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GROWTH AND STRUCTURE
OF THE SERVICES SECTOR IN INDIA

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GROWTH AND STRUCTURE OF THE SERVICES SECTOR IN INDIA

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[Abstract: The Services sector accounts over one half of India's GDP. The examination of the Services sector at a reasonably disaggregated level is necessary because the services sector (tertiary sector) is very highly heterogeneous in nature than the primary and the secondary sectors. Further technological advance, the process of globalisation and increased reliance of outsourcing have led to rapid changes in the economic structures of many economies including India. And these changes have resulted in the relatively higher levels of growth of the services sector. This study attempts to understand the growth and structure of the services sector in India through the analysis of the sub-sectors within the services sector at a level of disaggregation that has so far not been adequately analysed in the literature. It identifies sub-sectors within services that have contributed mainly to GDP growth. It also identifies sub-sectors that have contributed mainly to employment growth. The quality of employment in the services sector is examined through the analysis of the productivity levels in different services. The paper also compares the performance of producer services with distributive services and social or personal services.]

1. Introduction

There is a large body of academic literature on the role of services sector in the Indian economy. The growing share of the services sector in the gross domestic product (GDP) of India indicates the importance of the sector to the economy (GOI 2012; Eichengreen and Gupta 2010; Singh 2006; Papola 2008). The services sector accounted for about 30 per cent of total GDP of India in 1950s; its share in GDP increased to 38 per cent in the 1980s, then to 43 per cent in the 1990s and finally to about 56.5 per cent in 2012-13 (GOI 2013). Thus, the services sector currently accounts for more than half of India's GDP. This process of tertiarisation (dominance of the tertiary or services sector) of the economy has been accompanied by a decline in the share of the primary sector (agriculture) and a more or less constant share of the secondary (industry) sector over the years.

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In spite of its growing share in the total GDP, scholars have noted a serious mismatch between the share of services in total GDP and the corresponding share of services in total employment. For example, while the share of the services in GDP increased from 34 per cent in 1970s to 54 per cent in 2010-11, the corresponding share of services sector employment in total employment changed from 15 per cent in 1972-73 to only about 26.67 per cent per cent in 2009-10. As a consequence, a large proportion of workers remain in rural agriculture. Among others, this has led to a situation of a large gap in productivity between agricultural workers and workers in the services sector (Papola and Sahu 2012; Papola 2012).

The services sector is a highly non-homogeneous sector comprising a wide range of activities. There are differences within the services sector with regard to the contribution of different subsectors to GDP and to employment. Consequently, the labour productivity within the services sector is also likely to vary widely.

The services sector and particularly jobs in the services sector are often discussed in the literature on the informal sector. Service sector employment is associated with informal sector not only due to the relatively large proportion on unprotected jobs, but also due to the fact that a large proportion domestic workers are accounted for as services sector workers (Jonakin 2006).

In this paper, we attempt to understand the growth and structure of the services sector in India through an analysis of the different sub-sectors within the services sector at a level of disaggregation that has so far not been adequately analysed in the literature. A study of the services sector at a reasonably disaggregated level is necessary because, as noted earlier, unlike agriculture (the primary sector) and industry (the secondary sector), the services sector (the tertiary sector) is much more heterogeneous in nature. Further due to communications led technological advancement, the process of globalisation and increased reliance of outsourcing as a mode of production organisation, rapid changes have occurred in the economic structures of many economies including India. And a large part of this change is visible in the form of growth and change in the structure of economies in favour of larger share of the services sector.

In the analysis of the service sector GDP and services sector employment at a disaggregate level, we attempt to identify sub-sectors within services that have contributed mainly to GDP growth. We also attempt to identify sub-sectors that have contributed mainly to employment growth. Thus we attempt to address the question of whether there is, as in the case of the aggregate economy, a mismatch between contribution to GDP and to employment within the subsectors of the services sector.

A related question that we would like to address is on the quality of employment across different services that employ proportionately large number of workers. This leads us to the study of the productivity levels in different services. We compare the productivity

levels across different services with that of the average within the services sector and also with agriculture and the manufacturing (or the industry) sectors.

In the debate on the role of services sector and the 'services sector led growth' witnessed in India during the 1990s and 2000s, scholars have frequently questioned the medium to long term sustainability of this form of economic growth, which is heavily dependent on the services sectors performance. For example, questions are being raised as to how dependent the services sector growth is on government spending and to what extent the services growth in India is led by the external sector.

Finally, a number of services are closely linked to production or manufacturing. In the past, some of these services would be performed in-house within manufacturing enterprises. A combination of factors including technological advances, global competitive cost cutting pressures, fluctuating market demand and so on, have led to reorganisation of production such that producer services that contribute directly to manufacturing capacity are now seen as being independent from the process of manufacturing. Thus producer services are considered services and placed under that services sector. An important component of producer services is Information Communication Technologies (ICT) enabled producer services.

Growth of producer services is desirable for the growth of the manufacturing sector. In addition, due to ICT led technological possibilities and due to abundance of specifically skilled ICT workers, producer services based in India could cater to industry in other countries as well. In this paper we attempt to compare the performance of producer services with distributive services and social or personal services.

We begin the next section by briefly discussing what constitutes the services sector and how scholars have attempted to distinguish it from industry. We then discuss the issues and debates related to the definition, identification and measurement of the services sector particularly with reference to India. This is followed by brief description on the nature and sources of data on the services sector in India.

The next section has a brief discussion on what constitutes the services sector and the debate on the concept and definitions. In this section we also discuss measurement issues in general and those that are specific to India. In section 3 we analyse the growth and structure of GDP growth in India from 1950 till 2009-10. The focus though is on the latest period from 2004-05 to 2009-10. Section 4 presents a brief analysis of the growth and structure of services sector employment in India. This analysis is undertaken at the 2 digit as well as at the 5-digit levels. Section 5 is on the levels of productivity within the service sector and Section 6 looks at the different possible classifications of services and attempts to understand the prospects of growth and sustainability through this alternative classification. Finally, Section 7 provides a brief summary of the report and concludes.

2. The Services sector

What constitute the services sector?

The term services sector refers to, at the most aggregate level, a large group of activities that include trade, hospitality (hotels, restaurants), transportation, communication, entertainment, health, education, public services and so on. It can be argued that, even at the aggregate level, the services sector is more heterogeneous than the other two sectors, agriculture (primary sector) and industry (secondary sector). Thus if the primary sector involves producing goods directly from natural resources (agriculture, fishing, hunting, mining and so on) and secondary sector involves modifying material goods into other more useful products and commodities, then the tertiary sector or the services sector includes all activities that do not produce or modify material goods (Illeris 2007). In other words unlike the output of agriculture, mining or manufacturing which are material and tangible, the output of the services sector such as teaching, cleaning, selling, curing and entertaining have no physical form and therefore are immaterial or intangible (Noon 2003).

Given its nature and heterogeneity, there is a large body of literature where scholars have debated on the precise definition and identification of the services sector.¹ In this debate, scholars have argued that even in the most advanced countries where the services sector accounts for the largest proportion of all economic activities, it is defined negatively or as a residual comprising all economic activities that do not belong either to the primary and secondary sector (Illeris 2007). Scholars have also attempted to arrive at precise and positive definition of the services sector.

T. P. Hill wrote a set of influential papers on the concept and definition of the services sector as being distinct from goods (Hill 1977, Hill 1979). In an early review on what constitutes the production of goods and what would be services, Hill (1977) provides a positive definition of the services sector.² In a detailed discussion of the concept, definition and measurement of the services sector, Hill makes a distinction between 'services affecting goods' and 'services affecting persons'. And thus proposes a definition of the services sector "as a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit".

Despite its 'vagueness' in part, the positive definition by Hill was nevertheless influential and contributed to the UN System of National Accounts (1993) (Illeris). The

¹ For a summary of historical definitions of services see Walters and Bergiel (1982), cited in Table 2.1 in Joshi (2008).

² For a very brief and concise discussion of the distinction between goods producing operations and service operations see Noon (2003).

internationally accepted definition of what constitutes services is given by the UN SNA (1993). According to the SNA (1993), "Services are not separate entities over which ownership rights can be established. They cannot be traded separately from their production. Services are heterogeneous outputs produced to order and typically consist of changes in the conditions of the consuming units realized by the activities of producers at the demand of the consumers. By the time their production is completed they must have been provided to the consumers."³ And "The production of services must be confined to activities that are capable of being carried out by one unit for the benefit of another. Otherwise, service industries could not develop and there could be no markets for services. It is also possible for a unit to produce a service for its own consumption provided that the type of activity is such that it could have been carried out by another unit."⁴

Among the many services that are discussed in the literature on the concept of services, an important type can be called producer services.⁵ These services are essentially manufacturing activities that appear to be 'services activities' when the manufacturing process is subdivided and broken down into several components.⁶ The fact that some of these manufacturing activities appear to be similar to service activities is further exacerbated when these components of manufacturing are sub-contracted out or outsourced to other enterprises.⁷ This has led to a blurring of the distinction between manufacturing and services.

Growth of the services sector: A recent phenomenon?

In recent years, there has been an unprecedented growth in services across all countries. While in the advanced industrialised countries this is seen as a continuation of the economic transformation, the above average growth of the services sector as compared with manufacturing and agriculture is also seen in some less developed countries like India. The rise in the services sector has been attributed to a number of possible factors both from the demand as well as the supply side (Lee and Wolpin, 2006).

It has been argued that the disproportionate growth in services, at least in the case of India, is not a recent phenomenon. For example, Mitra (1988) noted the disproportionate growth in services GDP in India as well as the absence of corresponding increase in

³ Section 6.8, SNA (1993) page 148.

⁴ Section 6.9, SNA (1993) page 148.

⁵ Scholars have alternatively called this type of services producer services, production services, manufacturing services and 'services affecting goods'.

⁶ Kumar *et al* (2007) discuss the 'ambiguities inherent' in the accepted definitions of "manufacturing" activities and "services" in the case of estimation of GDP in India focusing on the unorganised or the unregistered sector.

⁷ Examples are activities such as painting and polishing of metal components, cleaning, ironing and o on of textiles and garments.

services employment in the 1980s. On similar lines, Nagaraj (1991) observed that rather than a sudden spurt of growth in services in recent years, the large share of services sector in recent times is due to the relative higher base in the 1950s and more or less steady growth from early 1950s onwards.

It has also been pointed out that there is a difference in nature and type of services between the advanced industrial countries and the countries that are still at lower levels of income. While services sector employment in advanced countries may not imply low quality employment, in case of less developed countries a large proportion of the service economy has low quality employment (Ghosh 1991). According to one argument, services sector occupations in less developed countries (LDCs) arise out of scarcity of employment opportunities in other sectors. In this context, Ghosh (1991) says that Arthur Lewis (1954) "rightly observed that cheap supply of labour and social prestige consideration of the upper strata of population make possible the employment of a large number of domestic servants in LDCs." Thus while labour productivity in the services sector in advanced countries would be on par with or higher than in manufacturing, in less developed countries the labour productivity in services sector is relatively lower. Secondly, accordingly to Ghosh (1991), the distributive services in the tertiary occupations (trade and transport) in LDCs are low-productivity and low-income type as compared with advanced countries; and finally services sector occupations in advanced countries are highly capital-intensive, whereas on the contrary in less developed countries there is very little use of capital. Thus, it may be concluded that a part of the services sector growth in less developed countries such as India should be treated with caution and should not be taken as an indicator economic growth.

While it is true, as in the case of India, that the share of services sector was already notable in the 1950s, and there has been steady growth of the sector since, there is no doubt that the nature and quality of growth of services GDP has changed in more recent years. Major changes in the services sector the recent period is brought about by three important factors: the role of IT and ICT led services, globalisation process and increased reliance on outsourcing.

In their study of globalisation of outsourcing, Kotabe *et al* (2009) have identified three phases in a period of about 20 years starting in the mid-1980s. The first wave which started in the mid-1980s was primarily focused on global sourcing of 'manufacturing activities.' The authors then identify a second wave of global outsourcing starting sometime in the 1990s. This is the time when large firms in the advanced countries began to reorganise and a number of them began by closing down their in-house IT departments. By then IT services were developed enough for it to be commoditized and offered by a third specialist firm. According to Kotabe *et al* (2009) "Global sourcing mostly involved labour-intensive and standardized programming activities, which could be easily sourced from locations like India." The third phase is identified with the beginning of the business process outsourcing (BPO) that extends beyond pure IT

services to other services such as legal affairs, accounting, human resources management, finance, sales and after-sales such as call centres. However, global outsourcing is possible in these cases only to the development of appropriate communication and IT technologies. In the second phase, India is considered a source country and this continues and gets strengthened in the third phase.⁸

Factors that have led to spurt in services growth

Scholars have offered a number of explanations about the growth in services employment. An important factor for services growth is **demand led**. The increased demand for services by the producers of goods and services 'is in part due to firms externalizing service functions that previously had been performed internally (Kirn 1987). It has also been argued that in comparative terms, there has been a spurt in the intermediate demand for services in recent years (Kirn 1987). The 'growth of multinational firms, the increase in international trade, and the proliferation of products' are also seen as causing an increase in the demand for services. Stanback *et al* (1981) have argued that multinational firms that compete in increasingly complex business environments 'have expanded the amount of effort devoted to activities such as planning, coordination, and control and consequently have increased their use of services' (Stanback *et al* 1981, cited in Kirn 1987).

Apart from the demand factors discussed above, scholars have also proposed **supply side** factors that have contributed to the increased role of the services sector. This is more prominently seen with regard to services employment and with regard to the advanced industrial economies. The technology led increases in labour productivity in manufacturing sector could lead to relative changes in employment share such that this results in the net decline in manufacturing employment and no change or increase in the services employment. Several scholars have argued that the relative increase in the share of services sector employment may not be due to opportunities or productivity levels in the services sector, but more to do with the productivity levels in the manufacturing sector – this is because the manufacturing sector is the "learning sector" while the services sector is not (Casares 2007).

Based on a review of a number of studies on labour productivity or per worker output in industry and in services in the United States, Kirn (1987) has argued that the 'most significant cause of services employment growth' is the relative slower growth in labour productivity in the services sector compared to similar increases in the goods producing manufacturing sector. Kirn (1987) cites a number of studies starting from Fuchs (1968) to Beyers *et al* (1985) while making this argument. Whether this logical argument about the relative change in labour productivity holds good for the less-developed countries needs

⁸ See Table 14.2 in Kotabe *et al* (2009) for a summary of the argument of the three distinct phases of global outsourcing.

to be assessed. Further, in the present context, with the growth and proliferation of the use of computers both in the services and well as in the manufacturing sectors, the issue of the relative change in labour productivity needs to be revisited. As this study has shown in subsequent sections, there are sub-sectors within the services sector that have high and growing labour productivity, while some other more traditional services have low labour productivity.

The inverse relationship between productivity and employment growth in the services sector is seen from another dimension by Kong and Hoon (1998). In their study of productivity and employment growth in the private sector and public sector in the US between the 1950 and 1975, the authors found a direct relationship between high productivity growth in the private sector and consequently lower employment possibilities. In this period, they have noted a growth in public sector employment. The trend is reversed in the 1980s and later when productivity growth in the US slowed down. In this later period, larger private sector employment opportunities and falling share in public sector employment were observed by Kong and Hoon (1998). Thus at least for the US, Kong and Hoon (1998) show that public employment acts as a buffer providing employment to those in the services sector who are unable to be absorbed by the private sector.

Services sector measurement issues

There are mainly three main sets of problems with regard to measurement of services sector value added. The first set of problems relates to the inability to measure the value of output itself. For example there are services that are not marketed or do not have an explicit 'market value' such as services that are provided by public administration. In such cases, it is difficult to obtain an economic value of the services provided. A part of this problem is also the difficulty in obtaining the actual 'quantity of service' provided. In case of a number of services, their true economic value is difficult to measure and evaluate. While government services to its citizens tops the list of services that are problematic in obtaining their economic value, other such services are ownership dwellings, defence services, banking and financial services and so on. The problem of measurement of the services sector has engaged governments and scholars since several years.⁹

The difficulty is in the pricing of various services such as public administration, health services, education services and so on where the state may play a major role and many of these services may not have a 'market value'. Here the general method of measuring value added is the value of wages given to workers in the sector. Thus an increase in either employment or in wages both lead to a corresponding increase in value added. In

⁹ See for example a detailed discussion on the measures and methods in the OECD countries by Hill and McGibbon (1966).

case of services such as health and education, Hill and McGibbon (1966) have argued that the demand for such services “is likely to be highly income elastic so that their relatively slow measured rate of growth in real terms must be viewed with some scepticism.”

The second set of problems relate to obtaining the real value of services as opposed to the nominal value of services. The absence of appropriate price deflators for many different types of services makes it difficult to arrive at the value added in services in real terms. There have been a number of attempts to overcome this problem by using different methods of deflation. The most popular method is the method of double deflation. In the method of double deflation, the value of output and value of inputs are deflated separately by their appropriate price indices and the value added for the service is then estimated as the difference between the output and inputs (CSO 2007).

The third set of issues is to do with the inability to actually make measurements on the ground and hence the use of indicators as proxies for the existence and growth of some services. For example, in the case of a number of services, employment (that is, the total number of persons employed in that in providing that service to rest of the economy) is used as an indicator to arrive at the size and growth of the service. Thus the total value added in the services sector is arrived at using different methods and measures for different services.¹⁰

Services sector measurement issues India

Having discussed the three problem areas of services sector measurement in general, we now turn to discuss issues specific to India. Accordingly to Shetty (2007), the main problem with regard to estimating services GDP in India emanates from the fact that the estimates for GDP are arrived at in seven main categories, each being subdivided into subcategories and each of the subcategories in turn being classified further into three institutional sectors *viz.*, private sector, public corporate sector and the unorganised sector. Each of these three institutional sectors has its own characteristics, making collection of data and estimates complicated and complex (Shetty 2007).

Due to the lack of availability of appropriate data, the method used in arriving at the estimate of GDP in case of a number of services, especially in the unorganised sector and in a few cases in the private corporate sector, a method is evolved where by GDP is obtained as a product of estimates of value added per worker and estimates of total number of workers. In this method, first a measure of the average gross value added (GVA) per workers in the particular sector or sub-sector is obtained through specialised surveys that are conducted for this purpose. The estimates for the total employment in the sector are then obtained from another source. The estimated GVA and total

¹⁰ For a fuller understanding of the more recent measure and methods used to arrive at the Services sector GDP in India see CSO (2007).

employment are then multiplied to obtain estimates of the GDP of that sector. The problem with this method is that not only there could be a regular mismatch between obtaining estimates for GVA and employment, resource and other constraints imply the GVA estimates or even employment estimate in the inter-survey period which can be five to six years in case of NSS and ten years in case of the Census are based on extrapolations. In case of services sector which has been identified as fast changing and growing sector of the economy, such extrapolations on thin past data do not lead to robust estimates. This is obvious from the difference in estimates for the same year and in current prices of various services when the series are revised from time to time.¹¹ Not surprisingly, the differences are higher, at higher levels of disaggregation.

Another limitation with regard to the measurement and estimation of services GDP in India is that estimates are not obtained at a sufficiently disaggregated level. While there is an improvement on this front with every new release of GDP series, the latest being the series with base year 2004-05, when compared with manufacturing sector, the services are far behind.¹² In this exercise of improving the coverage in every new GDP services, the Central Statistical Organisation also regroups economic activities according to a new classification scheme. In a detailed critique of this classification scheme, Banerjee *et al* (2007) conclude that data from the NSS enterprises surveys subsequent to the changes made in the 1999-2000 series support the regrouping of service sector activities.

On the private corporate sector

Unlike the long history of having price indices for whole sale prices and consumer prices for commodities, there is no price index for the services sector. Estimating the GVA from the private sector is thus complicated by the fact that it is difficult to obtain appropriate price indices separately for inputs and outputs or various components of GVA, such as salaries and wages and operating surplus in order to use the method of double deflation (Sharma *et al* 2007). In addition to this there is a no agency in the country that collects and disseminates current data on the private corporate sector (quarterly or annual). In this connection, the Ministry of Corporate Affairs (MCA), Government of India, initiated the MCA21 project in 2006. The MCA21 project aims to enable easy and secure access to MCA services in an assisted manner for corporate entities, professionals, and general public. The MCA21 project is designed to fully automate all processes related to enforcement and compliance of the legal requirements under the Companies Act, 1956. It is envisaged that the MCA21 will also act as a database that will provide regular data on

¹¹ According to Sharma *et al* (2007), for years subsequent to the base year (once the new series are released) in respect of various industry groups the estimates of value added are based on different procedures, depending upon the availability of data.

¹² For a comparison of the level of disaggregation between the previous series (base year: 1999-2000) and the series before that (base year: 1993-94) and the improvements therein see Table 3 and discussion in Sharma *et al* (2007).

the corporate sector through periodic online filing of accounts by companies. Scholars have also suggested that an annual survey of services enterprise (ASE) be organised on similar lines to the Annual Survey of Industries (ASI). The strengthening of corporate sector statistics, introduction of ASE and the service sector price indices are the key to improving the quality of services sector GDP estimates (Sharma *et al* 2007). And all this would then provide sufficient data to embark on an index of service production (ISP) similar to and on the line of the index of industrial production (IIP).

On the informal and unorganised sector

The second institutional category for which data are thin according to Shetty (2007) is the unorganised sector. The CSO has a detailed method at arriving at estimates of the GDP from the unorganised sector. In the case of the manufacturing sector as well as the services sector GVA per worker are obtained through NSS surveys (called follow-up surveys to economic census) for the base year. For subsequent years, the estimates of GVA are obtained by extrapolating and by making use of physical and price indicators (Saluja and Yadav 2007). However the estimates of value added obtained from enterprise surveys are criticised for being low and further the second criticism is that newer and growing services are not being captured by these surveys (Saluja and Yadav 2007).¹³

In this situation the use of appropriate indicators for the unorganised sector can be problematic, first in correctly representing the unorganised sector and second in a situation where vast changes happen within the sector over time. With the example of the financial services covering the banking and non banking services, annual data regarding the activities of unorganised non-banking enterprises and money lenders is not available. In this situation, Saluja and Yadav (2007) explain that CSO has been using a method whereby for the base year 1980-81, it was assumed that unorganised non banking financial enterprises and money lenders would constitute about a third of the organised non banking enterprises. While this ratio itself could be questioned, it has remained at that level from then on till 2004-05 (latest base year) despite the passage of about 25 years and several economic and social changes that have taken place in the interim period.

Another indicator often used for obtaining estimates of GDP in the unorganised sector is employment. As is well known, NSS surveys that provide reliable estimates of employment are conducted every 5-6 years. To add to this, if one of the NSS surveys turns out to be not as reliable (due to it being an unusual year such as a drought year for example), then all estimates of employment based on this survey would also be unreliable.

¹³ For a detailed discussion on the method of estimating value added specific to the unorganised sector services see Saluja and Yadav (2007).

Finally, in the unorganised sector, it is well known that workers engage in multiple occupations simultaneously. And since the workers' surveys only capture two or three main occupations and not details on their intensity in terms of time or value of incomes, this further adds to the complexity in obtaining estimates for the unorganised sector GDP. Giri *et al* (2007) have suggested an alternative method for measuring labour input in the unorganised sector more accurately. They suggest collection of data at the 5 digit level for current daily status so as to be able to capture multiple work or economic activities undertaken by workers in the unorganised sector.

In a study of the unorganised sector GDP at a more disaggregated level, Manna (2007) found that the precision of estimated GVA per worker is relatively low for activities of storage and warehousing, real estate, rent and business activities; health and social work; and other services (urban only). Further, while examining the GVA per worker for proprietary and partnership enterprises on the one hand and other enterprises on the other, Manna (2007) found that the estimates for the GVA per worker in the case of the later was generally inferior to that for proprietary and partnership enterprises. There is also a wide divergence between the enterprise survey based estimates of aggregate GVA and that (GDP at factor cost at current price) based on the National Accounts Statistics for the activity of hotels and restaurants according to this analysis.

Banking and financial sector

Banking and financial sector is one of the fast growing sub-sectors within the services sector. This sector has also attracted attention with regard to measurement of GDP (Barman and Samanta 2007; Chakrababorty and Das 2007).¹⁴ As in the case of many other services, the output of the financial sector cannot be measured directly and to obtain real values of output, some kind of a method of imputation has to be used. In the Indian case, conceptually there are two approaches – the national accounts approach and the banking production-function approach (Chakrababorty and Das 2007). According to experts in the field, the national accounts approach does not take into account “the provision of finance to bank borrowers in itself as an output of the banking industry, which is in sharp contrast to the bank production function approach.” In addition there is a problem in dealing with the non performing assets (NPA) and non-performing loans (NPL) of the financial sector.

As in the case of other services, attempts are being made to construct appropriate price and quantity indices for the banking and financial sector. India has adopted the SNA 1993 guidelines for arriving at GDP estimates for this sector since the GDP series of 1993-94. Constructing price and output indices of banking intermediation services remains to be undertaken and in this regard more research is required to arrive as the appropriate

¹⁴ For a detailed listing and critique of the statistic on banking and financial sector GDP in India see Barman and Samanta (2007).

measures (Barman and Samanta 2007). Scholars are also of the view that the implementation of the SNA 1993 has led to a change in the way the financial sector is treated with regard to its contribution to national income. The important questions in this connection are the 'valuation of GDP of the banking sector at constant prices and the treatment of NPLs of banks' (Chakrababorty and Das 2007). In this regard, scholars have argued that the current approach could 'significantly underestimate the contribution of banking sector GDP. This is more so due to the adjustment of financial intermediation services indirectly measured (FISIM) which is done to eliminate risk premium from interest rates (Chakrababorty and Das 2007; Rath *et al* 2007). For the banking sector, it has been argued by scholars that a weighted average index of the PFCE (Private Final Consumption expenditure) and GDCF (Gross Domestic Capital Formation) could possibly yield a better measure for deflating the banking sector GDP as compared to the practice of WPI deflation (Rath *et al* 2007).

Role of computers

Another interesting question that has been raised in the connection of estimating services sector output is the role of computers and whether computers add to the measurement problems especially with regard to the services sector output. Rath *et al* (2007) list a number of studies that have pointed out an increased presence of computers both in manufacturing as well as in services. However, the presence of computers appears to be associated with the increase the productivity in manufacturing and not in services. Secondly, according to their review, several service activities using computers have not been adequately captured in the official data. They argue that while the output of computers themselves may not be difficult to estimate (as in the case of manufacturing sector), the output due to software may be more difficult to capture and estimate.

Reviewing literature that has studied valuation of computer software, Rath *et al* (2007) show that since multiple versions of the same software are offered over time and each new version is typically an improved version with additional features, valuation of software is further complicated. A number of scholars have argued that official statistical system has not kept pace with the rapid growth of the software industry. In this situation, Rath *et al* (2007) have suggested that a product method at obtaining value added from computers and software may be more appropriate.

To conclude this discussion on the challenges in measurement of services sector in India, it is worth quoting from the economic Survey of 2010-11

"One of the important challenges faced by the country is collection of data on the services sector. The challenge of data collection leads to difficulties in compilation of an index for services sector production, non-representation of many services sectors in the calculation of the wholesale price index, limited availability of published data on pricing of services, and limited data on trade in services. Even where data are available, they suffer from

deficiencies related to definition, method of collection, suitability for pricing, and construction of indices.” (page 242).

With this background, we now go on to present our findings on the growth and structure of the services sector in India.

3. Analysis of the services sector GDP in India

In this section we undertake a detailed analysis of the growth and structure of the services sector GDP in India. We first discuss the growth of services sector which is then followed by a discussion on the structure of services and change in the structure of services.

Our analysis here is for the years starting from 1950 and goes on till 2009-10.¹⁵ The major focus of our analysis, though, is in recent period. For better understanding we have decided to divide the entire period into 5 parts.¹⁶ The first period is from 1950 to 1965-66. The second period begins in 1966-67 and ends in 1979-80. The third period begins in 1980-81 and ends in 1995-96 while the fourth period is from 1995-96 to 2004-05 and the last period is from 2004-05 to 2009-10.

Growth and structure of services sector GDP in India 1950 to 1980

The services sector in India has experienced sustained and secular growth for early years in our study period. For the period from 1950-51 till 1965-66, the average annual growth rate of the services sector was about 4.3 per cent. Within the services sector, however, there is a wide variation in the growth performance of different sub-sectors. Some services grew faster than the average for all services and others grew slower. Between 1950-51 and 1965-66, the services that grew at a rate faster than the average growth rate for the entire services sector are: Public administration (6.37 per cent), Banking (6.8 per cent), Insurance (6.8 per cent), Road transport (6.06 per cent) and Trade (5.2 per cent). Other sub-sectors that were relatively smaller in size and had smaller base values and experienced higher growth rates during this period were: Education (8 per cent), Water transport (6.15 per cent), Air transport (9.64 per cent) Health (5 per cent) and Communications (7 per cent) (*Appendix Table 1*).

The services sub-sectors that experienced lower than average growth in the period from 1950-51 to 1965-66 belonged to the category of Personal services (2.33 per cent) and to Dwellings and business services (2.45 per cent). Within personal services the low growth services were Domestic services (1.8 per cent), Laundry, dyeing & dry cleaning (4.18 per

¹⁵ See Appendix note on data for more details

¹⁶ The periodicity is also in line with other studies in the research programme of which study is a part.

cent), Barber & beauty shops (1.32 per cent) and Tailoring (1.87 per cent). Within business services the low growth services were Dwellings (2.34) real estate (3.72) and legal services (0.25).

In the second sub-period from 1966-67 to 1979-80, the pattern of growth in the services sector is more or less similar to first sub period from 1950 to 1966. Between 1966-67 and 1979-80, the average annual growth rate for the entire services sector of 4.33 per cent was no different from the earlier period of 4.30 per cent per annum. Several sub sectors within the services sector also experienced growth rates similar to the earlier period except Trade (2.33 per cent) and Hotels (2.13 per cent) that experienced lower than average growth rates while the growth rates of business services (6.33 per cent) appeared to pick up. The low rates of growth in the personal services continued and further dropped to below a percentage point for all personal services including Domestic service (0.56 per cent), Laundry, dyeing & dry cleaning (0.93 per cent) Barber & beauty shops (0.81 per cent) and Tailoring services (0.44 per cent) (*Appendix Table 1*).

Structure and change in the structure 1950-51 to 1979-80

Structure of the services sector in 1950

In 1950 at the time that India gained independence, the structure of the services sector was such that Trade (25 per cent) and Dwellings (23.8 per cent) together accounted for about half the services sector GDP. The other important services in terms of GDP were Public administration (9 per cent) and Recreation (5.4 per cent). Other services that accounted for more than 3 per cent of the total services sector GDP were Religious and community organisation (4.7 per cent), Road transport (4.5 per cent), Railways (3.7 per cent) and Education (4.1 per cent). All personal services together accounted for 8.4 per cent of the total services sector GDP (*Appendix Table 2*).

Structure in 1966 and changes from 1950 to 1966

Between 1950 and 1966, the first period under consideration in this analysis, there was no major change in the shares of Hotels, Restaurants and Railways. However, notable increases in shares were found for Road transport (whose share increased from 4.5 per cent in 1950-51 to 7.4 per cent in 1965-66), the entire banking sector (2.4 per cent to 3.3 per cent) and specifically for banks (1.2 per cent to 2.7 per cent). Other sub sectors that experienced large increases in their shares relative to the total services sector belonged to the domain of the public sector or the state sector. The share of Education services increased from 4.1 per cent to 7.3 per cent, which was essentially the expansion of public education system. Similarly, share of Public sector communications increased from 0.5 per cent to 0.7 per cent and finally Public administration also increased from accounting for 9.0 per cent of total services to 12.4 per cent (*Appendix Table 2*).

In the period from 1950 to 1966, major decline in shares were accounted for by Recreation and entertainment services (whose share in total services declined from 5.4 per cent in 1950 to 2.9 per cent in 1965-66), Personal services (from 8.4 per cent to 3.8 per cent), Radio and TV (from 1 per cent to 0.5 per cent) and Dwellings (from 23.8 to 17.8 per cent).

Structure of different services in 1980 and changes from 1966 to 1980

As noted in the earlier discussion on growth of different services, overall, the growth rates of services remained similar in the two periods from 1950 to 1966 and from 1966 to 1980. However there were large differences in growth rates of individual service activities in these two sub periods. This gets reflected as changes in the shares of different individual services by the year 1980.

For example, Road transport continued to increase in share accounting for 5.8 per cent in 1965-66 and 7.4 per cent in 1979-80. Similarly, the share of air transport increased from 0.2 per cent to 0.6 per cent (an almost trebling of its share) and storage from 0.2 per cent to 0.4 per cent. The Banking and insurance sector also increased its share with Banks' share in services increasing from 1.7 per cent to 2.5 per cent and that of non-life insurance increasing from 0.9 per cent to 1.3 per cent. The growth of the public sector led services continued in this period. While the share of education services remained unchanged that of medical services increased from 2.1 per cent to 2.6 per cent, that of public sector communications increased from 0.7 per cent to 0.9 per cent and finally public administration from 12.4 per cent to 14.7 per cent (*Appendix Table 2*).

In the period from 1966-67 to 1979-80, the service activities that experienced a relative decline in their shares were trade (whose share in total services GDP declined from 28.4 per cent in 1965-66 to 21.8 per cent in 1979-80). The share of hotels also declined from 2.2 per cent to 1.7 per cent. Among the other services the decline of dwellings (17.8 per cent to 14.7 per cent), recreation and entertainment services (2.9 per cent to 2.1 per cent) and personal services (6.2 per cent to 3.8 per cent). The last three continue with a declining trend that began in the 1950s. The only public sector led service that experienced a decline in its share was Railways from 4 per cent to 3.5 per cent.

Contribution to growth 1950 to 1980

Growing sectors contribute to overall growth, and larger sectors due to their size also contribute to growth. In the period from 1950 to 1966, Trade, Dwellings, Public administration, Education services, Road transport, Railways and Banks together contributed to about 80 per cent of the overall services sector growth (*Table 1*). Of these, Trade (30.5 per cent), Dwellings (13 per cent) and Public administration (13.3 per cent) accounted for over 55 per cent the services sector growth.

The services growth pattern changed in the next period from 1966 to 1980. Besides a notable decline in some services such as Trade, growth in services began to get more and

more diversified. In terms of contribution to total services growth, Public administration, Trade, Dwellings, Road Transport, Education services, Banking and Railways together contributed to about 68 per cent of the total growth. The contribution to services growth from Trade (15.4 per cent), Dwellings (11.9 per cent) Education (7.1 per cent) and Railways (3 per cent) was lower in this period than in the previous period. The contribution to growth of Public administration (16.2 per cent), Road transport (8.2 per cent) and Banking (5.5 per cent) was higher in this period as compared to the previous sub period.

Table 1
Contribution to GDP growth by service sub-sectors, 1950-51 to 1979-80 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51 to 1965-66</i>	<i>1965-66 to 1979-80</i>
1	Public administration & defence	13.3	16.2
2	Trade	30.5	15.4
3	Dwellings	13.0	11.9
4	Road transport	6.4	8.2
5	Education (and research & scientific)	7.7	7.1
6	Railways	4.2	3.0
7	Banks	2.0	2.9
8	Medical & health	2.2	2.8
9	Non-life insurance	1.0	1.4
10	Hotel and restaurant	2.4	1.1
11	All other services	17.3	30.0

Source: Derived from Appendix Table 3

Growth and structure of services GDP in India 1980 to 2004-05

In this section we analyse the growth and the structure of the service sector GDP for the more recent period, from 1980 till 2010. For the purposes of the analysis we have sub-divided this period into three sub periods. The first sub period is from 1980-81 to 1996-97, the second sub period is from 1996-97 to 2004-05 and the last sub-period is from 2004-05 to 2009-10. The growth of the services sector accelerated from the early 1980s onwards. The average annual growth rate of the services sector from 1980-81 to 1995-96 was about 6.5 per cent. The services sector growth further increased to 7.7 per cent in the period from 1996-97 to 2004-05 and finally to 10.3 per cent in the most recent period from 2004-05 to 2009-10 (*Appendix Table 4*).

In the period from 1980 to 1995-96, among the relatively larger service activities, Road transport (7.3 per cent) Banks (8.8 per cent) and Hotels and restaurants (7 per cent) had growth rates of sectoral GDP higher than the average for services (6.9 per cent). Among the services that were relatively of smaller size but experienced notable high growth in this period were Business services (10.7 per cent), Public sector communications (7.3 per cent), life insurance (8.7 per cent) and Public sector telephones (10.7 per cent). All other

services such as Trade, Public administration, Education services and Railways that accounted to major part of the growth in services in the earlier period from 1950 to 1980, appear to have lower than average growth from 1980-1 to 1995-96.

Pattern of services growth appears to change from 1996-97 onwards. From 1996-97 till 2004-05, the total services GDP grew at 7.7 per cent. The highlights of services growth in this period are high growth of banking and insurance services, communication services and business services. The growth rate of trade that had declined in the previous two time periods appears to have picked up between 1995-96 and 2004-05. The annual average growth rate of Trade in this period was 10.7 per cent. Road transport continued with its previous growth performance, achieving about 8.6 per cent per annum. The most spectacular growth performance is however from the communication services. In this, public sector telephones (20.8 per cent) and private sector communication (36 per cent) both emerge as rising services, albeit from a low base.¹⁷ In this period there was also high growth in the banking and insurance sector, banks (13 per cent), non-life insurance (8.6 per cent) and life insurance (16 per cent). The services that remained relatively large but experienced lower than average growth rates between 1996-97 and 2004-05 were Dwellings (2.6 per cent), Public administration (6.3 per cent) and the Railways (5.1 per cent).

Structure and change in the structure of services from 1980 to 2004

In the 1980s the services sector was in a way dominated by the public sector. Of the top 10 services which together accounted for about 79 per cent of services GDP, services dominated by public sector accounted for over 30 per cent. These are Public administration (14.5 per cent of services GDP), Railways (3.4 per cent), Medical and health services (2.6 per cent), and banks (2.4 per cent). The other services that were partially in the public sector domain are Road transport (14.6 per cent) and Education (6.9 per cent). The non-public sector related services that accounted for major share of services GDP in the 1980s were Trade (22.2 per cent), Dwellings (14.6 per cent) Road transport (7.9 per cent), and Recreation services (2.1 per cent) (*Appendix Table 5*).

By 1995-96, a few years into the regime of new economic policies that favoured privatisation and reduced role of the state, the services that were previously in the public sector continue to grow. However, this growth could be due to the presence and growth in the private sector activities in these services. Public administration and Railways, the two services fully in the public domain had lower shares in services GDP in 1995-96 as

¹⁷ During this study, it has been brought to my notice that measurement issues plague the estimates of GDP in telecommunications sector. The estimates on the number of mobile connections used in the estimation of GDP are apparently highly inflated. Nevertheless, even after discounting for the inflated number of mobile connections in an appropriate manner, in comparison with other services, the growth performance of the communications sector continues to be remarkable.

compared with that in the 1980s. Data at this level of disaggregation do not permit the separation of the public and the private sector activities and a separate analysis is required which is not being undertaken here.

In the year 1995-96, the top 10 services in terms of GDP remain the same as in 1980s, except for a few changes. Recreation and entertainment with a lower share in 1995-96 than in 1980 exits from the list of top ten services while the fast growing non-banking financial institutions accounting for about 3.4 per cent of the services GDP is in. Business services GDP which has experienced significant growth over this period appear to be in the 11th position in terms of GDP shares in 1995-96. Trade, whose growth rate was below the services sector average for several years begins to revive, and its share in 1995-96, though lower than in 1980, is still higher than in 1991-92. On the other hand, public administration that also had lower than average growth rates in the period from 1980 to 1995-96, has a lower share in 1995-96.

Major changes in the structure of services GDP happened from 1995-96 to 2004-05. Trade continued to lead as the largest contributor to services GDP by accounting for about 27.5 per cent of services GDP. This is the highest share Trade has ever had since 1950s. In 2004-05, Public administration (11.1 per cent), Dwellings (10.5 per cent), Road transport (9 per cent), Education (7.4 per cent), Banks (5.5 per cent) and Business services (5.5 per cent) are the major contributors to services GDP. Other important services accounting for over two per cent of the services GDP are Hotel and restaurants (2.7 per cent), Non-banking financial institutions (2.7 per cent) and Public sector communications (2.1 per cent).

Contribution to growth 1980-2004-05

A few services continued as major contributors to growth of services GDP (*Table 2*). The top five contributors to services growth in the period from 1980 to 1996 were Trade (which accounted for about 21.5 per cent of total services growth), followed by Dwellings (16.2 per cent), Public administration & defence (12.2 per cent), Road transport (8.4 per cent) and Education services (6.9 per cent). Together these top five services contributed to about 65 per cent of the services growth in the period from 1980 to 1996.

As seen from *Table 2* in the next time period from 1996 to 2004-05, the contribution of trade to services GDP growth further increased. Similarly the contribution of Road transport, Education, Banks, business services and Hotels and restaurants. In the period from 1996 to 2004-05, the contribution to services GDP growth of two important services declined and they are Dwellings (which had sharp decline contributing only to about 5.2 per cent of services GDP growth) and Public administration which contributed to about 10.2 per cent of GDP growth, down from the earlier period of about 12.2 per cent.

Growth and structure in the most recent period 2004-05 to 2009-10

The most recent period for which we attempt to analyse services sector GDP growth and structure, 2004-05 to 2009-10, is also the most vibrant and high growth period for the economy as a whole, but more for the services sector. Of all the periods discussed earlier, the growth rate of services GDP was the highest (at 10.3 per cent per annum) in this period. As in the previous periods, several individual service activities outperformed the average in terms of GDP growth. New and emerging services that appeared in the previous years as having potential for growth now proved that point by exhibiting remarkably high rates of GDP growth.

Table 2
Contribution to GDP growth by service sub-sectors, 1979-80 to 2009-10 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1979-80 to 1995-96</i>	<i>1995-96 to 2004-05</i>	<i>2004-05 to 2009-10</i>
1	Trade	21.5	29.8	24.3
2	Banks	3.4	6.0	10.6
3	Public administration & defence	12.2	10.2	9.8
4	Business services	1.7	5.2	9.2
5	Road transport	8.4	9.4	6.8
6	Education (and research & scientific)	6.9	7.7	6.2
7	Private sector communications	0.0	0.6	4.1
8	Dwellings	16.2	5.4	3.6
9	Public sector Telephones	0.7	1.9	3.3
10	Hotel and restaurant	1.8	3.0	2.3
11	Railways	2.0	1.5	1.6
12	Medical & health	2.8	3.6	1.4
13	All other services	22.5	15.6	16.8

Source: Derived from Appendix Table 6

Relatively large service activities that outperformed the average annual growth rate of services in this period were Banks (20.1 per cent), Business services (17.2 per cent), Private sector communications (41.1 per cent), Public sector communications (16.4 per cent) and non-life insurance services (14.7 per cent). Other services that accounted for relatively smaller proportion of total services GDP, nevertheless had very high growth rates of GDP in this period were Real estate (26.0 per cent), life insurance (19.4 per cent) and air transport (14.8 per cent).

The services that continued to be important in terms of their share in GDP but grew significantly slowly in this period are Dwellings (3.6 per cent), Road Transport (7.7 per cent) and non-banking financial institutions (3.8 per cent).

The structure of the services sector from 2004-05 to 2009-10

In 2009-10, as in the previous years, Trade was the largest of all service sub-sectors accounting for about 26 per cent of services GDP. This was marginally lower than its share in 2004-05 which was about 27.5 per cent. Public administration came second accounting for about 10.5 per cent of services GDP in 2009-10. This was followed by Banks (8.3 per cent), Road transport (8.1 per cent), Dwellings (7.6 per cent), Business services (7.4 per cent) and Education (6.9 per cent) (*Appendix Table 5*).

The top ten contributors to services GDP growth in this period are presented in *Table 2*. Trade contributed to about a fourth of the total services growth. The services that contributed to growth in services GDP growth at a rate higher than in the previous time period were Banks (10.6 per cent), Business services (9.2 per cent) Private sector communications (4.1 per cent) and public sector telephones (3.3 per cent). Other services that were in the top ten in terms of their contribution to services GDP growth were Public administration (9.8 per cent), Road transport (6.8 per cent), Education services (6.2 per cent), Dwellings (3.6 per cent) and Hotels and restaurants (2.3 per cent).

Business services have emerged as a major contributor to services sector GDP growth between 2004-05 and 2009-10. Business services accounted for about 7.4 per cent of services GDP in 2009-10. These services in turn are made up of computer related services (5.4 per cent), accounting services (0.2 per cent), Research and development (1.5 per cent) and Legal services (0.5 per cent). In terms of growth of GDP, high double digit growth by the business services is essentially led by computer related services (17.34 per cent) and Research and Development (19.04 per cent). The nature and type of business services show that these have relatively higher exposure to the external sector. Given their size, business services could have important contributions to the services GDP growth itself. As seen from the *Table 2*, business services contributed to about 9.2 per cent of the total services sector growth and of this, the computer related services contributed as much as 6.9 per cent (See also *Appendix Table 7a, 7b and 7c*).

To summarise this discussion on the growth and structure of services sector in India, the largest sub-sector in the services sector is trade – retail and wholesale trade taken together. Besides retail and wholesale trade in fruits, vegetables, milk, meat, grocery, and so on, this also includes motor vehicle sales and service, machinery, and so on. Trade accounted for 26 per cent of total services GDP in 2009-10. This is followed by banking and financial services (11.1 per cent in 2009-10) – banks, postal savings, pension funds and so on. Public administration comes third accounting for about 10.5 per cent in 2009-10, followed by road transport (8 per cent) and Dwellings 7.6 per cent.

In the entire study period from 1950 to 2009-10, two important service sub sectors, Trade and Public administration appear to remain stable with regard to their contribution to services sector GDP. The share of Trade changed from 25 per cent to about 26 per cent. Similarly the share of Public administration changed from 9 per cent to 10 per cent. A

closer look at the interim period of about 60 years shows that Trade shows a U shaped pattern with regard to its share in total services GDP - its share first declined to about 20 per cent in 1991-92 before increasing to 27 per cent in 2009-10. Similarly, Public administration displays an inverse U shaped pattern with regard to its share in total services GDP. Public administration peaked with a share in services GDP of about 14.7 per cent before declining to 10 per cent in 2009-10.

The services that have notable increases in shares through the period from 1950 till 2009-10 are Banks (whose GDP increase from about 1.2 per cent in 1950-51 to 8.3 per cent in 2009-10), Road transport (from 4.5 per cent to 8 per cent), Business services (from 0.8 per cent to 7.4 per cent) and Insurance (0.8 to 2.7 per cent). Of these, the share of Business services increased sharply starting from the mid-1990s.

Services that experienced a secular decline in the period from 1950s till 2009-10 are Dwellings (23.8 per cent to 7.6 per cent), Domestic services (8.4 per cent to 1.8 per cent) Recreation and entertainment services (5.4 per cent to 0.8 per cent) and Radio and TV (1.0 to 0.015 per cent). Of these the last three experienced share decline only after 1995-96.

Services that exhibited an inverse U pattern in their change of their shares in GDP are Public administration, Education and Health. Their respective shares in services GDP increased till about the 1980s before beginning to decline. Hotels and restaurants on the other hand showed a U shaped pattern with their share declining till about the late 1980s and then increasing.

Finally, there are two services that stand out prominently in terms of high growth in recent years. The first is Business services and the second is Private sector communications. Both these services accounted for negligible shares in the 1950s and 1960s, right up to the 1980s. Their share began to increase only after and major increases happened only in the 1990s and after. Private sector communications which did not exist in any significant way till 1990-91 (0.1 per cent) grew to account for about 3.5 per cent of services GDP in 2009-10. Similarly business services of which computer related services is a major component accounted for only about 1.3 per cent of the services GDP in 1989-90 and this share increased to 7.4 per cent in 2009-10.

4. Analysis of services sector employment in India

In this section we aim to understand the growth and distribution of employment across different services. For this we use data on employment from the NSSO surveys on employment and unemployment.¹⁸ The analysis of the growth and structure are carried out at the 2-digit level for the years 2004-05 and 2009-10. At this level of disaggregation,

¹⁸ See Appendix note on data for more details

data on employment at available for 26 categories. An analysis of the nature and type of employment within the services sector is attempted using data at the 5-digit level. In their present form the 2-digit and 5-digit categories used in this section do not correspond to the services sector sub categories discussed in the discussion on services GDP in the earlier section.

In the period from 2004-05 to 2009-10, employment in the services sector grew at a modest 1.84 per cent per annum. However, within the services sector there were several 2-digit service activities where employment grew at a much faster rate. Among the 2-digit services that accounted for at least 1 per cent of total services employment, employment in Computer and related activities grew at the highest rate at 17.8 per cent per annum. This was followed by financial intermediation having employment growth of 4.46 per cent and Public administration with an employment growth of 2.96 per cent. The only other 2-digit service activity with at least one per cent of the service sector workforce and having above average employment growth was Land transport (2.65 per cent) (*Appendix Table 8*).

Other 2-digit services that had a lower base in terms of share in total services workforce but high average annual employment growth rates were activities supporting and auxiliary to transport (14.42 per cent), Activities auxiliary to financial intermediation (13.01 per cent), Real estate activities (9.38 per cent), Insurance and pension funding activities (9.20 per cent) and Sewage and refuse disposal activities (6.76 per cent). Services that employed relatively larger proportion of service sector workers but registered lower than average growth rates of employment were Retail trade (which has an employment growth of about 1.41 per cent), Education services (1.56 per cent), Hotels and restaurants (1.38 per cent) and Wholesale trade and commission trade (1.21 per cent).

Share and change in share at 2-digit level

In terms of employment, at the 2-digit level of disaggregation, the top ten sub-sectors accounted for about 87.2 per cent of the total services sector employment in 2009-10. The corresponding share of the top five sub-sectors in the same year was about 67 per cent. Retail trade which accounted for about 31.4 per cent and 30.7 per cent of total service sector employment in 2004-05 and 2009-10 respectively, is the largest employer of service sector workers in India. The next two services that accounted for relatively large proportion of workers were land transport (14 per cent in 2009-10) and Education (10 per cent in 2009-10). This was followed by Public administration and defence (8.1 per cent), Hotels and restaurants (5.3 per cent) and Wholesale trade and commission trade (4.6 per cent) (*Appendix Table 9*).

Contribution to growth in services employment

In the period from 2004-05 to 2009-10, in terms of contribution to total services employment growth, the largest contribution was from Retail trade, which accounted for

almost one fourth of the total services employment growth. Other services that contributed significantly to services employment growth are Land transport (20.23 per cent) Public administration (12.35 per cent), Education (8.75 per cent), Computer and related activities (7.25 per cent) and Financial intermediation (per cent 4.71). Together the top ten service activities contributed to about 93 per cent of total employment growth in the services sector. (Table 3)

Table 3
Contribution to growth in services employment, 2004-05 to 2009-10 (%)

<i>NIC Code</i>	<i>Description of services</i>	<i>Contribution to growth in per cent</i>
52	Retail trade except of motor vehicles	23.95
60	Land transport	20.23
75	Public administration and defence	12.35
80	Education	8.75
72	Computer and related activities	7.25
65	Financial intermediation	4.71
55	Hotels and restaurants	4.03
63	Auxiliary transport activities	3.57
51	Wholesale trade and commission trade	3.09
74	Other business activities	2.94
66	Insurance and pension funding	2.59
	All other services	6.51

Source: Derived from Appendix Table 12

Quality of employment in the services sector

In this section we attempt to analyse data on employment by employment status categories in order to arrive at some understanding of the quality of employment in the services sector in India. The NSS data on employment gives three main employment status categories *viz.*, self-employed, regular workers and casual workers. Besides this, NSS provides employment data on three sub categories of self-employed worker, that is, own account workers, employers and unpaid helpers. Casual employment and unpaid helpers are unambiguously low or poor quality employment, own account workers category would comprise a mix of both low quality employment and reasonably good quality employment. Regular workers can be assumed of relatively better quality employment – there are however several caveats to this. For example, NSS considers all workers engaged in domestic household chores as regular workers as it is assumed that the duration of employment is more or less regular.

With this background, we attempt to understand the quality of services sector employment using the NSS employment status categories at the 2-digit level of disaggregation. Taking regular employment as a proxy for decent quality employment

we identify services where a relatively large proportion of regular workers are employed. Top five services sub sectors accounted for 67 per cent of all regular workers in the service sector in 2009-10. They are Education (21.2 per cent), Public administration (18.8 per cent), Land transport (12.0 per cent), Retail trade (9.5 per cent) and Health and social work (5.2 per cent).

As opposed to regular employment, we take the combination of workers in casual employment and unpaid helpers to form the service sector workers who are engaged in poor quality employment. The top five services sub-sectors that accounted for the largest proportion of casual workers + unpaid helpers accounted for 83.1 per cent of all such workers in the services sector in 2009-10. These are Retail trade (36.6 per cent), Land transport (18.9 per cent), Hotels and restaurants (10.4 per cent), Other service activities (9.5 per cent) and Wholesale trade and commission trade (7.7 per cent). The services employing the largest proportion of unpaid helpers were Retail trade (60.4 per cent) ; Hotels and restaurants (12.0 per cent), Other service activities (10.7 per cent), Wholesale trade and commission trade (7.6 per cent) and Land transport (3.3 per cent).

Quality of employment within a service activity can also be gauged by the proportion of casual workers+helpers in total workforce within the particular service activity. Thus at the 2 digit level, we identify services in which the proportion of casual workers + unpaid helpers was the largest. They are, Hotels and restaurants (with about 33.8 per cent of its workers being either casual worker or unpaid helpers in 2009-10), Activities of private households as employers of domestic staff (32.7 per cent), Wholesale trade and commission trade (28.9 per cent) and Sewage and refuse disposal, (24.8 per cent) (*Appendix Table 11*).

Similarly, and on the other hand, the services with better quality jobs are services with the largest proportion of NSS regular workers. In 2009-10, these were Public administration (where 97.9 per cent of all employment was regular employment), Computer and related activities (90.0 per cent), Education services (87.8 per cent), Financial intermediation (87.7 per cent) and Post and telecommunications (79.7 per cent).

Employment trends in the services sector: an analysis at the 5 digit level

The above discussion on the quality of employment in the services sector is based on the analysis of employment figures at the 2-digit level. Here we attempt to have a deeper and more complete understanding by trying to analyse the employment trends by at the 5 digit level and by the NSS employment status categories and hence attempt to further narrow down our search for services that provide good quality employment versus other services that provide poor quality employment. As in the analysis above, NSS regular employment is taken as a proxy for good quality employment while the combined share of casual workers and unpaid helpers is taken to indicate poor quality employment. The 5-digit services considered in this analysis are only those that accounted for at least one per cent of total services employment in 2009-10.

We begin by presenting the figures for growth of employment at the 5-digit level. As we have seen in the earlier section, services employment grew at about 1.84 per cent per annum between 2004-05 and 2009-10 (*Appendix Table 13*). Within the services sector, at the 5 digit level, services that accounted for at least 2 per cent of total services employment and that grew at a rate faster than the average were: Other non-scheduled passenger land transport by motor vehicles (in which employment grew at about 5.3 per cent per annum in this period), Restaurants without bars (4.94 per cent), Freight transport by motor vehicles (4.27 per cent), Retail sale of cereals and pulses and other grocery (3.26 per cent), Retail sale of fresh fruits and vegetables (2.88 per cent) and Primary education (2.74 per cent).

We then identify 5-digit services that provided poor quality employment, that is, we identify the top five services in terms of the total number of casual workers+ unpaid helpers (*Appendix Table 15*). In 2009-10, the top five services in terms of 'poor quality employment' together accounted for about 37 per cent of the total 'poor quality workers'. They are Retail sale of cereals and pulses (11.41 per cent), Freight transport by motor vehicles (10.71 per cent), Restaurants without bars (5.79 per cent), Retail sale of fresh fruits and vegetables (4.72 per cent) and Other non-scheduled passenger land transport by motor vehicles (4.69 per cent).

Thus, it is seen that the sub-sectors with relatively higher growth in employment during 2004-05 to 2009-10 are also the ones that offer the poorest quality employment. This is an indication of a rather gloomy picture on the quality of services sector employment in India in the recent period.

On the other hand, the 5-digit services with relative 'good quality' employment, that is where large proportion of NSS regular workers are concentrated are Primary education (accounting for 11.23 of all regular workers), General public service activities of the state governments (7.78 per cent), Secondary education (5.61 per cent), Freight transport by motor vehicles (4.27 per cent) Other non-scheduled passenger land transport by motor vehicles (3.98 per cent).

Share of good and poor quality employment within different services:

The proportion of NSS regular workers to the total number of workers employed in any particular service activity would be an indicator of the extent to which good quality employment was available in that service activity. Similarly the proportion of casual workers + unpaid helpers to the total number of workers employed in any particular service activity would give an indication of the extent to which poor quality employment dominates that particular service activity. Here we attempt to identify 5-digit services that provide good quality employment as well as poor quality employment.

For the services sector as a whole, good quality employment or NSS regular workers accounted for about 42.2 per cent of total employment (*Appendix Table 17*). Thus services with a proportion of regular workers higher than this average for the entire services sector would provide an indication of avenues for good quality employment within the services sector. Of the 5-digit service activities that accounted for at least one per cent of the total service sector workers, the top five in terms of having the largest proportion of NSS regular worker within their respective work force are General public service activities of the state governments (98.9 per cent), Secondary education (98.2 per cent), Primary education (95.4 per cent) Monetary intermediation of commercial banks (95.4 per cent), Hospital activities (91.5 per cent) and Housemaid/servants (70.4 per cent). However, as the higher proportion of NSS regular workers in the last category, housemaid/servant shows, the NSS regular worker category is not perfectly appropriate category to capture 'good quality' employment.

Poor quality employment dominated by casual employment or unpaid helpers account for about 17 per cent of total services employment. Thus service activities at 5 digit level with over 17 per cent of casual employment + unpaid helpers would give an indication that those services are avenues for poor quality of employment. The services that are dominated by casual employment and unpaid helpers and having above average share in these employment status were Washing and dry cleaning (with about 42.4 per cent of casual labour + unpaid helpers), Freight transport by motor vehicles (40.7 per cent), Restaurants without bars (36.8 per cent), Housemaid/servant (29.6 per cent), Retail sale of cereals and pulses (26.3 per cent), Retail sale in non-specialized stores with food, beverages (23.7 per cent) and Hair dressing (22.1 per cent) (*Appendix Table 17*).

5. Analysis of services sector productivity

Productivity or labour productivity gives as estimate of the average economic value generated by an average worker. Labour productivity levels in a way determine the quality of employment. High levels of labour productivity by themselves do not ensure high wage levels and better conditions of work. However, high levels of labour productivity are one of the necessary conditions to achieve high wage levels and better conditions of work. In other words, it can be said that high productivity sector are likely to provide better quality employment. It can be also said, with a few caveats that high productivity employment is also likely to be more sustainable and stable. Productivity difference across different service activities also has implications for equity.

The concept of productivity as used in this discussion does not have technological connotation as in manufacturing productivity. This is both because of the lack of technology led innovation in a number of service activities and also because of the diverse mix of criteria that have been used in forming sub-sectors within the services sector. Of course, in recent years there are a number of services where there is an actual enhancing of labour productivity due to the use of computers and communications

technologies. Our data, however, do not provide us an indication of the productivity growth, and hence do not allow us to identify productivity gains due to technology or otherwise.

As we have discussed in section 3, GDP data over a fairly long period of time are available by about 40 categories at the most disaggregated level. Employment data are available at an even more disaggregated level, that is, 5 digit level of industrial classification for the years 2004-05 and 2009-10. Combining the GDP data at the maximum possible level of disaggregation and matching the same with employment data we have estimated productivity per worker in the services sector for about 36 service activities for the years 2004-05 and 2009-10. In the discussion below, we describe the productivity levels across these 36 service activities.

We identify high-productivity services as well as low-productivity services and estimate employment in both. Through this exercise, we attempt to identify service activities that are likely to be more sustainable and stable and provide good quality employment. We also examine if within the services sector there is a mismatch between some services that provide bulk of the employment (low productivity) and others that account for bulk of the income (high productivity). Finally we study the changes in productivity in the period between 2004-05 and 2009-10, the period of relatively high growth in services in India.

During 2009-10, the average productivity for the Indian economy (combining all the three sectors—agriculture, manufacturing and services) as a whole was estimated at ₹95,478 per worker per year. The average productivity figures for agriculture, manufacturing and services sectors in the same period were ₹26,537, ₹1,39,054 and ₹2,09,391 per worker per year respectively. Thus, while average labour productivity in agriculture was far below the national average, that of the manufacturing and services sectors were way above the national average, the average labour productivity of the services sector being the highest.

Across all sectors of the economy, in the year 2009-10, labour productivity was highest in forestry and logging (10.2 times the national average), followed by utilities (7.33 times the national average) and fishing (2.3 times the national average). These three sectors of the economy however does not employ bulk of the workers. The bulk of the workers are employed in agriculture, services, manufacturing and construction. Of these, the labour productivity in both agriculture and construction was lower than the national average. The labour productivity in manufacturing was about 1.46 times the national average while it was about 2.19 times the national average in services. Thus at the most aggregate level, services sector appears to be a reasonably high productivity sector, even surpassing the manufacturing sector. (*Appendix Table 19*)

Labour productivity within services sector

In the year 2009-10, the labour productivity across different services ranged from as low as ₹19,600 per worker per year in Private household with employed persons to as high as ₹67,94,000 in the non-life insurance sector (*Appendix Table 20*).¹⁹ Growth in productivity between 2004-05 and 2009-10 was highest in the non-life insurance sector (29.3 per cent) followed by communications sector (25.4 per cent per annum), Renting of machinery and Research and Development (both 17 per cent). The labour productivity in banks grew by 14.7 per cent. The labour productivity in households with employed persons grew at a rate of 14.4 per cent, albeit from a very low base.

The services where the labour productivity grew the least or was negative in the period from 2004-05 to 2009-10 were storage activities (-4.2 per cent), Radio and TV (-4.1 per cent) Computer related activities (-0.4 per cent). Two important public or state run services also exhibit negative productivity growth, they are, Banking department of RBI (-175.6 per cent) and Employees provident fund (-5.2 per cent) (*Appendix Table 20*).

High productivity services

For the purposes of this analysis, high productivity services are defined as having productivity levels that were 5 times the average for the services sector in 2004-05 or 2009-10. The top five services with highest labour productivity in 2009-10 were Non-life insurance (₹67,94,000 per worker per year) following by Banks (₹14,59,000 per worker per year), Air Transport (₹11,48,000 per worker per year), Communications (₹10,53,000 per worker per year) and Computer relating services (₹7,87,000 per worker per year) (*Figure 1*).

In comparison with the average productivity in the services sector, the productivity levels in the high productivity services in 2009-10 was as much as 32.4 times in case of Non-life insurance and 7 times in the case of banks and 3.8 time in the case of computer relating services (*Figure 2*). In comparison with the national average productivity levels, the productivity levels in the high productivity services were even larger. For example, in 2009-10, Non-life insurance had 71 times the national average productivity, while Banks had 15 times the national productivity and Computer relating services had 8.2 times the national productivity. Similar comparisons with productivity levels in manufacturing and in Agriculture are given in *Figure 3*

¹⁹ According to the NAS, "The economic activities covered in services sector include ownership of dwellings (occupied residential houses) including imputed value of owner occupied dwellings also." Thus in large number of cases, the value added is derived due to the existence and use of residential premises. Further, this may involve insignificant amounts of employment. Hence in the discussion of productivity of the services sector, we exclude the sub-sector under the heading "dwellings".

A point to be noted here is that despite their high levels of productivity, these services provide very little employment. For example, the high productivity services discussed above together accounted for about 16.8 per cent of the national GDP in 2009-10. They, however, accounted for only about 1.14 per cent of the total employment.

Figure 1
High productivity services (₹1,000 per worker)

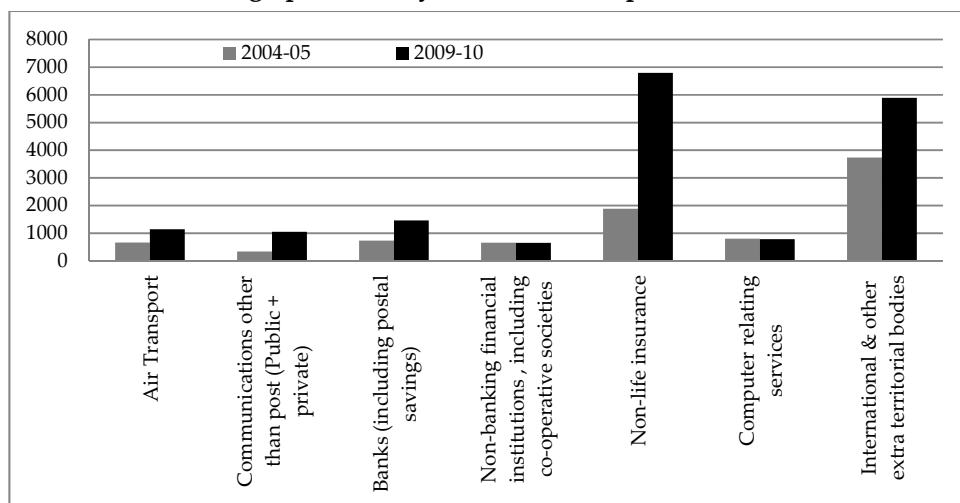


Figure 2
High productivity services Comparison with average productivity in the services sector

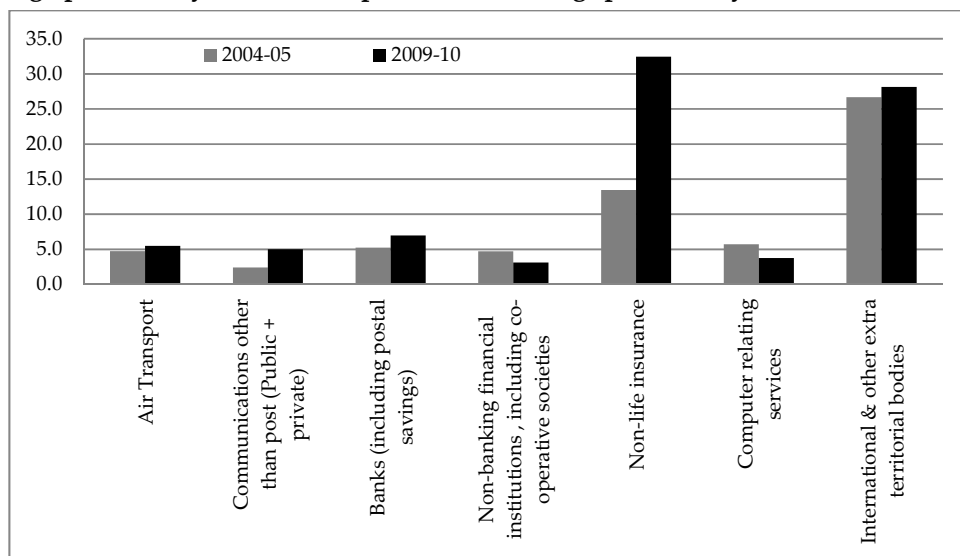
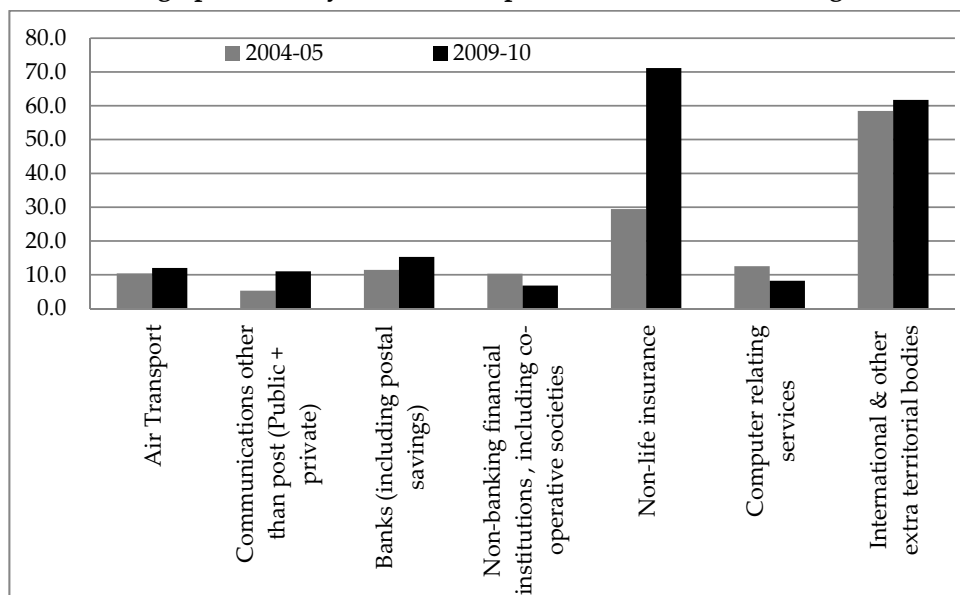


Figure 3
High productivity services Comparison with national average



Low productivity services

Similar to the definition of the high productivity services, low productivity services are defined as having productivity levels that are equal to or less than half the average for the services sector either in 2004-05 or in 2009-10 or in both years. In the year 2009-10, the latest year for which we have made estimations of labour productivity, the service activity with the lowest labour productivity is in Private households with employed person (₹19,600 per worker per year), this is followed by Custom tailoring (₹22,500 per worker per year), Hair dressing and other beauty treatment (27,000 per worker per year), Washing & cleaning of textiles (₹40,400 per worker per year), Public sector Postal services (₹59,700 per worker per year) and Hotel and Restaurants (₹1,05,200 per worker per year) (Figure 4 and Appendix Table 20).

As is evident from the estimates of average productivity and high productivity services provided above, low productivity services are at levels that appear to be the lowest in the economy. In order to examine this, we compare the productivity levels in these low productivity services with productivity levels in Agriculture. Two of these low productivity services, that is, Private households with employed persons and Custom tailoring had productivity levels in 2009-20 that were lower than in agriculture. Further, another low productivity service, Hair dressing and other beauty treatment had productivity levels more or less similar to that of agriculture (Figure 5). The remaining low productivity services had productivity levels marginally higher than in agriculture.

Figure 4
Low productivity services (₹1,000 per worker)

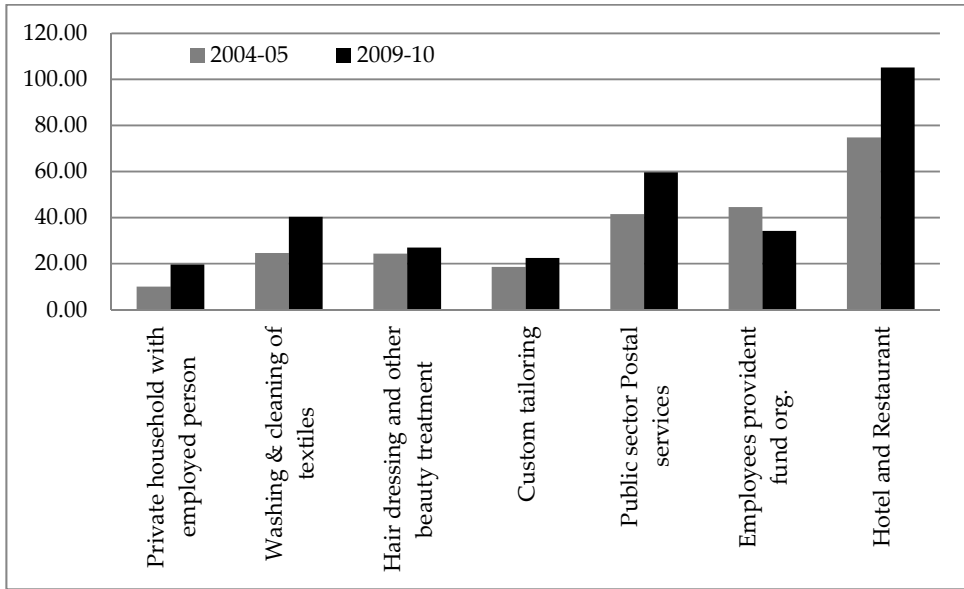
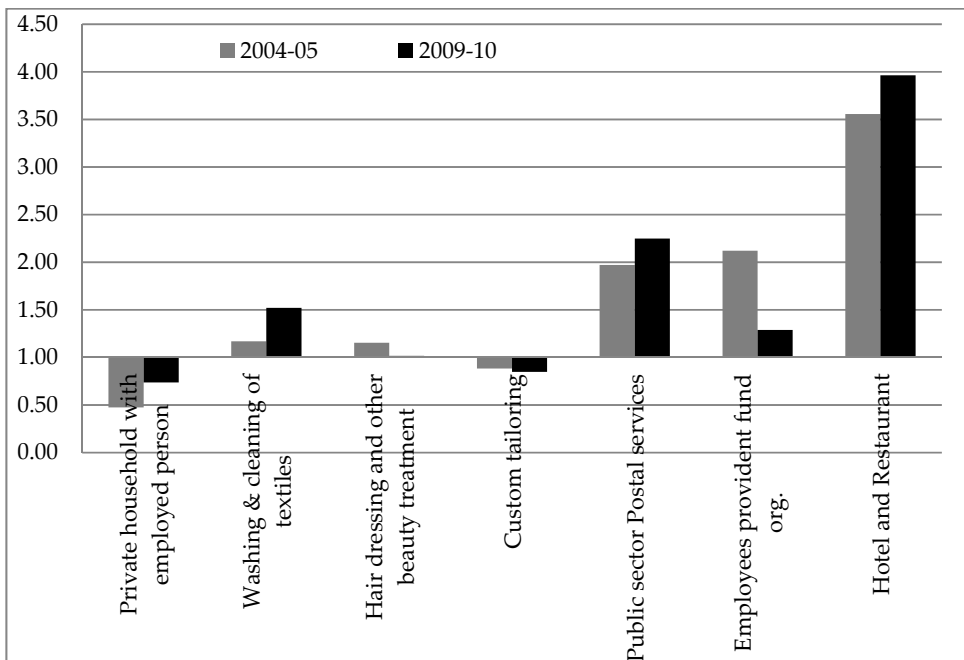


Figure 5
Low productivity services Comparison with agriculture



At this stage, it would also be appropriate to compare the low productivity with average productivity levels in the manufacturing sector. All the low productivity services had levels of labour productivity that were lower than in manufacturing (*Appendix Table 22*). The final point to be noted about low productivity services is that in 2009-10, together these services accounted 2.2 per cent of the national GDP. Their share in national employment was however nearly double at 4.28 per cent. In other words, low productivity services provide for proportionately larger avenues of employment within the services sector relative to high productivity services.

Thus, within the services sector, there is one set of activities that are high productivity and employing relatively smaller number of workers while there is another set of activities with very low levels of productivity employing relatively large number of workers. This mismatch between productivity and employment has long term implications for the policy of poverty and equity in the country.

6. Alternate classification of the services sector: An analysis

In the debate on the growth and prominence of services, some scholars have argued that part of what is called services is actually manufacturing. There could be a blurring of the distinction between manufacturing and services in many instances. First there are services that exhibit features of production, second there are services that directly lead to production, thirdly embedded services are those where final products have components of goods and services and finally repair services also have features that are very similar to that of production.

Services that exhibit some features of production are for example, restaurants and butchers.

In restaurants production of food is undertaken and served to customers. Since it is not possible to separate the activity in the kitchen to that in the dining hall of the restaurant, the entire business of a restaurant is classified as a service. However, on closer examination, not only does a restaurant 'produce' processed food, in case of restaurants that act mainly as takeaways, the semblance with the process of production of food is even larger. Another such activity is that of a butcher. In less developed countries the activity of a butcher would be classified as a service activity. However, as the economy gets more and more complex, slaughter houses are involved, meat processing plants are set up and meat packaging and storing facilities are also set up. The meat is then sold either in super markets or in specialised shops. Thus as the economy gets more and more advanced, the activity of the butcher is sub-divided with one part classified under manufacturing and the other part involving sale of meat as service.

Then there are services that directly lead to production (as intermediate goods) or productive services. For example, computing services, accounting services, legal services

and so on. All these services are directly related to the ensuing production process or in other words, large scale production cannot be undertaken without the use of these services.

Embedded services are those in which the final products have components of both goods and services. For example, in recent years most equipment and machinery are produced to run on some kind of software and at the time of the purchase of such equipment, the software is already installed in it. Another example of embedded services is all kinds of repair and refurbishing of old machinery and motor vehicles that render these 'as good as new' and ready for resale.

Repair and maintenance of equipments and machinery that are using in the process of manufacturing could very well be classified as part of manufacturing. In the National Industrial classification and the system of national accounts adopted in India, all kinds of repair services except for repair and maintenance of motor vehicles are classified under industry/manufacture and not under services.

The blurring between goods and services or a goods services continuum has led to a debate on what constitute services. Some scholars have argued that with regard to some services the strict dichotomy made between services and manufacturing is 'overdrawn' as these services are organised on ways that are similar to manufacturing (Hill 1977; Singh 2006). This has also led scholars to propose alternate schemes of classification of services by their similarity to or distinction from the process of manufacture.

Based on end user or beneficiary of services, services have been classified into two types, *viz.*, Producer services/household services and Intermediate services/Consumer services. This scheme of classification has, however, proved to be not useful as the two categories are not mutually exclusive with large overlap with them. A second classification, based on the method of financing of the services has been attempted, *viz.*, State funded or tax funded services and private services. This classification is also not useful as the tax and state policy both may and do vary from state to state and over time. A third type of classification is based on the marketability of the service. Thus services are classified as marketed services (assumed to be mainly provided by private enterprises), non-marketed services (assumed to be provided by the state). But in the present times where a number of services are provided both by the market and by the state, this classification also does not appear to be useful in providing a better understanding of the services sector.

Based on a combination of end user and ownership (Browning and Singelmann 1977), have proposed a four way classification of services. By this classification, distributive services are those involving transportation, communication, retail and wholesale trade. Producer services include banking, insurance, other financial activities, business services – accounting, computer services, legal services and so on. Social services include health, education, welfare services, and other government services and Personal Services include

domestic and personal services, hotels, restaurants, entertainment. The classification of Browning and Singelmann (1977) places all services into one category or another and these are mutually exclusive. Apart from this services that can be linked to production such as producer services and distributive services are clearly identified. Thus we use this scheme of classification to understand the structure of services sector in India for the most recent period from 2004-05 to 2009-10.

Our estimates show that Distributive services account for the largest share in employment and GDP followed by Social services. The share of both Distributive services and Social services in GDP also more or less corresponds to their share in total employment (*Table 4*). Producer services are as large as Social services in terms of GDP (in 2009-10), but account for relatively smaller share of employment. On the contrary, Personal services that account for the least in terms of GDP share, however, account for substantial share in employment.

In terms of labour productivity, Producer services have the highest productivity which was about 2.92 times the average labour productivity in services for 2009-10. Personal services on the other hand had the lowest labour productivity accounting for less than a third of the average productivity for services. In the Indian services growth story, the dominance of Producer services and Distributive services in the Indian economy is perhaps good news. The low productivity and relatively high employment in Personal services is perhaps bad news.

Table 4
Classification of services based on user and ownership

SNo.	Description of category	GDP (% Share in total)		Employment (% Share in total)		Comparison with average productivity of services sector	
		2004-05	2009-10	2004-05	2009-10	2004-05	2009-10
1	Distributive services	43.3	43.7	53.6	52.0	0.81	0.84
2	Personal services	5.0	4.6	17.2	16.6	0.29	0.28
3	Producer Services	17.4	22.4	6.1	7.7	2.84	2.92
4	Social services	23.9	21.8	22.5	22.6	1.06	0.96
5	Total services	100	100	100	100	1.00	1.00

Note: The categories in this Table are based on Browning and Singelmann (1975)

Source: Author's estimates

7. Summary and conclusion

In this paper, we have attempted to understand the growth and structure of the services sector in India through an analysis of the different sub-sectors within the services sector at a level of disaggregation that has so far not been adequately analysed in the literature.

In the analysis of the service sector GDP and employment at a disaggregate level, we have identified sub-sectors within services that have contributed mainly to GDP growth. We also identify sub-sectors that have contributed mainly to employment growth. We have also attempted to address the issue of quality of employment across different services that employ proportionately large number of workers. The analysis of the services sector in this paper also includes estimates and analysis of the productivity levels in different services.

In the period from 1950 to 2009-10, two important sub sectors, Trade and Public administration appear to remain stable with regard to their contribution to services sector GDP. The share of Trade changed from 25 per cent to about 26 per cent. Similarly the share of Public administration changed from 9 per cent to 10 per cent. A closer look at the interim period of about 60 years indicate that Trade shows a U shaped pattern with regard to its share in total services GDP—its share first declined to about 20 per cent in 1991-92 before increasing to 27 per cent in 2009-10. Similarly, Public administration displays an inverse U shaped pattern with regard to its share in total services GDP. Public administration peaked with a share in services GDP of about 14.7 per cent before declining to 10 per cent in 2009-10.

The services that have notable increases in shares in services GDP through the period from 1950 till 2009-10 are Banks (whose GDP increase from about 1.2 per cent in 1950-51 to 8.3 per cent in 2009-10), Road transport (from 4.5 per cent to 8 per cent), Business services (from 0.8 per cent to 7.4 per cent) and Insurance (0.8 to 2.7 per cent). Of these, the share of Business services increased sharply starting from the mid-1990s.

Services that experienced a secular decline in the share in services GDP in the period from 1950s till 2009-10 are Dwellings (23.8 per cent to 7.6 per cent), Domestic services (8.4 per cent to 1.8 per cent) Recreation and entertainment services (5.4 per cent to 0.8 per cent) and Radio and TV (1.0 to 0.015 per cent). Of these the last three experienced share decline only after 1995-96.

Services that exhibited an inverse U pattern in their change of their shares in GDP are Public administration, Education and Health. Their respective shares in services GDP increased till about the 1980s before beginning to decline. Hotels and restaurants on the other hand showed a U shaped pattern with their share declining till about the late 1980s and then increasing.

Finally, Business services and Private sector communications stand out prominently in terms of high growth in recent years. The first is Business services and the second is Private sector communications. Both these services, however, accounted for negligible shares in the 1950s and 1960s, right up to the 1980s. Their share began to increase only after the 1980s and major increases happened only in the 1990s and after.

Using employment data by NSS employment status categories we have attempted to identify good quality employment—as represented by NSS regular employment and poor quality employment—as represented by casual employment and unpaid helpers. We have estimated the growth and share of good quality employment in this manner at both the 2-digit as well as at the 5 digit levels.

Combining data on GDP and employment, we have estimated labour productivity across different service activities for the years 2004-05 and 2009-10. We have identified high productivity services (having at least 5 times the average services productivity) and low productivity services (having half the average services productivity). The high productivity services are Non-life insurance, Banks, Computer relating services, Air Transport and Communications other than post. Our analysis found that despite their high levels of productivity, these services provide very little employment.

The low productivity services, *viz.*, Private household with employed persons, Washing & cleaning, Hair dressing, Custom tailoring and Hotel and Restaurants. All the low productivity services had levels of labour productivity that were lower than in manufacturing. The final point to be noted about low productivity services is that in 2009-10, together these services accounted 2.2 per cent of the national GDP. Their share in national employment was however nearly double at 4.28 per cent. In other words, low productivity services provide for proportionately larger avenues of employment within the services sector relative to high productivity services.

Thus, within the services sector, there is one set of activities that are high productivity and employing relatively smaller number of workers while there is another set of activities with very low levels of productivity employing relatively large number of workers. This mismatch between productivity and employment has long term implications for the policy of poverty and equity in the country.

The larger picture that emerges from this analysis of services sector for about 60 years seems to indicate that the services sector is likely to continue to grow, at least in the medium term. In other words, this study does not find any reason to believe that the growth of services as seen in the past is not sustainable. However, there is a cause for worry as the quality of employment generated in a number of services that provide employment to the masses is both low productivity and poor quality employment. Future attempts at understanding the functioning of the services sector should focus on raising the productivity levels in these services and on how improve the conditions of employment therein.

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Appendix I

A note on the data

The main data used in this report are data on GDP from the CSO and data on employment from the NSSO. Data on GDP are from the latest series released in 2001. The new series is with the base year 2004-05 and CSO has released data with this new base year from 1950-51 onwards till 2009-10. These data are available at a level of disaggregation that includes about 40 services activities/sub-sectors. In addition, for data from 2004-05 onward there are 4 more additional categories within business services which is also a sub-sector within services that has relatively high growth in recent years.

Data on employment are from the NSSO surveys on employment and unemployment. Currently data from the NSS surveys at a 3 digit level of disaggregation are available from the NSS surveys for 1983, 1987-88, 1993-94, 1999-00, 2004-2005 and 2009-10. Data at the higher level of disaggregation, that is 5-digit level, are available for the years 1999-00, 2004-2005 and 2009-10. The problem with using NSS employment data at disaggregated levels is that the National Industrial Classification (NIC) on which the disaggregation has been based, has itself changed from NIC 1987 for the data from 1983, 1987-88 and 1993-94 to NIC 1998 for data from 1999-2000 and 2004-05 and finally NIC 2004 for data from 2009-10. Thus comparison across all the years listed above becomes difficult both due to differing levels and disaggregation and due to the changes in the national industrial classification. Since the focus of this report is the services sector and we intend to understand recent changes, for a major part of the analysis at the disaggregate level in this report, we use employment data only from 2004-05 and 2009-10. As is the usual case, while estimating actual employment using NSS data, the NSS estimates are adjusted by using Census population figures. In this case, as the population estimates from the Census 2011 were available, adjustment is done accordingly.

Finally, GDP estimates are available at 40 categories. Employment data are available at up to 5 digit level of disaggregation. Combining data on GDP (about 40 sectors) and employment (2- 3- 4- and 5-digit depending on GDP classification) I have attempted to estimate the productivity of different services.

Appendix Tables

Table 1
Growth rate of GDP by service sub-sectors, 1950-51 to 1979-80 (% per annum)

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51 to 1965-66</i>	<i>1965-66 to 1979-80</i>
1	Trade, hotels & restaurants	5.29	4.15
1.1	Trade	5.24	2.33
1.2	Hotel and restaurant	5.25	2.13
2	All transport	5.71	5.37
2.1	Railways	4.93	3.19
2.2	Other transport	6.20	6.37
2.2.1	Road transport	6.06	6.11
2.2.2	Water transport	6.15	4.47
2.2.3	Air transport	9.64	11.99
2.2.4	Service incidental to transport	6.25	22.44
3	Storage	2.59	7.87
4	Communications	7.25	6.08
4.1	Public sector communications	7.25	6.08
5	Banking and insurance	6.85	6.98
5.1	Banking	6.86	6.97
5.1.1	Banks	6.82	6.98
5.1.2	Banking department of RBI	6.82	6.99
5.1.3	Post office saving bank	6.87	6.98
5.1.4	Non-banking financial institutions	6.82	6.97
5.1.5	Co-operative credit societies	6.82	6.99
5.1.6	Employees provident fund org.		6.02
6	Insurance	6.82	6.98
6.1	Life (other than postal life)	6.81	6.99
6.2	Postal life		8.16
6.3	Non-life	6.83	6.99
7	Real estate, dwellings business services	2.45	3.03
7.1	Dwellings	2.34	2.87
7.1.1	Rural	1.87	1.65
7.1.2	Urban	3.11	4.22
7.2	Real estate	3.72	3.74
7.3	Business services	4.19	6.33
7.4	Legal services	0.25	4.73
8	Community services	4.47	4.83
8.1	Education (and research & scientific)	8.04	4.37
8.3	Medical & health	5.21	5.96
8.4	Religious & other community membership organisations	1.16	1.20
9	Recreation & entertainment services	0.37	1.63
10	Radio & TV broadcasting	0.00	3.72

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51 to 1965-66</i>	<i>1965-66 to 1979-80</i>
11	Personal services	2.33	0.58
11.1	Domestic	1.80	0.56
11.2	Laundry, dyeing & dry cleaning	4.18	0.93
11.3	Barber & beauty shops	1.32	0.81
11.4	Tailoring	1.87	0.44
11.5	Other services, n.e.c.	1.05	0.27
12	Sanitary services services/activities n.e.c.	2.28	2.30
13	International & other extra territorial bodies	0.36	5.13
14	Public administration & defence	6.37	5.81
	Total services sector	4.30	4.33

Table 2
Share of sub-sectors in total services sector GDP, 1950-51 to 1979-80 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51</i>	<i>1951-52</i>	<i>1965-66</i>	<i>1966-67</i>	<i>1979-80</i>
1	Trade, hotels & restaurants	26.9	26.9	31.0	30.8	30.3
1.1	Trade	25.0	24.9	28.6	28.4	21.8
1.2	Hotel and restaurant	2.0	2.0	2.2	2.2	1.7
2	All transport	9.2	9.3	11.3	11.3	13.0
2.1	Railways	3.7	3.7	4.1	4.0	3.5
2.2	Other transport	5.5	5.6	7.3	7.3	9.5
2.2.1	Road transport	4.5	4.5	5.8	5.8	7.4
2.2.2	Water transport	0.5	0.5	0.6	0.6	0.6
2.2.3	Air transport	0.1	0.1	0.2	0.2	0.6
2.2.4	Service incidental to transport	0.1	0.1	0.1	0.1	0.8
3	Storage	0.3	0.3	0.2	0.2	0.4
4	Communications	0.5	0.5	0.7	0.7	0.9
4.1	Public sector communications	0.5	0.5	0.7	0.7	0.9
5	Banking and insurance	3.2	3.2	4.5	4.4	6.5
5.1	Banking	2.4	2.4	3.4	3.3	4.8
5.1.1	Banks	1.2	1.2	1.8	1.7	2.5
5.1.2	Banking department of RBI	0.4	0.4	0.5	0.5	0.7
5.1.3	Post office saving bank	0.1	0.1	0.1	0.1	0.1
5.1.4	Non-banking financial institutions	0.2	0.2	0.2	0.2	0.3
5.1.5	Co-operative credit societies	0.5	0.5	0.7	0.7	1.1
5.1.6	Employees provident fund org.	0.0	0.0	0.0	0.0	0.0
6	Insurance	0.8	0.8	1.1	1.1	1.6
6.1	Life (other than postal life)	0.2	0.2	0.3	0.3	0.4
6.2	Postal life	0.0	0.0	0.0	0.0	0.0
6.3	Non-life	0.6	0.6	0.9	0.9	1.3
7	Real estate, dwellings business services	24.1	24.1	18.4	18.3	15.5
7.1	Dwellings	23.8	23.8	17.9	17.8	14.7
7.1.1	Rural	16.6	16.5	11.6	11.5	8.1
7.1.2	Urban	7.9	7.9	6.6	6.7	6.5

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51</i>	<i>1951-52</i>	<i>1965-66</i>	<i>1966-67</i>	<i>1979-80</i>
7.2	Real estate	0.7	0.7	0.6	0.6	0.6
7.3	Business services	0.8	0.8	0.8	0.8	1.0
7.4	Legal services	1.1	1.1	0.6	0.6	0.7
8	Community services	10.7	10.7	10.9	11.3	11.7
8.1	Education (and research & scientific)	4.1	4.4	7.0	7.3	7.0
8.3	Medical & health	1.8	1.9	2.1	2.1	2.6
8.4	Religious & other community membership organisations	4.6	4.6	2.9	2.9	1.9
9	Recreation & entertainment services	5.4	5.3	3.0	2.9	2.1
10	Radio & TV broadcasting	1.0	0.9	0.5	0.5	0.5
11	Personal services	8.4	8.4	6.3	6.2	3.8
11.1	Domestic	1.7	1.7	1.2	1.1	0.7
11.2	Laundry, dyeing & dry cleaning	0.9	0.9	0.9	0.9	0.6
11.3	Barber & beauty shops	2.5	2.4	1.6	1.6	1.0
11.4	Tailoring	1.4	1.4	1.0	1.0	0.6
11.5	Other services, n.e.c.	2.7	2.6	1.7	1.6	0.9
12	Sanitary services services/activities n.e.c.	1.0	1.0	0.7	0.7	0.6
13	International & other extra territorial bodies	0.5	0.5	0.3	0.3	0.3
14	Public administration & defence	9.0	9.0	12.1	12.4	14.7
	Total services sector	100.0	100.0	100.0	100.0	100.0

Table 3
Contribution to GDP growth by service sub-sectors, 1950-51 to 1979-80 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51 to 1965-66</i>	<i>1965-66 to 1979-80</i>
1	Trade, hotels & restaurants	33.1	29.7
1.1	Trade	30.5	15.4
1.2	Hotel and restaurant	2.4	1.1
2	All transport	12.3	14.0
2.1	Railways	4.2	3.0
2.2	Other transport	8.0	10.7
2.2.1	Road transport	6.4	8.2
2.2.2	Water transport	0.7	0.6
2.2.3	Air transport	0.2	0.6
2.2.4	Service incidental to transport	0.1	0.4
3	Storage	0.2	0.4
4	Communications	0.8	1.0
4.1	Public sector communications	0.8	1.0
5	Banking and insurance	5.0	7.3
5.1	Banking	3.8	5.5
5.1.1	Banks	2.0	2.9
5.1.2	Banking department of RBI	0.6	0.8
5.1.3	Post office saving bank	0.1	0.2

<i>SNo.</i>	<i>Description of category</i>	<i>1950-51 to 1965-66</i>	<i>1965-66 to 1979-80</i>
5.1.4	Non-banking financial institutions	0.3	0.4
5.1.5	Co-operative credit societies	0.8	1.2
5.1.6	Employees provident fund org.		0.0
6	Insurance	1.3	1.8
6.1	Life (other than postal life)	0.3	0.5
6.2	Postal life		0.0
6.3	Non-life	1.0	1.4
7	Real estate, dwellings business services	13.7	12.9
7.1	Dwellings	13.0	11.9
7.1.1	Rural	7.2	4.4
7.1.2	Urban	5.7	6.5
7.2	Real estate	0.6	0.5
7.3	Business services	0.8	1.1
7.4	Legal services	0.1	0.7
8	Community services	11.1	12.2
8.1	Education (and research & scientific)	7.7	7.1
8.3	Medical & health	2.2	2.8
8.4	Religious & other community membership organisations	1.3	0.8
9	Recreation & entertainment services	0.5	1.1
10	Radio & TV broadcasting	0.0	0.4
11	Personal services	4.6	0.9
11.1	Domestic	0.7	0.2
11.2	Laundry, dyeing & dry cleaning	0.9	0.2
11.3	Barber & beauty shops	0.8	0.3
11.4	Tailoring	0.6	0.1
11.5	Other services, n.e.c.	0.7	0.1
12	Sanitary services services/activities n.e.c.	0.5	0.4
13	International & other extra territorial bodies	0.0	0.3
14	Public administration & defence	13.3	16.2
	Total services sector	100	100

Table 4
Growth rate of GDP by service sector sub-sectors, 1979-80 to 2009-10 (% per annum)

<i>SNo.</i>	<i>Description of category</i>	<i>1979-80 to 1995-96</i>	<i>1995-96 to 2004-05</i>	<i>2004-05 to 2009-10</i>
1	Trade, hotels & restaurants	6.4	7.8	9.1
1.1	Trade	6.4	10.7	9.1
1.2	Hotel and restaurant	7.0	12.8	8.5
2	All transport	6.3	7.6	8.0
2.1	Railways	3.7	5.1	9.1
2.1.1	Passenger related	4.0	6.1	11.5
2.1.2	Goods transport related	3.9	4.4	7.9
2.2	Other transport	7.1	8.1	7.8
2.2.1	Road transport	7.3	8.6	7.7
2.2.2	Water transport	4.6	6.1	7.8
2.2.3	Air transport	5.5	4.1	14.8
2.2.4	Service incidental to transport	8.3	6.3	5.5
3	Storage	2.8	2.1	8.0
4	Communications	8.1	20.7	26.7
4.1	Public sector communications	7.3	17.0	16.4
4.1.1	Public sector postal services	0.5	-3.4	-1.6
4.1.2	Telephones	9.2	20.8	17.3
4.2	Private sector communications		36.4	41.1
5	Banking and insurance	9.5	8.5	15.6
5.1	Banking	10.6	7.8	15.2
5.1.1	Banks	8.8	13.0	20.1
5.1.2	Banking department of	8.4	-190.5	-183.4
5.1.3	Post office saving bank	2.6	7.6	2.7
5.1.4	Non-banking financial institutions	22.8	4.7	3.8
5.1.5	Co-operative credit societies	6.7	5.7	3.3
5.1.6	Employees provident fund org.	6.1	7.9	13.0
6	Insurance	5.0	12.5	17.5
6.1	Life (other than postal life)	8.7	16.0	19.4
6.2	Postal life	10.6	7.0	7.0
6.3	Non-life	2.9	8.6	14.7
7	Real estate, dwellings business services	7.4	7.0	9.4
7.1	Dwellings	7.1	2.6	3.6
7.1.1	Rural	7.7	1.9	5.3
7.1.2	Urban	6.7	3.1	1.2
7.2	Real estate	3.8	5.0	26.0
7.3	Business services	10.7	21.3	17.2
7.4	Legal services	7.9	3.7	7.9
8	Community services	6.0	8.5	7.9
8.1	Education (and research & scientific)	6.4	8.6	8.6
8.1.1	Education			7.4
8.1.2	Research & scientific			18.4

<i>SNo.</i>	<i>Description of category</i>	<i>1979-80 to 1995-96</i>	<i>1995-96 to 2004-05</i>	<i>2004-05 to 2009-10</i>
8.3	Medical & health	7.1	9.9	4.4
8.4	Religious & other community membership organisations	3.1	4.1	14.2
9	Recreation & entertainment services	3.0	3.0	8.9
10	Radio & TV broadcasting	6.0	-15.9	-1.5
11	Personal services	3.8	6.4	5.7
11.1	Domestic	1.0	7.3	9.6
11.2	Laundry, dyeing & dry cleaning	3.9	6.0	3.8
11.3	Barber & beauty shops	0.6	6.1	3.9
11.4	Tailoring	5.2	6.8	12.9
11.5	Other services, n.e.c.	6.6	6.3	1.1
12	Sanitary services services/activities n.e.c.	5.0	3.4	7.8
13	International & other extra territorial bodies	-0.8	4.9	4.9
14	Public administration & defence	5.4	6.3	9.2
	Total services sector	6.5	7.7	10.3

Table 5
Share of sub-sectors in total services sector GDP, 1979-80 to 2009-10 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1980-81</i>	<i>1991-92</i>	<i>1995-96</i>	<i>1999-00</i>	<i>2004-05</i>	<i>2009-10</i>
1	Trade, hotels & restaurants	30.7	27.5	29.9	28.9	30.2	28.5
1.1	Trade	22.2	19.8	21.5	20.5	27.5	26.0
1.2	Hotel and restaurant	1.7	1.6	1.8	2.0	2.7	2.5
2	All transport	13.4	12.8	12.7	11.6	12.6	11.3
2.1	Railways	3.4	2.9	2.3	1.9	1.8	1.7
2.1.1	Passenger related	0.9	0.7	0.6	0.6	0.5	0.6
2.1.2	Goods transport related	2.3	2.0	1.6	1.3	1.2	1.1
2.2	Other transport	10.0	9.9	10.4	9.7	10.8	9.6
2.2.1	Road transport	7.9	8.0	8.4	8.0	9.1	8.1
2.2.2	Water transport	0.6	0.4	0.5	0.4	0.4	0.4
2.2.3	Air transport	0.6	0.5	0.5	0.3	0.4	0.4
2.2.4	Service incidental to transport	0.7	1.0	1.0	1.0	0.9	0.7
3	Storage	0.3	0.2	0.2	0.1	0.1	0.1
4	Communications	0.9	0.9	1.1	1.6	3.1	6.2
4.1	Public sector communications	0.9	0.8	1.0	1.4	2.1	2.7
4.1.1	Public sector postal services	0.9	0.5	0.3	0.3	0.1	0.1
4.1.2	Telephones	0.5	0.5	0.7	1.0	1.9	2.6
4.2	Private sector communications	0.0	0.1	0.1	0.2	1.0	3.5
5	Banking and insurance	6.2	9.9	10.1	11.6	10.8	13.7
5.1	Banking	4.7	7.8	8.8	10.2	8.9	11.1
5.1.1	Banks	2.4	3.6	3.6	3.9	5.5	8.3
5.1.2	Banking department of	0.7	1.0	1.0	1.0	-0.2	0.0
5.1.3	Post office saving bank	0.1	0.1	0.1	0.1	0.1	0.1

<i>SNo.</i>	<i>Description of category</i>	<i>1980-81</i>	<i>1991-92</i>	<i>1995-96</i>	<i>1999-00</i>	<i>2004-05</i>	<i>2009-10</i>
5.1.4	Non-banking financial institutions	0.3	2.2	3.4	4.1	2.6	1.9
5.1.5	Co-operative credit societies	1.0	1.0	1.1	1.1	0.9	0.7
5.1.6	Employees provident fund org.	0.0	0.0	0.0	0.0	0.0	0.0
6	Insurance	1.6	2.1	1.3	1.4	1.9	2.7
6.1	Life (other than postal life)	0.4	0.5	0.6	0.7	1.1	1.7
6.2	Postal life	0.0	0.0	0.0	0.0	0.0	0.0
6.3	Non-life	1.2	1.6	0.7	0.7	0.8	1.0
7	Real estate, dwellings business services	15.3	18.3	17.8	17.3	16.9	16.2
7.1	Dwellings	14.6	17.3	16.2	13.0	10.5	7.6
7.1.1	Rural	8.2	10.5	9.7	7.5	5.9	4.7
7.1.2	Urban	6.4	7.1	6.8	5.6	4.6	3.0
7.2	Real estate	0.6	0.4	0.4	0.3	0.3	0.6
7.3	Business services	1.0	1.5	1.9	3.2	5.5	7.4
7.4	Legal services	0.7	0.8	0.8	0.7	0.6	0.5
8	Community services	11.6	11.3	10.9	11.7	11.7	10.4
8.1	Education (and research & scientific)	6.9	7.1	6.9	7.7	7.4	6.9
8.1.1	Education	0.0	0.0	0.0	0.0	0.0	5.9
8.1.2	Research & scientific	0.0	0.0	0.0	0.0	0.0	1.0
8.3	Medical & health	2.6	2.8	2.8	3.0	3.4	2.6
8.4	Religious & other community membership organisations	1.9	1.3	1.1	1.0	0.8	1.0
9	Recreation & entertainment services	2.1	1.4	1.2	1.0	0.8	0.8
10	Radio & TV broadcasting	0.4	0.4	0.4	0.1	0.0	0.0
11	Personal services	3.7	2.5	2.5	2.2	2.3	1.8
11.1	Domestic	0.7	0.3	0.3	0.3	0.3	0.3
11.2	Laundry, dyeing & dry cleaning	0.5	0.5	0.4	0.3	0.3	0.2
11.3	Barber & beauty shops	1.0	0.5	0.4	0.3	0.3	0.3
11.4	Tailoring	0.5	0.5	0.5	0.4	0.4	0.5
11.5	Other services, n.e.c.	0.9	0.7	1.0	0.9	0.9	0.6
12	Sanitary services services/activities n.e.c.	0.5	0.5	0.4	0.4	0.3	0.3
13	International & other extra territorial bodies	0.3	0.2	0.1	0.1	0.1	0.1
14	Public administration & defence	14.5	14.1	12.4	13.3	11.1	10.5
	Total services sector	100.0	100.0	100.0	100.0	100.0	100.0

Table 6
Contribution to GDP growth by service sub-sectors, 1979-80 to 2009-10 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>1979-80 to 1995-96</i>	<i>1995-96 to 2004-05</i>	<i>2004-05 to 2009-10</i>
1	Trade, hotels & restaurants	29.9	30.4	26.5
1.1	Trade	21.5	29.8	24.3
1.2	Hotel and restaurant	1.8	3.0	2.3
2	All transport	12.7	12.6	9.8
2.1	Railways	2.0	1.5	1.6
2.1.1	Passenger related	0.6	0.5	0.6
2.1.2	Goods transport related	1.4	0.9	0.9
2.2	Other transport	10.4	11.0	8.1
2.2.1	Road transport	8.4	9.4	6.8
2.2.2	Water transport	0.4	0.4	0.3
2.2.3	Air transport	0.5	0.3	0.5
2.2.4	Service incidental to transport	1.0	0.8	0.5
3	Storage	0.2	0.1	0.1
4	Communications	1.1	3.0	8.1
4.1	Public sector communications	1.0	2.2	3.3
4.1.1	Public sector postal services	0.1	-0.1	0.0
4.1.2	Telephones	0.7	1.9	3.3
4.2	Private sector communications	0.0	0.6	4.1
5	Banking and insurance	9.5	11.2	16.4
5.1	Banking	7.9	8.9	13.1
5.1.1	Banks	3.4	6.0	10.6
5.1.2	Banking department of	0.9	-23.7	3.5
5.1.3	Post office saving bank	0.1	0.1	0.0
5.1.4	Non-banking financial institutions	1.2	2.1	1.0
5.1.5	Co-operative credit societies	1.1	0.8	0.3
5.1.6	Employees provident fund org.	0.0	0.0	0.0
6	Insurance	1.3	2.1	3.3
6.1	Life (other than postal life)	0.6	1.2	2.1
6.2	Postal life	0.0	0.0	0.0
6.3	Non-life	0.6	0.8	1.1
7	Real estate, dwellings business services	17.7	16.3	15.4
7.1	Dwellings	16.2	5.4	3.6
7.1.1	Rural	9.6	2.4	3.0
7.1.2	Urban	6.8	2.7	0.5
7.2	Real estate	0.3	0.2	0.8
7.3	Business services	1.7	5.2	9.2
7.4	Legal services	0.8	0.4	0.4

<i>SNo.</i>	<i>Description of category</i>	<i>1979-80 to 1995-96</i>	<i>1995-96 to 2004-05</i>	<i>2004-05 to 2009-10</i>
8	Community services	10.9	12.0	8.9
8.1	Education (and research & scientific)	6.9	7.7	6.2
8.1.1	Education			4.8
8.1.2	Research & scientific			1.2
8.3	Medical & health	2.8	3.6	1.4
8.4	Religious & other community membership organisations	0.9	0.6	1.2
9	Recreation & entertainment services	1.0	0.5	0.7
10	Radio & TV broadcasting	0.4	-0.9	0.0
11	Personal services	2.2	2.1	1.2
11.1	Domestic	0.1	0.3	0.3
11.2	Laundry, dyeing & dry cleaning	0.3	0.3	0.1
11.3	Barber & beauty shops	0.1	0.3	0.1
11.4	Tailoring	0.5	0.4	0.5
11.5	Other services, n.e.c.	1.0	0.8	0.1
12	Sanitary services services/activities n.e.c.	0.4	0.2	0.2
13	International & other extra territorial bodies	0.0	0.1	0.0
14	Public administration & defence	12.2	10.2	9.8
	Total services sector	100	100	100

Table 7a

Share of real estate and business services in total services sector GDP, 2004-05, 2009-10 (%)

<i>SNo.</i>	<i>Description of category</i>	<i>2004-05</i>	<i>2009-10</i>
7	Real estate, dwellings business services	16.9	16.2
7.1	Dwellings	10.5	7.6
7.1.1	Rural	5.9	4.7
7.1.2	Urban	4.6	3.0
7.2	Real estate	0.3	0.6
7.3	Business services	5.5	7.4
7.3.1	Renting of machinery	0.1	0.2
7.3.2	Computer relating services	4.1	5.6
7.3.3	Accounting	0.3	0.2
7.3.4	Research development	1.0	1.5
7.4	Legal services	0.6	0.5
	Total services sector	100.0	100.0

Table 7b
Growth rate of GDP in real estate and business, 2004-05, 2009-10 (% per annum)

<i>SNo.</i>	<i>Description of category</i>		<i>2004-05 to 2009-10</i>
7	Real estate, dwellings business services		9.45
7.1	Dwellings		3.57
7.1.1	Rural		5.25
7.1.2	Urban		1.23
7.2	Real estate		25.98
7.3	Business services		17.24
7.3.1	Renting of machinery		16.83
7.3.2	Computer relating services		17.34
7.3.3	Accounting		6.33
7.3.4	Research development		19.04
7.4	Legal services		7.93
	Total services sector		10.33

Table 7c
Contribution to GDP growth by service sub-sectors, 2004-05 and 2009-10 (%)

<i>SNo.</i>	<i>Description of category</i>		<i>2004-05 to 2009-10</i>
7	Real estate, dwellings business services		15.4
7.1	Dwellings		3.6
7.1.1	Rural		3.0
7.1.2	Urban		0.5
7.2	Real estate		0.8
7.3	Business services		9.2
7.3.1	Renting of machinery		0.2
7.3.2	Computer relating services		6.9
7.3.3	Accounting		0.2
7.3.4	Research development		1.9
7.4	Legal services		0.4
	Total services sector		100

Table 8

Growth rate of employment, by employment status, 2004-05 to 2009-10 (% per annum)

<i>NIC Code</i>	<i>Description of services</i>	<i>Own account workers</i>	<i>Regular wage workers</i>	<i>Casual workers and helpers</i>	<i>Total</i>
50	Sale, maintenance and repair of motor vehicles; retail sale of automotive fuel	0.45	3.09	-3.47	0.02
51	Wholesale trade and commission trade, except of motor vehicles	1.15	2.25	1.98	1.21
52	Retail trade, except of motor vehicles; repair of personal and household goods	2.03	0.04	1.54	1.41
55	Hotels and restaurants	1.19	1.95	3.89	1.38
60	Land transport (road, rail, pipelines)	2.45	1.89	5.62	2.65
61	Water transport	-12.21	12.66	-7.46	5.68
62	Air transport		4.45	-18.00	3.68
63	Supporting and auxiliary transport activities; travel agencies	11.85	16.79	15.22	14.42
64	Post and telecommunications	-8.37	3.01	-9.24	-0.53
65	Financial intermediation, except insurance and pension funding	-1.99	5.23	11.14	4.46
66	Insurance and pension funding, except compulsory social security	8.21	9.92	26.16	9.20
67	Activities auxiliary to financial intermediation	20.62	8.77	-20.96	13.01
70	Real estate activities	12.72	-2.51	92.53	9.38
71	Renting of machinery and equipment, household goods without operator	-0.18	2.26	-1.91	-0.62
72	Computer and related activities	5.25	20.82	10.21	17.80
73	Research and development		-11.82		-10.74
74	Other business activities	3.01	4.09	-2.73	2.37
75	Public administration and defence; compulsory social security		3.01	10.33	2.96
80	Education	-5.00	2.63	12.41	1.56
85	Health and social work	-2.73	1.58	3.74	0.47
90	Sewage and refuse disposal, sanitation and similar activities	-7.96	16.92	6.85	6.76
91	Activities of membership organisations n.e.c.	2.64	-5.66	12.52	-0.62
92	Recreational, cultural and sporting activities	-1.62	-3.43	0.93	-2.42
93	Other service activities	0.61	29.98	12.72	2.01
95	Activities of private households as employers of domestic staff		-5.13	-2.07	-4.19
99	Extra territorial organizations and bodies		-43.81		-44.27
	All services	1.60	2.63	3.73	1.84

Table 9
Share of different two digit services industries in total services sector

<i>NIC 2 code</i>	<i>Description of services</i>	<i>2004-05</i>	<i>2009-10</i>
50	Sale , maintenance and repair of motor vehicles; retail sale of automotive fuel	2.34	2.14
51	Wholesale trade and commission trade, except of motor vehicles	4.72	4.57
52	Retail trade, except of motor vehicles; repair of personal and household goods	31.37	30.70
55	Hotels and restaurants	5.39	5.27
60	Land transport (road, rail, pipelines)	14.05	14.62
61	Water transport	0.08	0.10
62	Air transport	0.07	0.07
63	Supporting and auxilliary transport activities; travel agencies	0.46	0.82
64	Post and telecommunications	1.74	1.55
65	Financial intermediation, except insurance and pension funding	1.95	2.21
66	Insurance and pension funding, except compulsory social security	0.52	0.74
67	Activities auxiliary to financial intermediation	0.20	0.33
70	Real estate activities	0.42	0.60
71	Renting of machinery and equipment, household goods without operator	0.48	0.42
72	Computer and related activities	0.75	1.55
73	Research and development	0.03	0.01
74	Other business activities	2.29	2.35
75	Public administration and defence; compulsory social security	7.70	8.13
80	Education	10.32	10.18
85	Health and social work	3.31	3.09
90	Sewage and refuse disposal, sanitation and similar activities	0.37	0.47
91	Activities of membership organisations n.e.c.	1.18	1.04
92	Recreational, cultural and sporting activities	0.94	0.76
93	Other service activities	5.10	5.14
95	Activities of private households as employers of domestic staff	4.22	3.11
99	Extra territorial organizations and bodies	0.00	0.00
	Total	100	100

Table 10
Share of service sector workers by employment status, 2004-05 (%)

<i>NIC Code</i>	<i>Description of services</i>	<i>Own account workers</i>	<i>Employers</i>	<i>Regular wage workers</i>	<i>Casual workers and helpers</i>	<i>Total</i>
50	Sale , maintenance and repair of motor vehicles; retail sale of automotive fuel	30.5	6.6	40.2	22.7	100.0
51	Wholesale trade and commission trade, except of motor vehicles	44.6	4.7	22.7	28.0	100.0
52	Retail trade, except of motor vehicles; repair of personal and household goods	62.7	1.6	14.0	21.7	100.0
55	Hotels and restaurants	37.1	2.7	26.0	34.2	100.0
60	Land transport (road, rail, pipelines)	43.0	1.0	36.1	19.8	100.0
61	Water transport	23.6	1.0	58.4	17.0	100.0
62	Air transport	0.0	0.0	94.8	5.2	100.0
63	Supporting and auxilliary transport activities; travel agencies	14.8	5.5	53.6	26.1	100.0
64	Post and telecommunications	22.5	2.8	66.9	7.9	100.0
65	Financial intermediation, except insurance and pension funding	12.9	0.4	84.6	2.1	100.0
66	Insurance and pension funding, except compulsory social security	52.5	0.0	45.3	2.2	100.0
67	Activities auxiliary to financial intermediation	41.7	5.1	49.5	3.7	100.0
70	Real estate activities	59.0	4.7	33.5	2.9	100.0
71	Renting of machinery and equipment, household goods without operator	48.3	4.8	13.7	33.2	100.0
72	Computer and related activities	14.5	2.4	79.3	3.7	100.0
73	Research and development	0.0	0.0	93.8	6.2	100.0
74	Other business activities	44.3	6.4	39.7	9.6	100.0
75	Public administration and defence; compulsory social security	0.4	0.0	97.7	1.8	100.0
80	Education	14.6	0.4	83.3	1.8	100.0
85	Health and social work	25.3	2.0	67.8	4.9	100.0
90	Sewage and refuse disposal, sanitation and similar activities	31.8	0.0	38.1	30.1	100.0
91	Activities of membership organisations n.e.c.	48.4	0.0	42.2	9.4	100.0
92	Recreational, cultural and sporting activities	38.7	2.4	38.6	20.4	100.0
93	Other service activities	59.1	0.8	3.7	36.4	100.0
95	Activities of private households as employers of domestic staff	0.0	0.0	70.6	29.4	100.0
99	Extra territorial organizations and bodies	0.0	0.0	95.9	4.1	100.0
	Total	39.7	1.6	40.6	18.0	100.0

Table 11
Share of service sector workers by employment status, 2009-10 (%)

<i>NIC Code</i>	<i>Description of services</i>	<i>Own account workers</i>	<i>Employers</i>	<i>Regular wage workers</i>	<i>Casual workers and helpers</i>	<i>Total</i>
50	Sale , maintenance and repair of motor vehicles; retail sale of automotive fuel	31.1	3.6	46.8	18.5	100.0
51	Wholesale trade and commission trade, except of motor vehicles	44.5	2.8	23.9	28.9	100.0
52	Retail trade, except of motor vehicles; repair of personal and household goods	64.6	1.9	13.1	20.4	100.0
55	Hotels and restaurants	36.8	2.7	26.7	33.8	100.0
60	Land transport (road, rail, pipelines)	42.6	0.4	34.8	22.2	100.0
61	Water transport	9.3	2.0	80.4	8.2	100.0
62	Air transport	0.0	0.0	98.4	1.6	100.0
63	Supporting and auxiliary transport activities; travel agencies	13.2	2.6	59.3	24.8	100.0
64	Post and telecommunications	14.9	2.1	79.7	3.3	100.0
65	Financial intermediation, except insurance and pension funding	9.4	0.4	87.7	2.5	100.0
66	Insurance and pension funding, except compulsory social security	50.2	0.4	46.8	2.6	100.0
67	Activities auxiliary to financial intermediation	57.7	1.0	40.9	0.4	100.0
70	Real estate activities	68.6	3.6	18.8	8.9	100.0
71	Renting of machinery and equipment, household goods without operator	49.4	6.5	15.8	28.3	100.0
72	Computer and related activities	8.3	0.8	90.0	0.9	100.0
73	Research and development	11.7	0.0	88.3	0.0	100.0
74	Other business activities	45.6	4.5	43.2	6.6	100.0
75	Public administration and defence; compulsory social security	0.0	0.0	97.9	2.1	100.0
80	Education	10.4	0.3	87.8	1.5	100.0
85	Health and social work	21.5	2.0	71.7	4.8	100.0
90	Sewage and refuse disposal, sanitation and similar activities	15.2	0.0	60.0	24.8	100.0
91	Activities of membership organisations n.e.c.	56.9	0.1	32.5	10.5	100.0
92	Recreational, cultural and sporting activities	40.3	9.8	36.6	17.9	100.0
93	Other service activities	55.2	0.5	12.5	32.8	100.0
95	Activities of private households as employers of domestic staff	0.0	0.0	67.3	38.9	100.0
99	Extra territorial organizations and bodies	0.0	0.0	100.0	0.0	100.0
	Total	39.2	1.4	42.2	17.4	100.0

Table 12
Contribution to growth in employment, by employment status, 2004-05 to 2009-10 (%)

<i>NIC Code</i>	<i>Description of services</i>	<i>Own account</i>	<i>Regular - wage</i>	<i>Casual workers and helpers</i>	<i>Total</i>
50	Sale, maintenance and repair of motor vehicles; retail sale of automotive fuel	0.5	2.7	-4.5	0.03
51	Wholesale trade and commission trade, except of motor vehicles	3.8	2.3	4.5	3.09
52	Retail trade, except of motor vehicles; repair of personal and household goods	62.9	0.2	5.3	23.95
55	Hotels and restaurants	3.8	2.6	9.0	4.03
60	Land transport (road, rail, pipelines)	23.4	9.0	48.6	20.23
61	Water transport	-0.4	0.6	-0.3	0.26
62	Air transport		0.3	-0.2	0.14
63	Supporting and auxiliary transport activities; travel agencies	1.3	3.8	5.7	3.57
64	Post and telecommunications	-5.2	3.3	-1.8	-0.50
65	Financial intermediation, except insurance and pension funding	-0.8	8.0	1.0	4.71
66	Insurance and pension funding, except compulsory social security	3.5	2.2	0.6	2.59
67	Activities auxiliary to financial intermediation	2.7	0.8	-0.2	1.40
70	Real estate activities	5.0	-0.3	0.2	2.15
71	Renting of machinery and equipment, household goods without operator	-0.1	0.1	-0.6	-0.16
72	Computer and related activities	0.9	11.6	0.2	7.25
73	Research and development		-0.3		-0.16
74	Other business activities	4.8	3.5	-0.9	2.94
75	Public administration and defence; compulsory social security		21.2	4.2	12.35
80	Education	-11.9	21.2	3.1	8.75
85	Health and social work	-3.6	3.3	1.1	0.84
90	Sewage and refuse disposal, sanitation and similar activities	-1.5	2.3	1.8	1.37
91	Activities of membership organisations n.e.c.	2.4	-2.6	1.4	-0.39
92	Recreational, cultural and sporting activities	-0.9	-1.2	0.2	-1.23
93	Other service activities	2.9	5.3	18.8	5.56
95	Activities of private households as employers of domestic staff		-14.3	-9.0	-9.59
99	Extra territorial organizations and bodies		-0.1		-0.08
	All services	100	100	100	100

Table 13
Growth rate of employment in important 5 digit services, 2004-05 to 2009-10, (% per annum)

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Own account</i>	<i>Unpaid family labour</i>	<i>Regular wage</i>	<i>Casual total</i>	<i>Total</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	-0.20	-6.16	-9.07	-18.05	-2.84
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	4.13	2.31	-0.98	4.67	3.26
52202	Retail sale of fresh fruits and vegetables	2.90	3.66	2.33	0.02	2.88
52203	Retail sale of meat, fish and poultry	1.68	-12.32	2.11	15.75	0.01
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	3.02	3.77	-18.36	1.79	2.65
52321	Retail sale of textiles	1.93	-4.58	-3.09	-5.72	-1.35
52322	Retail sale of readymade garments, including hosiery goods	6.24	9.89	14.13	-11.65	9.05
55202	Restaurants without bars	9.27	6.92	0.51	0.06	4.94
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	4.08	14.32	6.35	6.79	5.30
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	2.00	-24.52	9.96	38.13	3.19
60231	Freight transport by motor vehicles	8.48	1.51	2.49	5.60	4.27
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	-3.98	-7.46	-4.90	2.99	-3.22
65191	Monetary intermediation of commercial banks	-5.28		3.99	24.23	4.09
75112	General public service activities of the state governments			2.66	7.75	2.63
80101	Primary education	0.68	-5.95	2.83	5.18	2.74
80211	Secondary education	-16.24	-47.65	-0.13	-5.32	-0.56
85110	Hospital activities	2.95	18.49	-0.16	-4.98	-0.05
93010	Washing and (dry-) cleaning (including collection and delivery)	-3.63	-9.07	-11.14	-3.44	-6.05
93020	Hair dressing and other beauty treatment	1.92	-2.38	13.44	7.96	1.77
95001	Housemaid/servant			-2.17	6.39	-0.05
	Total for services sector	1.60	-1.41	2.63	3.55	1.84

Table 14**Share of important 5 digit services in total services sector employment, 2004-05 (%)**

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Own account</i>	<i>Employer</i>	<i>Regular wage</i>	<i>Casual labour Helpers</i>	<i>Total</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	2.87	0.84	0.59	3.29	1.98
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	10.74	4.20	1.79	10.50	6.95
52202	Retail sale of fresh fruits and vegetables	7.17	1.01	0.22	4.20	3.71
52203	Retail sale of meat, fish and poultry	1.89	0.70	0.10	1.29	1.04
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	3.01	0.20	0.13	1.32	1.49
52321	Retail sale of textiles	1.82	4.28	1.52	2.01	1.77
52322	Retail sale of readymade garments, including hosiery goods	1.47	1.97	0.62	0.99	1.05
55202	Restaurants without bars	1.84	5.04	1.55	4.86	2.32
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	5.79	2.26	3.33	3.36	4.29
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	4.24	0.07	0.14	0.44	1.82
60231	Freight transport by motor vehicles	1.57	5.74	4.30	8.58	4.01
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	3.44	0.01	0.14	1.78	1.74
65191	Monetary intermediation of commercial banks	0.08		2.54	0.08	1.08
75112	General public service activities of the state governments	0.03	0.06	7.76	0.15	3.19
80101	Primary education	0.39	0.82	11.12	0.38	4.76
80211	Secondary education	0.13	0.76	6.43	0.23	2.72
85110	Hospital activities	0.12	0.60	3.23	0.32	1.43
93010	Washing and (dry-) cleaning (including collection and delivery)	2.36	0.37	0.10	5.29	1.94
93020	Hair dressing and other beauty treatment	3.67	1.76	0.25	2.93	2.11
95001	Housemaid/servant			4.57	2.85	2.37
	Other sub sectors	47.38	69.31	49.58	45.17	48.24
	Total for services sector	100.00	100.00	100.00	100.00	100.00

Note: The above 5 digit services account for at least one per cent of total services sector employment and together account for about 52 per cent of total services sector employment.

Table 15**Share of important 5 digit services in total services sector employment, 2009-10 (%)**

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Own account</i>	<i>Employer</i>	<i>Regular wage</i>	<i>Casual labour Helpers</i>	<i>Total</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	2.62	2.21	0.32	2.17	1.57
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	12.14	6.97	1.50	11.41	7.45
52202	Retail sale of fresh fruits and vegetables	7.64	0.30	0.22	4.72	3.90
52203	Retail sale of meat, fish and poultry	1.90	0.24	0.10		0.95
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	3.22	0.42	0.04	1.52	1.55
52321	Retail sale of textiles	1.85	3.22	1.14	1.51	1.51
52322	Retail sale of readymade garments, including hosiery goods	1.84	5.69	1.05	1.33	1.47
55202	Restaurants without bars	2.65	5.22	1.40	5.79	2.70
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	6.53	1.91	3.98	4.69	5.07
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	4.32		0.19	0.96	1.94
60231	Freight transport by motor vehicles	2.18	1.52	4.27	10.71	4.51
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	2.59	0.03	0.10	1.71	1.35
65191	Monetary intermediation of commercial banks	0.05		2.71	0.20	1.20
75112	General public service activities of the state governments			7.78	0.20	3.32
80101	Primary education	0.38	0.80	11.23	0.40	4.97
80211	Secondary education	0.05	0.62	5.61	0.08	2.41
85110	Hospital activities	0.13	0.04	2.82	0.35	1.30
93010	Washing and (dry-) cleaning (including collection and delivery)	1.81	1.03	0.05	3.20	1.29
93020	Hair dressing and other beauty treatment	3.73	0.53	0.41	2.72	2.10
95001	Housemaid/servant			3.59	3.72	2.16
	Other sub sectors	44.36	69.26	51.51	42.60	47.28
	Total for services sector	100.00	100.00	100.00	100.00	100.00

Table 16
Share of workers by employment status in important 5 digit services, 2004-05 (%)

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Own account</i>	<i>Employer</i>	<i>Regular wage</i>	<i>Casual labour the Helpers</i>	<i>Total</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	57.4	0.7	12.0	29.9	100.0
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	61.3	1.0	10.5	27.2	100.0
52202	Retail sale of fresh fruits and vegetables	76.7	0.4	2.4	20.4	100.0
52203	Retail sale of meat, fish and poultry	72.4	1.1	4.0	22.5	100.0
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	80.1	0.2	3.6	16.0	100.0
52321	Retail sale of textiles	40.8	4.0	34.8	20.4	100.0
52322	Retail sale of readymade garments, including hosiery goods	55.8	3.1	24.0	17.1	100.0
55202	Restaurants without bars	31.5	3.6	27.1	37.8	100.0
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	53.5	0.9	31.5	14.1	100.0
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	92.6	0.1	3.0	4.3	100.0
60231	Freight transport by motor vehicles	15.5	2.4	43.6	38.6	100.0
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	78.3	0.0	3.3	18.4	100.0
65191	Monetary intermediation of commercial banks	2.9		95.8	1.3	100.0
75112	General public service activities of the state governments	0.3	0.0	98.8	0.8	100.0
80101	Primary education	3.3	0.3	95.0	1.4	100.0
80211	Secondary education	1.9	0.5	96.1	1.5	100.0
85110	Hospital activities	3.3	0.7	92.0	4.0	100.0
93010	Washing and (dry-) cleaning (including collection and delivery)	48.4	0.3	2.0	49.3	100.0
93020	Hair dressing and other beauty treatment	68.9	1.4	4.7	25.0	100.0
95001	Housemaid/servant			78.3	21.7	100.0
	Total for services sector	39.7	1.6	40.6	18.0	100.0

Table 17
Share of workers by employment status in important 5 digit services, 2009-10 (%)

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Own account</i>	<i>Employer</i>	<i>Regular wage</i>	<i>Casual labour the Helpers</i>	<i>Total</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	65.6	2.0	8.6	23.7	100.0
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	63.9	1.3	8.5	26.3	100.0
52202	Retail sale of fresh fruits and vegetables	76.8	0.1	2.3	20.7	100.0
52203	Retail sale of meat, fish and poultry	78.7	0.4	4.4	16.6	100.0
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	81.6	0.4	1.1	16.9	100.0
52321	Retail sale of textiles	48.0	3.0	31.8	17.1	100.0
52322	Retail sale of readymade garments, including hosiery goods	48.9	5.5	30.1	15.5	100.0
55202	Restaurants without bars	38.6	2.7	21.9	36.8	100.0
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	50.5	0.5	33.1	15.9	100.0
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	87.3		4.2	8.5	100.0
60231	Freight transport by motor vehicles	18.9	0.5	40.0	40.7	100.0
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	75.2	0.0	3.0	21.7	100.0
65191	Monetary intermediation of commercial banks	1.8		95.4	2.8	100.0
75112	General public service activities of the state governments			98.9	1.1	100.0
80101	Primary education	3.0	0.2	95.4	1.4	100.0
80211	Secondary education	0.8	0.4	98.2	0.6	100.0
85110	Hospital activities	3.8	0.0	91.5	4.7	100.0
93010	Washing and (dry-) cleaning (including collection and delivery)	54.9	1.1	1.5	42.4	100.0
93020	Hair dressing and other beauty treatment	69.4	0.4	8.2	22.1	100.0
95001	Housemaid/servant			70.4	29.6	100.0
	Total for services sector	39.2	1.4	42.2	17.1	100.0

Table 18
Contribution of important 5 digit services to employment growth in services sector,
2004-05 to 2009-10, (%)

<i>NIC 2004</i>	<i>Description of categories</i>	<i>Total employment</i>
52110	Retail sale in non-specialized stores with food, beverages or tobacco	-3.1
52201	Retail sale of cereals and pulses, tea, coffee, spices, flour and other basic food items	12.3
52202	Retail sale of fresh fruits and vegetables	5.8
52203	Retail sale of meat, fish and poultry	0.0
52207	Retail sale of paan, bidi, cigarette, opium, ganja, cinchona	2.1
52321	Retail sale of textiles	-1.3
52322	Retail sale of readymade garments, including hosiery goods	5.1
55202	Restaurants without bars	6.2
60221	Other non-scheduled passenger land transport by motor vehicles [taxi and rental of private cars]	12.3
60222	Other non-scheduled passenger land transport, other than by motor vehicles (i.e. By bullock carts, tongas and cycle rickshaws etc.)	3.1
60231	Freight transport by motor vehicles	9.3
60232	Freight transport other than by motor vehicles (i.e. By man or animal drawn vehicles such as bullock carts, cycle rickshaws and the like)	-3.0
65191	Monetary intermediation of commercial banks	2.4
75112	General public service activities of the state governments	4.6
80101	Primary education	7.1
80211	Secondary education	-0.8
85110	Hospital activities	0.0
93010	Washing and (dry-) cleaning (including collection and delivery)	-6.4
93020	Hair dressing and other beauty treatment	2.0
95001	Housemaid/servant	-0.1
	Total for services sector	100.0
	Share of good employment	13.1
	Share of other employment	44.6

Table 19
Productivity across different sectors, India, 2004-05 and 2009-10

SNo.	Sector	Labour productivity (₹ per worker)		Times average productivity	
		2004-05	2009-10	2004-05	2009-10
1	Agriculture, forestry & fishing	21033	26537	0.33	0.28
1.1	Agriculture	17927	22548	0.28	0.24
1.2	Forestry & logging	423226	974672	6.62	10.21
1.3	Fishing	180165	219762	2.82	2.30
2	Mining & quarrying	326185	348584	5.10	3.65
3	Manufacturing	84063	139054	1.31	1.46
4	Electricity gas & water supply	509329	700106	7.97	7.33
5	Construction	89398	79861	1.40	0.84
6	Services	140106	209391	2.19	2.19
7	All sectors	63945	95478	1.00	1.00

Note: Constant GDP at factor cost (2004-05 prices)
Employment UPSS from NSS surveys

Table 20
Productivity in Services sector, disaggregated level, 2004-05 and 2009-10

SNo.	Description of category	Labour productivity (₹1,000 per worker)		Growth in productivity
		2004-05	2009-10	(% per year)
1	GDP TRADE, HOTELS & RESTAURANTS	98.2	146.4	8.3
1.1	Trade	101.4	152.2	8.5
1.2	Hotel and Restaurant	74.8	105.2	7.0
2	All transport (railway + others)	127.7	163.0	5.0
2.1	Railways	272.7	416.8	8.9
2.2	Other transport	117.0	146.7	4.6
2.2.1	Road Transport	102.4	129.2	4.8
2.2.2	Water Transport	507.5	552.4	1.7
2.2.3	Air Transport	665.1	1148.0	11.5
2.2.4	Service Incidental to Transport	493.1	385.0	-4.8
3	Storage	211.4	170.3	-4.2
4	Communications GDP (Public and private sector)	263.7	885.3	27.4
4.1	Public sector Postal services	41.5	59.7	7.6
4.2	Communications other than post (Public + private)	339.9	1052.6	25.4
	Banking and insurance	585.7	883.8	8.6
5	Banking	600.0	934.6	9.3
5.1	Banks (including postal savings)	733.9	1458.9	14.7
5.2	Banking department of RBI	-130.7	32.2	-175.6
5.3	Non-banking financial institutions , including co-operative societies	660.0	653.2	-0.2

SNo.	Description of category	Labour productivity (₹1,000 per worker)		Growth in productivity
		2004-05	2009-10	(% per year)
5.4	Employees provident fund org.	44.6	34.2	-5.2
6	Insurance	527.9	720.6	6.4
6.1	Life Insurance (including postal life insurance)	351.6	476.9	6.3
6.3	Non-life insurance	1883.6	6794.1	29.3
7	Real estate, dwellings business services	632.2	741.5	3.2
7.1	Dwellings (urban + rural)	4905.2	5538.6	2.5
7.2	Real estate	406.0	424.5	0.9
7.3	Business services	255.8	418.0	10.3
7.3.1	Renting of Machinery	36.1	81.1	17.6
7.3.2	Computer relating services	802.2	786.9	-0.4
7.3.3	Legal services	168.5	223.9	5.8
7.3.4	Accounting	108.4	160.9	8.2
7.3.5	Research Development	107.3	235.0	17.0
8	Education	105.9	148.0	6.9
9	Medical & health	150.8	182.7	3.9
10	Religious and other community membership organisations	81.1	153.3	13.6
11	Recreation & entertainment	140.0	250.0	12.3
12	Radio & TV broadcasting	83.5	67.6	-4.1
13	Personal and other services	17.5	24.6	7.0
13.1	Private household with employed person	10.0	19.6	14.4
13.2	Washing & cleaning of textiles	24.6	40.4	10.4
13.3	Hair dressing and other beauty treatment	24.3	27.0	2.1
13.4	Custom tailoring	18.6	22.5	3.9
14	Sanitary services	121.5	127.8	1.0
15	Funeral related activities & other services	325.4	250.1	-5.1
16	International & other extra territorial bodies	3739.2	5891.6	9.5
17	Public administration & defence	212.8	288.0	6.2
	Total services	140.1	209.4	8.4

Table 21
Productivity in Services sector, disaggregated level, 2004-05 and 2009-10

SNo.	Description of category	Comparison with average productivity of services sector		Comparison with National average productivity	
		2004-05	2009-10	2004-05	2009-10
1	GDP TRADE, HOTELS & RESTAURANTS	0.70	0.70	1.54	1.53
1.1	Trade	0.72	0.73	1.58	1.59
1.2	Hotel and Restaurant	0.53	0.50	1.17	1.10
2	All transport (railway + others)	0.91	0.78	2.00	1.71
2.1	Railways	1.95	1.99	4.26	4.37
2.2	Other transport	0.84	0.70	1.83	1.54
2.2.1	Road Transport	0.73	0.62	1.60	1.35
2.2.2	Water Transport	3.62	2.64	7.94	5.79
2.2.3	Air Transport	4.75	5.48	10.40	12.02
2.2.4	Service Incidental to Transport	3.52	1.84	7.71	4.03
3	Storage	1.51	0.81	3.31	1.78
4	Communications GDP (Public and private sector)	1.88	4.23	4.12	9.27
4.1	Public sector Postal services	0.30	0.28	0.65	0.63
4.2	Communications other than post (Public + private)	2.43	5.03	5.32	11.02
	Banking and insurance	4.18	4.22	9.16	9.26
5	Banking	4.28	4.46	9.38	9.79
5.1	Banks (including postal savings)	5.24	6.97	11.48	15.28
5.2	Banking department of RBI	-0.93	0.15	-2.04	0.34
5.3	Non-banking financial institutions , including co-operative societies	4.71	3.12	10.32	6.84
5.4	Employees provident fund org.	0.32	0.16	0.70	0.36
6	Insurance	3.77	3.44	8.26	7.55
6.1	Life Insurance (including postal life insurance)	2.51	2.28	5.50	5.00
6.3	Non-life insurance	13.44	32.45	29.46	71.16
7	Real estate, dwellings business services	4.51	3.54	9.89	7.77
7.1	Dwellings (urban + rural)	35.01	26.45	76.71	58.01
7.2	Real estate	2.90	2.03	6.35	4.45
7.3	Business services	1.83	2.00	4.00	4.38
7.3.1	Renting of Machinery	0.26	0.39	0.56	0.85
7.3.2	Computer relating services	5.73	3.76	12.55	8.24
7.3.3	Legal services	1.20	1.07	2.64	2.34
7.3.4	Accounting	0.77	0.77	1.70	1.69
7.3.5	Research Development	0.77	1.12	1.68	2.46
8	Education	0.76	0.71	1.66	1.55
9	Medical & health	1.08	0.87	2.36	1.91
10	Religious and other community membership organisations	0.58	0.73	1.27	1.61

SNo.	Description of category	Comparison with average productivity of services sector		Comparison with National average productivity	
		2004-05	2009-10	2004-05	2009-10
11	Recreation & entertainment	1.00	1.19	2.19	2.62
12	Radio & TV broadcasting	0.60	0.32	1.31	0.71
13	Personal and other services	0.12	0.12	0.27	0.26
13.1	Private household with employed person	0.07	0.09	0.16	0.20
13.2	Washing & cleaning of textiles	0.18	0.19	0.38	0.42
13.3	Hair dressing and other beauty treatment	0.17	0.13	0.38	0.28
13.4	Custom tailoring	0.13	0.11	0.29	0.24
14	Sanitary services	0.87	0.61	1.90	1.34
15	Funeral related activities & other services	2.32	1.19	5.09	2.62
16	International & other extra territorial bodies	26.69	28.14	58.47	61.71
17	Public administration & defence	1.52	1.38	3.33	3.02
	Total services	1.00	1.00	2.19	2.19

Table 22
Productivity in Services sector, disaggregated level, 2004-05 and 2009-10

SNo.	Description of category	Comparison with manufacturing productivity		Comparison with agriculture productivity	
		2004-05	2009-10	2004-05	2009-10
1	GDP TRADE, HOTELS & RESTAURANTS	1.2	1.1	4.7	5.5
1.1	Trade	1.2	1.1	4.8	5.7
1.2	Hotel and Restaurant	0.9	0.8	3.6	4.0
2	All transport (railway + others)	1.5	1.2	6.1	6.1
2.1	Railways	3.2	3.0	13.0	15.7
2.2	Other transport	1.4	1.1	5.6	5.5
2.2.1	Road Transport	1.2	0.9	4.9	4.9
2.2.2	Water Transport	6.0	4.0	24.1	20.8
2.2.3	Air Transport	7.9	8.3	31.6	43.3
2.2.4	Service Incidental to Transport	5.9	2.8	23.4	14.5
3	Storage	2.5	1.2	10.1	6.4
4	Communications GDP (Public and private sector)	3.1	6.4	12.5	33.4
4.1	Public sector Postal services	0.5	0.4	2.0	2.2
4.2	Communications other than post (Public + private)	4.0	7.6	16.2	39.7
	Banking and insurance	7.0	6.4	27.8	33.3
5	Banking	7.1	6.7	28.5	35.2
5.1	Banks (including postal savings)	8.7	10.5	34.9	55.0
5.2	Banking department of RBI	-1.6	0.2	-6.2	1.2

SNo.	Description of category	Comparison with manufacturing productivity		Comparison with agriculture productivity	
		2004-05	2009-10	2004-05	2009-10
5.3	Non-banking financial institutions , including co-operative societies	7.9	4.7	31.4	24.6
5.4	Employees provident fund org.	0.5	0.2	2.1	1.3
6	Insurance	6.3	5.2	25.1	27.2
6.1	Life Insurance (including postal life insurance)	4.2	3.4	16.7	18.0
6.3	Non-life insurance	22.4	48.9	89.6	256.0
7	Real estate, dwellings business services	7.5	5.3	30.1	27.9
7.1	Dwellings (urban + rural)	58.4	39.8	233.2	208.7
7.2	Real estate	4.8	3.1	19.3	16.0
7.3	Business services	3.0	3.0	12.2	15.7
7.3.1	Renting of Machinery	0.4	0.6	1.7	3.1
7.3.2	Computer relating services	9.5	5.7	38.1	29.7
7.3.3	Legal services	2.0	1.6	8.0	8.4
7.3.4	Accounting	1.3	1.2	5.2	6.1
7.3.5	Research Development	1.3	1.7	5.1	8.9
8	Education	1.3	1.1	5.0	5.6
9	Medical & health	1.8	1.3	7.2	6.9
10	Religious and other community membership organisations	1.0	1.1	3.9	5.8
11	Recreation & entertainment	1.7	1.8	6.7	9.4
12	Radio & TV broadcasting	1.0	0.5	4.0	2.5
13	Personal and other services	0.2	0.2	0.8	0.9
13.1	Private household with employed person	0.1	0.1	0.5	0.7
13.2	Washing & cleaning of textiles	0.3	0.3	1.2	1.5
13.3	Hair dressing and other beauty treatment	0.3	0.2	1.2	1.0
13.4	Custom tailoring	0.2	0.2	0.9	0.8
14	Sanitary services	1.4	0.9	5.8	4.8
15	Funeral related activities & other services	3.9	1.8	15.5	9.4
16	International & other extra territorial bodies	44.5	42.4	177.8	222.0
17	Public administration & defence	2.5	2.1	10.1	10.9
	Total services	1.7	1.5	6.7	7.9

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* Most of the working papers are downloadable from the institute’s website: <http://isidev.nic.in/> or <http://isid.org.in/>

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The Institute for Studies in Industrial Development (ISID), successor to the Corporate Studies Group (CSG), is a national-level policy research organization in the public domain and is affiliated to the Indian Council of Social Science Research (ICSSR). Developing on the initial strength of studying India's industrial regulations, ISID has gained varied expertise in the analysis of the issues thrown up by the changing policy environment. The Institute's research and academic activities are organized under the following broad thematic areas:

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Trade, Investment and Technology: Trends and patterns of cross-border capital flows of goods and services, mergers & acquisitions, inward and outward FDI etc. and their implications for India's position in the international division of labour;

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