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### Services Sector Growth in India: Toward Some Dynamic Explanations

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### Services Sector Growth in India: Toward Some Dynamic Explanations<sup>1</sup>

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#### Abstract

The paper suggests answers to two important questions that arise in the context of the increasing importance of services sector in India in the recent years. First, is the services sector dominance in India premature? The answer is in the negative, given that even in the classical studies of structural transformation the conclusions about the sectoral share of services were not as firm as those about agriculture and industry; and also given that plausible values of sectoral elasticities of demand and productivities can simulate the observed sectoral shares. Secondly, given the widely accepted assumption of low productivity growth in services, which implied a deceleration of aggregate growth in developed countries in the 1970s in the context of their growing share of services, can an economy with a dominant services sector produce high aggregate growth rates? This can happen if the services output is more in the nature of intermediate goods like business services rather than final consumption goods, which seems to be the case in India.

**Keywords:** Structural Transformation, Services Sector, Productivity of

Services Sector

**JEL Codes:** O14, O47, O53

#### 1 Introduction

A pronounced shift in the sectoral composition of output (and employment) towards the services sector was initiated in India in earlier decades, but its pace has accelerated in the post-reforms period. The above average growth rate of the services sector that this implies has also been accompanied by an increase in the growth rate of aggregate output in the 1990s. Yet the growth within the services sector has not been uniform, e.g., the growth of business services has been much more rapid than, say community services and personal services. The paper attempts to explain, in a preliminary way, the increase in the

<sup>&</sup>lt;sup>1</sup> The paper follows from the Working Paper WP/ECO/DTL/09/01 of the Unit, "A Note on Static Contribution of Services Sector to Growth in India," which examined the service sector contribution in a purely statistical sense. This paper, on the other hand, brings out more dynamic links between the growth of the services sector and the aggregate growth in the economy.

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so-called premature dominance of the services sector in India. It also attempts to explain why the dominance of services sector characterised by low productivity growth can also lead to high aggregate growth in the economy.

There are two important differences between the developed and developing countries like India *vis-à-vis* the increasing importance of the services sector in their economies. First, as is believed in many quarters, the observed growth in the services sector of countries like India has been attained at an earlier stage of development than would be predicted by time-series and cross-section studies of the Kuznets-Chenery kind. Secondly, and more importantly, the 'premature' dominance of the services sector has been attained in countries like India in the context of an increasing and not a falling aggregate growth rate. The increase in the dominance of the services sector witnessed in the 1970s in the developed countries at the cost of manufacturing (a phenomenon dubbed as de-industrialization), was accompanied by a deceleration in their growth rates. The paper makes use of available literature to explain these differences.

The paper suggests, in a preliminary way, that the observed shift towards services in India can be understood with reference to the classical explanation of structural change in terms of sectoral elasticities of demand and productivity changes through use of models like those propounded by Sundrum (1990). Reference has been made to sectoral productivity changes in the economy, though it is acknowledged that there is not a sufficient consensus on the direction of change of manufacturing sector productivity in the post-reforms period. The paper also looks at some of the explanations for deindustrialisation offered in the context of developed countries. In particular, Baumol (1967) explained the declining aggregate growth rate in the developed countries using his unbalanced growth thesis. The thesis implies that resources are shifted to low-productivity-growth sectors like services from high productivity sectors in order that the increasing demand for both manufacturing and services is satisfied. As modified by Oulton (1999), the thesis suggests that a declining growth rate would be implied by a shift to the services sector only if the services sector growth is in the final demand subsectors (personal services) and not if it is in sub-sectors providing intermediate inputs to

the manufacturing sector (business services). Oulton's conclusion is valid even if the productivity in the services sector is lower than that in the manufacturing sector. The Baumol-Oulton thesis, though propounded for developed countries, is clearly relevant in explaining the high growth obtained in the Indian economy during the phase of its shift toward the services sector.

The remaining part of the paper is organised as follows. Section 2 examines the changes in sectoral composition of output and in particular the changes within the service sector. Section 3 examines the conclusions of the classical studies on structural transformation and suggests a preliminary explanation for the observed structural change in India in terms of parameters like demand elasticities and productivity changes. Section 4 looks at some of the explanations offered in the context of the de-industrialisation debate in the developed countries in the 1970s and in particular refers to the Baumol thesis to explain the decline in the growth rate in the context of the increasing dominance of the services sector. Section 5 uses the observed changes in the service sub-sectors in India to explain the high growth rate using the Baumol-Oulton thesis.

#### 2 Structural Transformation of the Indian Economy: Services Sector Growth

The decade-wise growth rate of services sector over the last five decades has always been above the growth rate of aggregate output in the Indian economy. With the acceleration of the aggregate growth rate over the last two decades, there has been a corresponding increase in the growth rate of the services sector. The decade-wise growth rate of the manufacturing sector has also been above the average for the economy, but the difference has reduced in recent decades, the growth rate of the manufacturing sector in the last decade (1991-2000) being only marginally above the aggregate average. The growth rate in the agricultural sector, on the other hand, has been consistently below the aggregate growth rate in all the decades (Table 1A). This of course implies that whereas the importance of the services sector in the national output has consistently increased that of the agricultural sector has declined over the years. The manufacturing sector output has by and large stabilised as a percentage of the aggregate output (Table 1B). In the computation of the above tables Agriculture + includes agriculture, forestry and fishing.

Services includes the five sub-sectors on trade, hotels and restaurant; transport, storage and communications; finance, insurance, real estate and business services; public administration and defence; and the other services part of the community, social and personal services (consisting largely of personal services). The remaining sectors are all included in Manufacturing +, i.e., this sector also includes mining apart from the utilities and construction sectors.<sup>3</sup>

Taking decade-wise averages, of course, smoothen the data and muffles some of the stark conclusions. Annual data shows that the services sector output has reached nearly half and agriculture + output has reduced to a less than a quarter of the aggregate output in recent years. In terms of sectoral composition, the services sector always dominated the manufacturing sector in India. It overtook the dominant agriculture + sector in the mid-eighties when it attained the level of 38 per cent of the aggregate output. The manufacturing + sector too overtook the agricultural sector in the mid-nineties by producing around 28 per cent of the domestic product, yet there are clear indications in the annual data that the percentage of output produced in this sector could actually decline in the near future. The services sector is clearly attaining the dominant position that was once reserved for the agricultural sector. Growth seems to have by-passed the manufacturing sector in India.

It is of interest to examine the composition of growth in the services sector in recent years. Table 2A shows the sub-sectoral growth rates and Table 2B shows the corresponding changes in the composition of output within the services sector. In terms of the arguments that will be used in subsequent sections, it is important to distinguish between the services sub-sectors that cater to final demand and those that provide intermediate inputs to production sectors. It is of course true that many of the sub-sectors cater to both final and intermediate demand. Thus transportation services are used for carrying both passengers and cargo. Yet it is possible to say with certainty that the output of certain sectors is put more to intermediate than to final use, just as the reverse can be

<sup>&</sup>lt;sup>3</sup> The classification used is largely similar to that of Kuznets (1957).

said to hold with certainty in other cases: business services are more for intermediate use and personal services are for final use.

An examination of the data (Tables 2A & 2B) suggests that the growth in the services sector in recent years (in the eighties and nineties) has clearly been more in the sub-sectors providing intermediate inputs rather than in the sub-sectors catering to final demand. Thus in the decade 1991-2000, business services increased at the annual average rate of 8.43 per cent, which was clearly above the aggregate service sector GDP growth rate of 7.66 per cent. The GDP growth rate in the personal services plus sector, on the other hand was 6.80 per cent, i.e., below the average growth rate of the services sector. Over the longer period of five decades, the percentage of GDP produced in the business services sub-sector initially declined from nearly 23 per cent in the 1<sup>st</sup> decade (1951-60) to 18.5 per cent in the 3<sup>rd</sup> decade (1971-80), but subsequently increased to over 26 per cent in the decade 1991-2000. There has also been, by and large, a consistent increase in the percentage of output produced in the transport, communications and storage sub-sector from 12.50 per cent in the decade 1951-60 to 15.50 in the decade 1991-2000. These two sub-sectors are clearly more important as providers of intermediate inputs to production sectors.

As an aside, it should be noted that, contrary to the popular belief, the spectacular growth in the services sector cannot be explained away by the Fifth Pay Commission phenomenon. The percentage of output produced in public administration and defence increased in the initial decades from 9.25 per cent of services sector output to over 13.5 per cent, but has actually declined in recent decades to 12.65 per cent. Even within the 19990-200 decade the relative increase in the public administration, defence and other services part of the S sector is marginal - from 12.03% in the first half of 1990s to less than 12.30% in the second half. Undoubtedly the burden on the government budget in nominal terms has increased due to the pay revision causing its own share of problems, but in real terms the relative growth of the services sector cannot be explained by the

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<sup>&</sup>lt;sup>4</sup> The percentage of services sector GDP produced in transport, communications and storage sub-sector was slightly higher at over 16 per cent in the 1981-90 decade.

growth of public administration and defence. The proportion of services sector output produced in the personal services plus sub-sector, on the other hand, declined consistently from 23.50 per cent in the 1<sup>st</sup> decade, 1951-60, to less than 15 per cent in the last decade, 1991-2000.<sup>5</sup> It is the trade, transport, storage, communication, financing, insurance, real estate and business services sectors within the S-sector that has picked up most of the relative growth in that sector. <sup>6</sup> The growth of the services sector GDP is clearly accompanied by a change in the structure of output produced in the services sector – from sub-sectors catering to final demand to sub-sectors providing intermediate inputs.

## 3 Towards an Explanation of the Services Sector Growth in India: Is the Growth Premature?

It is believed in some quarters that the growth of the services sector in countries like India that are at relatively low levels of development is premature. Conventional wisdom as gleaned purportedly from the writings of Colin Clark, Simon Kuznets and Hollis Chenery suggests that, in the development process, as the A+ sector contracts, it is the M+ sector that expands initially and the S sector at a much later stage. A careful reading of the writings of Kuznets however suggests that his conclusions about the services sector growth in the process of development are not as definite as those about the decline of agriculture or even about the rise of manufacturing.

Kuznets (1957) conclusions are based on a grouping of countries into seven classes according to per capita income and deal with changes in three major industrial sectors: Sector A+ (agriculture, fisheries, and forestry), Sector M+ (manufacturing, mining, and construction), and Sector S (all service industries). The conclusions arrived at through inter-country analysis are cross checked with the results derived from the examination of long-term changes in those (developed) countries where sufficient time series data are available. The time series samples are hence much smaller.

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<sup>&</sup>lt;sup>5</sup> The personal services plus sub-sector is defined by us the residual sector obtained by separating the public administration and defence (PAD) sub-sector from community, social and personal services sub-sector. This enables us to separate out the effect of changes in PAD. See the next note.

<sup>&</sup>lt;sup>6</sup> The percentage in the sub-sector trade, hotels and restaurant also shows a similar pattern – though the percentage of services sector output produced in the sub-sector had increased to around 34 per cent, in the 1991-2000 decade the percentage is around 31 per cent, about the same as was being produced in the 1<sup>st</sup> decade.

Thus, in his cross-section sample including less developed countries along with developed ones, Kuznets finds a positive correlation between income level and the importance of A+ sector in both national product and employment. On the other hand, there is a negative correlation between income level and the importance of M+ sector in national product and labour force. And though there is a positive correlation between income level and the share of services sector in employment, there is no evidence of a systematic variation in the importance of the service sector in national product over levels of income. This suggests that, historically, different countries can exhibit dominance of the services sector at different levels of income.

These conclusions are, by and large, reinforced in the long time series data. In the output of 15 countries, A+ sector declined throughout and M+ sector increased in importance in all but two cases. However the trends in services sector were again mixed. The employment data of 28 countries showed a consistent decline in the share of A+ sector, but not as consistent a rise in the share of M+ sector as in the case of output. The time series data however was more definite about the rise in the share of services sector in employment, unlike its share in output.

It is thus clear that, at least so far as the output share, if not the employment share, of the services sector is concerned, the pattern of development is not as consistent as in the case of the output and employment shares of agriculture and manufacturing. Countries can exhibit dominance of the service sector at different stages in their development. Part of the explanation for this is in the fact that different countries exhibit different sectoral elasticities of demand and different sectoral productivity growth rates in stages of their development. The transformation of an economy is explained by productivity increases on the supply side and income elasticities on the demand side. The transfer of labour from the A-sector to the M-sector is possible only because of high productivity growth in the A-sector. And the transfer takes place initially to the M-sector rather than the S-sector, because, as income increases from low to intermediate levels, demand for manufactured goods increases proportionately more than the demand for services. The demand for services increases much more only at higher levels of income. The so-called

paradox in our case is that the demand for services seems to have increased even before we have reached the status of membership in the middle-income group of countries. Models like Sundrum (1990) can however be used to show that reallocation of labour from one sector to another and changing patterns of output shares depend on sectoral elasticities and productivity growths. Higher the elasticity of demand for the output of a sector and lower the productivity growth rate in the sector, larger the shift of resources into the sector as development proceeds. If productivity growth were to be high in a sector with increasing demand for its output, the higher output required could be produced with a smaller resource shift to the sector. However, if productivity growth is low, larger shift of resources to the sector is necessary to meet the increasing demand for its output if the income elasticity of demand for its output is high.

Sectoral income elasticities (*ex post*) can be computed for the Indian economy from the observed decade wise sectoral and aggregate growth rates in the economy. The relative sectoral growth rates and the implied changes in sectoral shares can be summarised for the 1991-2000 decade through elasticity values of 0.5 for the agricultural sector and 1.25 for the services sector, with a unitary elasticity for the manufacturing sector. With similar benchmarks on sectoral productivity, models could be constructed to simulate the pattern of changes in sectoral shares of output and employment in the Indian economy.<sup>7</sup> It is possible to explain the observed structural change in India by simulating models like those in Sundrum (1990) through realistic values of parameters like sectoral productivity growth and income elasticity of demand.<sup>8</sup>

It does not necessarily follow from the conclusions of historical studies of the Kuznets-Chenery kind, or with reference to simulation models with realistic values of productivity/ elasticity parameters, that the services sector dominance in countries like India is premature.

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<sup>&</sup>lt;sup>7</sup> Measurement of services sector productivity is a problem even in the developed economies. For the less developed countries estimates of manufacturing productivity are also a problem. There is no consensus in the Indian economy on the methodology of measuring productivity as also on the direction in which productivity of the manufacturing sector has changed in the last decade.

<sup>&</sup>lt;sup>8</sup> This work is at a preliminary stage at the Unit and firm conclusions cannot be reached as yet in the matter..

# 4 De-industrialization, Services Sector Growth and Deceleration of Aggregate Growth in the Developed Countries

The decade of seventies witnessed an accelerated pace of relative decrease in the output of (and employment in) the manufacturing sector and a corresponding increase in the output of the services sector - a phenomenon dubbed as de-industrialisation. An attempt was made to explain the process of de-industrialisation and the accompanying structural change through models like Cambridge models (Cornwall, 1982 and Thirlwall, 1978) and the Dutch disease models (Corden and Neary, 1982). The Cambridge view explained the deceleration in the growth rate of aggregate output and in particular of the manufacturing output with reference to the balance of payments constraint that eventually makes it necessary to cut down growth in output to match the growth in exports. The Dutch disease view on the other hand related the declining manufacturing growth to a boom in the resource sector (e.g., discovery and exploitation of oil reserves) causing marginal productivity of labour to rise therein and leading to a movement of resources away from the manufacturing sector. The non-tradable services sector output on the other hand rises in response to the increase in income caused by the booming sector. Import of manufactures to replace domestic production is aided by the revaluation of the exchange rate caused by the increased export in the resource sector. Both the Cambridge and the Dutch disease view aim at explaining de-industrialisation and the accompanying deceleration of growth with reference to the external sector.

Even before de-industrialisation set in, the aggregate growth rate in the developed countries had started declining. Baumol (1967) thesis of unbalanced growth aims at explaining the deceleration of the growth rate in the developed countries with reference to internal developments in their economies, particularly the growth in their services sector. The fact that services sector productivity growth is lower than that in manufactures implies, on the one hand, that resources have to shift to the services sector to provide high enough output to satisfy the demand generated in accordance with high income elasticity for the sector. On the other hand, it implies that the aggregate productivity growth and hence income growth of the economy gravitates towards the

increasingly dominating service sector productivity growth. Since the latter is low, the growth rate inevitably declines.

Following Oulton (1999), the conclusion comes out sharply in the context of a model producing two goods (cars and haircuts) with one input (labour). It is assumed that productivity grows in cars and that there is no productivity growth in haircuts. Employment is assumed to be constant. Aggregate incomes rise (because of productivity growth in cars) and consequently demand increases (assumed to be at the same rate in both sectors). Since more haircuts are needed as income increases, the only way that is possible (with fixed employment) is by transferring labour from production of cars to that of haircuts. The production of cars can also increase in spite of a decrease in labour allocation because of the assumed increase in productivity. The aggregate productivity growth, however, decreases and the standard of living can be shown to fall in the model. The aggregate productivity decreases because it is the weighted average of sectoral productivities with employment shares as weights: the weight of the zero productivity growth sector increases over time. Given fixed employment, a decrease in aggregate productivity implies a decrease in growth rate of income. The relative price and hence the proportion of expenditure on haircuts increases asymptotically over time implying a fall in the standard of living.

It would be tempting to explain the relative decline of the manufacturing sector in the Indian economy in the immediate past with reference to the opening up of the economy to manufacturing imports. It is generally believed that, left to ourselves, we would have liberalised at a much slower pace in the external sector than we have internally. This is evident with respect to the cautious opening up that we are undertaking on the capital account. We had no such choice in the matter of opening up the imports of goods, given that the US forced an accelerated opening up on us through the WTO. The explanation of the decline of the manufacturing sector would then be similar to the one espoused for the developed economies in the Cambridge and the Dutch disease view. There are however two problems with this kind of an explanation. First, the trend of increasing dominance of the service sector is a much longer trend, and, secondly, the

relative decline of manufacturing cannot be attributed to increased imports even in the short term. The explanation for the relative growth of the services sector has to be sought in factors internal to the economy like in the Baumol model for the developed economies of the 1970s. The problem with the application of the Baumol model is that it is applicable in the context of declining aggregate growth rates. The dominance of the service sector is in the context of increasing aggregate growth rates in countries like India.

## 5 An Explanation of High Aggregate Growth in India in the context of Service Sector Growth

An important question in this context is: 'Can the high growth rate of the services sector contribute to the observed aggregate growth rate?' The question is not being posed in a statistical sense. Statistically, the aggregate will grow at a higher rate if it's dominating part (services sector) grows at a high rate. The question is: 'Given that the productivity growth is generally accepted to be low in the services sector, can we escape the Baumol conclusion that the aggregate productivity (and output growth) will ultimately gravitate to the low productivity growth rate of the services sector?' To answer the question in positive, Oulton (1999) considers a model with two outputs, cars and business services. Cars are produced using labour and business services, whereas business services are produced using only labour. Note that the final demand service sector (haircuts) of the Baumol model has been replaced in Oulton (1999) by an intermediate input providing service sector (business services). The productivity growth in cars is assumed to be higher than in business services. More cars can now be produced either by allocating more labour to the production of cars or by allocating more labour to the production of business services that are then available as inputs in the production of cars. It follows that productivity growth in business services, even if lower than in cars, will contribute to increasing output in the car industry and a shift in resources to the business services sector will not lead to a decline in growth of overall productivity and output.

Oulton's model clearly indicates that services sector growth can contribute to overall growth if the growth is in sectors providing intermediate inputs to the producing sectors, even if the productivity growth is lower in services than in manufacturing. This is precisely the kind of growth that is being observed in the services sector of the Indian economy as was shown in the first section.

Reference may be made here to the fact that the contribution of services sector to economic development is also being recognised of late in the literature. Thus Eswaran and Kotwal (2002) postulate a model to explain the industrialisation of Canada given that Canada had comparative advantage in agriculture. High productivity of agriculture, as in the Lewis model of growth with unlimited supplies of labour, militates against industrialisation by raising the wage rate which makes the industrial sector noncompetitive in an open economy of the kind that Canada was when it industrialised. Eswaran and Kotwal (2002) explain Canadian industrialisation by postulating that it was the growth of the non-traded services sector with supply linkages to the industrial sector that enabled the development of competitiveness of the industrial sector and promoted its growth in the face of openness of the economy. It is postulated that the effective cost of the industrial sector by the availability of a variety of services that caters to the specific individual needs of industry. The development of the services sector also enables greater degree of specialisation and division of labour. Such processes are indeed relevant in postulating a substantive (rather than statistical mechanical) contribution of the services sector to the growth process.

As a final point, it should be made clear that the growth in services sector that we are speaking of is not of the kind where excess labour is disguised employed. Demands of competitiveness in the context of an open economy, of course, require the use of labour-saving technical progress in the manufacturing sector. This technical progress is enabling productivity growth so rapidly that labour can be transferred out of the sector into the services sector just as in the earlier years in the developed economies labour-saving technical progress in agriculture enabled a transfer of labour to the M+ sector. That

explains why labour can be transferred out of the manufacturing sector. Yet the transfer out of a sector will not be effective as a transfer in some other sector unless there is a genuine increase in the demand for the output of the sector to which the transfer takes place, in this case the service sector. If there is no such genuine increase in the demand for the output of the service sector, it will have to be concluded that the transferred labour is surviving in the service sector as disguised unemployed. That would be a far cry from authentic development. It should be noted though that a hypothesis of disguised unemployment in the service sector could explain in this context the higher share of the services sector in employment, but perhaps not the higher share in output that is being observed. Examination of data on the share of services in national output suggests that there is a widespread increase in the shares of a range of service sub-sectors spanning from the technologically sophisticated sub-sectors to the not-so-sophisticated ones. This growth in the services sector is not only providing the necessary jobs that are not available in the manufacturing sector, but is also contributing to the overall growth.

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<sup>9</sup> Labour is being transferred out of the manufacturing sector not in the same sense that it was being transferred out of the agricultural sector in the now-developed economies, but in the sense that it finds employment in the service sector, bypassing the manufacturing sector.

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Table 1A: Decadal Sectoral Growth Rates in India - 1951 to 2000

(Per cent per annum)

Sector:	Agriculture +	Manufacturing +	Services	GDP at Factor Cost	
Decade					
1951-60	2.68	5.78	4.10	3.62	
1961-70	1.50	5.49	4.49	3.23	
1971-80	1.72	4.45	4.55	3.39	
1981-90	2.91	6.46	6.63	5.24	
1991-00	3.27	6.27	7.66	6.02	

Table 1B: Decadal Sectoral Composition of Output in India - 1951 to 2000

(Per cent of GDP)

Sector:	Agriculture +	Manufacturing +	Services	GDP at Factor Cost	
Decade					
1951-60	55.96	16.12	28.29	100.00	
1961-70	47.56	21.18	31.45	100.00	
1971-80	42.59	22.83	34.47	100.00	
1981-90	36.06	25.13	38.80	100.00	
1991-00	28.71	27.14	44.15	100.00	

Table 2A: Decadal Growth Rates of Services Sub-Sectors in India - 1951 to 2000

(Per cent per annum)

Sub- Sector:	Trade +	Transport +	Business Services	PAD	Personal Services +	Services
<b>Decade</b>						
1951-60	4.98	5.58	3.01	5.03	2.82	4.10
1961-70	4.36	5.37	3.06	7.37	3.90	4.49
1971-80	4.81	6.20	4.35	4.81	2.75	4.55
1981-90	5.71	5.63	9.53	7.11	5.40	6.63
1991-00	8.08	7.82	8.43	6.02	6.80	7.66

Table 2B: Decadal Sectoral Composition of Services Output in India - 1951 to 2000

(Per cent of Services GDP)

Sub-	Trade +	Transport +	Business	PAD	Personal	Services
Sector:			Services		Services +	
Decade						
1951-60	31.96	12.43	22.96	9.26	23.38	100.00
1961-70	34.06	14.14	19.42	11.56	20.81	100.00
1971-80	33.51	15.71	18.41	13.68	18.69	100.00
1981-90	32.25	16.17	20.76	14.54	16.28	100.00
1991-00	30.84	15.53	26.09	12.65	14.89	100.00

**Source for Tables 1A, 1B, 2A and 2B:** Computed from the EPW Research Foundation (2002), *National Accounts Statistics*, Mumbai.