

Services-Led Industrialization in India

Assessment and Lessons

Nirvikar Singh

Professor of Economics

University of California, Santa Cruz

Institute for South Asian Studies

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Why this Topic?

- India one of the fastest growing economies over the last two decades
- Dynamism of the service sector – over 60 percent of growth in the 1990s from services
- Stands out from traditional development path from agriculture to manufacturing, with services becoming important at a later stage
- Questions arise about India's development pattern
 - What is its nature?
 - Is it sustainable?
 - Is it replicable?

Outline

1. Conceptual Framework
2. India's Growth Experience
3. Service Sector Growth and Impacts
4. Linkages and Spillovers
5. International Trade in Services
6. Employment, Education and Training
7. Social and Environmental Issues
8. Conclusions

Conceptual Framework (1)

- Characteristics of services
 - Intangibility
 - Heterogeneity
 - Simultaneity of production and consumption
 - Perishability
- Imply non-storability, non-transferability, lack of scale economies
- Display and consumer assessment of characteristics difficult

Conceptual Framework (2)

- But boundary between products and services often a function of market and economic conditions, rather than the intrinsic characteristics of what is being exchanged
- Practical application of conceptual distinctions incorporates contractual nature of transaction
 - For example, utilities typically classified as services in national income accounts, since contractual relationship is primarily for delivery services
- In general, products and services often bundled

Conceptual Framework (3)

- Locational characteristics important in international trade classifications:
 - Those that require physical proximity of the user and provider
 - Mobile provider and immobile user
 - Mobile user and immobile provider
 - Mobile user and mobile provider
 - Those that do not

Conceptual Framework (4)

- Digital technology has several impacts
 - Greater routinization and standardization; more lie manufacturing
 - Less need for physical proximity

Table 1: Services Sub-sectors for India

Sector	Activities Included
Trade, hotels and restaurant	
<i>Trade</i> (distribution services)	Wholesale and retail trade in commodities both produced at home (including exports) and imported, purchase and selling agents, brokers and auctioneers
<i>Hotels & Restaurants</i>	Services rendered by hotels and other lodging places, restaurants, cafes and other eating and drinking places
Transport, storage and communication	
<i>Railways</i>	
<i>Transport by other means</i>	Road, water, air transport, services incidental to transport
<i>Storage</i>	
<i>Communication</i>	Postal, money orders, telegrams, telephones, overseas communication services, miscellaneous
Financing, insurance, real estate and business services	
<i>Banking</i>	Banks, banking department of RBI, post office saving bank, non-bank financial institution, cooperative credit societies, employees provident fund
<i>Insurance</i>	Life, postal life, non-life
<i>Dwellings, real estate</i>	
<i>Business services</i>	
<i>Legal services</i>	
Community, social and personal services	
<i>Public administration, defense</i>	
<i>Personal services</i>	Domestic, laundry, barber, beauty shops, tailoring, others
<i>Community services</i>	Education, research, scientific, medical, health, religious and other community
<i>Other services</i>	Recreation, entertainment, radio, TV broadcast, sanitary services

India's Growth Experience (1)

- Growth acceleration began some time in the 1980s
 - Growth during 1980s inconsistent
 - Last three years of decade contributing 7.6 percent annual growth
 - Without that, growth in 1980s only marginally better than that of the previous three decades
 - High growth in 1980s preceded or accompanied by significant trade and industrial policy liberalization
 - Growth in 1980s fueled by expansionary policies that contributed to an economic crisis.
- “The 1991 market reforms and subsequent liberalizing policy changes ... helped sustain growth”

Table 2: Structural Breaks in India's Growth Rates

Series	Break Year 1	Break Year 2
GDP	1980**	
GNP	1987**	
Trade, transport, storage, and communication	1992**	
Finance, insurance, real estate, and business services	1974**	1980***
Agriculture, forestry and logging, fishing, mining and quarrying	1979	
Manufacturing, construction, electricity, gas and water supply	1964	
Registered manufacturing	1964	
Public administration, defense and other services	1993	

India's Growth Experience (2)

- Growth acceleration mostly not a result of structural breaks in sub-sectors
 - Shifts from slow to fast growing sub-sectors
- Services sector grew fastest, especially in 1990s
 - 12 of 15 service sub-sectors grew faster than GDP over 50 year period
 - 5 sub-sectors responsible for most of 1990s services growth acceleration
 - Business services, communication, banking services, hotels and restaurants, community services

India's Growth Experience (3)

- FDI inflows moved away from manufacturing and towards services sector
- India's skill-intensive growth continues in services as well as manufacturing

Service Sector Growth and Impacts (1)

- Some service sector growth may be due to splintering/unbundling of service activities out of manufacturing sector
 - Domestic splintering added 0.5 percentage points of growth in 1980s
 - No contribution in 1990s
 - Misses international splintering, but that is more a real shift than accounting change
- Service sector growth not purely demand (income elasticity) driven
- Indirect and case study evidence for positive role of policy liberalization, e.g., IT, telecoms

Service Sector Growth and Impacts (2)

- Positive impact of industrial growth on services growth
- Service inputs contributed little to production of registered manufacturing sector during the 1980s
- Contribution of services increased substantially in the 1990s
- Increasing use of services in manufacturing in the 1990s favorably affected TFP
- Trade reforms played an important role in increasing use of services in manufacturing sector

Service Sector Growth and Impacts (3)

- Underlying theoretical basis for empirics
 - Use of ICTs (products and services) increases productivity
 - Use of ICTs reduces transaction costs
 - Increases product variety and long-run productivity
 - Improved transportation also reduces transaction costs
 - Use of ICTs spurs innovation

Linkages and Spillovers (1)

- Based on input-output production linkages, in 1970s and 1980s
 - Agricultural production became more industry and services intensive
 - Industrial production became less agriculture intensive and more services intensive
- Little change in 1990s
- Demand linkages tell a similar story

Table 3: Sectoral Production Linkages

	Agriculture	Industry	Services
1968-69			
Agriculture	0.182	0.127	0.017
Industry	0.043	0.333	0.132
Services	0.016	0.135	0.096
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

Linkages and Spillovers (2)

- More disaggregated analysis also supports conclusion that
 - Indian economy is quite services-intensive with industry being the most services-intensive sector

Table 4: Distribution of Activities with Above Average Sectoral Intensity

Activity Categories (number)	Agriculture Intensive			Industry Intensive			Services Intensive		
	Direct intensity		Direct & indirect intensity 1993-94	Direct intensity		Direct & indirect intensity 1993-94	Direct intensity		Direct & indirect intensity 1993-94
	1993-94	1998-99		1993-94	1998-99		1993-94	1998-99	
Agricultural activities (22)	15	14	15	0	0	0	1	1	1
Industrial activities (80)	18	19	22	57	61	55	56	57	59
Service activities (13)	1	1	1	3	3	3	6	7	2
Total activities (115)	34	34	38	60	64	58	63	65	62
Average intensity	7	6	12	29	24	59	15	14	30

Linkages and Spillovers (3)

- Intermediate level of aggregation:
 - Manufacturing, construction and “electricity, gas and water supply” are all services intensive
 - Among services activities
 - “transport, storage and communication” are together quite industry intensive
 - “personal, social and other services,” and “trade, hotels and restaurants” also somewhat industry intensive
 - Level of linkages to and from agriculture is quite low.
 - Surprisingly, the same is true for “financing, insurance and real estate”
- In 1990s, “transport, storage and communications,” “financing, insurance and real estate,” and “personal and social services” all became more services intensive in absolute and relative magnitude

Table 5: Sectoral Intensity – Aggregate Categories

Sector	Agriculture			Industry			Services		
	G		G*	G		G*	G		G*
	(Rank)	(Rank)	(Rank)	(Rank)	(Rank)	(Rank)	(Rank)	(Rank)	(Rank)
	93-94	98-99	93-94	93-94	98-99	93-94	93-94	98-99	93-94
Agriculture	0.131 (2)	0.093 (3)	0.172 (3)	0.092 (7)	0.091 (7)	0.211 (8)	0.057 (10)	0.051 (9)	0.122 (8)
Allied activities	0.179 (1)	0.173 (1)	0.220 (1)	0.039 (10)	0.038 (10)	0.127 (9)	0.068 (8)	0.049 (10)	0.121 (9)
Mining & quarrying	0.000 (9)	0.000 (9)	0.028 (9)	0.190 (5)	0.143 (6)	0.358 (5)	0.070 (7)	0.059 (8)	0.152 (7)
Manufacturing	0.091 (3)	0.110 (2)	0.179 (2)	0.420 (2)	0.417 (2)	0.811 (1)	0.185 (2)	0.179 (2)	0.385 (1)
Construction	0.024 (5)	0.021 (5)	0.095 (4)	0.362 (3)	0.340 (3)	0.706 (3)	0.202 (1)	0.171 (4)	0.381 (2)
Electricity, gas & water supply	0.004 (8)	0.003 (8)	0.038 (8)	0.453 (1)	0.440 (1)	0.800 (2)	0.166 (4)	0.176 (3)	0.330 (3)
Transport, storage & communication	0.023 (6)	0.005 (7)	0.074 (5)	0.282 (4)	0.276 (4)	0.560 (4)	0.175 (3)	0.191 (1)	0.317 (4)
Trade, hotels & restaurants	0.034 (4)	0.048 (4)	0.060 (6)	0.091 (8)	0.083 (8)	0.214 (7)	0.160 (5)	0.131 (6)	0.227 (5)
Financing, insurance & real estate	0.000 (10)	0.000 (10)	0.006 (10)	0.044 (9)	0.056 (9)	0.089 (10)	0.061 (9)	0.105 (7)	0.087 (10)
Personal, social & other services	0.016 (7)	0.013 (6)	0.048 (7)	0.152 (6)	0.157 (5)	0.301 (6)	0.090 (6)	0.144 (5)	0.167 (6)
Average Intensity	0.050	0.064	0.092	0.212	0.241	0.418	0.123	0.139	0.229

Linkages and Spillovers (4)

- Transportation, trade and communications
 - All have high impacts on transaction costs
 - Have all been markedly inefficient
 - 1980s and 1990s saw this begin to change
 - Plausible interpretation of input-output results is that, through linkages, this change has stimulated the entire economy to some extent
- Time-series analysis also suggests forward linkages from key service sectors
- IT-based services may reduce transaction costs, and provide spillovers through knowledge acquisition and information access

Table 6: Leading Sectors, 1998-99

	Relative growth factor	Growth rate (base 7 percent)
Electricity, gas & water supply	1.0108	8.16
Iron, steel and ferro-alloys	1.0049	7.52
Non-ferrous basic metals	1.0037	7.40
Other services	1.0031	7.33
Other transport services	1.0028	7.30
Railway transport services	1.0020	7.21
Coal and lignite	1.0018	7.19
Trade	1.0016	7.17
Miscellaneous manufacturing	1.0016	7.17
Inorganic heavy chemicals	1.0013	7.14

Growth effect of increasing efficiency of sector by 5%

International Trade in Services (1)

- IT and ITES exports helped relax India's BoP constraints
- In 1990s, ratio of services exports to merchandise exports increased from 25% to 45%
- Positive balance also in travel services
- Exports of services were highly significant for explaining overall growth of business services
- The growth of other kinds of services did not show much sensitivity to exports

International Trade in Services (2)

- Sub-sectors such as health and education have growth and development impacts that are affected by international trade
- Services that face high trade barriers have mostly grown slowly
- Others, which have seen moderate liberalization, such as health and education, have had their growth held back by domestic constraints
 - Infrastructure inadequacies
 - Poor quality and standards
 - Lack of clear-cut responsibilities between center and state governments
 - Other policy-related disincentives

Table 7: Categorization of Services by Extent of Trade Liberalization and Growth

	Substantially Liberalized	Moderately Liberalized	Less than Moderately Liberalized / Restricted
High growth (10% and above)	Software Services H Telecommunication M	Banking M Insurance M Travel H Health L Education L	
Moderate Growth (5-9%)			Legal L
Low growth (0-5%)	Road Transport L	Construction L Air Transport M	Professional Services, e.g., Postal, Accountancy L Rail Transport L

H High share in exports of services (10% and above)

M: Moderate share in exports of services (5-9%)

L: Low share in exports of services (less than 5%)

Employment, Education and Training (1)

- Slow overall growth in employment
 - True of organized manufacturing sector in particular
 - True of services overall, though less so
 - Agricultural sector not generating employment since the early/mid 1990s
- Aggregate employment generation improved after 2000
 - Growth coming in urban areas and small-scale sector

Table 8: Growth of Employment by Sectors

Industry	Employed Workers, Millions (%)			Annual Growth Rates, %	
	1983	1993-94	1999-2000	1983-94	1994-2000
Primary	208.99 (69.0)	245.16 (65.5)	239.83 (60.4)	1.60	-0.34
1. Agriculture				1.51	-0.34
2. Mining and quarrying				4.16	-2.85
Secondary	41.66 (13.8)	55.53 (14.8)	66.91 (16.8)	2.91	3.14
3. Manufacturing				2.14	2.05
4. Electricity, gas and water supply				4.50	-0.88
5. Construction				5.32	7.09
Tertiary	52.11 (17.2)	73.76 (19.7)	90.26 (22.7)	3.53	2.42
6. Trade				3.57	5.04
7. Transport, storage and communication				3.24	6.04
8. Financial services				7.18	6.20
9. Community, social and personal services				2.90	0.55
Total employment	302.76 (100)	374.45 (100)	397.00 (100)	2.04	0.98

Table 9: Shares of Different Sectors in Increase of Employment (Million)

Sectors	1983	1993-94	Increase during 1983-93	Share in Increase, %	1999-2000	Increase during 1994-2000	Share in Increase, %
Primary	208.99	245.16	36.17	50.5	239.83	-5.33	-23.6
Secondary	41.66	55.53	13.87	19.3	66.91	11.38	50.4
Tertiary	52.11	73.76	21.65	30.2	90.26	16.50	73.2
Total	302.76	374.45	71.69	100.00	397.00	22.55	100.00

Employment, Education and Training (2)

- Poor manufacturing employment growth a longstanding problem (since independence)
- Employment elasticities are low in the 1980s and 1990s, supporting the long-run view of the employment problem
- Some decrease in employment elasticities in the 1990s
- Improvement after 2001
- Skill intensity of both services and manufacturing may be the real problem
- Spillovers harder to come by as well in skill-intensive services

Table 10: Sectoral Employment Elasticities

Sectors	1983 to 1987-88	1983 to 1993-94	1993-94 to 1999-2000
Agriculture	0.87	0.70	0.01
Mining and quarrying	1.25	0.59	-0.41
Manufacturing	0.59	0.38	0.33
Electricity, gas and water supply	0.30	0.63	-0.52
Construction	2.81	0.86	0.82
Trade, hotels and restaurants	0.87	0.68	0.62
Transport, storage and communication	0.47	0.55	0.63
Financing, insurance, real estate and business services	0.49	0.45	0.64
Community, social and personal services	0.52	0.68	-0.25
ALL	0.68	0.52	0.16

Employment, Education and Training (3)

- Theoretical and empirical analyses of employment aspects of India's growth experience suggest that
 - Constraints on employment can be traced to labor demand side disincentives heavily built into the labor laws labor
 - And supply side constraints, in educational system
- Education sector provides underpinnings for rest of economy
- Policy battles over existing rents, rather than relaxing supply constraints through supporting freer entry

Social and Environmental Issues (1)

- Particular kinds of inequality in income may affect demand patterns in a way that reduces innovation and growth
- Skill-intensity may be exacerbated by the rapid increase in services exports
 - In sub-sectors where necessary skills available only to a small minority
- Scale economies and skill scarcities may magnify existing regional inequalities
- Correlations between structural change and growth are low

Table 11: Structural Change in Selected Indian States

		Agriculture	Industry	Services	Sum of absolute values	Structural change rank
Andhra Pradesh	1993-94 share	35.9	15.5	48.5	100.0	
	2003-04 share	28.3	15.3	56.4	100.0	
	Percent change	-21.3	-1.6	16.3	39.2	14
	Percentage point change	-7.7	-0.3	7.9	15.8	13
Bihar	1993-94 share	51.4	5.2	43.5	100.0	
	2003-04 share	38.0	2.8	59.1	100.0	
	Percent change	-26.0	-45.3	36.1	107.4	2
	Percentage point change	-13.4	-2.3	15.7	31.4	4
Chhattisgarh	1993-94 share	34.3	30.0	35.7	100.0	
	2003-04 share	23.8	30.1	46.1	100.0	
	Percent change	-30.5	0.3	29.1	59.8	10
	Percentage point change	-10.5	0.1	10.4	20.9	9
Goa	1993-94 share	15.9	32.4	51.7	100.0	
	2003-04 share	7.8	32.5	59.7	100.0	
	Percent change	-51.1	0.5	15.4	66.9	9
	Percentage point change	-8.1	0.1	8.0	16.2	12
Gujarat	1993-94 share	24.3	30.9	44.9	100.0	
	2003-04 share	21.3	30.5	48.2	100.0	
	Percent change	-12.1	-1.4	7.5	21.0	18
	Percentage point change	-2.9	-0.4	3.4	6.7	18
Haryana	1993-94 share	42.6	18.0	39.4	100.0	
	2003-04 share	25.8	24.0	50.3	100.0	
	Percent change	-39.6	33.4	27.6	100.5	3
	Percentage point change	-16.9	6.0	10.9	33.7	3
Jharkhand	1993-94 share	26.4	38.8	34.9	100.0	
	2003-04 share	24.2	35.9	39.9	100.0	
	Percent change	-8.2	-7.5	14.5	30.1	17
	Percentage point change	-2.2	-2.9	5.1	10.1	17

Table 11: Structural Change in Selected Indian States

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Karnataka	1993-94 share	37.5	19.2	43.3	100.0	
	2003-04 share	19.3	18.9	61.8	100.0	
	Percent change	-48.5	-1.7	42.8	93.0	5
	Percentage point change	-18.2	-0.3	18.5	37.0	2
Kerala	1993-94 share	32.0	12.3	55.7	100.0	
	2003-04 share	18.6	10.9	70.4	100.0	
	Percent change	-41.8	-10.7	26.4	78.9	7
	Percentage point change	-13.4	-1.3	14.7	29.4	6
Madhya Pradesh	1993-94 share	42.9	16.0	41.1	100.0	
	2003-04 share	33.7	16.4	49.9	100.0	
	Percent change	-21.5	2.5	21.5	45.6	12
	Percentage point change	-9.2	0.4	8.8	18.5	11
Maharashtra	1993-94 share	20.7	26.4	52.9	100.0	
	2003-04 share	12.7	19.8	67.4	100.0	
	Percent change	-38.5	-25.0	27.6	91.1	6
	Percentage point change	-8.0	-6.6	14.6	29.2	7

Table 11: Structural Change in Selected Indian States

		Agriculture	Industry	Services	Sum of absolute values	Structural change rank
Orissa	1993-94 share	44.3	13.8	41.9	100.0	
	2003-04 share	36.5	13.9	49.6	100.0	
	Percent change	-17.5	0.8	18.2	36.5	15
	Percentage point change	-7.8	0.1	7.6	15.5	14
Punjab	1993-94 share	48.2	15.3	36.4	100.0	
	2003-04 share	38.3	15.6	46.1	100.0	
	Percent change	-20.7	1.9	26.6	49.1	11
	Percentage point change	-10.0	0.3	9.7	19.9	10
Rajasthan	1993-94 share	35.2	15.5	49.3	100.0	
	2003-04 share	29.1	16.3	54.5	100.0	
	Percent change	-17.2	5.5	10.5	33.2	16
	Percentage point change	-6.0	0.8	5.2	12.1	16
Tamil Nadu	1993-94 share	25.6	27.2	47.1	100.0	
	2003-04 share	12.1	18.2	69.7	100.0	
	Percent change	-52.8	-33.2	47.9	133.9	1
	Percentage point change	-13.5	-9.0	22.6	45.2	1
Uttar Pradesh	1993-94 share	41.1	15.3	43.6	100.0	
	2003-04 share	36.3	13.1	50.6	100.0	
	Percent change	-11.7	-14.0	16.0	41.7	13
	Percentage point change	-4.8	-2.1	7.0	13.9	15
Uttaranchal	1993-94 share	39.8	17.0	43.2	100.0	
	2003-04 share	31.1	10.3	58.5	100.0	
	Percent change	-21.7	-39.2	35.4	96.3	4
	Percentage point change	-8.6	-6.7	15.3	30.6	5
West Bengal	1993-94 share	34.7	17.9	47.4	100.0	
	2003-04 share	27.1	13.3	59.6	100.0	
	Percent change	-21.8	-25.8	25.7	73.4	8
	Percentage point change	-7.6	-4.6	12.2	24.4	8

Table 12: Per Capita NSDP Changes in Selected Indian States

State	1993-94	2003-04	Growth (percent)	Growth rank	Structural change index
Andhra Pradesh	7416	11756	58.52	5	15.8
Bihar	3037	3557	17.12	18	31.4
Jharkhand	5897	7732	31.12	13	20.9
Goa	16558	30506	84.24	1	16.2
Gujarat	9796	16780	71.29	3	6.7
Haryana	11079	15752	42.18	9	33.7
Karnataka	7838	13141	67.66	4	10.1
Kerala	7983	12328	54.43	7	37
Madhya Pradesh	6584	8284	25.82	16	29.4
Chhattisgarh	6539	8383	28.20	14	18.5
Maharashtra	12183	16479	35.26	11	29.2
Orissa	4896	6487	32.50	12	15.5
Punjab	12710	16119	26.82	15	19.9
Rajasthan	6182	9685	56.66	6	12.1
Tamil Nadu	8955	12976	44.90	8	45.2
Uttar Pradesh	5066	5975	17.94	17	13.9
Uttaranchal	6896	9471	37.34	10	30.6
West Bengal	6756	11612	71.88	2	24.4

Social and Environmental Issues (2)

- Concerns about cultural loss associated with certain kinds of ITES
- Environmental impacts of service-intensive growth may differ

Conclusions (1)

- Manufacturing, services and agriculture are all important
- Need policy steps to improve growth and employment across the economy
- Specific policy suggestions to improve the tradability and productivity of particular services
- Linkages suggest that certain service sub-sectors of the economy, such as trade, transportation and communications, may be particularly important

Conclusions (2)

- Dichotomy between services and manufacturing overdrawn
 - Certain kinds of services can be organized in ways that are closer to modern manufacturing
- Skill-intensity may be a more important characteristic
- Constraints on appropriate skill acquisition that face the majority are the greatest barrier to sustained growth of any kind
- Debate on the role of services in India's growth was in simplified terms, as services substituting for manufacturing
- Refocus on productivity, linkages and distributional concerns, rather than any simple dichotomous choice