



PUNE INTERNATIONAL CENTRE



INDIA'S NEW GROWTH MODEL

April 2022

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INTRODUCTION

India's growth story has broken an iron law of development that has held for two hundred years since the Industrial Revolution. India has catapulted itself straight from an agricultural economy into a major service center, thanks to the digital revolution. Over the last 30 years, India has grown twice as fast as the world economy, and has ranked in the top 10 percent of all countries in growth performance. Service has been the largest contributor to GDP growth, job growth, and poverty reduction, and pace of contribution has increased over time. Some have labelled India's growth pattern as idiosyncratic, and not sustainable.

Services have contributed more than manufacturing sector to India's output growth, job growth, and poverty reduction. India's output growth in services sector has increased at a much faster pace compared to USA. India's productivity growth in services, and export of services have also outperformed China's services sector. Service growth is the largest contributor to poverty reduction in India, with one percentage increase in service growth associated with a decrease in the poverty rate by 1.5 points.

India's growth path has contradicted the conventional path to development, with new models of growth displacing traditional sources of growth. Thanks to the 3Ts--tradability, technological innovation, transport--services are being unbundled, splintered in a value chain just like goods, and electronically transported globally. India's demographic dividend, and its youth bulge compared to an aging population in the developed countries, has enabled India to capitalize on the cost advantage, in terms of labor and skills to meet the demands of the fast-growing service industries. Indeed, India's demographic dividend and supply factors provide a higher revealed comparative advantage in this service revolution. There is as much scope for catching up and growth convergence through services than there is in manufacturing.



India's New Growth Model

Although high growth rate is common to both China and India, their growth patterns are very different. Unlike China, India is a service-led growth miracle. It is almost as if India skipped the manufacturing sector, and has leaped straight from agriculture into services. India did not wait for decades of industrialization and structural transformation to shift resources away from low productivity agricultural sector to higher productivity sectors.

A striking feature about India's structural transformation and growth is that the increase in national labor productivity growth rate from the re-allocation of labor across sectors is much higher in India compared to China and USA. This is expected, as agriculture accounts for a large share of the labor force in India, and labor productivity in agriculture is low.

India has experienced a much higher total factor productivity growth in the service sector compared to the manufacturing sector. India's total factor productivity growth rate in the service sector has increased at twice the rate compared to industry. India has performed better than China, when we compare India's total factor productivity growth rate in the service sector with that of China. In China, industrial labor productivity has contributed more to aggregate labor productivity growth, unlike in India where services have taken the leading role. In the USA, the contribution of sectoral labor productivity growth rates to national labor productivity growth rate is evenly balanced across sectors.

A comparison of cross-country regression on growth rates in total labor productivity, service labor productivity, and industrial labor productivity confirms the miracle of service-led growth in India. The size of the coefficient on service output growth is more than double compared to the coefficient on manufacturing output growth. The larger coefficient on service output growth compared to manufacturing output growth suggests that service is a bigger source of labor productivity growth. Services now provide a bigger scope for catch-up through productivity growth in services compared to manufacturing.

Whether India's share of service sector in GDP is too big or too small compared to other developing and developed countries can be measured by correcting for the level of per capita income, non-linearity in development, and country size. Empirical results do suggest that India, unlike China, has an unusually high share of the service sector in GDP.

What explains success of new growth model?

The 3Ts--technology, transportability, and tradability--have enabled rapid globalization of service. However, the 3Ts are common to all countries in the world. Why has India grasped this opportunity?

Growth is an outcome of complex interactions between market integration, institutions, investment in physical and human infrastructure, and leadership. Growth has common characteristics such as sound economic management, trade liberalization to tap into global markets, rapid technological adaptation and learning, and above all resource mobility away from low productivity and into high productivity areas. These policies are important to both service-led and manufacturing-led growth.

India's service led growth resulted from a combination of factors, including market integration, better institutions, improved availability and quality of infrastructure supportive of service growth, and availability of education and skilled labor force--scalability, depth, and quality of the talent pool.

Although India is not as well integrated in goods trade with the global economy, it adopted more liberal policies towards the service sector. Liberalized services like business and telecommunications services attracted significant domestic and foreign investment. In India, the majority of FDI inflows are concentrated in the service sector.

India removed the bureaucratic burden on IT service industry by removing licensing requirements. The IT service industry was declared an "essential services industry" in some states in India, allowing "365 x 24 x 7" operations, which was otherwise prohibited by restrictive labor laws in India. The institutions that affect day to day functioning of service firms in India are far more business friendly compared to institutions that impact goods. For example, the Telecommunications Regulatory Authority of India (TRAI), which impacts the electronic delivery of service, has performed better than institutions affecting trade in goods (roads authority, port authority, customs and product quality certification).

Public-private partnerships (PPP) are common and widespread in IT and IT-enabled business. Government and IT firms routinely work together to address resource constraints. In the area of skill development, for example, NASSCOM--the industry association in India representing more



than 1,200 IT companies—has created standards for competency assessment that are now also being used by state training institutions. The Indian diaspora has also played an important role in fostering the country's IT-BPO industry. It provided the contacts and networks that facilitated access to senior executives of major foreign companies who might otherwise not have considered investing in India as an IT-BPO destination in the early years.

India is well known for its poor physical infrastructure. But the infrastructure that matters to service trade is in a better shape. Manufacturing relies on hard infrastructure for transportation of goods—ports, roads, ships, air, and customs—for delivery of goods. Service relies on telephone lines and the internet for electronic delivery.

India has experienced a telecom revolution. The sector has experienced major investment and competition and this has improved electronic delivery of services tremendously. Technological change has favored the tradability of modern service (IT and business) which can be digitized and delivered long-distance, relative to traditional personal service (tourism and trade) which can only be delivered in person and faces poor infrastructure.

The Software Technology Parks of India (STPI) initiative launched by the Indian government in 1991 to overcome infrastructural and procedural constraints by providing data communication facilities, office space, and “single window” statutory services was extremely beneficial. The technology parks proved essential to the growth of the industry given the broader context of deficient infrastructure and bureaucratic red tape. India's telecommunications policies of 1994 and 1999 allowed private sector investments into the sector and cleared the path for establishment of alternative international gateways that were also critical to development of the IT services and ITES industries.

The dramatic success of modern service exports from India illustrates the importance of education which has depth and talent, and which can be easily scaled up. India has benefitted from globalization of service because it has a large number of highly skilled graduates. India has earned a strong reputation for its Indian Institutes of Technology (IITs) and the English language ability of IIT graduates.

India's education system is unique. It spends more on tertiary education, with 6 times more on tertiary education per student compared to primary education. This ratio is high when one compares it to Ireland, Israel, Mexico, South Africa, Kenya, USA and Philippines. Empirical results

of cross-country regressions on public expenditure on tertiary education per student for a group of 60 countries, controlling for initial GDP per capita, stage of development and country size (measured by country population) shows that the coefficient on India was more than 2 percentage points above the norm, one of the highest in the sample. It was statistically different from zero. The coefficient on China was also positive and statistically significant but its coefficient was small in comparison to the coefficient on India country indicator. The coefficient on USA was not significantly different from zero.



How has changes in globalization impacted Service-led growth?

Globally, the service sector is much larger in relative size than manufacturing. Because of tradability, the demand curve for many services has become much more elastic. This permits services to be a source of sustained growth (absent this, growth is choked off by declining prices when the demand curve slopes down). The demand for service increases disproportionately with increasing income. Services have huge potential for productivity gains because of trade, income elasticity, economies of scale and specialization, and externalities from learning, networking, and knowledge spillovers.

Given the impact of the 3Ts, it is not surprising that service has become the fastest growing sector in global trade. Since the 1980s, global trade in service has grown faster than global trade in merchandise goods. The ratio of service trade in service output for developing countries has increased much faster than for developed countries.

A disaggregation of global service export into modern service export (computer and information services, financials services, business services, communication) and traditional service export (travel and transport) shows that the former is growing much faster than the latter. First, the growth rate in share of modern service export in total service output has exceeded the growth rate in the share of traditional service export in total service output for both developing and developed countries. Second, it is striking that growth in the share of modern service export and traditional service export in total service output is growing much faster in developing countries compared to developed countries.

There is increasing evidence that countries that specialize in the types of goods that rich countries export are likely to grow faster than countries that specialize in goods that low income countries export. That is, specializing in knowledge service exports may sustain higher growth rates than specializing in low skill goods. India's IT and IT-enabled service exports have more in common with exports of developed countries. India has a ratio on IT service exports to total exports which is much higher than what would be predicted based on their income levels. This bodes well for sustaining the service export-led growth in India.

The "spillover" effects of modern service exports on the domestic economy is also immense. First, it has contributed to the development of other export-oriented service industries, creating more jobs. This can be most clearly seen in India, which began with skill intensive software

exports (custom application development, packaged software installation, network infrastructure management) and has now expanded to less skill intensive service exports, such as business processing outsourcing (BPO). The spillover effects of the rapidly expanding modern service sectors are also being felt across countries.

In today's world, new innovations have made services more productive and tradable. To the national accounts, the value of the services Google provides to its users – its contribution to GDP – is zero, because those services are free. The contribution of Facebook and Twitter's services are also zero. But Google makes our life easier in significant ways. We no longer go to the library to search for hours for the documents we need. The productivity we have gained by using Google's search engine is not being counted. It may be the case that a large part of innovation is not being counted or captured in national accounts and our GDP. Compounded over years, this makes a huge difference.

Innovation and technological changes have made location, proximity, and time requirements that inhibited service transactions earlier redundant. The impact of technological change is visible in the speed with which international exchange of business services have increased. Technological changes have dramatically improved the global availability and quality of infrastructure for delivering service. Transportation of goods has become cheaper in the past eighty years, but the cost of transporting services that could be digitized has fallen even more dramatically.

Technology has reduced the cost of trading or “cost of transaction”, as services can be more easily measured, exchanged, and outsourced. Technology has also made restrictive regulatory and trade regimes redundant. There are no customs posts in service trade unlike goods trade. The 3Ts have made more things tradable now than in the past.

The world is still at an early stage of the third industrial revolution—the information age. The internet age will continue to transform personal into impersonal services. Technological change in ICT has progressed at a dizzying pace. The range of business processes that can be globalized and digitized 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.



New forms of globalization and a Global Talent Race

Demographics are playing a new role in globalization, with an aging population in Europe and USA, and a youth bulge in India. There is a global race for talent. India has the largest diaspora in the world, with 20 million people living outside their homeland. The relationship between diaspora and the new country is complex, and it is still evolving. It can raise sentiments of distrust, envy, and resentment. But, the diaspora can also be a lifeline to the home country, as global remittances now exceed foreign direct investment inflows into India. Diaspora networking has also accelerated knowledge and technological diffusion within India. Global development institutions are now exploring how diaspora bonds can be used as new instruments for development.

India has a unique demographic advantage, with half of its population in the working age. There are four 20-year-olds for every 65-year-old in India, compared to Western Europe where the ratio is one to one. At the same time, average earnings in India are 70 times lower compared to Europe and USA. Combined, these demographic changes, and wage differentials, have become a strong impetus for India's migration.

A worldwide “war for talent” has started, and enterprises that manage their global talent pool well are marching ahead. Most multinational corporations now insist that high-potential executives gain global experience by working in other countries, and they have made international mobility a prerequisite for senior leadership positions. Some of the global economy's most familiar players – including Google, Microsoft, Alcoa, Clorox, Coca-Cola, McDonald's, Pepsi, and Pfizer – have immigrant CEOs. Indian immigrants to the USA are a spectacular success story, and bringing their own entrepreneurial stamp to the digital economy.

Although the share of migrants in the world's population has remained mostly stable for six decades, its composition has changed. The share of high-skilled migrants relative to low-skilled migrants has grown dramatically during the last decade. Nearly 75% of all high-skilled migrants reside in the United States, the United Kingdom, Canada, and Australia. More than 70% of software engineers in Silicon Valley are foreign-born.

The transition from Industrial Revolution to Digital Revolution has increased the demand for more skilled workers. This has been helped by the decline in communication and travel costs (high-skilled migrants tend to travel farther to their destination countries than do-less skilled migrants)

and the desire to explore educational opportunities outside their home countries. The main cause, however, is the growing recognition that human capital plays a key role in today's knowledge economy. Education has played an important role in facilitating the flow of expertise. India has become an integral part of the knowledge-based economy and global services supply chain, and witnessed a mushrooming of start-ups, innovating across domains such as digital payments, online retail, education and software.

Some have viewed global outsourcing as a substitute for global mobility. But while the internet does allow for some forms of labor to be provided at a distance, it has only strengthened diaspora networks, and ICT innovations have been complemented by these connections. Diaspora networks exchange have enabled India to leap-frog over several development stages.

India is one of the pioneers in recognizing the importance of diaspora, and meet the aspirations of the overseas Indian community as a significant constituency across the world. To promote investments from Indian Diaspora, several provisions have been put in place ranging from special incentives for Bank deposits, investments in the Share Market, and certain special provisions for OCIs and NRIs for Foreign Direct Investment. Also, to encourage employment of overseas Indians, amendments to rules for doctors, scientists, academics and accountants have been amended.

How vulnerable is India's new growth model to current global economic downturn?

Having narrowly avoided a global economic collapse twice, first in 2008, and then in 2020, when the coronavirus crisis almost led to a collapse of the financial system, the world now confronts a future of unprecedented risk, uncertainty, turmoil, and climate breakdown. How vulnerable is a service led growth to a global economic downturn?

During previous global downturns, the decline in services trade has been less volatile compared to goods in trade. Moreover, since service growth is largely being driven by technological changes, and the current pandemic will further accelerate technological changes, service-led growth is most likely to be relatively less affected by the global downturn compared to goods trade.

How will a global financial turmoil impact service-led growth? Service exports and remittances are the largest source of external fund inflows into India. They are much less volatile compared to portfolio and FDI inflows. While remittances amount to almost 8 percent of GDP, FDI inflows amount to one-third of this.



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How vulnerable is the future of service-led growth? The globalization of services is only the tip of the iceberg. As the services produced and traded across the world expand with globalization, the possibilities for all countries to develop on the basis of their comparative advantages expand. There is now a consensus that the growth slowdown in the US, China, Europe, and other major economies is the result of supply bottlenecks in the goods markets. On the other hand, the pandemic is opening many service sectors, and linking them to the global supply chains.

How inclusive is service-led growth?

There are different meanings attached to pro-poor and inclusive growth in the policy debates. This debate revolves around a distinction between the absolute and relative concepts of inclusive and pro-poor growth. The absolute concept is that growth is inclusive and pro-poor when it reduces poverty. The relative concept of pro-poor growth focuses on job creation, and reduction in income inequality and gender inequality. Job creation and reduction in gender inequality are better measures than income inequality, as the growth dynamic changes from “race to the bottom” to “race to the top”.

Our empirical evidence has shown that growth in the service sector has been more correlated to poverty reduction than growth in manufacturing. These results are further confirmed when we examine the impact of growth patterns on poverty reduction within India, using state level data. Empirical results show that 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. In fact, the service sector is the only sector which shows a statistically significant association with poverty reduction. Service sector growth is also strongly associated with a reduction both in the rural and urban poverty rate. Some states like Karnataka, Tamil Nadu, Andhra Pradesh, and West Bengal have experienced a significant decrease in poverty, thanks to the service revolution.

Service growth reduced poverty through two channels. First, they have provided the largest source of job growth. Second, they provided the income that, when spent, drives further demand for goods and services, and for the jobs to produce them. India has experienced the fastest growth in the number of jobs created in the services sector. In addition to direct job creation, some estimates suggest that the indirect effect of a growing services sector can be larger than its direct effect. For instance, India's information technology industry association (NASSCOM) estimates that for every job created in the information technology sector, four additional jobs are created in the rest of the economy, because of the high levels of consumption spending by professionals employed in this sector.

India's service led growth is inclusive, as it has created more jobs. However, the rate of job creation has not kept pace with the potential for labor mobility from agriculture to other sectors. It has also failed to keep up with India's demographic dividend. India needs to create more jobs, as nearly 200 million more people will enter the prime working age population over the next decade, who would need jobs.



The silver lining is that India's youth bulge and demographic dividend can contribute to additional growth. So will the increased female participation in the labor force. An additional benefit of service-led growth is that its environmental impact would be less dramatic, allowing time for income effects (favoring a clean environment) to work their way through to environmental regulation. Service-led growth may also avoid problems that come from natural resource export paths of development.

Policy Lessons

The 3Ts--technology, transportability, and tradability--have enabled India and other developing countries to benefit from a service-led growth. Technological changes, and in particular information communication technology (ICT), have disembodied and splintered services, just like manufactured goods were unbundled. Services can now be easily transported internationally through satellite and telecom networks.

The number of services that can be produced and traded 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 3Ts have unleashed the next industrial revolution--the information and internet age. This has opened new doors to late-comers to development.

Service is no longer a stagnant sector. It is the fastest growing sector in global trade. The share of service trade in service value added has increased at a much faster rate in developing countries compared to developed countries. Globalization of services has enabled developing countries to tap into service as a new source of growth.

India has experienced an exponential increase in service export, and managed to secure a leading position in the export of a number of modern services. There is an even bigger scope for catch-up through productivity growth in services compared to manufacturing sector, given that the service sector is much larger than manufacturing.

Growth in India will continue to benefit from cumulative causation in tradable services sector. Thick markets for service attract more service firms and workers. Service corridors, just like manufacturing clusters, benefit from externalities such as knowledge spillovers between firms, workers, and universities. Productivity enhancing externalities are far more prominent in service clusters compared to goods clusters, as services tend to be "non-rival" goods.

To ensure that a service-led growth is sustained and the benefits of service-led growth are widely shared, policy makers will need to focus on a few priorities. This will also help manufacturing sector growth, and accelerate the pace of job creation.



- **First**, India will need to scale up investments in human and physical infrastructure, without which market integration and connectivity cannot be achieved. The rate of return on infrastructure projects in India are much compared to OECD countries, given the huge potential for growth in India. The funds managed by institutional investors in OECD countries exceed \$100 trillion, but their current allocation to India is tiny. The basic traits of infrastructure projects in India make them extremely attractive for global institutional investors, given the long-term steady revenue stream generated by infrastructure projects, a desire to scale up investments in green growth, less volatility due to the long-term nature of their contracts, and investment returns that exceed inflation. This makes infrastructure investments in India much more attractive for private investors in a volatile world.
- **Second**, reduce the digital divide (that deprives more than 400 million people from access to the internet), the spatial digital divide (internet density in rural areas is lower than in urban areas), and gender digital divide (far fewer women have access to smartphones than men). India's digital divide has remained deep and persistent. It is multidimensional, and growing across states, within states and across gender groups. This digital divide is expected to worsen in the future with the onset of the new digital revolution, which is AI, and which will unleash a bigger wave of digital change. Unfortunately, India still lacks the investments to benefit from the new digital innovations.
- **Third**, firms and universities are currently at the frontline participants in the global talent race, but global-governance organizations, multilateral development banks, and civil-society groups also have key roles to play. So, too, does technology, which now allows for virtual talent mobility through video conferencing, digital platforms, online labor exchanges, and other applications. The global talent race will continue to accelerate as countries and businesses compete for the best and brightest. The race is on for the Indian diaspora.
- **Fourth**, avoid imposing internet tax that is akin to fees on reading books or charging people to have conversations with friends.

India's growth experience shown that the late-comers to development are not doomed to failure and the "bottom billion" have not missed the boat. Globalization of services provides many more opportunities for developing countries to find niches, beyond manufacturing, where they can dominate.

India's experience shows that industrialization is not the only route to economic development.

- Technological advances are now making the distinction between services and manufacturing increasingly blurred. The differences in the growth patterns in China and India have now started to converge. The manufacturing sector is now taking on characteristics of the services sector, with a growing share of occupations and revenues being derived from services they offer. Services are becoming more like manufacturing, as they have growing impacts on other sectors of economy. Business conditions are changing, and firms' business models are evolving from "make it, sell it" to "make it, sell it, and service it." This blurring between manufacturing and service is behind why the growth patterns of China and India are now converging.



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