

The Service Revolution

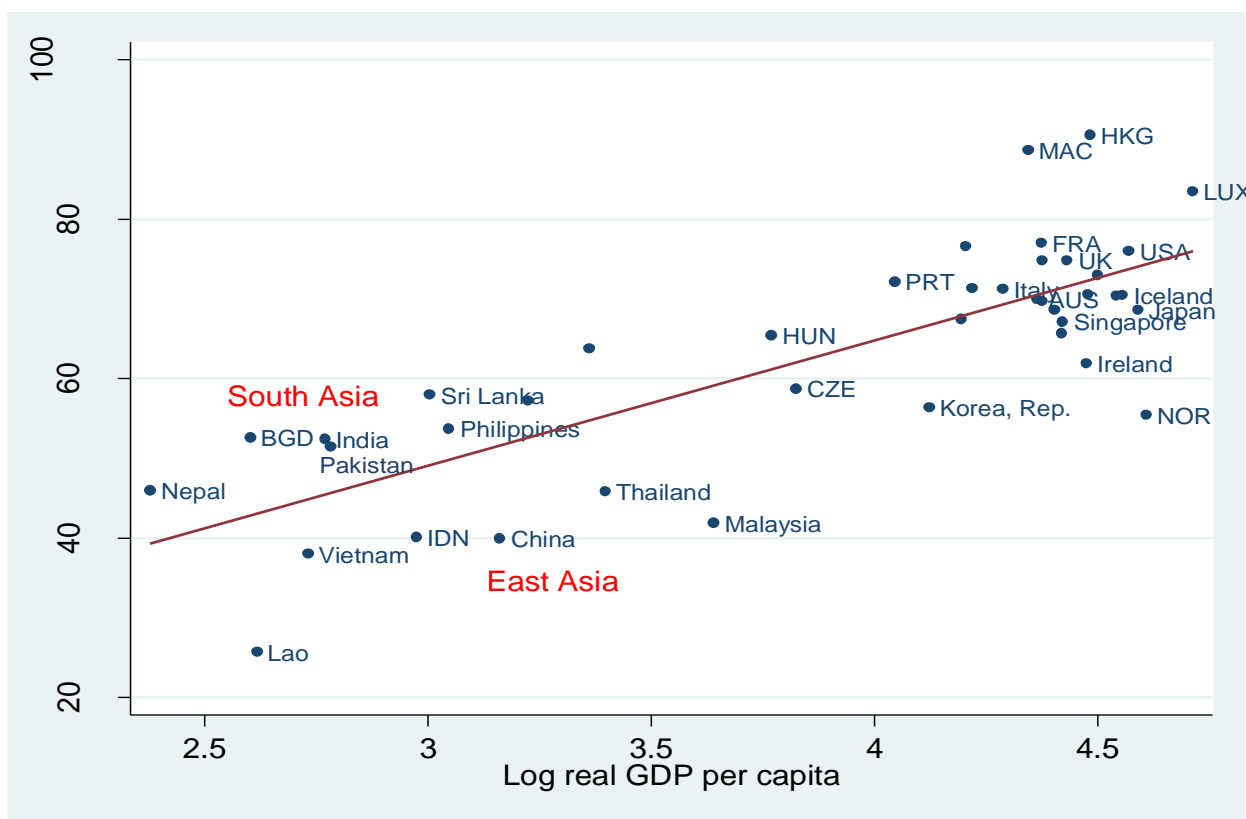
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China and India are the two fastest growing economies in the world. However, their growth patterns are dramatically different. Figure 1 compares the share of service value added in GDP in China, India and OECD countries. The share of the service sector in India is much bigger than in China, after controlling for their stage of development. China has a large manufacturing sector, and it has a global reputation for exporting manufactured goods. India has a small manufacturing sector but a large services sector, and it has acquired global recognition for exporting services.

The difference in their growth patterns are so striking that it raises big questions in development economics. Can service sector be as dynamic as manufacturing sector? Can service-led-growth contribute to job creation and poverty reduction? Can the late comers to development take advantage of globalization of service?

Figure 1: Comparing the contribution of manufacturing and service sectors to GDP in China and India, 2005



Source: The Service Revolution in South Asia (Ghani and Kharas, 2010).

Comparing China and India's Growth Patterns

Table 1 reports the results of cross-country growth regressions for a large group of countries. In 1991, India's share of service sector in GDP was 5 percentage points above the global norm, after controlling for stage of development, and non-linearity in development. USA's relative share of service was 9 percentage points above the norm. However, China was a negative outlier. Its share of service sector in GDP was 6 percentage points less than the global norm. By 2005, India had become an even bigger outlier on services compared to the global norm. The size of its service sector was 6 percentage points above the global norm. China, on the other hand, became an even bigger negative outlier. Its relative share of service was nearly 8 percentage points below the global norm. So service has continued to remain a more important sector for India, but not so important for China, controlling for other things.

Table 1 - China, India, & USA in the Cross Section: Shares of Manufacturing and Service in GDP

	Share of Service		Share of Manufacturing	
	1991	2005	1991	2005
Log GDP per capita	11.58 (12.82)	26.28 (12.00)	33.79*** (10.53)	18.89*** (7.00)
Log GDP per capita ²	0.17 (1.94)	-1.95 (1.77)	-4.56*** (1.60)	-2.41** (1.03)
India indicator	4.83*** (1.53)	6.09*** (1.66)	2.96** (1.27)	3.01*** (0.76)
China indicator	-5.8* (3.37)	-7.92 (4.35)	18.35*** (3.31)	18.26*** (1.57)
USA indicator	8.91** (3.82)	12.29*** (4.88)	1.66 (3.19)	1.12 (2.18)
Control for size	YES	YES	YES	YES
Observations	158	161	136	155

Notes: Robust standard errors are reported in paranthesis.

*** represents significance at 1%, ** at 5%, and * at 10%.

Country size is measured by area in square kilometres.

What about the manufacturing sector? In 1991, China was a huge positive outlier in manufacturing, compared to the global norm. Its manufacturing share in GDP was a whopping 18 percentage points above the global norm, controlling for other factors. India's share was merely 3 percentage points above the norm. The coefficient for USA

was not significantly different from zero. In 2005, China's share of manufacturing in GDP was even higher at 19 percentage points above the global norm. India and USA's relative share of manufacturing in GDP had not changed much.

Are export patterns of China and India also different? Table 2 reports cross-country regression results for the share of total service export in total exports of goods and services and the share of modern service export (IT and IT-enabled service exports) in total exports. In 1982, the share of service exports in total exports for China and India was not significantly different than the global norm. Only USA had a significant positive coefficient. Its relative share of service export was 20 percentage points above the global norm. In 2006, India was a significant and large positive outlier. Its share of service export in total exports was nearly 21 percentage points greater than the norm. China's coefficient was not significantly different from zero.

Table 2 - China, India & USA in the Cross Section--Share of Total Service Export and Modern Service Export (Computer and Information Service Exports) in Total Exports of Goods and Services

	Share of Service Export in Total Export		Share of Computer, Information Services in Total Export	
	1982	2006	2000	2006
Log GDP per capita	-4.3 (28.90)	2.39 (27.30)	-2.01** (1.12)	-3.17* (1.90)
Log GDP per capita ²	0.36 (4.20)	0.06 (3.97)	0.37** (0.19)	0.53* (0.32)
India indicator	2.8 (4.47)	20.97*** (3.60)	7.96*** (0.08)	14.7*** (0.14)
China indicator	4.1 (7.90)	15.6 (10.03)	.32 (0.23)	.59* (0.35)
USA indicator	20.16*** (1.60)	31.4*** (10.50)	-.46 (0.34)	-.74 (0.55)
Control for size	YES	YES	YES	YES
Observations	109	125	137	116

Notes: Robust standard errors are reported in paranthesis.

*** represents significance at 1%, ** at 5%, and * at 10%.

Country size is measured by area in square kilometres.

Services can be divided into two broad categories--modern services and traditional services. Modern services are linked to information communication technology (ICT). They can be unbundled and splintered in a value chain just like goods. Because they are disembodied, they can be electronically transported internationally through satellite and telecom networks. The number of services that can be transported digitally is constantly expanding--processing insurance claims; call centers, desktop publishing; the remote management and maintenance of IT networks; compiling audits; completing tax returns; transcribing medical records; health records, and financial research and analysis.

The other broad category of services is traditional services which are less ICT-intensive, and require face to face interaction. These include transport, trade, hotel, restaurant, beauty shops, barbers, education, health and other government and community services. It is modern services that are developing rapidly thanks to the 3Ts (Ghani, 2010): growing tradability, more sophisticated technology (including specialization, scale economies and off-shoring) and reduced transport costs.

A good measure of modern impersonal service export is IT and IT-enabled services. Cross-country data for IT exports is available only from 2000 onwards. Table 2 shows that India stood out as a significant and positive outlier when we compare its share of IT and IT-enabled exports in total exports of goods and services with the rest of the world, and control for real GDP per capita and non-linearities in development. India's share was nearly 8 percentage points above the norm after controlling for other factors. The relative share of modern services in total exports for China was not significantly different than the norm. A distinctive feature of India is that it is emerging as a major exporter of modern impersonal service, which is growing much faster than traditional personal service export, and service exports from India in turn are growing much faster than good exports from China.

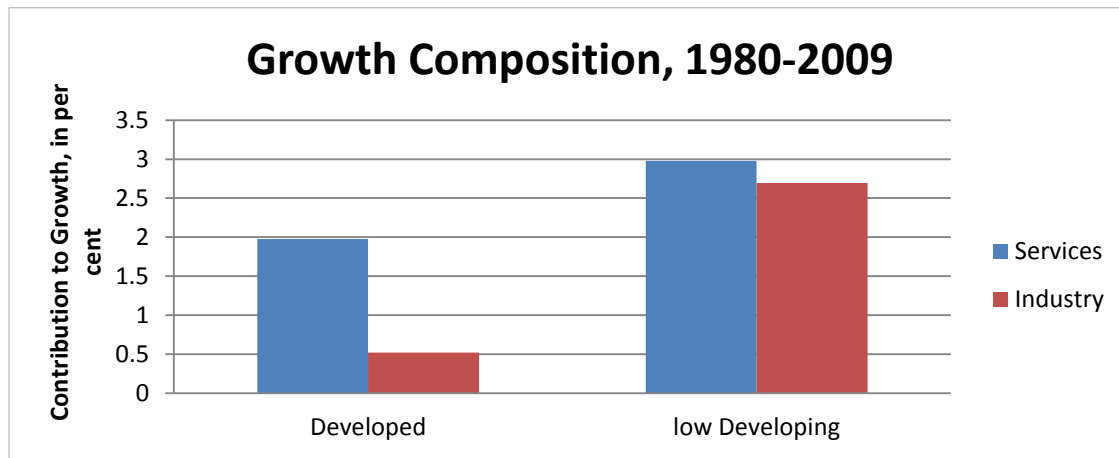
It is not that China is not competitive in any service export. Indeed, they are doing much better than Indian firms in traditional services, which are closely associated with manufacturing sector. Traditional services like transport, logistics and trade have grown more rapidly in China compared to India. India's traditional services have not grown as fast. It is in modern services, which can be transported through the internet (auditing, accounting, financial, and health services) that have grown rapidly in India. Modern services have grown more rapidly in India despite a small manufacturing base. Growth in modern services is not tied to growth of the manufacturing sector.

Can Service sector contribute to Growth?

Services have long been the main source of growth in rich countries. Now they are also the main source of growth in poor countries. Services have become a larger share of GDP in poor countries and productivity growth in services exceeds that in industry for most poor countries. This is largely explained by the rapid development of modern, commercial services—business processing, finance, insurance, and communications. Modern service productivity growth, in turn, is driven by the 3T's: tradability, technology and transportability.

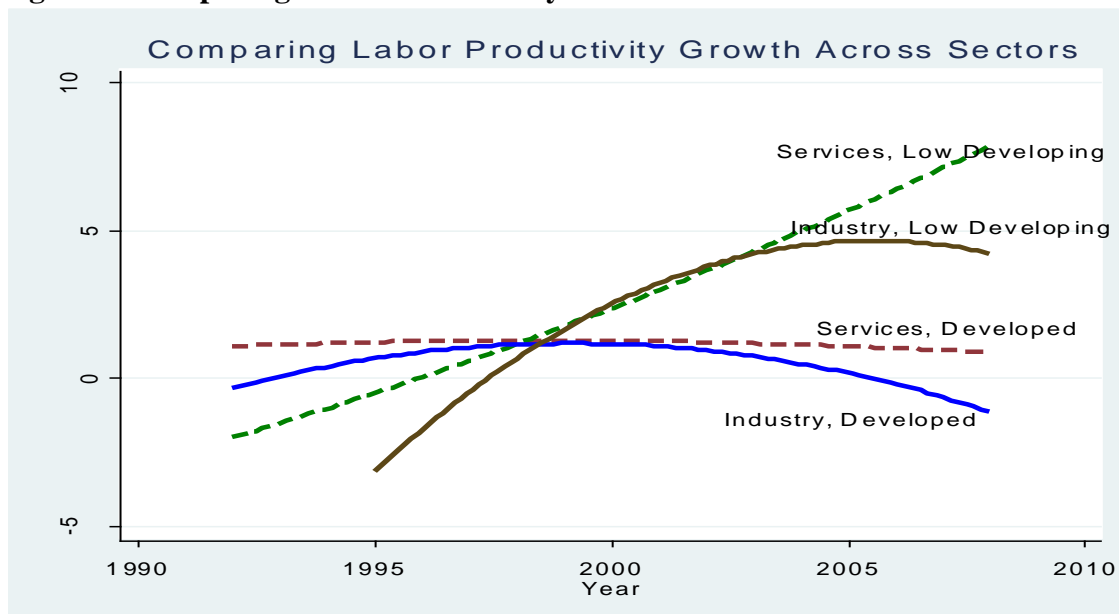
For more than 200 years, it was argued that economic development, growth and structural transformation out of agriculture was best achieved through developing a labor-intensive manufacturing sector. Expansion of the service sector was seen as giving rise to stagnant growth (Baumol 1967, 1986; Kaldor 1966). Services were considered as menial, low skilled, low wage, low productivity sectors, with low innovation, low learning and low spillovers (McCredie and Bubner, 2010). Today, services can be among the most dynamic sectors in an economy, even in poor countries.

Figure 2: Sources of Growth in Rich and Poor Countries



Source: Authors' calculation from World Development Indicators, World Bank.

Figure 3: Comparing Labor Productivity across Sectors



Source: Authors' calculation based on World Development Indicators

Note: Labor Productivity is calculated as the Sector Value Added per employee. Line shown is the best-fit quadratic function.

More than 75 percent of the global economy is now accounted for by services (45 percent in developing economies). Services are the fastest growing sector in global trade. The share of developing countries in world service exports increased from 14 percent in 1990 to 21 per in 2008. The average growth of service exports from poor countries has exceeded that of rich countries during the last two decades. Their service exports are growing faster than goods exports. In brief, the globalization of service has enabled developing countries to tap into services as a source of growth.

It is perhaps not surprising that services are expanding rapidly in upper middle income developing countries. Their economies increasingly resemble those of rich countries where services have long dominated economic growth. This note, however, focuses on the contribution of services to poor countries, defined as the low income and lower middle income countries in the World Bank classification in 2009. Low income countries have a per capita income of US\$ \$995 or less and lower middle income countries have a per capita income in the range of \$996 - \$3,945.

Figure 2 shows the composition of services and industry to GDP growth in the last thirty years for rich and poor countries. In both cases, the contribution of services to total growth is higher than industry's contribution. In poor countries, services (and industry) have contributed more to growth than in rich countries.

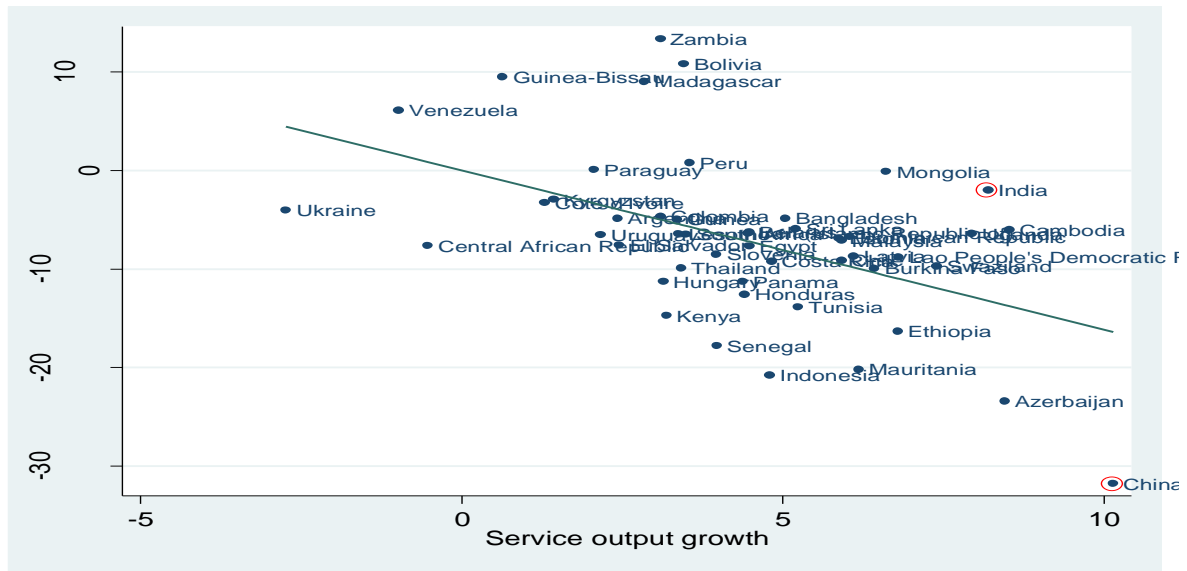
Figure 3 shows that the rise in services' contribution to growth is linked to a rise in productivity growth in the sector. The figure shows that labor productivity growth in rich countries has been higher in services than in industry for the last thirty years, and that it remains positive. That implies that the global technology frontier for services is still shifting out, while that for industry has stagnated. At the same time, productivity growth in poor countries in services is accelerating and appears to have outstripped productivity growth in industry. In 58 out of 94 countries for which we have data, productivity growth in services exceeded that in industry.

India's growth pattern in the 21st century is remarkable because it contradicts a seemingly iron law of development. This law—which is now conventional wisdom—says that industrialization is the only route to rapid economic development for developing countries. It goes further to say that as a result of globalization the pace of development can be explosive. But the potential for explosive growth is distinctive to manufacturing only (UNIDO 2009). This is no longer the case.

Role of Service led Growth in Poverty Reduction and Job Creation

We find that growth in the service sector is more correlated with poverty reduction than growth in agriculture for a sample of 50 developing countries. Visually, we can plot the change in poverty between 1990 and 2005 against the growth of services (Figure 4). The negatively sloped line indicates the strong association between services output growth and poverty reduction for our sample of developing countries.

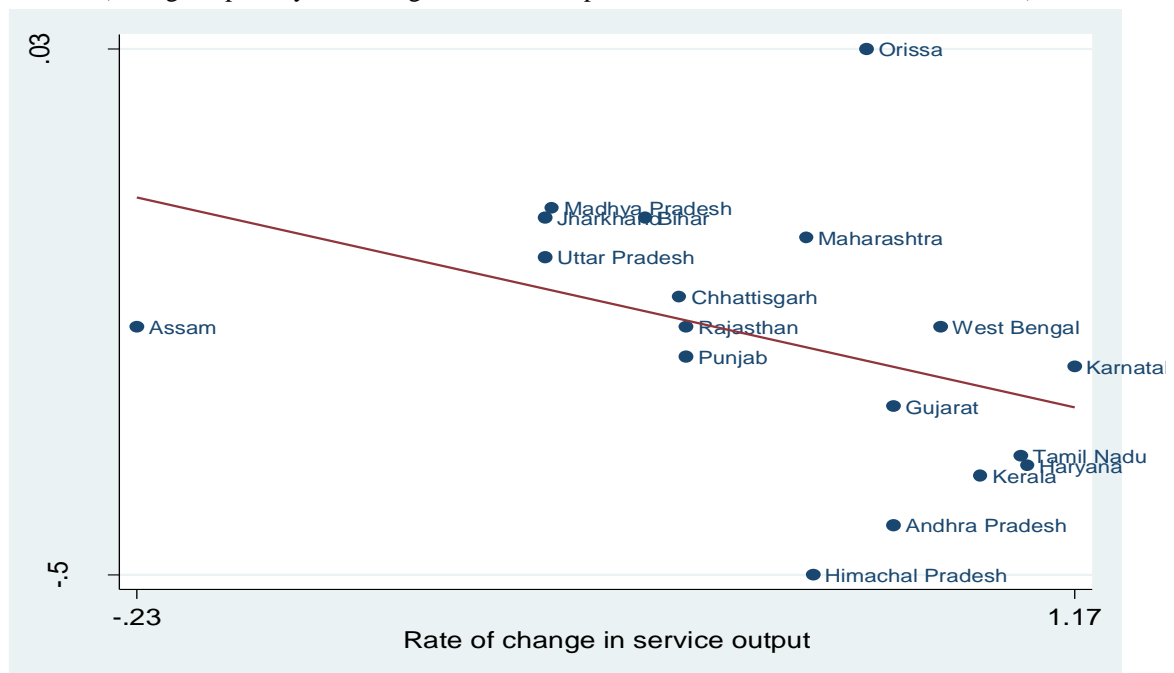
Figure 4: Change in Poverty and Growth in Service Output (1990-2005)



Source: World Bank, World Development Indicators.

Note: Change in poverty (1991-2205) after controlling for initial level of poverty, and growth in agricultural output, manufacturing output, and service output.

Figure 5: Service output growth is a big contributor to poverty reduction in India
(Change in poverty and change in service outputs at the state level in India, 1994-2005)



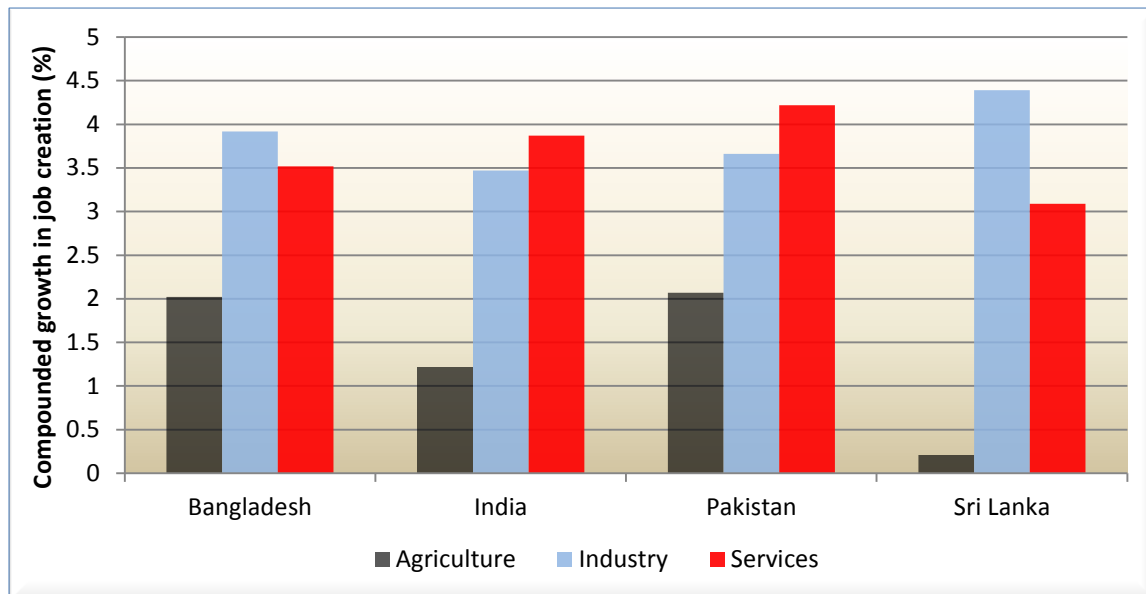
Source: The Service Revolution, Chapter 1, Ghani (2010).

These results are further confirmed when we examine the impact of sectoral growth patterns on poverty reduction within India, using a panel of Indian state data from 1994 to 2005. Our results show that the trend growth in the service sector among Indian states is

associated with a decrease in the trend of the headcount poverty rate of almost 1.5 points during the sample period. In fact, the service sector is the only sector showing a statistically significant association with poverty reduction. Similar results are found when differentiating into rural and urban poverty. Service sector growth is strongly associated with a reduction in both urban and rural poverty rates. Some states like Andhra Pradesh, Kerala and Tamil Nadu, have experienced a significant decrease in urban poverty that is associated with an increase in their service sector share (figure 5).

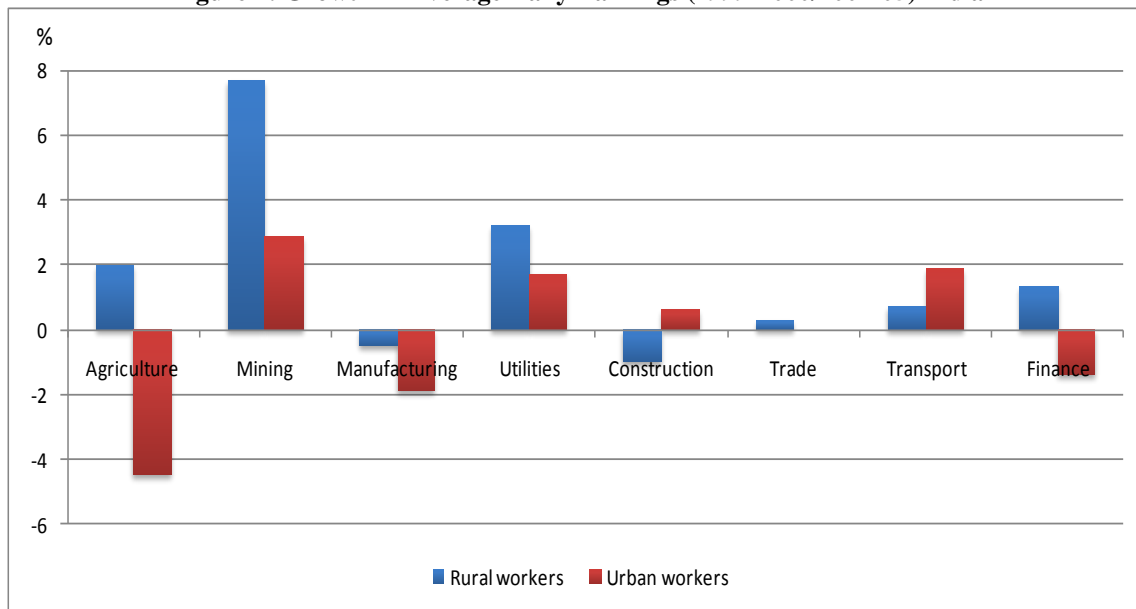
Services contribute to poverty reduction via two channels. Directly, they provide the largest source of new job growth. Indirectly, they provide the income that, when spent, drives further demand for goods and services and jobs to produce these. Figure 6 shows that the service sector in India has had the fastest growth in the number of jobs created in recent years. In addition to direct job creation, some estimates suggest that the indirect effect of a growing service sector can be larger than the direct effect. For instance, India's IT industry association NASSCOM estimates that for every job created in the IT sector, four additional jobs are created in the rest of the economy due to high levels of consumption spending by professionals employed in this sector.

Figure 6: Job Creation Rates in Agriculture, Industry and Services Sectors, 1990-2006



Source: Bangladesh: Labour Force Surveys, in Key Findings of Labour Force Survey and Statistical Yearbook, various editions. India: Sivasubramonian: The Sources of Economic Growth in India 1950-1 to 1999-2000 for earlier years, and Bosworth, Collins and Virmani (2007) for the more recent period Pakistan: LABORSTAT, ILO, 2008 and Handbook of Statistics on Pakistan Economy, Sri Lanka: up to 1989: KILM, from 1990 onwards Labour Survey Reports, various editions.

Figure 7: Growth in Average Daily Earnings (1999-2000/2004-05) India



Source: Kundu and Mohanan 2009.

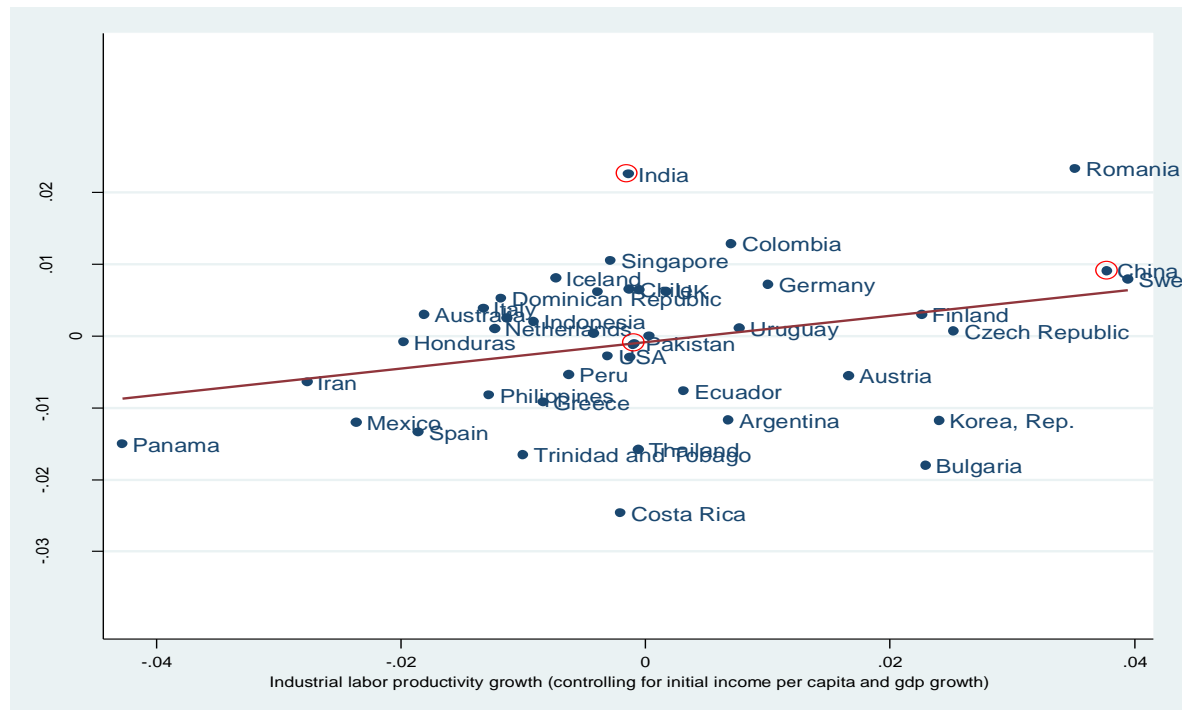
Note: Agriculture includes agriculture, forestry and fishing; Mining includes mining and quarrying; Utilities includes electricity, gas and water supply; Trade includes trade, hotels and restaurants; Transport includes transport, storage and communications; Finance includes financial intermediation, real estate and business.

Are Service jobs good jobs?

Wage growth has been higher in the services sector than in manufacturing and agriculture in recent years in India. While manufacturing wages fell in the early 2000s in both rural and urban areas despite rapid economic growth, service sector wages in utilities, trade, transport, and even rural finance improved. In fact, in many sectors, rural wages may have increased faster than in urban areas, possibly reflecting the rising rural-urban migration over time that is taking place in India. It is this internal rural-urban migration and links between rural and urban labor markets that allows the modern impersonal service sector in India to contribute to overall poverty reduction, even though modern services are concentrated in urban areas.

Is the service sector more productive in India than in China, and manufacturing sector more productive in China compared to India? Figure 8 compares service labor productivity and industry labor productivity for a large sample of countries, after controlling for initial GDP per capita and GDP growth. India is way above the line. It shows much higher labor productivity in the service sector compared to industry. On the other hand, China shows much higher labor productivity in industry compared to services.

Figure 8: Comparing Service Labor Productivity Growth and Manufacturing Labor Productivity Growth over 1991-2005



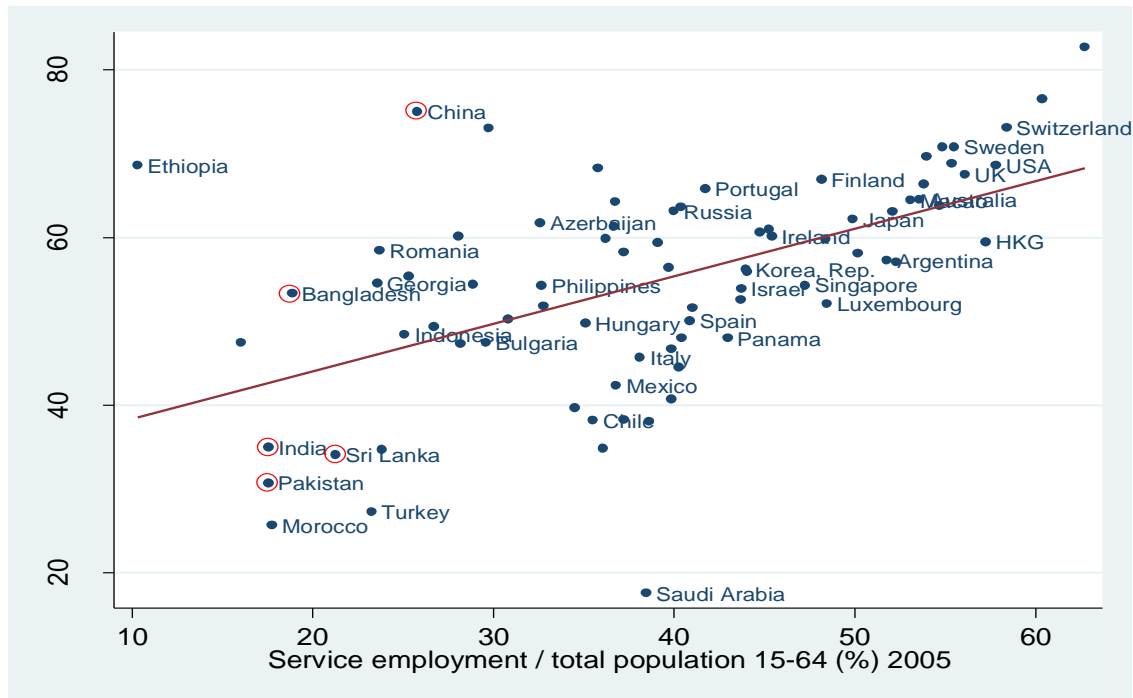
Note: The vertical axis is growth in service labor productivity after controlling for initial income per capita and GDP growth whereas the horizontal axis is industrial labor productivity growth controlled for initial income per capita and GDP growth, for the time period 1991-2005. The line represents a linear regression line.

There are two tipping points that are driving higher service labor productivity growth rates. First, low income countries that have the benefit of low wage rates, scale economies, and knowledge spillovers, like India, are catching up with the global production possibility frontier in services. In essence, the service sector in India has behaved like the manufacturing sector in China. Second, high income countries like Singapore, Sweden, United Kingdom, and United States are pushing the global production possibility frontier in services through innovation.

Currently South Asia suffers from one of the lowest female labor force participation rates in the world. Only around one-third of all women of working age in India, Pakistan and Sri Lanka are actually working or looking for work. Internationally, countries with high employment in services tend to have the highest participation of women in the labor market. (Figure 9). The development of service industries, therefore, brings new workers into the labor force, making the contribution to aggregate growth even larger.¹

¹ In this, services play a similar role to labor-intensive manufacturing exports in East Asia. There, assembly jobs in garments and electronics assembly have been largely filled by women moving out of low-productivity self-employment on family farms.

Figure 9: Female employment goes hand in hand with increased service employment



Source: The Service Revolution (Ghani, 2010)

The employment of women has a special role in poverty reduction. Incomes of households where women have jobs are significantly higher. Higher household incomes and enhanced economic status for women in turn reduce the number of children per household, drive higher levels of education and health care for those children, and increase household savings and the ability to accumulate assets that generate additional income.

Can Service led growth be sustained?

Yes, because the current globalization of service is just the tip of the iceberg (Blinder, 2006). Service is the largest sector in the world, accounting for more than 70 percent of global output. The Service Revolution has altered the characteristics of services. Services can now be produced and exported at low cost (Bhagwati, 1984). The old idea of services being non-transportable, non-tradable, and non-scalable no longer holds for a host of modern impersonal services that are moved across borders over the internet, digitized and stored electronically, and scaled into giant global businesses. Developing countries can sustain a service led growth as there is a huge room for catch up and convergence.

Technological change in ICT has progressed at a dizzying pace. The range of business processes that can be digitized and traded globally is constantly expanding: processing insurance claims; desktop publishing; the remote management and maintenance of IT networks; compiling audits; completing tax returns; transcribing medical records; financial research and analysis. The list of possible activities is almost endless.

Can poor countries take advantage of this trend? The answer appears to be yes. India has been a pioneer, but many other poor countries are finding it easier to generate productivity growth in services than in industry. This does not happen automatically. Although the same set of general non-distortionary policies is as important for modern services as for goods, specific strategies for services matter.

Modern services need a strong telecommunications backbone. Use of the internet, personal computers and telephone lines are all independently significant in service exports (Lennon, 2006). So is more advanced education (secondary and higher). Promoting FDI selectively in telecom sectors is now an active component of industrial policy in many developing countries (Alfaro and Charlton, 2007).

Globalization of services provides many opportunities for late-developing countries to find niches, beyond manufacturing, where they can be successful. Taking advantage of these opportunities requires a government that energetically takes steps to accelerate services growth, through a variety of policies (Bhagwati, 2004). Services may provide the easiest and fastest route out of poverty for many poor countries.

India's development experience offers hope to late comers to development. The marginalization of Africa during a period when China and other East Asian countries grew rapidly led some to wonder if late-comers were doomed to failure. Many considered the bottom billion to be trapped in poverty (Collier, 2007). The process of globalization in the late 20th century led to a strong divergence of incomes between those who industrialized and broke into global markets and a "bottom billion" of people in some 60 countries where incomes stagnated for twenty years. It seemed as if the "bottom billion" would have to wait their turn for development, until the giant industrializers like China became rich and uncompetitive in labor-intensive manufacturing.

The promise of the Service Revolution is that countries do not need to wait to get started with rapid development. There is a new boat that development late-comers can take. The globalization of service provides alternative opportunities for developing countries to find niches, beyond manufacturing, where they can specialize, scale up and achieve explosive growth, just like the industrializers. The core of the argument is that as the services produced and traded across the world expand with globalization, the possibilities for all countries to develop based on their comparative advantage expand. That comparative advantage can just as easily be in services as in manufacturing or indeed agriculture.

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