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Growth of the services sector in India: notional or real?

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Abstract

It is often argued that the rapid growth of the services sector in India maybe notional rather than real. This is because increased ‘contracting out' to specialist providers results in economic activity, which was earlier subsumed in manufacturing or agriculture value added, to be accounted for as service sector contributions to GDP. But our statistical analysis of input-output coefficients from National Accounts Statistics shows that, in India, during the period from 1979-80 to 2006-07, greater ‘contracting out' of services by firms or households in the industrial and agricultural sectors, which alters aggregate accounting, is not an important explanation for the increasing share of the services sector in total output. This is an important result, particularly because the period after the mid-1990s saw a notable increase in the share of the services sector in total output, while that of industry remained largely unchanged. At the same time, we find that at a disaggregated level, ‘contracting out' is irrelevant for most service sub-sectors, and has only a very small effect on the increasing importance of banking and business services.

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1. Introduction

Table I shows that, in India, during the period from 1980-81 and 2006-07, the share of the agricultural sector in GDP declined by about 20 per cent. Over the same period, the increase in the share of the industrial sector in GDP was, at best, modest, while the increase in the share of the services sector in GDP was so substantial that it picked up more than 80 per cent of the decline in the share of the agricultural sector in GDP.

Table I: Sectoral Shares in Gross Domestic Product in India: 1950-51 to 2006-07

	1980-81	1990-91	1998-99	2006-07	Change between 1980-81 and 2006-07	Change between 1998-99 and 2006-07
Agriculture	38.9	31.3	26.4	18.5	-20.4	-7.9
Industry	24.5	27.6	27.2	27.9	3.4	0.7
Services	36.6	41.1	46.4	53.6	17.0	7.2

Source: Central Statistical Organisation, National Accounts Statistics

These facts do not conform to the conventional wisdom about structural change and are striking for two reasons. First, the expansion of the services sector in India has been very rapid during the past 25 years. Second, the services sector now appears to dominate economic activity, having constituted as much as 54 per cent of the country's GDP in 2007.

It maybe argued that the rapid growth of the services sector in India is notional rather than real. This can be explained by two factors: an increase in the relative price of services or a statistical artifice whereby what was earlier subsumed in manufacturing or agriculture value added is now accounted for as service sector contributions to GDP. For instance, firms in the industrial sector may make greater use of specialist sub-contractors to provide legal, accounting, and R&D services, which were previously provided by the firms themselves. Similarly, households in the agricultural sector may make greater use of specialist transport and distribution service providers for activities they previously carried out themselves.

The object of this paper is to analyze the importance of increased ‘contracting out’, which alters aggregate accounting, as an explanation for the increasing importance of the services sector in India. In doing so, it carries out statistical analysis of input-output coefficients from National Accounts Statistics (NAS). The contribution of the paper to the literature is two-fold. First, it extends existing analysis beyond the late 1990s. This important because the period from 1998-99 to 2006-07 saw a notable increase in the share of the services sector in total output (see Table I). Second, it carries out the same exercise at a disaggregated level for different service sub-sectors. This is important as, given the wide variety of economic activities includes in the services sector, analysis at an aggregate level may conceal more than it reveals. The scope of the paper does not include an analysis of the impact of relative prices. But it has been shown elsewhere that the relative price of services in India did not increase notably during the period from 1993-94 to 2003-04 (Nayyar 2009). The structure of the paper is the following. Section 2 discusses the relevance of the theoretical work of Coase (1937) on the nature of the firm in providing a rationale for ‘contracting out’ services to specialist providers. Section 3 presents results of the existing empirical literature analysing the importance of ‘contracting out’ to the growth of the

services sector. Section 4 explains the statistical methodology used and discusses results. Section 5 presents conclusions.

2. The Nature of the Firm

In a seminal article, Coase (1937) argues that, "as a firm becomes larger, the costs of organising additional transactions within the firm may rise". According to him, this may be due to misallocation of factors of production, duplication of tasks or an increase in the supply price of one or more factors of production owing to "other advantages" of small firms[1]. Hence, a firm will tend to expand until it becomes more profitable to 'contract out' certain activities to other firms as opposed to producing them in-house. In the more recent literature, Bhagwati (1984) refers to this process as 'splintering'. This is relevant for explaining the growth of the services sector as an increase in scale and the application of new technologies has increased the complexity of production, especially in manufacturing, implies that 'contracting out' to specialist service providers maybe more efficient than producing the same services in the firm. Importantly, if services components of manufacturing and agricultural activity such as distribution and transport are 'contracted out' to other firms, their inclusion in services value added will increase in the share of services in GDP, even when GDP is not growing itself.

3. The Empirical Literature

Gordon and Gupta (2004) estimate the importance of 'contracting out' to services growth in India by analysing the increase in the input usage of services in the agricultural and industrial sectors. Importantly, they measure this through changes in input-output coefficients, which measure flows of intermediate transactions of different services required to produce a rupee worth (one unit) of agricultural or industrial output (Table II). They show that splintering added about half a percentage point to annual services growth between 1979-80 and 1993-94. Singh (2006) uses the same methodology to obtain essentially no contribution of splintering between 1989-90 and 1998-99. He notes that this methodology does not enable an analysis of cross-country splintering as input-output coefficients, derived from India's NAS, do not include data on foreign producers. But Singh (2006) also argues such splintering would imply a real shift in economic activity to India, rather than an accounting change.

4. Contribution to the Existing Literature

4.1 Analyzing a Longer Time Period

We use the methodology provided by Gordon and Gupta (2004) to extend the analysis beyond 1998-99, using the latest data which is available for 2006-07. This is important as during the period from 1998-99 to 2004-05, the share of the industrial sector in GDP remained more or less unchanged, while that of the services increased by 7 per cent (see Table I). The input-output coefficients for 2006-07 are derived[2] from the input flow (absorption) matrix in India's NAS [see Table II].

[1] Such as a preference of managers to head small independent businesses rather than departments in a large business.

[2] They are derived as the ratio of the value of a set of service inputs to the total output of the industry.

Table II: Input-output coefficients for the Indian Economy (1979-80 to 2006-07)

		Agriculture	Industry	Services
1979-80	Agriculture	0.160	0.130	0.039
	Industry	0.068	0.345	0.105
	Services	0.020	0.149	0.096
1989-90	Agriculture	0.166	0.042	0.035
	Industry	0.144	0.373	0.172
	Services	0.047	0.188	0.185
1993-94	Agriculture	0.145	0.035	0.034
	Industry	0.140	0.365	0.150
	Services	0.048	0.213	0.195
1998-99	Agriculture	0.117	0.081	0.019
	Industry	0.075	0.397	0.145
	Services	0.050	0.173	0.144
2006-07	Agriculture	0.156	0.046	0.021
	Industry	0.097	0.482	0.137
	Services	0.075	0.165	0.131

Source: Pre-2006-07, Singh (2006); 2006-07, Author's calculations

Table II reveals that during the period from 1979-80 to 2006-07, the input-output coefficient for services input in agriculture and industry increased by 0.055 and 0.016 respectively. These coefficient changes would have changed the demand for services (as a first round, partial equilibrium effect) by:

$$\Delta Y_S = 0.055 Y_A + 0.016 Y_I \quad (1)$$

Dividing Equation (1) throughout by total output, Y, we get:

$$\Delta Y_S / Y = 0.055 (Y_A / Y) + 0.016 (Y_I / Y) \quad (2)$$

Next, dividing Equation (2) throughout by services sector output, Y_S, we get:

$$(\Delta Y_S / Y) / Y_S = [0.055 (Y_A / Y) + 0.016 (Y_I / Y)] / Y_S \quad (3)$$

$$=> \Delta Y_S / Y_S = [0.055 (Y_A / Y) + 0.016 (Y_I / Y)] * (Y / Y_S) \quad (4)$$

$$=> \Delta Y_S / Y_S = [0.055 (Y_A / Y) + 0.016 (Y_I / Y)] / (Y_S / Y) \quad (5)$$

Evaluating Equation (5) at the average sectoral shares during the period (0.30, 0.26 and 0.44 for agriculture, industry and services respectively) yields:

$$\Delta Ys / Ys = [(0.055*0.30) + (0.016*0.26)]/0.44 = 0.047$$

The above implies that during the twenty-seven year period from 1979-80 to 2006-07, splintering increased annual services growth by about 0.17 percentage point., i.e. it had a negligible contribution. This is intuitive given that some of the fastest growing services during this period, including hotels and restaurants and communication, were oriented towards final consumption.

At the same time, growth in financial services, business services and wholesale and retail trade was also important (Gordon and Gupta 2004).

4.2 The Analysis at a Disaggregated Level

Importantly, while splintering may have had little contribution to the growth of the services sector in the aggregate, this may not be true for sub-sectors that predominantly serve intermediate demand. Hence, the above analysis, which is carried out at an aggregate level, may conceal more than they reveal. For analysis at a more disaggregated level, we compute input-output coefficients using primary data from the input flow (absorption) matrix in India's NAS, which unfortunately is not available for before 1993-94.

Table III: Changes in Service Input-Output Coefficients: 1993-94 to 2006-07

	Agricultural Output	Industrial Output	Share of sector in GDP (average over the period)
Wholesale and Retail Trade	0.014	-0.008	0.137
Hotels and Restaurants	0.000	0.000	0.010
Transport	0.000	-0.016	0.055
Storage	0.000	0.000	0.001
Communications	0.000	0.003	0.031
Banking and Insurance	0.000	0.008	0.065
Public Administration and Defence	0.000	0.000	0.055
Education, Research and Health	0.000	0.000	0.053
Other Services (Business, Real estate, Renting and Personal Services)	0.001	0.012	0.087

Source: Author's calculation based on Central Statistical Organisation of India, National Account Statistics

Note: Figures are rounded off to the third decimal place

Table III shows that during the period from 1993-94 to 2006-07, input usage of storage, communications, hotels and restaurants, public administration and defence and education and health services in producing agricultural and industrial output has remained more or less constant. In part, this is because many of these services cater almost exclusively to final demand. Strikingly, use of transport services as an input for agricultural and industrial production has reduced, while splintering increased the growth of wholesale and retail trade by only 1.5 percentage points during this twenty-seven year period. Similarly, splintering increased the growth of financial services and 'other services' (business, real estate and personal services) by only 3.2 and 3.9 percentage points respectively.[3] Therefore, over a twenty-seven year period, the increase in the use of these two services as inputs in other sectors plays a very small part in explaining their increasing share in GDP.

[3] The relevant data for business services as an independent category are not available for 1993-94.

5. Conclusion

Analysing data from India's NAS, we found that, contrary to common presumption, during the period from 1979-80 to 2006-07, greater 'contracting out' of economic activity by firms or households in the industrial and agricultural sectors to specialist service providers is not an important explanation for the increasing share of the services sector in total output. The period studied includes the decade after the early 1990s, which saw the most rapid growth of the services sector in India, associated with a structural change in the composition of output (Rakshit, 2007). At the same time, we found that at a disaggregated level, 'contracting out' is irrelevant for most services sub-sectors, and has only a very small effect on the increasing importance of banking and business services. Hence, the growth of the services sector in India has largely been real rather than notional. This real growth of the services sector is probably attributable to high income elasticity of final demand for education, health, transport, communication and personal services (Nayyar, 2009). It is also attributable, in part, to increased tradability of software, business-process outsourcing and other professional services in international markets (Rakshit, 2007, and Gordon and Gupta 2004) and large endowments of highly skilled labour which is important for banking, business, telecommunication, education and health services (Amin and Mattoo, 2008).

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