated goods and services producing activities of household for own use

Source: National Industrial classification 2008.

⁷Arpita Mukherjee, ‘ The service sector in India.

⁸National Industrial classification 2008.

⁹Arpita Mukherjee, ‘ The service sector in India.’

To study the overall growth of service sector it is essential to look at every sub service sector. Its fact that service sector generates informal sector at a large extent, so it is very difficult to collect data of informal or unorganised sector. Reserve Bank of India(RBI), National Sample Survey Organisation (NSSO), Central Statistical Organisation (CSO), Ministry of Statistics and Programme Implementation (MOSPI) has been trying to collect data at decentralized level. Due to India's federal structure services in India comes under three list of Union, State and Concurrent list.¹⁰

Because of quasi federal structure of governance of India services are considered in three different lists of jurisdictions. Few are under the central government influence (Union list), some are under the state influence (State list), and remaining are under the combined controlling of central and state governments (Concurrent List). These all jurisdiction list can be explained under the following box¹¹:

Box: Jurisdictions in the Service Sector
Union List
Telecommunications, Postal, broadcasting, financial services (including insurance and banking), national highways, mining services
State List
Healthcare and related services, real estate services, retail, services incidental to agriculture, hunting, and forestry
Concurrent List
Professional services, education, printing and publishing, electricity.

1.7 Sub Sectors of Service Sector

Service sector incorporates various services in itself but the contribution of all sub sectors is not equal in the growth of services and GDP. The three major services shares are mostly consider as a wheel of service sector which are as follows:

¹⁰ Mukherjee, A. 'Service sector in India'.

¹¹ Mukherjee, A. 'Service Sector in India'.

- Trade, hotels, transport and communication
- Community, social and personal services
- Financing, insurance, real estate and business services

Community, social and personal services have highest growth rate on the other hand growth rate of ‘Trade, hotels, transport and communication’ have been showing highest growth rate. All services are growing in a substantial way and contributing in the growth of service sector.

‘Trade, hotels, transport and communication’ provide services related to tourism, exchange of goods and service between two or more than two people or states or countries in exchange for remuneration of goods or services and connectivity between people or territory. Activities similar to recreational, cultural and sporting, sewage and refuse disposal, sanitation, membership organisations etc. are included in ‘Community, social and personal services’ and ‘Financing, insurance, real estate and business services’ include banking and non-banking institutions whose principal functions include the sale of bonds, securities or obligations of any kinds; the lending, investing or placement of funds or evidence of equity deposited with them etc. Whereas Insurance - comprises insurance carriers of all kinds such as life, fire, marine, accident, health, consultants for policy holders; adjusting agencies; independently organized pension (superannuation) funds etc. Real Estate includes letting and operating real estate such as non-residential buildings, apartment building and dwellings etc. and lastly Business Services not elsewhere includes legal services; accounting, auditing and bookkeeping services; engineering, architectural and technical services etc.

Table 1.3. shows that all services are growing at different growth. Many variations have found in respective of their contribution in the GDP and Service sector.

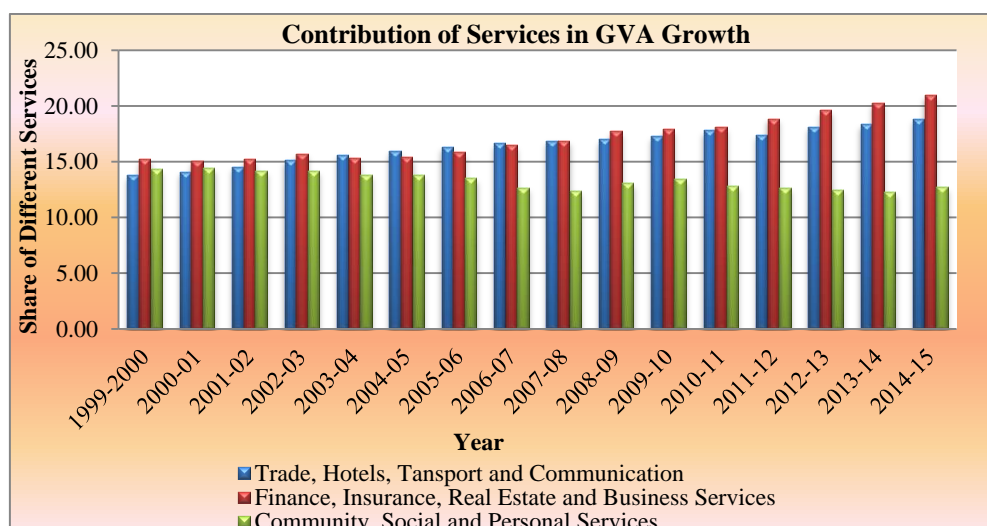
Share of Financing, Insurance, Real Estate and Business Services is highest with the 20.97 per cent of share in GDP followed by Trade, Hotels, Transport and communication and Community, Social and Personal Services with the share of 18.85 and 12.69 per cent respectively. It has been noticed that the contribution of community, social and personal services is decreasing, it has fell from 14.34 per cent of 1999-2000 to 12.69 per cent of 2014-15 while other two services have been

showed increasing share in GDP. The reason behind the rise in trade and financial services are encouragement of tourism and financial inclusion respectively.

Year	Trade, Hotels, Transport and Communication	Finance, Insurance, Real Estate and Business Services	Community, Social and Personal Services
1999-2000	13.82	15.20	14.34
2000-01	14.12	15.11	14.40
2001-02	14.55	15.23	14.21
2002-03	15.17	15.72	14.20
2003-04	15.62	15.33	13.85
2004-05	15.98	15.42	13.82
2005-06	16.35	15.86	13.52
2006-07	16.66	16.50	12.68
2007-08	16.90	16.89	12.40
2008-09	17.02	17.73	13.07
2009-10	17.30	17.91	13.45
2010-11	17.83	18.09	12.87
2011-12	17.43	18.88	12.66
2012-13	18.13	19.61	12.49
2013-14	18.38	20.30	12.28
2014-15	18.85	20.97	12.69

Source: Researcher's calculations based on Economic Survey of India 2015-16.

Fig. 3: Contribution of Services in GVA Growth



1.8 Employment in Service Sector

Employment in service sector is continuously increasing. Work force is shifting from agriculture sector to other two sectors. The picture of sectoral share of employment has changed over the last decades when the share of agriculture was 59.9 per cent during the period of 1999-2000 to 2004-05 and it decreased to 52.9 per cent during the period of 2004-05 to 2009-10. In this period the share of employment has increased from 23.7 per cent to 24.4 per cent in above respective period.

“As per the National Sample Survey Office’s (NSSO) report on employment and unemployment situation in India 2009-10, on the basis of usually working persons in the principal and subsidiary statuses, for every 1000 people employed in rural India, 679 people are employed in the agriculture sector, 241 in the services sector (including construction), and 80 in the industrial sector. In urban India, 75 people are employed in (including construction) and 242 in the industrial sector. Construction; trade, hotels, and restaurants; and public administration, education, and community services are the three major employment- providing services sector.”(Verma,2014)

Employment generated by service sector is organised and unorganised both sector. Finance, insurance, real estate, and business services and community, social and personal services largely provide organised employment while retail and wholesale trade largely provide unorganised employment.¹²

In FY 2004-06, 17.4 million people were employed in organised sector while in the same year the absolute number of employed people in unorganised sector was 83.2 million.¹³ Trade hotels and restaurants are the only activities in which the contribution of the public sector is lower than that of the private sector. Service sector is creating an informal sector at a large extent.

Labour productivity in service sector differs among the various services. Some service’s employment is productive while few have lower labour productivity;It all depends on the nature of services and employment.

¹²Arpita Mukherjee, ‘The Service sector in India.’ (2013)

¹³ Data book for PC; 4th august 2014.

1.9 Statement of Problem

Growth of service sector in an economy is a vital indicator of development. The service sector with the tremendous growth has the highest labour productivity, but employment has not kept step with the large share of the sector in GDP has not created the number or qualitative jobs needed. With the lot of heterogeneity this sector has large variation in the share of sub-sectors and labour productivity among sub-sectors. Growth rate of 8.2 per cent was achieved due to services, so it is essential to understand the nature, problem and their solutions of service sector. Now in this scenario service sector is the main catalyst for every economy and especially for developing economy like India. It is very important to understand the growth pattern and structural breaks in respect of service sector because in last few decades the growth pattern of economy has changed due to the change in economy structure through the movement of concentration from agriculture to service sector. To focus on these aspects there are few objectives of study.

1.10 Rational of the Study

The present study is an attempt to highlights the performance of service sector and its services in India which are the main sources of development in present scenario. So, in such case it is essential to focus on this sector and find out the problems in order to take it in a forward path of development. The findings of study will provide benefit to policy makers; government and research scholars considering the service sector as an important indicator of economic growth at aggregate and disaggregate level.

1.11 Scope of the Study

The study re-examines the structural change and labour productivity of service sector and its different services of Indian economy by applying theoretical consideration of the shift share analysis using annual data covering from period 1999-00 to 2014-15, Which is a period of 15 years. The sources of data of study are Central Statistical Organisation (CSO), Economic Survey of 2015-16, Ministry of Statistics and Programme Implementation (MOSPI), Director General of employment and training, Ministry of labour and employment and National Sample Survey Organisation (NSSO) database.

1.12 Objectives of the Study

The objectives of the study are:

- To study the recent trend and performance of service sector and its sub sectors.
- To measure the labour productivity of service sector.

1.13 Organisation of Study

The organisation of the study is as follows:

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Research Methodology of Study

Chapter 4: Recent trend and pattern of service sector and its sub sectors

Chapter 5: Labour productivity of service sector

Chapter 6: Major Findings, Conclusion, Policy Implications and Limitations of the Study

Bibliography

Appendix

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

This chapter deals with the review of existing literature related to topic of study. Chapter is divided into three sections dealing with theoretical foundations, global context and Indian context of study. Theoretical foundation deals with different theory of development through which any economy moves. Global and Indian context literature put light on different concepts and dimensions of development of service sector.

2.2 Theoretical Foundations

2.2.1 Classical Theories of Economic Development

2.2.1.1 The Linear stages of Growth Models

In these models capital is taken as injections for the growth of GDP. The concept of economic development and its model was formulated in the initial years after the world war 2nd. Rostow's stages growth and The Harrod-Domar Model are the two linear stages growth Model.

Rostow's Stages of Economic Growth

W.W Rostow provided a systematic process of economic development. He propounded five stages through which an underdeveloped country can move towards the development. These five stages are: The Traditional Society, The Preconditions for take-off, The take-off, The drive to Maturity and the last is the age of high mass consumption. Among these take-off stage is very important in which a country travel from an underdeveloped to a developed state. Investment is considered as necessary condition to boost up of per capita growth. *The Stages of Economic Growth* of Rostow has been discussing from the period of its commencement in literature.

The Harrod-Domar Model

On the other hand Harrod-Domar focuses on investment for development. This model is based on advanced economies. This model is a practice to attend steady state growth in the economy. The models of both economists are unlike in details, but they arrived at same result. They talk about double character of investment which is to create income on one hand and on other hand it increases capital stock. The creation of income referred as *demand effect* and the latter is known as *supply effect*. It is essential to increase the output and real income at the same rate at which the productive capacity of the capital stock is increasing to maintain full employment equilibrium level of income. R. F. Harrod talk about three growth rate for description of economy and its various phases, these growth rate are: The Actual Growth Rate, The warranted rate of growth, The Natural rate of growth.

2.2.1.2 Structural Change Models

These models came in existence during the period of 1960s and early 1970s. In these models development process is described as a shifting of labour from agriculture to industrial sector. Two sector model of Lewis (1959) and Chenery's (1960) the structural change and patterns of development are the structural change models.

The Lewis Theory

His concerned is about two sector economy. Lewis has propounded a theory with a title of *Economic Development with Unlimited Supplies of Labour*. He talks about shifting of labour from traditional sector to modern one. The reason behind this shifting is difference between the wages of these two sectors. Workers of agriculture sector earns only subsistence wage while wage of modern industrial sector is more. High wage and investment in modern sector attract labours and cause of expansion of economic growth.

Chenery's Patterns of Structural Change

Chenery identified some similar features in the pattern of development of less developed nations. He studied the several less developed countries during the post-war period. Chenery defines the development pattern "*as a systematic variation in any significant aspect of the economic or social structure associated with a rising*

level of income.” But he specially talk about sustained increase in per capita income. He has divided the development process in three principle development which also divided into ten basic development processes through which all dimensions of development can be described. These processes are: Accumulation Process, Resource allocation Process and Demographic and Distributional Process.

As per Structural change and patterns of development analysis concerns, it gives equal importance to the physical and human capital accumulation for economic growth with a consideration of saving and investment. Chanery (1960), Chenery & Taylor (1968), Kuznets (1971), and Chanery & Syrquin (1975) provided an essential explanation of this approach.

International Dependence Models

This model was developed in 1970s and early 1980s. Theory explained that the reason behind underdevelopment is dominance of developed of developed country over developing one. This theory is taken as the addition to Marxist theory. It concludes that developing countries should break up their relationship with developed countries to get rid of problem.

2.2.2 Contemporary Theories of Economic Development

New Growth Theory

New growth theory which is also known as endogenous growth theory emerged in 1990s to describe the poor concert of many underdeveloped countries, which have applied in neo-classical theories. Romer (1986), Lucas (1988), Aghion and Howitt (1992) are few new growth theorists who linked technological change to the production of knowledge. It focuses on knowledge as compare to labour and capital for economic growth. Arrow’s learning by doing, King Robson’s learning by watching, Romer’s learning by investment are few models of New Growth Theory all of which emphasis on human capital. Therefore new growth theory promotes the role of government and public policies to invest in knowledge intensive industries such as computer software and telecommunication (Meier, 2000).

Theory of Coordination Failure

Theory of Coordination failure emerged in 1990s. Many times coordination does not exist among complementary activities and this is the reason of foundation of coordination failure. Rosenstein Rodan (1943) was the first economists who raise this concept first time. Nurkse (1953) and Hirschman (1957) followed his emphasized the role of government to solve the problem.

2.3 Global Context

Mark (1982) focused on the special challenges for productivity analysis in growth of Service economy. It discusses particularly labour productivity in service industries and explains how the Bureau of labour Statistics is working to overcome some of the problems. Problems related to output and input measurements are discussed in different service industries viz. Trade, Transport, Communication, Business and Personal Service, Finance.

Wachter (2001) focused on the employment and productivity growth in service and manufacturing sectors in France, Germany and the US. While Labour productivity increases faster in France and Germany than in the US. This paper starts out from the observation that the patterns of growth service sector can explain most of these differences. Manufacturing sectors grew in a same manner in all three countries. It focuses on the structural differences through a shift share analysis, in the sense that there is a lag in structural change in the European countries with respect to the US. But the aggregate growth differences derive from differences in sectoral rates of growth. The high growth rates in labour productivity of service sector in France and Germany seem to be partly driven by convergence to American levels of productivity. The paper represents how changes in capital-accumulation can only clarify around 50 per cent of the catch-up by using a growth accounting approach consistent with the incidence of biased technological change. Paper examines the Mechanism behind these patterns of growth by comparing the evolution of single, large service sector. If the growth of productivity in services decreases as convergence of labour productivity is attained, increase in employment of service sector in France and Germany may have to sustain output growth in future. To analyse the source of labour productivity growth, the paper assumes that the economies' and sector' production processes can

be captured by a production function with constant returns to scale. The paper's aim is to assess the role of these sectoral differences in describing aggregate growth and its difference across countries. For this, it has examined and compared the impact of structural change on growth within countries. Through shift share analysis it has assessed the potential of differences in economic structure for explaining differences in growth across countries. Paper investigates the role of capital-accumulation in explaining diverging sectoral patterns of productivity growth. This is done in a constant way with the impact of non-neutral technological change, whose importance is suggested by growth patterns of capital shares. It uses various stylised facts regarding to the growth of manufacturing and service sectors which are 2fundamental to the analysis. Paper concludes that growth of labour productivity in France and Germany service sectors may be due to catch up process to the higher level of American service productivity. To speculate about the future development of service employment in Europe, the extension of the Baumol's model (1967) of 'unbalanced growth' is used.

Ghani (2011) compares the fastest growing economies China and India. Service sector's share in India's GDP is bigger than in China, China is dominated I manufacturing sector and it exports manufactured goods. Paper focuses on growth pattern of China and India. Services can be separated into two broad categories- Traditional and Modern Service. India is rich in Modern Service which is linked to ICT. By comparing India's share of IT and IT enabled service I total exports with the rest countries of the world it can be easily said India stands at significant outlier. China in other hand is better than Indian firms in traditional services, which is nearly related to manufacturing sector. Tradability, Technology, and Transportability are 3T's through which Modern services productivity is being derived. It focuses on role of service led growth in reduction of poverty and creation of job, also at this fact that the jobs created by services are good or not. It also examines the growth generated through service sector.

Park and Shin (2012) analysed the 12 Asian countries which indicates that the service sector plays a great role for region's growth in the past. This paper provides substantial cause about the role of the service sector as an engine of growth in Asia. It also specifies few Asian countries such as Korea and Thailand where service sector is not so developed, i.e. in a stage of struggling and it will be very challenging for those

countries to develop the sector. It explores the history of service sector in 12 major Asian economies. Separately and specially focuses on the share of service in total output and employment. The data are collected from the World Bank's World Development Indicators. The paper follows Einchengreen and Gupta (2009)'s quartic relationship of two waves of service sector growth between the service sector's share of GDP and per capita GDP. Data related to service sector value added, GDP and per capita GDP are taken in two phases first is from 1970-89 and second is from 1990-2010. Employment data is taken from 1980. To analyse the fact that is the service sector be a reason of growth of Asia. Paper investigates the GDP growth and productivity of Service sector compare to other sector.

Lee and Mckibbin (2014) used empirically based global intertemporal mutisector general equilibrium model to identify the impacts of rapid growth of labour productivity in the service sector in Asia. G-cubed model which is an intertemporal general equilibrium model is used to explore the impact of rise in labour productivity in the service sector in Individual Asian economies and then across all Asian economies at the same time. It emphasis on input output linkages and capital movements across industries and economies, and consumption and investment dynamics. The paper analyses the role of the service sector in structural adjustment and economic growth in Asia. Data are collected from the Groningen growth Developing centre (GGDC) which covers years from 1970-2005. The data covers 10 Asian economies. Original data is divided into nine sectors. Shift Share analysis is used to examine empirically the impact of Tertiarisation on aggregate productivity growth. Where on the one hand the paper finds that overall economic growth in Asia is hampered by lower labour productivity in the service sector relative to the manufacturing sector similarly on the other hand it finds that all sectors are benefited by the faster productivity growth in Service sector.

2.4 Indian Context

Mukhopadhy (2002) emphasised on Globalisation and Indian service sector describes the method for development of service sector and its subsectors. Through data of World development indicators (1998, 2001) and CSO this paper highlight the increasing contribution of service sector in Indian economy. Paper suggests that for

increasing service sector's contribution in economy it is important to liberalise trade and investment in service sector.

Joshi (2004) analysed the sectoral composition of GDP and employment for the period 1950-2000. It exposes various facts related to employment, growth in various sector, through data of governmental agencies. In addition, it emphasis not only on employment as whole but divides it into formal and informal sector. Service sector is as a very important sector for employment generation and poverty alleviation, but in long run the development of all three sectors is important.

Banga (2005) Growth of Service sector in India Has increased tremendously in the last ten years but the growth of employment in Service sector has not been accompanied by growth of service sector. The paper finds that the growth of service sector has been jobless. It examines that some sectors have witnessed a high growth rate in the in the last decade, example business service and communication while some sectors have witnessed a decrease in their growth rates e. g, real estate and railways. The sectors with low and negative growth rate have a large potential for generating employment e g, Transport, construction and professional services. Reason of reduction of the scope for increasing employment in these sectors is raising labour productivity in the faster growing sectors. Growth in services has increased to higher use of services in manufacturing sector which implies that the service sector will be able to create its own demand in future. Study shows that due to growing external markets for services, India's service sector is growing. The domestic reforms and liberalisation through lowering of barriers to trade and allowing FDI, have improved growth of Indian Economy in the corresponding services. Paper suggests that to overcome the problems of lack of employment growth in services, it is necessary to achieve uniformity in the growth of different services.

Guha (2007) focuses on the demand pattern as a factor which is responsible for growth pattern. By following Baumol and Kaldorian views paper tries to examine the Indian growth structure through the validity of the production structure based explanation. It finds that the production structure based explanations is inadequate fir GDP growth structure. Service sector's productivity is higher than manufacturing and agriculture sector but the terms of trade have moved against the services. These are the features Kaldor had predicted for the manufacturing sector. The paper finds that

decrease in price of service and increase in income inequality should lead a greater demand for services. For Kaldor's growth structure it focuses on the service and IT sector and for this paper examines the linkages of sector with the rest of economy. Leontief inverse matrix is used for this. Input-Output published by CSO is used to track the backward and forward linkages. It concludes that the structures of Indian growth do not follow the theories of Kaldor and Baumol, and the cause is that these theories provide explanations based on production structure of GDP growth. In India the case is different; here the growth structure can be better explain through demand component, increasing exports and consumption demand. The reason of service dominated growth structure is decrease in relative price of service.

Nayyar (2009) analysed the employment nature created in the different subsectors of services, relative to industrial sector. It includes educational requirements and quality of employment to define the nature of employment in which it takes three measures for quality of life: wages, job security and social protection. Cross sectional analysis has been done for sample over 600000 individuals in India in 1993-1994 and 2004-05. The choice of surveys is identified by the two facts. First, The period from 1990-91 to 2004-05 saw the most dramatic enhance in the output share of the services sector. Second, 2004-05 survey is recent while surveys of before 1993-94 are not as comprehensive in the variables. The surveys do not cover the same individuals over time. Data is collected at individual level through Pan- India Surveys on employment, conducted regularly by India's National Sample Survey Organisation (NSSO), which collects micro level data. It finds that in certain subsectors of services, the level of education of an individual has an important effect on the probability of being employed, while in others it does not. In comparison to the industrial sector, Services sub- sectors with quality of employment have low educational requirements.

Einchengreen and Gupta (2011) Working paper on the service sector as India's road to economic growth focuses on modern services as a reason for the growth in service sector's output and employment. Business services, communication and banking considered as modern services. This study observes that for sustaining economic growth and raising living standard will require shifting labour into both manufacturing and services.

Mukherjee (2012) quotes the contribution of service sector and subsector in GDP and employment of India through the data available on official government website and agencies like MOSPI, CSO and NSSO. In the 1950s and 1960s, transport, storage and communication services and trade, hotels and restaurant services grew faster than the overall services sector growth in India. In the 1970s and 1980s, financing and business services started growing at a faster rate. In fact, in the 1980s, financing and business services surpassed the growth of services such as transport, storage and communication and trade, hotels and restaurant. In the decade of 2000-2010, transport, storage and communication services are the fastest growing services sub-sector, followed by financing and business services. Both the sub-sectors have grown faster than the overall services sector growth. This paper identifies a number of barriers faced by the service sector and recommends the policy measures which if implemented will lead to inclusive growth, increased productivity, employment, trade and investment.

Das (2013) focuses the INDIA KLEMS Panel data to examine the labour productivity in Indian Service Sector during the period 1980-2009. The empirical results suggest that labour productivity in Indian Service Sector has been growing substantially over decades, and much of this productivity gain is accruing through acceleration in market services labour productivity. The observed growth pattern in the service sector has not been uniform across all services in India. The performance of market based ICT intensive sector is impressive especially telecommunications and financial services.

Mukherjee A. (2013) presented the service sector as the vast and fastest growing sector of India. Service sector has the highest labour productivity, and it will be increase continually. Quality of employment generated through service sector is not as good as needed. The service's share in total trade of India is higher than the global average. India places among top 10 WTO members in service exports and imports. There are so many reasons among which are: India does not have a policy that can lead to inclusive growth, no. of governing bodies and in coordination among them adversely affect the growth of sector, FDI restrictions and regulatory barriers. India's service sector growth and exports of service are less than that of competing countries and exports are concentrated in few services and markets only. There are wide inequality in the growth of different types of services and great inconsistency in access to services, a major proportion of the poor in India do not basic services such

as healthcare and education. Infrastructure is poor, so the cost of service delivery is high. Although India wants to develop as a knowledge hub, there is no equality in the quality and standard of education. The service sector will be able to contribute to inclusive growth sby increasing investment, generating employment and human capital and developing infrastructure. It is essential for a developing country like India, to generate quality employment. India requires private investment in key and telecommunications. It can attract FDI and private investment only with a secure, clear, unbiased competitive policy environment. The paper suggests various reforms, if these are implemented, it will increase the productivity and efficiency of the service sector and lead to inclusive growth.

Singh and Kumar (2014) analysed the contribution and growth of service sector and its components to GDP for the period years (1950-51 to 2010-11). The paper describes that the service sector marked growth took place especially in the post liberalisation period. This paper using National account statistics, Economic survey and MOSPI as a data base and compound growth rate in methodology to show that the contribution of service sector in total GDP has been increased as compare to primary and secondary sector during the study period.

Latha et al. (2014) focused on health and education of India which are subsectors of service sector. The development of both health and education sectors have made the advancement of service sector. The study has done with the focused on service sector growth, health and education services of India. Secondary data is used which is obtained from economic survey of Government of India. Analysis covers the period from 1950-51 to 2010-11. Over the period between 1950-2011 the contribution of service sector has doubled and the contribution of other service sector is increasing much faster as compare to growth rate of GDP in the last decades during 2000-2001 and 2010-11. As civilization progresses human desires enhance leading to the evolution of education activities.

Verma et al. (2014) explained that service sector in India has emerged as a prominent sector in terms of its contribution to income, FDI inflows, employment and trade inflows in the context of national and state. It focuses on two objectives. First, is to identify those factors through which the India's export growth increases during recent years and the second is to identify the growth and performance of subsectors of

service sector in India. The study says that the service sector is the only sector which can take India to achieve the golden target of becoming one of the developed nations of the world by 2020. Trade hotels and restaurants as a group are presented as a largest contributor subsector. On the basis of GSDP of 2011-12 of different states and Union territories, the service sector is the dominant sector in most of the states in India. The share of cumulative FDI inflows to the service sector would be 43.33 per cent during 2012-13. In exports the software services are the major constituent which includes both IT enabled services and business processing and outsourcing. The paper gives importance to venture capital and private equity investment because service sector influences it.

Pais (2014) A working paper on Growth and structure of the service sector in India by analyses the subsectors within services that have contributed mainly to GDP growth and employment growth. This paper observes the dimensions of employment in service sector by which the quality of employment is examined in service sector through the analysis of the productivity levels in different services.

Basha et al. (2014) a study on impact of service sector in Indian Economy identifies that most of the economies are depending on service sector. Through using data available on official websites of National Accounts Statistics, CSO and MOSPI, this paper explains that which sub sector is growing rapidly, growth of service sector in different states of India and people's dependency on service, agriculture and industrial sector. It also concludes that growth rate of the economy should not be only limited to service sector but it should also develop in agricultural and industrial sector. This paper explains about how our economy has developed since 1951-2013.

Chahal (2015) presented Service sector as an engine of growth for Indian economy. The data of Planning Commission, MOSPI and CSO has been taken. The study confirms that service sector have grown at the significant rate in comparison to other sectors. Rising share of this sector in GDP over covers the poor performance of agriculture sector. Paper finds that as a service sub sector, trade is dominant all in terms of its contribution in Indian GDP and the employment percentage in service sector as well as in industry sector is rising while in agriculture, it is falling continuously.

Joshi (2015) provided remark of the shift in India's development strategy from import substitution growth strategy (ISS) to an Export-led –growth Strategy (ELGS). It argues that if Hindu rate of growth is due to ISS in the first three decades of planning, then. India unstoppable growth is due to service led growth. It emphasis the openness of services and foreign direct investment in services as an essential determinants of GDP growth during the period 1995-2005. Trade is an engine of growth in the context of ELGS due to globalization. It focuses on deregulation of various subsectors of service sector which has done by government of India in the post 1991 period. It presents service sector as a source of foreign exchange reserves, FDI, GDP growth. The paper also identifies that the for sustainable growth, along with openness in services, industrial and agricultural reforms are important. India has need to diversify the services, explore new destinations for its exports and also to move higher up in value chain as Philippines, China and Ireland which are providing tough competition to India. It also focuses on social sector allocations in which especially the fact about education has taken.

2.5 Research Gap

Various national and international literatures have been found which deals with structural change and labour productivity of various sectors of economy and economy as whole. This study provides the structural change and labour productivity of services sector by using theoretical analysis of 'Shift Share Analysis' as whole and within sector rather than regional analysis which has been done in maximum of studies. It is an attempt to measure the labour productivity of service sector in India at aggregate and disaggregate level.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

Methodology has been adopted as per the problems and objectives are concerned. As per the study demand secondary data has been used. Time period for selection of data has been selected with the concern of availability of data at total and disaggregated level because study demands data from macro to micro level. Data has been collected from different sources of database for different variables which have been used in study. The analysis has been covered period of 14 years from 2000 to 2014. Descriptive analysis has done to fulfil the objectives of study. There are two objectives of the study i.e. firstly, to find out the recent trend and pattern of service sector and its sub sectors. Secondly, to measure the labour productivity of service sector. Here labour productivity is taken as a proxy of employment productivity. Year to year wise analysis has done to make clear and efficient study of sector.

3.2 Techniques of Estimation

Different techniques are used to fulfil both objectives of study. To fulfil the first objective of the study, the methodology adopted to compute the trend and pattern is percentage and growth method. Further to fulfil second objective of measurement of labour productivity, Shift share analysis Proposed by Maddison (1952) has used. Both of techniques are described as follows:

3.2.1 Trend and Pattern of Service Sector and its Services

Growth and share of service sector in an economy has been seen in this section. To understand the growing nature of service sector it is essential to find out the trend. It represents the true picture of structural change of an economy since 2000. Growth and share has been taken as indicators of finding out the trend and pattern. For measuring growth, percentage growth method has been used. The percentage growth rate from one period to another is calculated from the formula:

$$GR = \left[\frac{Y_t - Y_{t-1}}{Y_{t-1}} \right] \times 100$$

Here GR is Percentage growth rate. Y_t and Y_{t-1} represent the value of present year and past year.

Growth rate of service sector indicates its growing pattern and which has helped to know about its importance in growth of an economy. Trend and pattern has been finding out by seeing off the growth rate and share of service sector at aggregate level in total GDP and for different services of service sector at disaggregate level.

3.2.2 Labour Productivity of Service Sectors

The effect of structural change has played a vital role in explaining the growth performance of an economy. When the movement of resources is towards the high productivity level from relatively low productivity level, then the effect of structural change would be positive. Differences in productivity levels between the sectors and the change in share of employment from low productivity to high productivity sector are needed for above analysis. In analysis labour productivity is taken as employment productivity. Overall growth can be described through the growth rate of sectors. To measure the effects of shifts and difference in sector shares on aggregate growth rates, consider the following decomposition of the proposed by Maddison (1952):

$$\Delta y/y = \sum_{j=1}^k \frac{Y_j}{Y} \left[\frac{\Delta y_j}{y_j} \right] + \sum_{j=1}^k \left[\frac{y_j}{y} \right] \Delta s_j + \sum_{j=1}^k \left[\frac{y_j}{y} \right] \left(\frac{\Delta y_j}{y_j} \right) (\Delta s_j)$$

Where, Δ represents change, y is aggregate labour productivity of service sector (or GVA of service sector per worker), y_j is labour productivity of sector j , Y is initial GVA, Y_j is initial output of sector j , and S_j is employment share of sector j .

$$\sum_{j=1}^k \frac{Y_j}{Y} \left[\frac{\Delta y_j}{y_j} \right] = \text{Total growth Effect}$$

$$\sum_{j=1}^k \left[\frac{y_j}{y} \right] \Delta s_j = \text{Total Shift Effect}$$

$$\sum_{j=1}^k \left[\frac{y_j}{y} \right] \left(\frac{\Delta y_j}{y_j} \right) (\Delta s_j) = \text{Total Interaction Effect.}$$

This is often known as a 'Shift-Share Decomposition' of an aggregate growth rate. The first term in right hand side of equation represents the 'Growth Effect' it is that part of overall productivity change which is caused by productivity growth within the

sectors. The second term is called ‘Shift Effect’ and measures the effect of the change in sectoral employment share on overall growth. The last term is expressed as an ‘Interaction Effect’ and it depicts the joint effect of changes in employment shares and sectoral productivity. The effect of last is usually small as in most cases sectors which have a rapid productivity growth and decline in employment shares.

Some authors (including Maddison, 1996) infer the net shift effect and the interaction effect together as representing the structural effect. Though, it is useful to distinguish between these two effects, because former only represents the pure effect of shifts from low productivity to high productivity sectors, even though the interaction effect includes a ‘Structural Effect’ component as well.

3.3 Data Source of the Study

As per study requirement secondary data has been collected from different sources. Sources of study are as follow:

- Central Statistical Office (CSO)
- Ministry of Statistics and Programme Implementation (MOSPI)
- Economic Survey of 2015-16
- Director General of employment and training, Ministry of labour and employment
- National Sample Survey Organisation (NSSO)

Because of lack of availability of all data of employment as per study requirement (year to year wise), it has calculated through regression analysis with the help using SPSS software which shows quadratic form of data.

3.4 Variables Used in Study

To fulfil the objectives of study, the various variables have used at aggregate and disaggregate levels which are as follows:

- Gross Value Added (GVA) at base prices (2011-12)
- Sectoral GVA at base prices (2011-12)
- GVA of different services at base prices (2011-12)
- Growth rate of GVA

- Employment.
- Labour productivity
- Employment Share.

Gross Value Added: Difference between output and intermediate consumption is measured through Gross Value Added (GVA). It is a productive metric. It measures through deduction of the cost of all inputs and raw material that are directly attributable to that production from the value of amount of goods and services that have been produced.

Now the question is why GVA has considered in study to measure growth. Various reasons are cause to deal with GVA which are as follows:

GVA and GDP both are true indicators to represent the picture of economic activity from producer and consumer point of view. Net direct tax (NIT) is the reason of divergence between GDP and GVA. $\text{Net direct tax} = \text{Indirect tax} - \text{Subsidies}$. Net direct tax involves in GDP. GDP is summation of GVA and NIT. A strong increase in growth rate of 7.5 per cent year over year has noticed in terms of GDP during the first quarter of 2015 while on the other hand GVA growth has increased with 6.1 per cent year over year.

But GVA carries greater significance for various reasons.

- GVA delivers better measure of economic activity; GDP represents the high growth rate because of consideration of sharp increase in tax collection due to better compliance not because of the increase in output.
- GVA replicates the productivity of producers as it ignores the indirect taxes which could misrepresent the production process. However, it can also be argued that GVA is distorted due to the presence of subsidies.
- GVA provides a sector wise breakdown which helps the policy makers to decide which sectors need inducements or vice versa.

However GDP still leftovers key measures to make cross country analysis and comparing the incomes of different economies.

Labour Productivity: Its represents the true picture of employment and economic growth of country. It measures the amount of goods and services produced by one hour of labour. Amount of real GDP by an hour of labour has been measured by labour productivity.

Though in study, output per worker has taken to measure labour productivity.

CHAPTER 4

RECENT TREND AND PATTERN OF SERVICE SECTOR AND ITS SUB-SECTORS

4.1 Introduction

In this section a detailed analysis of the growth and share of service sector in Indian GVA and its different services in all over the service sector's GVA have carried out through growth rate method. Firstly growth and share of service sector have taken into consideration and after that trends and pattern of all three services of service sector have considered to fulfil the first objective of study. Analysis has started from 2000 and goes on till 2015. Year to year growth has taken for better analysis.

4.2 Growth of Service Sector GDP

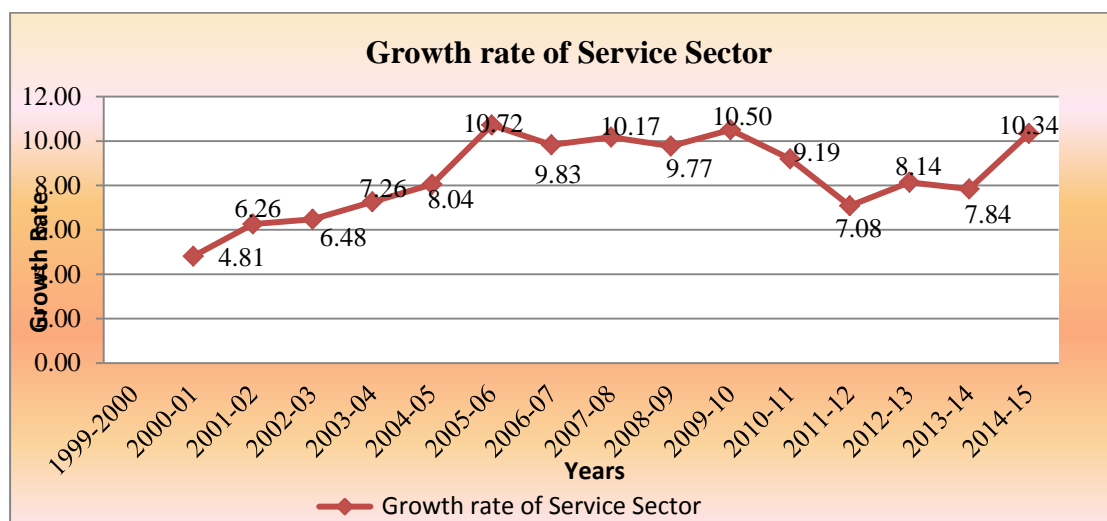
The service sector in India has experienced sustain and secular growth from early years since 1990s when economic reforms took place but in the study because analysis has started from 2000 and during the period of 2001 to 2015 when average growth of service sector was highest, 2005-06 was the period when service sector grew at faster rate of 10.72 per cent (Table 4.1).

Year	Services (in Rs. Cr.)	Growth Rate	Year	Services (in Rs. Cr.)	Growth Rate
1999-00	1510234	–	2007-08	2780508	10.17
2000-01	1582879	4.81	2008-09	3072360	10.50
2001-02	1681959	6.26	2009-10	3395036	10.50
2002-03	1790898	6.48	2010-11	3707200	9.19
2003-04	1920966	7.26	2011-12	3969789	7.08
2004-05	2075504	8.04	2012-13	4293071	8.14
2005-06	2298002	10.72	2013-14	4629679	7.84
2006-07	2523784	9.83	2014-15	5108194	10.34

Source: Researcher's Calculation based on Economic Survey of India 2015-16
Note: Growth rate at base prices 2011-12.

It was due to increasing share of ‘Financing, Insurance, Real Estate and Business Services’. In 2006-07 it has decreased because of fall in other two sub sectors of services except financing, insurance, real estate and business services. 2007-08 was the period of recession when maximum countries of world have got affected. Indian economy was not exceptional. The outcome of recession has started to see till the end of 2008. In 2009 when GVA has fall from 10.17 per cent of 2007-08 to 9.77 per cent of 2008-09 was the result of recession. Since 2011 because of deceleration in trade, hotels transport and communication the growth rate of service sector has fallen in last three years except 2012-13.

Fig. 5: Growth Rate of Service Sector



4.3 Share of Service Sector in GDP

Share of service sector is continuously increasing at very fast pace. After the liberalization in the year 1991, the contribution of service sector is continuously increasing in Indian economy. Service sector are growing in volume with sophistication and complexity.

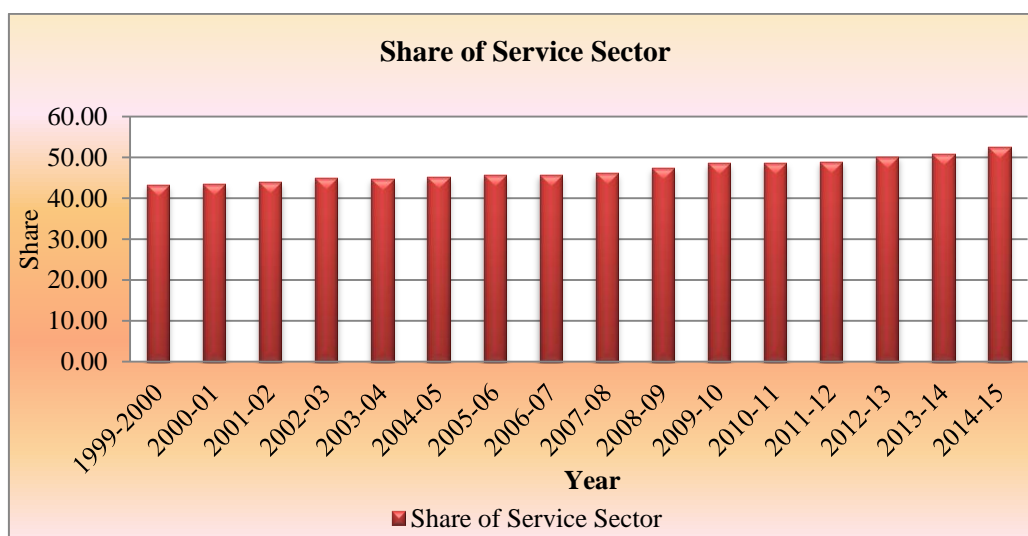
The reason behind this increase is economic affluence, cultural changes, IT revolution, markets development, market orientation, health care consciousness, economic liberalization, rampant migration and export potential. These all factors increase with the development process.

Table 4.2 Share of Service Sector in GDP			
Year	Service Sector (in Rs. Cr.)	Gross Value Added	Share
1999-00	1510234	3483551	43.35
2000-01	1582879	3628055	43.63
2001-02	1681959	3823449	43.99
2002-03	1790898	3971713	45.09
2003-04	1920966	4288121	44.80
2004-05	2075504	4590471	45.21
2005-06	2298002	5025516	45.73
2006-07	2523784	5506414	45.83
2007-08	2780508	6019725	46.19
2008-09	3072360	6424538	47.82
2009-10	3395036	6976660	48.66
2010-11	3707200	7598404	48.79
2011-12	3969789	8106656	48.97
2012-13	4293071	8546552	50.23
2013-14	4629679	9084369	50.96
2014-15	5108194	9727490	52.51
Source: Researcher's Calculation based on Economic Survey of India 2015-16.			
Note: Value of Service sector and GDP is taken in absolute form in Rs. cr. And all of three GDP of service sector and economy and share are taken in terms of Gross Value Added at base Prices 2011-12.			

Table 4.2 depicts that service sector is growing with a sustain manner. In last 15 years it has been observed that service's share is increasing smoothly. A slightly fall in 2003-04 has been observed which was due to fall in trade, hotels, restaurant and communication. It is contributing largest share in GDP of Indian economy.

Share of agriculture and industry sector has decreased. Services are contributing approximately 55 per cent on an average. Its share has reached to 52.51 per cent in 2015 while in 2000 it was 43.35 per cent. Approximately 10-11 per cent increase has noticed in this sector during the period of 2000 to 2015.

Fig. 6: Share of Service Sector



Consequently, large variations have been observed in the growth rate while share of service sector has increased continually except in the year of 2004 when share has decreased to 44.80 per cent from 45.09 per cent of 2003. In 2015 service sector is growing with the rate of 10.34 per cent along with the share of 52.51 per cent.

As it has already stated that service sector is the only one which is incorporated with various services, with heterogeneity. To define service sector in a proper way is a difficult task in its own. Many economists tried hard to give exact definition because the problem occurs due to be heterogeneity. T.P Hill is that economist who tried to define services sector as being distinct from goods (Hill1977, Hill 1979).¹

It has been seen that a continuation in growth of service sector has found in developed countries in developing countries disproportionate growth of service sector has noticed. In the case of India disproportionate growth of service sector is not a recent phenomenon. The reason behind this is supply of labour and capital which are used as input in services. In developing countries like India distributive service (Trade and Transport) are low productive and low income type as compared to advanced countries. Services which needed less capital and more labour are contributing more in GDP.

¹JesimPais, "Growth and Structure of the service sector in India."

India's services growth has been consistently above its overall growth in the last decade except for 2004 (when the former was marginally lower than the latter). Thus, for more than a decade, this sector has been accelerating the growth of the Indian economy with a great amount of firmness (it has been seen in chapter 3). In this contribution of service sector in economy, its various services play a vital role. The study is considering only major 3 services: firstly, trade, hotels, transport and communication. Secondly, financing, insurance, real estate and business services and the last one is community, social and personal services. These three are contributing 60 to 70 per cent in the development of service sector. Their trend can be analysing through share and growth rate of all these three services separately.

4.3 Trend of Trade, Hotels, Transport and Communication

It is very essential sub sector of Service sector. It involves services related to trade among other countries or between the states, services related to tourism which incorporates transport and hotels and IT enabled services. Table 4.3 represents the whole picture of growth rate of this sector.

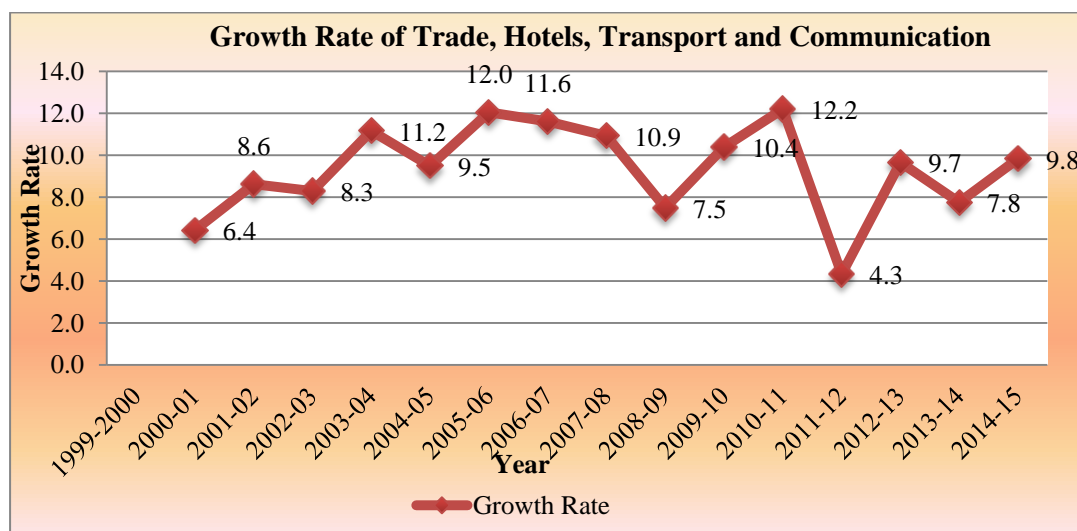
Year	Trade, Hotels, Transport and Communication	Growth Rate
1999-2000	481302	–
2000-01	512234	6.4
2001-02	556392	8.6
2002-03	602524	8.3
2003-04	669782	11.2
2004-05	733353	9.5
2005-06	821719	12.0
2006-07	917129	11.6
2007-08	1017335	10.9
2008-09	1093525	7.5
2009-10	1207164	10.4
2010-11	1354428	12.2
2011-12	1413116	4.3
2012-13	1549608	9.7
2013-14	1669844	7.8
2014-15	1833997	9.8

Source: Researcher's calculation based on Economic Survey of India 2015-16.
Note: Output value of Trade, Hotels, Transport and Communication is in Rs. Cr. at constant basic prices in Gross Value Added terms.

Growth rate of ‘Trade, Hotels, Transport and Communication’ has been observed that it had placed at first among others services till 2005-06. The trend of its growth rate is full of fluctuations. It shows the upward and downward trend of growth rate in these 15 years of study. 3.4 per cent of increase in growth rate has been noticed in these years from 2000 to 2015. It was 6.4 per cent in 2001 and it has reached to 9.8 per cent in 2015.

Now according to 2014-15 data it places at third among other services. But overall picture represents that it places after ‘Financing, insurance, real estate and business services’. During the period of 2007-08 and 2008-09 growth rate of ‘Trade, hotels, transport and communication’ has decreased due to global financial crisis. Deceleration in this service was also found in 2011-12 which was also the reason of depreciation in GVA of Indian economy. On an average high growth rate of these services have been observed as compare to other two services but in current scenario it places at third among all services with growth rate of 9.8 per cent.

Fig. 7: Growth Rate of Trade, Hotels, Transport and Communication



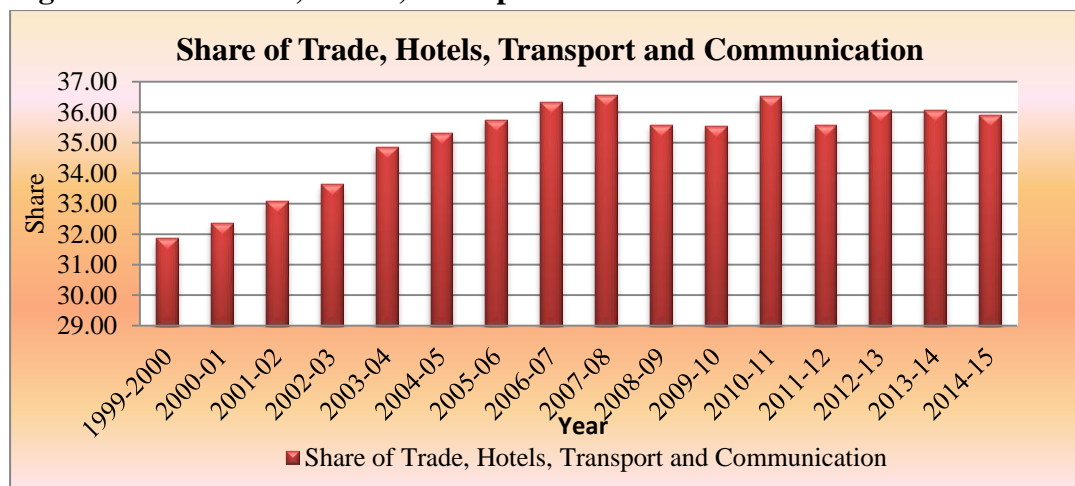
By moving towards the share of ‘Trade, Hotels, Transport and Communication’ it can be easily observed that this subsector has been continually increasing since 2000 except for few years. The whole picture of this service’s share can be observed from the table 4.4.

Table 4.4 Share of Trade, Hotels, Transport and Communication in Service sector	
Year	Share
1999-00	31.87
2000-01	32.36
2001-02	33.08
2002-03	33.64
2003-04	34.87
2004-05	35.33
2005-06	35.76
2006-07	36.34
2007-08	36.59
2008-09	35.59
2009-10	35.56
2010-11	36.54
2011-12	35.60
2012-13	36.10
2013-14	36.07
2014-15	35.90
Source: Researcher's Calculations based on Economic Survey of India 2015-16.	

The share of these services has increased by 4.03 per cent in the years of study from 2000 to 2015. Its share was 31.87 per cent in 1999-2000 and by increase of 4.03 per cent it has reached to 35.90 per cent in 2014-15. In the rank of share 'Trade, Hotels, Transport and Communication' is positioned at second after 'Financing, Insurance, Real Estate and Business Services' and following by 'Community, Social and Personal Services'.

During the period of 2003-04 to 2007-08 'Trade, Hotels, Transport and Communication' had placed at first in terms of its share in services sector but since 2008-09 its share is overtook by 'Financing, Insurance, Real Estate and Business Services'.

Fig.8:Share of Trade, Hotels, Transport and Communication



It is placed at second rank in terms of share with the lowest growth rate among other two services. This fact represents the importance of this subsector in service sector. But in last two years it has been noticed that the share is continually decreasing. It was 36.10 per cent in 2012-13 and it fell to 36.07 per cent and again 35.90 per cent in next two years respectively.

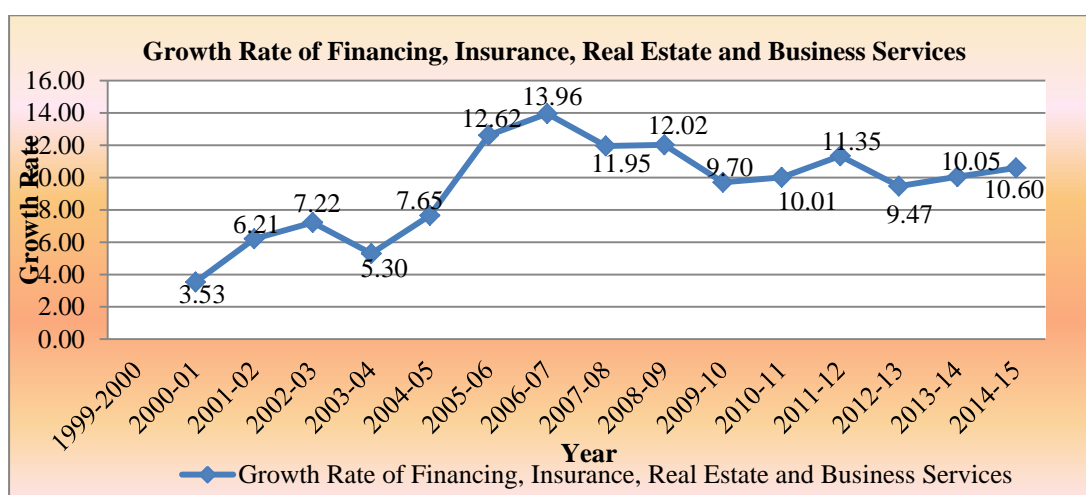
4.5 Trend of Financing, Insurance, Real Estate and Business Services

With the development of economy, it is important to provide security to the people and it is possible through providing finance and insurance to them. These services especially provide secure and tension free future to the people. Its contribution is continually increasing. For wide picture of this subsector it is essential to focus light on its growth rate and share in service sector. The growth rate of these services was lowest in 2000 with the growth rate of 3.53 per cent and it has reached to second position in terms of growth rate with 10.6 per cent growth in 2015 followed by 'Trade, Hotels, Transport and Communication. With 7.1 per cent of increase in growth rate it has become a fastest growing sub sector of service sector. It has attained the highest growth rate of 13.96 per cent in 2006-07 due to financial inclusion. The increase in growth rate has found in 2005-06 when growth rate increased by 4.97 per cent from 7.65 per cent of 2004-05 to 12.62 per cent in 2005-06 as seen in Table 4.5.

Table 4.5 Growth Rate of Financing, Insurance, Real Estate and Business Services		
Year	Financing, Insurance, Real Estate and Business Services	Growth Rate
1999-00	529548	–
2000-01	548246	3.53
2001-02	582279	6.21
2002-03	624333	7.33
2003-04	657417	5.30
2004-05	707725	7.65
2005-06	797032	12.62
2006-07	908285	13.96
2007-08	1016847	11.95
2008-09	1139080	12.02
2009-10	1249609	9.70
2010-11	1374722	10.01
2011-12	1530691	11.35
2012-13	1675592	9.47
2013-14	1844070	10.05
2014-15	2039460	10.60
Source: Researcher's Calculation based on Economic Survey of India 2015-16.		

This was the result of financial inclusion which was firstly used as words in Annual Policy Statement presented by Y. Venugopal Reddy. After that not many variations have been observed in the growth rate of the services from 2005-06 to 2008-09. Effect of financial crisis of 2008 has been observed in 2009-10 when growth of 'Financing, Insurance, Real Estate and Business Services' fell to 9.7 per cent after that it did not get the same path of growth as of during the period of before 2010 and after financial inclusion.

Fig 9: Growth Rate of Financing, Insurance, Real Estate and Business Services



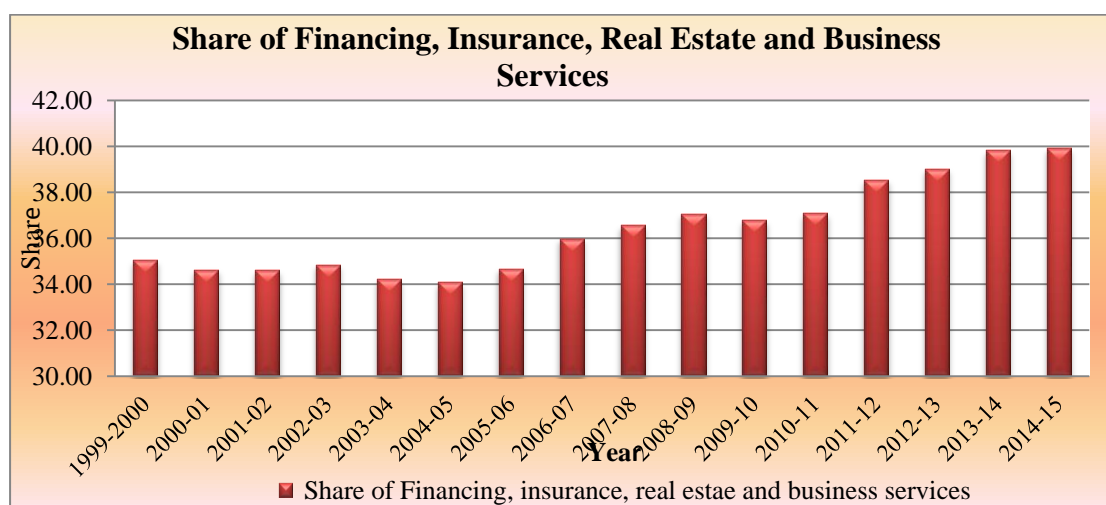
Now moving towards the share of ‘Financing, Insurance, Real Estate and Business Services’ in service sector it can be analysed through Table 4.6. This sub sector is contributing highest share with 39.93 per cent share in 2014-15. The share of ‘Financing, Insurance, Real Estate and Business Services’ is showing much variation but on an average its share is 35 per cent.

Year	Share of Financing, Insurance, Real Estate and Business Services
1999-2000	35.06
2000-01	34.64
2001-02	34.62
2002-03	34.86
2003-04	34.22
2004-05	34.10
2005-06	34.68
2006-07	35.99
2007-08	36.57
2008-09	37.08
2009-10	36.81
2010-11	37.08
2011-12	38.56
2012-13	39.03
2013-14	39.83
2014-15	39.93

Source: Computation based on Economic Survey of India 2015-16.
Note: Share is calculated on the basis of GVA at base prices (2011-12).

Since 2001 to 2004-05 shares was continually decreasing except for 2003 but after financial inclusion in 2005-06 it has increased robustly except for 2009-10 which was due to recession of 2008. Since 2000 to 2015 share has increased by 4.87 per cent. It was 35.06 in 2000 while in 2015 it has reached to 39.93 per cent. It is the only sub sector which is increasing its share continuously rapidly.

Fig. 10: Share of Financing, Insurance, Real Estate and Business Services



Initially the growth rate of this subsector is less than the overall growth of service sector but after 2005-06 it has increased robustly more than the overall growth rate of service sector due to financial inclusion.

4.6 Trend of Community, Social and Personal Service

Community, Social and Personal services include number of various fields of activity- sewage and refuse disposal, sanitation, recreation, artistic, cultural and sporting activities, funeral and related services, hairdressing, undifferentiated goods and services producing activities of private household for own use etc. This sector's contribution is lowest if all over period since 2000 would be considered. For major analysis of trend, focus on growth rate and share is important.

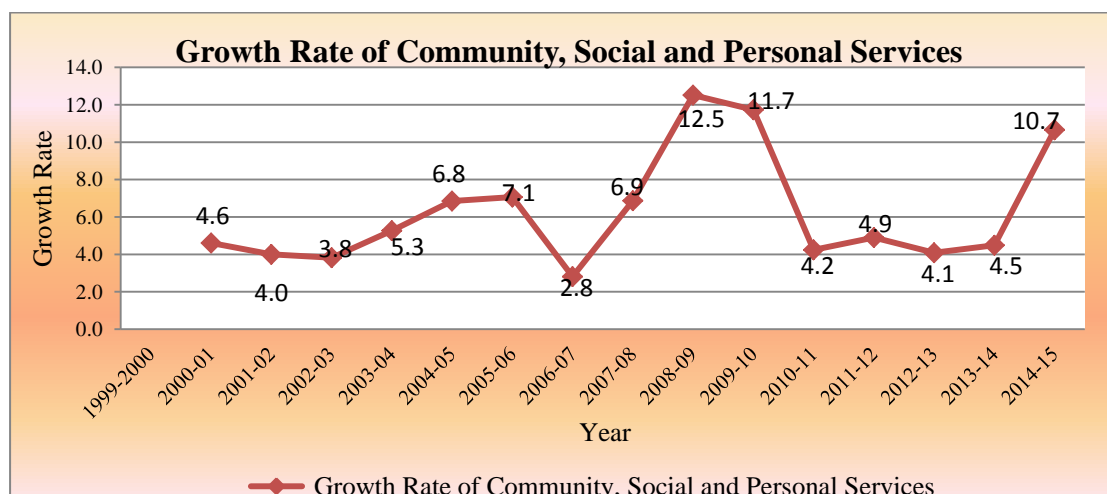
Table 4.7 represents the large variations in last fifteen years since 2000. Its growth rate was at second in 2000 after 'Trade, Hotels, Transport and Communication' but now it places at first in 2015. Many fluctuations have been noticed. Only in 2008-09, 2009-10 and 2014-15 it grew at two digit level growth rates and from 2011 to 2014 its

growth rate was very similar in every year on an average of 4.4 per cent. Its growth rate was highest during the period of 2008-09 it was due to the implementation of recommendations of sixth pay commission in quarter 3 and fiscal expansion in quarter 4 of 2008-09.

Table 4.7 Growth Rate of Community, Social and Personal Services		
Year	Community, Social and Personal Services	Growth Rate
1999-00	499384	–
2000-01	522399	4.6
2001-02	543287	4.0
2002-03	564041	3.8
2003-04	593767	5.3
2004-05	634425	6.8
2005-06	679251	7.1
2006-07	698371	2.8
2007-08	746326	6.9
2008-09	839756	12.5
2009-10	938263	11.7
2010-11	978050	4.2
2011-12	1025982	4.9
2012-13	1067871	4.1
2013-14	1115765	4.5
2014-15	1234737	10.7
Source: Researcher's Calculation based on Economic Survey of India 2015-16.		

These services have grown by 6.1 per cent from 1999-2000 to 2014-15 from growth of 4.6 per cent to 10.7 per cent respectively. This sub sector talks about standard of living of people in a nation. In maximum years its growth rate is less than the overall growth rate of service sector so it can be said that its contribution in service sector growth is less as compare to other two sub sectors only three times its growth rate was higher than the overall growth rate of service sector.

Fig. 11: Growth Rate of Community, Social and Personal Services



Moving towards the share of ‘Community, Social and Personal Services’ in service sector it has been found that share is continually decreasing. Table 4.8 depicts that in 2000 share of ‘Community, Social and Personal Services’ was 33.07 per cent while it has reached to 24.17 per cent in 2014-15. In developed countries the share of these services are much higher than developing countries like India the reason behind this is lack of capital in country and stage of development.

Developing countries are busy to increase national income, industrialisation, trade, tourism banking services etc. which are helpful in increase of GDP do not consider about sustainability. The share of ‘Community, Social and Personal Services’ are lowest among three subsectors that have discussed. After recession period in 2008-09 and 2009-10 its share increased by 0.49 and 0.32 per cent respectively.

Fig.12: Share of Community, Social and Personal Services

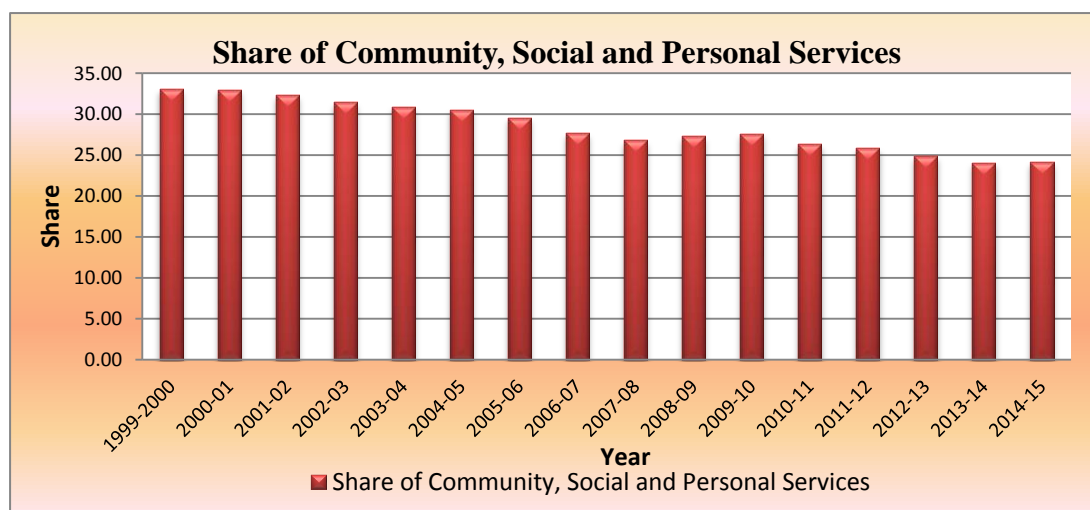


Table 4.8 Share of Community, Social and Personal Services	
Year	Share of Community, Social and Personal Services
1999-2000	33.07
2000-01	33.00
2001-02	32.30
2002-03	31.49
2003-04	30.91
2004-05	30.57
2005-06	29.56
2006-07	27.67
2007-08	26.84
2008-09	27.33
2009-10	27.64
2010-11	26.38
2011-12	25.84
2012-13	24.87
2013-14	24.10
2014-15	24.17
Source: Researcher's Calculation based on Economic Survey of India 2015-16. Note: Share is calculated on the basis of GVA at constant base prices (2011-12).	

4.7 Conclusion

Consequently, Service sector has grown with high growth rate even two digit level high growth has observed in few of period of study. Due to development of an economy share of service sector in GDP has increased and its share is highest among all other sectors. Service sector is a group of services, only three services have taken into study among which growth rate of 'Financing, insurance, real estate and business services' is highest followed by and 'Trade, hotels transport and communication' and 'Community, Social and Personal Services' and similar to growth rate share in service sector is dominated by 'Financing, insurance, real estate and business service' followed by 'Trade, hotels, transport and communication' and 'Community, social, personal services'. It has observed that overall trend of all services shows that

‘Financing, insurance, real estate and communication’ has been fastest growing services with the highest share in GDP of service sector.

CHAPTER 5

LABOUR PRODUCTIVITY OF SERVICE SECTOR

5.1 Introduction

To measure labour productivity, effect of structural change on labour productivity growth is essential to see. The effect of structural change has played a vital role in explaining growth performance of an economy. When the movement of resources is towards the high productivity level from relatively low productivity level then the effect of structural change would be positive. Difference in productivity level between the sectors and the change in share of employment from low productivity to high productivity sector is needed for above analysis. Labour productivity is used as a proxy of employment productivity. For this Shift Share Technique is used to measure the effects of shifts and difference in sector shares on aggregate growth rates through considering decomposition of aggregate productivity growth proposed by Maddison (1952).

$$\Delta y/y = \sum_{j=1}^k \frac{Y_j}{Y} \left[\frac{\Delta y_j}{y_j} \right] + \sum_{j=1}^k \left[\frac{y_j}{y} \right] \Delta s_j + \sum_{j=1}^k \left[\frac{y_j}{y} \right] \left(\frac{\Delta y_j}{y_j} \right) (\Delta s_j)$$

Where Δ represents change, y is aggregate labour productivity of service sector (or GVA of service sector per worker), y_j is labour productivity of sector j , Y is initial GVA, Y_j is initial output of sector j , and S_j is employment share of sector j .

This is often known as a 'Shift-Share Decomposition' of an aggregate growth rate. The first term in right hand side of equation represents the 'Growth Effect' it is that part of overall productivity change which is caused by productivity growth within the sectors. The second term is called 'Shift Effect' and measures the effect of the change in sectoral employment share on overall growth. The last term is expressed as an 'Interaction Effect' and it depicts the joint effect of changes in employment shares and sectoral productivity. The effect of last is usually small as in most cases sectors which have a rapid productivity growth and decline in employment shares.

All three effect of aggregate productivity growth are explained for services sector as a whole and separately for its sub sectors also.

5.2 The Growth Effect

It can be explained through table 5.1 which shows the decomposition of the growth rates of labour productivity by components and by sectors.

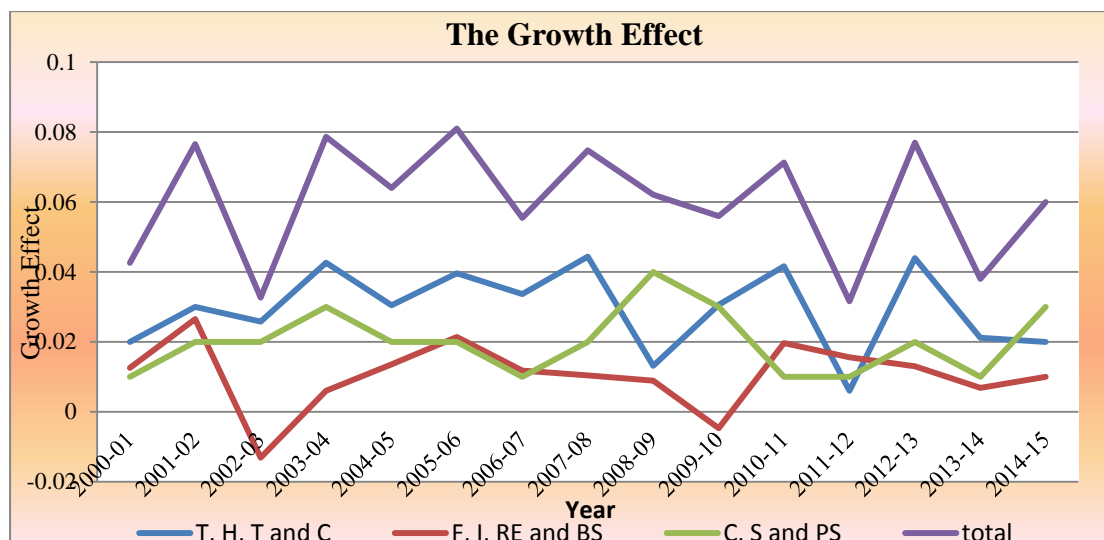
For all subsectors by far the largest part of the overall productivity increase is explained by the rise in growth effect. Overall growth effect of service sector has increased since 2000-01 but it has been showing stagnant performance.

Table 5.1 Total Growth Effect of Service Sector Growth				
Year	Growth Effect (1)	Growth Effect (2)	Growth Effect (3)	Total Growth Effect
1999-00	–	–	–	–
2000-01	0.02	0.01	0.01	0.04
2001-02	0.03	0.03	0.02	0.08
2002-03	0.03	-0.01	0.02	0.03
2003-04	0.04	0.01	0.03	0.08
2004-05	0.03	0.01	0.02	0.06
2005-06	0.04	0.02	0.02	0.08
2006-07	0.03	0.01	0.01	0.06
2007-08	0.04	0.01	0.02	0.07
2008-09	0.01	0.01	0.04	0.06
2009-10	0.03	0.00	0.03	0.06
2010-11	0.04	0.02	0.01	0.07
2011-12	0.01	0.02	0.01	0.03
2012-13	0.04	0.01	0.02	0.08
2013-14	0.02	0.01	0.01	0.04
2014-15	0.02	0.01	0.03	0.06

Source: Researcher's Calculation based on Economic Survey of India 2015-16 and CSO and Director General of employment and Training, Ministry of Labour and Employment.
 Note: Here (1) indicates Trade, Hotels, Transport and Communication, (2) indicates Financing, Insurance, Real Estate and Business Services and (3) indicates Community, Social and Personal Services. Total Growth effect is of Service sector as a whole.

Most importantly, the contribution of growth in the service sector to improvements in aggregate labour productivity is highest in ‘Trade, hotels, transport and communication’ and followed by ‘Community, social and personal services’.

Figure 13: The Growth Effect of Service Sector



From figure 13 it is clear that total growth effect of service sector has been increasing i.e. productivity of service sector has been increasing due to increase in GVA of economy. Change in the productivity of service sector is composition of growth in the productivity of its different services. High productivity has found in ‘Trade, hotels, transport and communication’ and lowest in ‘Finance, insurance, real estate and business services’

5.3 The Shift Effect

It measures the effect of the change in sectoral employment shares on overall growth. The negative shift effect of sector represents the diminishing share of sector in overall growth. Table 5.2 depicts the Shift effect in service sector.

From the table it is clear that the positive shift effect of service sector represents the increases of services sector’s total contribution in overall growth except for few years. Moving towards the different services, negative shift effect of both sectors except ‘Financing, Insurance, Real Estate and Business services’ indicates diminishing share in the growth of service sector, leaving development in ‘Financing, Insurance, Real Estate and Business Services’ as the main positive driving force of growth in service

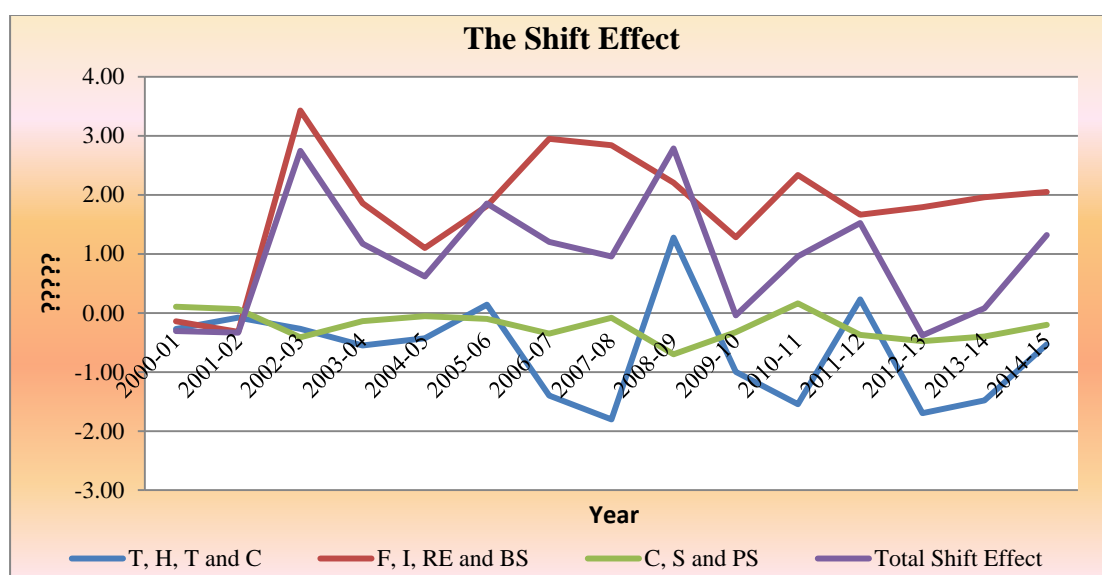
sector this is due to due to financial inclusion and increase in awareness of people towards the banking and insurance.

Table 5.2 Total Shift Effect of Service Sector Growth				
Year	Shift Effect (1)	Shift Effect (2)	Shift Effect (3)	Total Shift Effect
1999-00	–	–	–	–
2000-01	-0.27	-0.14	0.11	-0.31
2001-02	-0.08	-0.32	0.07	-0.33
2002-03	-0.27	3.43	-0.41	2.75
2003-04	-0.55	1.86	-0.14	1.17
2004-05	-0.43	1.10	-0.05	0.62
2005-06	0.14	1.81	-0.10	1.85
2006-07	-1.40	2.95	-0.35	1.20
2007-08	-1.80	2.84	-0.08	0.96
2008-09	1.28	2.21	-0.70	2.79
2009-10	-1.00	1.28	-0.32	-0.04
2010-11	-1.54	2.34	0.16	0.96
2011-12	0.23	1.66	-0.37	1.52
2012-13	-1.70	1.79	-0.48	-0.38
2013-14	-1.48	1.96	-0.40	0.08
2014-15	-0.53	2.05	-0.20	1.32

Source: Researcher's Calculation based on Economic Survey of India 2015-16 and CSO and Director General of employment and Training, Ministry of Labour and Employment.
Note: Here (1) indicates Trade, Hotels, Transport and Communication, (2) indicates Financing, Insurance, Real Estate and Business Services and (3) indicates Community, Social and Personal Services. Total Growth effect is of Service sector as a whole.

Figure 14 clearly shows that the shift effect is highest in 'Financing, insurance, real estate and business services' and lowest in 'Trade, hotels transport and communication' followed by 'Community, social and personal services'. Figure represents that even the shift effect of 'Financing, insurance, real estate and business services' is higher than the overall shift effect of service sector which indicates that this sub sector of service is contributing more in service sector than the contribution of service sector in overall GVA of economy.

Figure 14: The Shift Effect of Service Sector



5.4 The Interaction Effect

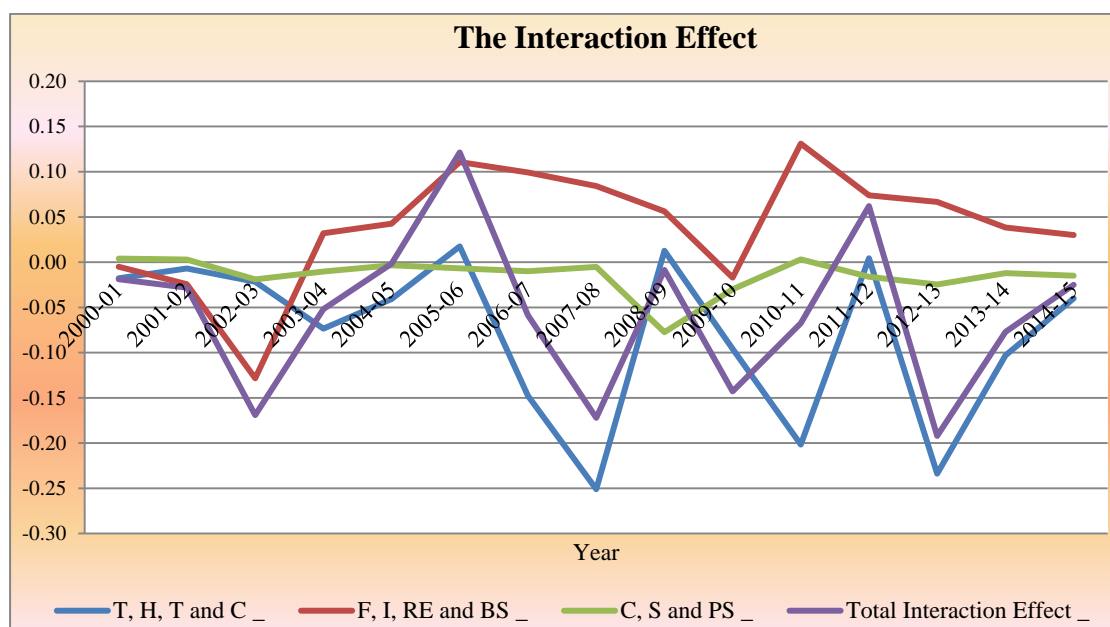
This effect shows the negative relationship between labour productivity and employment share. It represents that value will low in case of sectors with rapid productivity growth. Table 5.3 depicts the interaction effect of service sector.

Year	Interaction Effect (1)	Interaction Effect (2)	Interaction Effect (3)	Total Interaction Effect
1999-00	-	-	-	-
2000-01	-0.02	-0.01	0.00	-0.02
2001-02	-0.01	-0.02	0.00	-0.03
2002-03	-0.02	-0.13	-0.02	-0.17
2003-04	-0.07	0.03	-0.01	-0.05
2004-05	-0.04	0.04	0.00	0.00
2005-06	0.02	0.11	-0.01	0.12
2006-07	-0.15	0.10	-0.01	-0.06
2007-08	-0.25	0.08	-0.01	-0.17
2008-09	0.01	0.06	-0.08	-0.01
2009-10	-0.10	-0.02	-0.03	-0.14
2010-11	-0.20	0.13	0.00	-0.07
2011-12	0.00	0.07	-0.02	0.06
2012-13	-0.23	0.07	-0.02	-0.19
2013-14	-0.10	0.04	-0.01	-0.08
2014-15	-0.04	0.03	-0.02	-0.03

Source: Researcher Calculation based on Economic Survey of India 2015-16 and CSO and Director General of employment and Training, Ministry of Labour and Employment.
 Note: Here (1) indicates Trade, Hotels, Transport and Communication, (2) indicates Financing, Insurance, Real Estate and Business Services and (3) indicates Community, Social and Personal Services. Total Growth effect is of Service sector as a whole.

Table represents that service sector with low value of interaction effect represents the rapid productivity growth. ‘Trade, hotels, transport and communication’ and Community, social and personal services’ with negative and low interaction effects shows that their employment share has decreased on an average with the increase in labour productivity while on an average positive interaction effect of ‘Financing, insurance, real estate and business Services’ represent the slow productivity growth it depicts that increase in labour productivity with rise in employment share in service sector.

Figure 15: The Interaction Effect of Service Sector



5.5 Conclusion

Therefore it has been observed that services which are generating large share of employment have low labour productivity while services with a low share in employment generation have high labour productivity. ‘Trade, hotels, transport and communication’ and ‘Community, social and personal services’ have been grown with rapid labour productivity growth with low employment share. Though ‘Financing, insurance, real estate and business services’ is contributing highest employment in service sector, yet labour productivity is lowest i.e. quality of employment is not as good as it should be. It represents that there is negative relationship between labour productivity and employment.

CHAPTER 6

CONCLUSION, MAJOR FINDINGS, POLICY IMPLICATIONS AND LIMITATIONS OF THE STUDY

The present study was an attempt to find out the trend and pattern of India's service sector and its different services. Further the effect of structural change on labour productivity growth has been carried out to analyse the performance and labour productivity of service sector. It's a well-known fact that service sector in India has experienced sustain and secular growth but the maximum growth was noticed in 2005-06 when financial inclusion came in existence and service sector could not effected due to recession of 2008 just because of the growth of 'Financing, insurance, real estate and business services'. It has grew with a sustain growth except for few years. Overall growth is satisfactory. Share of service sector is continually increasing; it has placed at first with the highest share among all other sectors in terms of contributing in growth. This all is due to increase in economic affluence, changing role of women, cultural changes, IT revolution, markets development, market orientation, health care consciousness, economic liberalization, widespread urbanisation and export potential. The increases in these all factors are process of development which indicates that the economy is moving towards the path of development and service sector is working as a catalyst in this process. Study has only focused on three services broadly as considered by NIC 2008: 'Trade, hotels, transport and communication', 'Financing, insurance, real estate and business service' and 'Community, social and personal services'.

6.1 Major Findings

Major findings of study can be summarized as follows:

- 1) Service sector has been growing with high growth rate.
- 2) Share and Growth rate of 'Financing, insurance, real estate and business services' are highest followed by 'Trade, hotels, transport and communication' and 'Community, social and personal services'.
- 3) 'Trade, hotels, transport and communication' and 'Community, social and personal services' have low employment share in service sector with rapid

productivity growth while ‘Financing, insurance, real estate and business services’ has been contributing largest employment share in service sector with lowest labour productive employment.

6.2 Conclusion

As already discussed in detail about two objectives of the study and on the base of findings of the study which have detailed in chapters 4 and 5 the main conclusion can be explained as follows:

Study has only focused on three services broadly as considered by NIC 2008. ‘Trade, hotels, transport and communication’, ‘Financing, insurance, real estate and business service’ and ‘Community, social and personal services’, Their trend can be explained as follows:

‘Trade, hotels, transport and communication’ have been showing a mean growth rate with the increasing share in service sector and it places at third and second in terms of growth rate and share in service sector respectively. Much fluctuation have been seen in its growth rate but maximum times its growth rate is high than the overall growth of service sector so it can be say that its contribution is noticeable. Directly or indirectly it encourages tourism which is contributing approximately 6 per cent in GDP and trade is an essential factor of economy for growth.

‘Financial, insurance, real estate and business services’ has grown with high growth robustly and its contribution is highest in service sector growth followed by ‘Trade, hotels, transport and communication’ and ‘Community, social and personal services’. By considering the overall trend of growth rate it has been found that it has a highest growth rate also. It has found that maximum time especially since 2005 its growth rate was higher than the overall growth rated of service sector. Since 2005-06 after financial inclusion these services have become a catalyst for service sector and Indian economy. In this case development of service sector of India is following normal trend of development which is also followed by maximum of countries with the increasing share and growth of ‘financing, insurance, real estate and business services’.

‘Community social and personal services’ has grown with lower growth rate except for few years 2009, 2010 and 2015 with the lowest share in service sector. Share of service sector has been decreasing since 2000.

Finally, to conclude the second objective it is essential to talk about the all three effects of aggregate labour productivity measurement for different services with a service sector as whole and for better understanding it should be written in points:

- 1) Total growth effect of service sector represents that many fluctuations have found in the overall productivity increase in service sector but on an average it has increased since 1999-2000.
- 2) Positive shift effect in service sector represents that the contribution of service sector is increasing in growth and resources are shifting towards the service sector from other two sectors.
- 3) Negative or low interaction effect represents rapid productivity growth in service sector along with the declining share of employment.

Hence, service sector overall productivity has been increasing along with the contribution in growth.

4) The overall productivity has increased in all three services but in case of ‘Trade, hotels, transport and communication, and ‘Financing, insurance, real estate and business services’ it is stagnant when it is compared with 2000-01 to 2014-15 while productivity of ‘Community, social and personal service’ has increased. Whole picture of growth effect represents that productivity in ‘Trade, hotels, transport and communication’ and ‘Community, social and personal services’ have increased.

5) The negative shift effect of ‘Trade, hotel, transport and communication’ and ‘Community, social and personal services’ represent that the contribution of both services in terms of providing the employment share in service sector has decreased while the contribution of ‘Financing, insurance, real estate and business services’ is increasing therefore employment share of these services has been increasing and shifting towards it from other two sectors.

6) Rapid productivity growth has found in ‘Trade, hotels, transport and communication’ and ‘Community, social and personal services’ with decreasing

employment share while on the other hand financing has been not showing rapid productivity growth with the large employment share.

Therefore, it can be concluded that 'Financing, insurance, real estate and business services' have provided large employment to service sector but its labour productivity is low while on the other hand with high labour productivity 'Trade, hotels, transport' and 'Community, social and personal services' have been constituting less employment share in service sector.

6.2 Policy Implications

Policy implications of the study on the basis of analysis are as follows:

- 1) It is important for developing countries like India, where service sector is dominant that government should create new opportunities for the development of service sector.
- 2) India needs more private investment in 'Trade, hotels, transport and communication' and 'Community, social and personal services' because where on the one hand former services are highest productive services with the lowest employment share while on the other hand latter services are lowest productive among other services with the highest employment share.

6.4 Limitations of the Study

Present study has also some limitations which are as follows:

- 1) Only organised public and private employment has considered in study, unorganised sector has not taken because of unavailability of data so may be result will be different by the consideration of unorganised sector also.
- 2) Broadly only three services which are contributing highest share in services among all are taken into consideration.

6.5 Future Scope of the Study

Present study is one step to move towards the attempt to analyse the role of service sector in Indian economy. But there are so many limitations of study, which can be overcome by other rational researcher through new ideas and methodologies. Limitations of the study are as follows:

- 1) Only service sector has considered in study it can be extended to various sectors.
- 2) Time period of analysis can be enhanced for wide study.
- 3) Study is at national level it can also be done at regional level.

BIBLIOGRAPHY

- Aanestad, J. (1987). Measurement Problems of the Service Sector. *Business Economics*, 22(2), 32-37.
- Chahal, M., & Chahal, M. (2015, May). An Analysis of Services Sector in Indian Economy. *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, 3(v).
- Charles, S. (1993). Conceptualizing Services Sector Productivity. *Social and Economic Studies*, 42(4), 95-113.
- Das, D. K., Erumban, A. A., Aggarwal, S., & Sengupta, S. (2013, Nov 26-27). Revisiting the Service-led Growth in India Understanding India's service sector productivity growth. *International Association for Research in Income and Wealth*.
- Das, S. P., & Saha, A. (2011, October). On the Growth of the Services Sector. *Indian Statistical Institute - Delhi Centre*.
- Deepita Chakravarty., 4. (2006). Growing Services in India: An Inter-Sectoral Analysis Based on State-Level Data. *Economic and Political Weekly*, 41(27/28), 3061-3067.
- Eichengreen, B., & Gupta, P. (2010, April). The Service Sector as India's Road to Economic Growth. *Indian Council for Research on International Economic Relations*(249).
- Esteban, J. (1999, Dec). Regional Convergence in Europe and the Industry-Mix: a Shift-Share Analysis.
- Fiala, R. (1983). Inequality and the Service Sector in the Less Developed Countries: A Reanalysis and Respecification. *American Sociological Review*, 48(3), 421-428.
- Hindley, B. (1988). Service Sector Protection: Considerations for Developing Countries. *The World Bank Economic Review*, 2(2), 205-224.
- Jensen, J. B. (2011). Some Basic Facts about the Service Sector and Service Trade. In *Global Trade in Services: Fear, Facts and Offshoring* (pp. 11-40). Peterson Institute for International Economics.
- Joshi, S. (2004). Tertiary Sector-Driven Growth in India: Impact on Employment and Poverty. *Economic and Political Weekly*, 39(37), 4175-4178.
- Joshi, S. (2010, July). From the 'Hindu rate of growth' to 'unstoppable India': has the services sector played a role? *The Service Industries Journal*, 30(8), 1299-1312.
- Kendrik, J. (1987). Service Sector Productivity. *Business Economics*, 22(02), 18-24.
- Layton, A. &. ((1989)). Leading Indicators for the Service Sector. *Journal of Business & Economic Statistics*, 7(3), 379-386.

- Lee, D. &. (2006). Intersectoral Labour Mobility and the Growth of the Service Sector. *Econometrica*, 74(1), 1-46.
- Lee, J.-W., & McKibbin, W. J. (July 2014). Service Sector Productivity and Economic Growth in Asia. (A. D. Institute, Ed.) *ADB Working Paper Series*, 490 .
- Mansell, R. (1985). The Service Sector and Western Economic Growth. *Canadian Public Policy/Analyse the Politiques*(11), 354-360.
- Maroto-Sanchez, A. a.-R. (2011, April). Analyzing the Role of service sector on productivity growth on European regions. *Instituto Universitario de Analisis Economicoy social*.
- Merrifield, J. (1983). The Role of Shift Share in Regional Analysis. *Journal of Regional Analysis and Policy*, 13(1).
- Mukherjee, A. (2013, June). The Service Sector in India. *ADB Economics Working Paper Series*(352).
- Mukhopadhyay, S. (2002, Oct). Globalisation and Indian Services Sector. *Economic @ Political Weekly*, 37(40), 4097-4098.
- Nagaraj, R. (2009, January 31). is services sector Output Overestimated? an inquiry. *Economic and Political Weekly*, 44(5), 40-45.
- Nayyar, G. (n.d.). The Nature of Employment in India's Services Sector: Exploring the Heterogeneity. *Department of Economics Discussion Paper Series*.
- Papola, T. (2012, June). Structural Changes in the Indian Economy Emerging Patterns and Implications. *Institute for Studies in Industrial Development*(02).
- P, J. (2014, Feb). Growth and Structure of the Services Sector in India. *Institute for Studies in Industrial Development*(160).
- Prasad, H. C., Sathish, R., & Singh, S. S. (2014). Emerging Global Economic Situation: Opportunities. *Ministry of Finance, Department of Economics Affairs, Economic Division*(1).
- Rath, D. N. (2007). A User's Perspective on the Database of Services Sector in Indian Economy. *Economic and Political Weekly*, 42(37), 3770-3775.
- Sen, C. (2011). FDI in the Service Sector – Propagator of Growth for India? *Theoretical and Applied Economics*, XVIII(6(559)), 141-156.
- Singh, H., & Kumar, S. (2014, Feb). Growth of Services Sector in India. *Asian Journal of Multidisciplinary Studies*, 2(2).
- Singh, N. (2006, Nov). Services-Led Industrialization in India: Assessment and Lessons.
- Shetty, S. (2007). Status Paper on Database Issues of the Services Sector. *Economic and Political Weekly*, 42(37), 3723-3726.

- Subramanian, P. B., & Arimohan, T. (2014, May). Role of Service Sector in Indian Economy. *International Journal of Innovative Research & Studies (IJIRS)*, 3(5).
- Swan, N. (. (1985). The Service Sector: Engine of Growth? *Canadian Public Policy / Analyse De Politiques*(11), 344-350.
- Tendulkar, S. D., & Tendulkar , S. D. (2007). India's Growing Services Sector: Database Problems and Issues. *Economic and Political Weekly*, 42(37), 3721-3722.
- Verma, R., & Karinje, P. (2014, Feb). A critical analysis of Growth and performance of Inter-Sectoral Service sector in India. *International Journal of Commerce, Business and Management (IJCBM)*, 3(1).
- Vijaya, M. T., & Suganya , D. (2015, Apri). Service sector in India. *International Journal of Multidisciplinary Research and Development*, 2(4), 195-197 .
- Wachter, T. V. (2001, March). Employment and Productivity Growth in Service and Manufacturing Sectors in France, Germany and the US. (50).
- Wegner, M. (1987). Creating New Jobs in the Service Sector. *The Annals of the American Academy of Political and Social Science*, 492, 136-150.
- Wood, P. ((1990)). The service sector. *Geography*, 75(4), 364-368.
- Wu, Y. (2005). Service Sector Growth in China and India: A Comparison. *China: An International Journal*.

E-BIBLIOGRAPHY

<http://planningcommission.gov.in/>
www.economicdiscussion.net
<https://en.wikipedia.org/>
<https://en.wikipedia.org/wiki/Investopedia>

Appendix

(A)

Sectoral GVA at Constant Basic Prices (2011-12) (in Rs. Cr.)				
Year	Agriculture	Industry	Service	Total
1999-2000	1204442	928391	1510234	3483551
2000-01	1207564	988768	1582879	3628055
2001-02	1274232	1015456	1681959	3823449
2002-03	1211750	1087205	1790898	3971713
2003-04	1311464	1172914	1920966	4288121
2004-05	1326290	1290620	2075504	4590471
2005-06	1387816	1428418	2298002	5025516
2006-07	1451311	1609258	2523784	5506414
2007-08	1531463	1774532	2780508	6019725
2008-09	1536901	1857164	3072360	6424538
2009-10	1559479	2032899	3395036	6976660
2010-11	1689189	2188228	3707200	7598404
2011-12	1762851	2374017	3969789	8106656
2012-13	1784082	2469399	4293071	8546552
2013-14	1855614	2599076	4629679	9084369
2014-15	1880621	2738675	5108194	9727490

(B)

Gross Value added of Service Sector by sub sectors at Constant Basic Prices				
Year	Trade, Hotels, Transport and Communication	Financing, Insurance, Real Estate and Business Services	Community, Social and Personal Services	Gross Value Added of Service Sector
1999-00	481302	529548	499384	1510234
2000-01	512234	548246	522399	1582879
2001-02	556392	582279	543287	1681959
2002-03	602524	624333	564041	1790898
2003-04	669782	657417	593767	1920966
2004-05	733353	707725	634425	2075504
2005-06	821719	797032	679251	2298002
2006-07	917129	908285	698371	2523784
2007-08	1017335	1016847	746326	2780508
2008-09	1093525	1139080	839756	3072360
2009-10	1207164	1249609	938263	3395036
2010-11	1354428	1374722	978050	3707200
2011-12	1413116	1530691	1025982	3969789
2012-13	1549608	1675592	1067871	4293071
2013-14	1669844	1844070	1115765	4629679
2014-15	1833997	2039460	1234737	5108194

(C)

Growth Effect of Trade, Hotels, Transport and Communication						
Year	Output of T, H, T and C	GVA of service sector (in Rs. Cr.)	Employment	(yj)	Δyj	Growth Effect
1999-00	481302(Yj)	1510234 (Y)	36.40	1.32	-	-
2000-01	512234	1582879	36.20	1.41	0.09	0.02
2001-02	556392	1681959	35.77	1.56	0.14	0.03
2002-03	602524	1790898	35.60	1.69	0.14	0.03
2003-04	669782	1920966	34.28	1.95	0.26	0.04
2004-05	733353	2075504	33.95	2.16	0.21	0.03
2005-06	821719	2298002	33.31	2.47	0.31	0.04
2006-07	917129	2523784	33.25	2.76	0.29	0.03
2007-08	1017335	2780508	31.75	3.20	0.45	0.04
2008-09	1093525	3072360	33.79	3.24	0.03	0.01
2009-10	1207164	3395036	33.72	3.58	0.34	0.03
2010-11	1354428	3707200	32.89	4.12	0.54	0.04
2011-12	1413116	3969789	33.67	4.20	0.08	0.01
2012-13	1549608	4293071	31.83	4.87	0.67	0.04
2013-14	1669844	4629679	31.91	5.23	0.36	0.02
2014-15	1833997	5108194	32.49	5.64	0.41	0.02

Note: Yj is the initial output of T, H, T and C and 'Y' refers to the initial output of service sector. Employment is of T, H, T and C in lakh persons, 'yj' and Δyj refer to labour productivity and change in labour productivity of T, H, T and C.

(D)

The Shift Effect of Trade, Hotels , Transport and Communication							
Year	(yj)	GVA of service sector(in Rs. Cr.)	Employment	(y)	T, H,T and C(Sj)	ΔSj	The Shift Effect
1999-00	1.32	1510234	167.88	0.90	21.68		
2000-01	1.41	1582879	168.35	0.94	21.5	-0.18	-0.27
2001-02	1.56	1681959	166.75	1.01	21.45	-0.05	-0.08
2002-03	1.69	1790898	167.28	1.07	21.28	-0.17	-0.27
2003-04	1.95	1920966	163.62	1.17	20.95	-0.33	-0.55
2004-05	2.16	2075504	163.98	1.27	20.7	-0.25	-0.43
2005-06	2.47	2298002	164.27	1.40	20.78	0.08	0.14
2006-07	2.76	2523784	166.14	1.52	20.01	-0.77	-1.40
2007-08	3.20	2780508	166.45	1.67	19.07	-0.94	-1.80
2008-09	3.24	3072360	170.8	1.80	19.78	0.71	1.28
2009-10	3.58	3395036	175.28	1.94	19.24	-0.54	-1.00
2010-11	4.12	3707200	178.13	2.08	18.46	-0.78	-1.54
2011-12	4.20	3969789	181.25	2.19	18.58	0.12	0.23
2012-13	4.87	4293071	182.32	2.35	17.76	-0.82	-1.70
2013-14	5.23	4629679	187.04	2.48	17.06	-0.70	-1.48
2014-15	5.64	5108194	193.25	2.64	16.81	-0.25	-0.53

Note: yj refers to labour productivity of T, H, T and C, Employment is in lakh persons of service sector, y is the labour productivity of service sector, 'Sj' refers to the employment share of T, H, T and C in service sector employment and ΔSj is the change in the employment share of T, H, T and C.

(E)

The Interaction Effect of Trade, Hotels, Transport and Communication							
Year	(yj)	(y)	Δy_j	(yj)	ΔS_j	The Interaction Effect	
1999-00	1.32	0.90	–	1.32	–	–	–
2000-01	1.41	0.94	0.09	1.41	-0.18	-0.02	-0.02
2001-02	1.56	1.01	0.14	1.56	-0.05	-0.01	-0.01
2002-03	1.69	1.07	0.14	1.69	-0.17	-0.02	-0.02
2003-04	1.95	1.17	0.26	1.95	-0.33	-0.07	-0.07
2004-05	2.16	1.27	0.21	2.16	-0.25	-0.04	-0.04
2005-06	2.47	1.40	0.31	2.47	0.08	0.02	0.02
2006-07	2.76	1.52	0.29	2.76	-0.77	-0.15	-0.15
2007-08	3.20	1.67	0.45	3.20	-0.94	-0.25	-0.25
2008-09	3.24	1.80	0.03	3.24	0.71	0.01	0.01
2009-10	3.58	1.94	0.34	3.58	-0.54	-0.10	-0.10
2010-11	4.12	2.08	0.54	4.12	-0.78	-0.20	-0.20
2011-12	4.20	2.19	0.08	4.20	0.12	0.00	0.00
2012-13	4.87	2.35	0.67	4.87	-0.82	-0.23	-0.23
2013-14	5.23	2.48	0.36	5.23	-0.70	-0.10	-0.10
2014-15	5.64	2.64	0.41	5.64	-0.25	-0.04	-0.04

Note: yj refers to the labour productivity of T, H, T and C. 'y' refers to labour productivity of service sector. ' Δy_j ' refers to change in labour productivity of T, H, T and C. ' ΔS_j ' refers to the change in the employment share of T, H, T and C.

(F)

The Growth Effect of Finance, Insurance, Real Estate and Business Services						
Year	Output of F, I, RE and BS	GVA of service sector (in Rs. Cr.)	Employment	(yj)	Δy_j	The Growth Effect
1999-2000	529548 (Yj)	1510234 (Y)	16.54	3.20	–	–
2000-01	548246	1582879	16.51	3.32	0.12	0.01
2001-02	582279	1681959	16.21	3.59	0.27	0.03
2002-03	624333	1790898	18.03	3.46	-0.13	-0.01
2003-04	657417	1920966	18.66	3.52	0.06	0.01
2004-05	707725	2075504	19.31	3.66	0.14	0.01
2005-06	797032	2298002	20.42	3.90	0.24	0.02
2006-07	908285	2523784	22.49	4.04	0.14	0.01
2007-08	1016847	2780508	24.43	4.16	0.12	0.01
2008-09	1139080	3072360	26.67	4.27	0.11	0.01
2009-10	1249609	3395036	29.65	4.21	-0.06	0.00
2010-11	1374722	3707200	30.79	4.46	0.25	0.02
2011-12	1530691	3969789	32.76	4.67	0.21	0.02
2012-13	1675592	4293071	34.53	4.85	0.18	0.01
2013-14	1844070	4629679	37.26	4.95	0.10	0.01
2014-15	2039460	5108194	40.59	5.02	0.08	0.01

Note: Yj is the initial output of F, I, RE and BS and 'Y' refers to the initial output of service sector. Employment is of F, I, RE and BS in lakh persons, 'yj' and Δy_j refer to labour productivity and change in labour productivity of F, I, RE and BS.

(G)

The Shift Effect of Financing, Insurance , Real Estate and Business services							
Year	(yj)	GVA of service sector (in Rs. Cr.)	Employment	(y)	Employment Share (Sj)	ΔS_j	The Shift Effect
1999-00	3.20	1510234	167.88	0.90	9.85	-	-
2000-01	3.32	1582879	168.35	0.94	9.81	-0.04	-0.14
2001-02	3.59	1681959	166.75	1.01	9.72	-0.09	-0.32
2002-03	3.46	1790898	167.28	1.07	10.78	1.06	3.43
2003-04	3.52	1920966	163.62	1.17	11.4	0.62	1.86
2004-05	3.66	2075504	163.98	1.27	11.78	0.38	1.10
2005-06	3.90	2298002	164.27	1.40	12.43	0.65	1.81
2006-07	4.04	2523784	166.14	1.52	13.54	1.11	2.95
2007-08	4.16	2780508	166.45	1.67	14.68	1.14	2.84
2008-09	4.27	3072360	170.8	1.80	15.61	0.93	2.21
2009-10	4.21	3395036	175.28	1.94	16.2	0.59	1.28
2010-11	4.46	3707200	178.13	2.08	17.29	1.09	2.34
2011-12	4.67	3969789	181.25	2.19	18.07	0.78	1.66
2012-13	4.85	4293071	182.32	2.35	18.94	0.87	1.79
2013-14	4.95	4629679	187.04	2.48	19.92	0.98	1.96
2014-15	5.02	5108194	193.25	2.64	21	1.08	2.05

Note: yj refers to labour productivity of F, I, RE and BS, Employment is in lakh persons of service sector, y is the labour productivity of service sector, 'Sj' refers to the employment share of F, I, RE and BS in service sector employment and ΔS_j is the change in the employment share of F, I, RE and BS.

(H)

The Interaction Effect of Finance, Insurance, Real Estate and Business Services						
Year	(yj)	(y)	Δy_j	(yj)	ΔS_j	The Interaction Effect
1999-00	3.20	0.90	-	3.20	-	-
2000-01	3.32	0.94	0.12	3.32	-0.04	-0.01
2001-02	3.59	1.01	0.27	3.59	-0.09	-0.02
2002-03	3.46	1.07	-0.13	3.46	1.06	-0.13
2003-04	3.52	1.17	0.06	3.52	0.62	0.03
2004-05	3.66	1.27	0.14	3.66	0.38	0.04
2005-06	3.90	1.40	0.24	3.90	0.65	0.11
2006-07	4.04	1.52	0.14	4.04	1.11	0.10
2007-08	4.16	1.67	0.12	4.16	1.14	0.08
2008-09	4.27	1.80	0.11	4.27	0.93	0.06
2009-10	4.21	1.94	-0.06	4.21	0.59	-0.02
2010-11	4.46	2.08	0.25	4.46	1.09	0.13
2011-12	4.67	2.19	0.21	4.67	0.78	0.07
2012-13	4.85	2.35	0.18	4.85	0.87	0.07
2013-14	4.95	2.48	0.10	4.95	0.98	0.04
2014-15	5.02	2.64	0.07	5.02	1.08	0.03

Note: yj refers to the labour productivity of F, I, RE and BS. 'y' refers to labour productivity of service sector. ' Δy_j ' refers to change in labour productivity of F, I, RE and BS. ' ΔS_j ' refers to the change in the employment share of F, I, RE and BS.

(I)

The Growth Effect of Community, Social and Personal Services						
Year	Output of C, S and PS	GVA of service sector (in Rs. Cr.)	Employment	(yj)	Δy_j	The Growth Effect
1999-00	499384 (Yj)	1510234 (Y)	114.94	0.43	–	–
2000-01	522399	1582879	115.64	0.45	0.02	0.01
2001-02	543287	1681959	114.77	0.47	0.02	0.02
2002-03	564041	1790898	113.65	0.50	0.02	0.02
2003-04	593767	1920966	110.68	0.54	0.04	0.03
2004-05	634425	2075504	110.72	0.57	0.04	0.02
2005-06	679251	2298002	110.54	0.61	0.04	0.02
2006-07	698371	2523784	110.40	0.63	0.02	0.01
2007-08	746326	2780508	110.27	0.68	0.04	0.02
2008-09	839756	3072360	110.34	0.76	0.08	0.04
2009-10	938263	3395036	111.91	0.84	0.08	0.03
2010-11	978050	3707200	114.45	0.85	0.02	0.01
2011-12	1025982	3969789	114.82	0.89	0.04	0.01
2012-13	1067871	4293071	113.31	0.94	0.05	0.02
2013-14	1115765	4629679	114.76	0.97	0.03	0.01
2014-15	1234737	5108194	117.17	1.05	0.08	0.03

Note: Yj is the initial output of C, S and PS and 'Y' refers to the initial output of service sector. Employment is of C, S and PS in lakh persons, 'yj' and Δy_j refer to labour productivity and change in labour productivity of C, S and PS.

(J)

The Shift Effect of Community, Social and Personal Services							
Year	(yj)	GVA of service sector (in Rs. Cr.)	Employment	(y)	Employment Shares (Sj)	ΔS_j	The Shift Effect
1999-00	0.43	1510234	167.88	0.90	68.47		
2000-01	0.45	1582879	168.35	0.94	68.69	0.22	0.11
2001-02	0.47	1681959	166.75	1.01	68.83	0.14	0.07
2002-03	0.50	1790898	167.28	1.07	67.94	-0.89	-0.41
2003-04	0.54	1920966	163.62	1.17	67.64	-0.30	-0.14
2004-05	0.57	2075504	163.98	1.27	67.52	-0.12	-0.05
2005-06	0.61	2298002	164.27	1.40	67.29	-0.23	-0.10
2006-07	0.63	2523784	166.14	1.52	66.45	-0.84	-0.35
2007-08	0.68	2780508	166.45	1.67	66.25	-0.20	-0.08
2008-09	0.76	3072360	170.8	1.80	64.6	-1.65	-0.70
2009-10	0.84	3395036	175.28	1.94	63.85	-0.75	-0.32
2010-11	0.85	3707200	178.13	2.08	64.25	0.40	0.16
2011-12	0.89	3969789	181.25	2.19	63.34	-0.91	-0.37
2012-13	0.94	4293071	182.32	2.35	62.15	-1.19	-0.48
2013-14	0.97	4629679	187.04	2.48	61.14	-1.01	-0.40
2014-15	1.05	5108194	193.25	2.64	60.63	-0.51	-0.20

Note: yj refers to labour productivity of C, S and PS. Employment is in lakh persons of service sector, y is the labour productivity of service sector, 'Sj' refers to the employment share of C, S and PS in service sector employment and ΔS_j is the change in the employment share of C, S and PS.

(K)

The Interaction Effect of Community, Social and Personal Services						
Year	(yj)	(y)	Δy_j	(yj)	ΔS_j	The Interaction Effect
1999-2000	0.43	0.90		0.43	–	–
2000-01	0.45	0.94	0.02	0.45	0.22	0.004
2001-02	0.47	1.01	0.02	0.47	0.14	0.003
2002-03	0.50	1.07	0.02	0.50	-0.89	-0.019
2003-04	0.54	1.17	0.04	0.54	-0.30	-0.010
2004-05	0.57	1.27	0.04	0.57	-0.12	-0.003
2005-06	0.61	1.40	0.04	0.61	-0.23	-0.007
2006-07	0.63	1.52	0.02	0.63	-0.84	-0.010
2007-08	0.68	1.67	0.04	0.68	-0.20	-0.005
2008-09	0.76	1.80	0.08	0.76	-1.65	-0.077
2009-10	0.84	1.94	0.08	0.84	-0.75	-0.030
2010-11	0.85	2.08	0.02	0.85	0.40	0.003
2011-12	0.89	2.19	0.04	0.89	-0.91	-0.016
2012-13	0.94	2.35	0.05	0.94	-1.19	-0.025
2013-14	0.97	2.48	0.03	0.97	-1.01	-0.012
2014-15	1.05	2.64	0.08	1.05	-0.51	-0.015

Note: y_j refers to the labour productivity of C, S and PS. 'y' refers to labour productivity of service sector. ' Δy_j ' refers to change in labour productivity of C, S and PS. ' ΔS_j ' refers to the change in the employment share of C, S and PS.

(L)

The aggregate Productivity Growth of Service Sector				
Year	Total Growth Effect	Total Shift Effect	Total Interaction Effect	Aggregate Productivity Growth
1999-00	–	–	–	–
2000-01	0.04	-0.31	-0.02	-0.28
2001-02	0.08	-0.33	-0.03	-0.28
2002-03	0.03	2.75	-0.17	2.61
2003-04	0.08	1.17	-0.05	1.20
2004-05	0.06	0.62	0.00	0.68
2005-06	0.08	1.85	0.12	2.06
2006-07	0.06	1.20	-0.06	1.20
2007-08	0.07	0.96	-0.17	0.86
2008-09	0.06	2.79	-0.01	2.84
2009-10	0.06	-0.04	-0.14	-0.13
2010-11	0.07	0.96	-0.07	0.96
2011-12	0.03	1.52	0.06	1.62
2012-13	0.08	-0.38	-0.19	-0.49
2013-14	0.04	0.08	-0.08	0.04
2014-15	0.06	1.32	-0.03	1.35