

# Contents

<i>Introduction</i>	ix
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## **Part I: Development: An Indian Way**

Prelude	3
1. How Do Countries Grow Rich?	5
2. Why Has India Not Built a Global Manufacturing Presence?	16
3. The Transformation in Trade and Services-Led Development	31
4. Where Should India Place Its Hopes?	51

## **Part II: Governance, Capabilities and More**

Prelude: Governance and Structures	75
5. Governance for the Twenty-First Century: Structure	79
6. Governance for the Twenty-First Century: Process	102
7. Capabilities: The Childhood Challenge	120
8. Capabilities: Higher Education	140
9. Capabilities: Health Care	163
10. Addressing Inequality	182
11. India's Engagement with the World	204
12. A Creative Country	228

### Part III: Wrapping Up

Prelude	245
13. The Wrong Way	247
<i>In Conclusion</i>	267
<i>Acknowledgments</i>	271
<i>Notes</i>	275

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## PART I

# DEVELOPMENT: AN INDIAN WAY

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## Prelude

How might India grow faster to produce the jobs its people need? In Chapter 1, we will explain how a country develops and grows richer. We will focus on how Asian economies like China and Korea grew quickly over the last few decades following a manufacturing-exports-led strategy. In Chapter 2, we will examine why India did not follow the China strategy, even after India's liberalizing reforms in the early 1990s. This will highlight some of the weaknesses that make it difficult for India to excel in low-skill manufacturing. Historically, services have been hard to export, for reasons we will point out in Chapter 3. But across the world, even as the manufacturing-exports-led growth strategy is becoming harder to follow, both direct services exports as well as the export of services embedded in manufacturing are becoming easier, especially after the global pandemic in 2020–22. India has strong advantages in such exports, demonstrated by a significant existing share of such exports worldwide. In Chapter 4, we will argue that it is a mistake to elevate manufacturing over all else as the means for India to grow. It can also grow by expanding services, both direct services and services embedded in manufacturing, for export as well as for the domestic market. More important, the government has to build the basis for growth in any sector by strengthening the human capital of

India's people. The government also has to create an environment where people can be creative and entrepreneurial, where new firms can flourish and create the jobs the country desperately needs. All of this requires a reimagining and reorienting of the trajectory India is on. The proposed path, which we will draw out in Part II, will utilize India's strengths better and depend less on capabilities where India is weak.

1

## How Do Countries Grow Rich?

What does it mean for a country to be rich? Broadly speaking, richer countries produce more economic output per person—more food, such as grains and milk; more goods, such as cars, clothes, electronics and oil and natural gas; and more services, such as haircuts, doctor consultations, restaurant meals, hotel stays, films and software code. The more everyone in the country produces, the higher the incomes will be. So, the key to greater incomes is greater production per person, also called productivity.

Clearly, someone has to buy all those goods and services and pay for them—there has to be demand for all that is supplied. (As a side note, “supply” and “demand” are two of the most important words in economics, and if you speak fast and sprinkle what you say with these words, people will think you are a real economist.) A French economist, Jean-Baptiste Say, pointed out that the income from selling all that production becomes the means to buy that production. So, the farmer sells vegetables and uses the proceeds to pay for his laundry, while the laundry operator charges for laundering the farmer’s clothes and uses that to buy vegetables. Well, matters are a little more complicated, but production is largely what matters.

## Where Do Higher Incomes Come From?

What allows a worker to produce more? First of all, tools or machines. In preparing the ground for a building's foundations, a laborer with a spade digs more slowly than the operator of an earth mover. The latter's work is both easier and more productive, because it is aided by an immensely powerful machine. In the economist's parlance, the earth mover operator's labor is augmented by capital, the earth mover itself. Of course, an operator who does not know how to drive the earth mover or operate its shovel can damage production. So the worker's skills, or human capital, also affect how much they produce or how valuable their output is.

What else goes into increasing productivity? The organization of production matters. If the laborer shovels the earth into a wheelbarrow, which he then carts to a landfill, where he compacts the earth with a heavy roller and then starts laying the foundation of a building—each part of the production process may require specialized skills, yet one person does it all. What if, instead, the operator uses the earth mover to dump earth into a truck, which a truck driver takes to the landfill site, where the dumped earth is compacted by other operators driving steamrollers, and finally, bricklayers take over to build the foundation? Productivity is much higher in the latter operation, not just because workers use machines but also because workers specialize, and specialists are typically better at their specific tasks than generalists. The great Scottish economist Adam Smith noted the benefits of division of labor in enhancing production. Of course, such division of labor is possible only if the operation is sufficiently large, that is, if the scale of production is high. The chain of workers would make little sense if we were moving earth within a small kitchen garden—everyone would get in each other's way.

Also critical to capital and the organization of production is the technology that underpins both. A more fuel-efficient or powerful earth mover will allow the operator to generate more value with



her labor. Here, technology refers to the quality of the capital that augments labor.

Finally, it's also important to consider how workers are incentivized and how their output makes its way through the economy. Economists group these aspects into a catch-all word: "institutions." These could include incentive contracts for workers, the nature of ownership, logistics, the existence of markets, contract enforcement, regulations and the independence of courts. In a rich country, the operator might own the earth mover and so has an incentive to dig up as much and as quickly as possible. Furthermore, the truck that collects the dug-up earth would then travel over fast highways to the coast where a property developer, who purchased the earth in an online auction, would dump it into the sea to reclaim land, on which he would build a luxury hotel, earning a lot of money. In effect, there is a supply chain, linked through enforceable contracts, that utilizes what is produced well.

In a poor country, there would be very few immediate uses for the earth. Left on the side of the hole, the dug-up earth would blow away steadily in the wind, causing costly dust pollution elsewhere, with some even settling back into the same hole. Something as mundane as digging a hole can be done far more productively in a rich country than in a poor country.

So how does a poor country—where almost everyone is a farmer, herder or fisherman, or is part of a household dependent on someone who practises these occupations—develop? That is to say, how does it get rich? From the above example the answer is clear. Labor needs to be educated or trained so that human capital improves; it should be supported with more equipment or capital; the equipment has to get better through technological improvements; and institutions have to be created and strengthened, all with the aim of enhancing production and productivity (the value of production per worker).

Unfortunately, there is only so much that can be done to improve productivity in sectors like agriculture. The use of fertilizers, irrigation,

tractors and even giant combines can increase yields, but ultimately there is only so much land. In India, each agricultural worker had, on an average, only 0.67 hectares of arable land in 2020, while in the United States, the comparable figure was 46.6 hectares.<sup>1</sup> The Indian worker cannot produce much from a small plot of land, even if they use the best agricultural techniques. They could add value to their produce—for instance, by making pickles out of vegetables, or keeping chickens and goats—and many do, but it cannot get them anywhere near the wealth of the Americans.

Historically, workers had to move out of agriculture into manufacturing to increase productivity significantly. For much of the now-developed world, this was a slow process. One estimate suggests the share of labor in agriculture in England shrank steadily from around 63 percent in the 1550s to 35 percent in the 1750s.<sup>2</sup> Most workers who left agriculture spun, wove, stitched, sawed or hammered to make goods in their homes. The Industrial Revolution accelerated the pace of transformation. With the advent of the factory system, the increasing use of steam-powered machines, coupled with better organization of manufacturing, increased the efficiency of production.

Growth took off because a virtuous circle developed. As people left agriculture, those who stayed behind could consolidate land into larger farms. Mechanization in tilling, better-quality seeds, irrigation and new techniques of crop rotation helped the output produced per worker go up significantly. It turned out that many of the farm workers who had been employed earlier were not really needed, especially as farmers found more productive methods of working the fields when labor became harder to find.

Wealthier farmers had incomes to spend, and they spent it on finer clothes, stylish hats and shoes, better furniture and larger dwellings, thus consuming the products being churned out by the urban factories. As factory owners became richer, they invested their profits in better machines that would allow their workers to produce more. As workers

became more productive, they were paid more, and they too started contributing to demand.

New needs emerged. For example, the local tavern allowed the factory laborer to relax, even make merry, after a hard day's work in the factory. So, an industry developed around fermenting grain, distilling it and delivering beer to every part of the city. The employment of bartenders and barmaids also increased.

Initially, workers leaving agriculture for the factories did not have much education, nor did they need much. But as machines became more sophisticated and complicated, workers needed more training, even some knowledge of mathematics, physics and chemistry, to operate, maintain and repair those machines. Clever workers innovated on the shop floor, jury-rigging machines together to make them more efficient.

Furthermore, as factories became bigger, new positions, such as those of manager, engineer and accountant, had to be filled. As clothing came to be mass-produced, consumers demanded some diversity in styles, so factory owners started looking for clothing designers. Many existing jobs as well as these new jobs needed more skills and education. Given the scarcity of educated workers, wages went up for these positions.

Seeing that education paid off with higher wages and productivity, urban dwellers, supported by factory owners, demanded more and better schools for their children. From simply being seen as vehicles for imparting a civilizing and religious discipline to children, schools became an economic imperative, a way to forge the worker of the future.<sup>3</sup> In other words, along with an expansion in physical capital, the human capital of populations also improved, once again increasing productivity.

Perhaps most important for longer-run growth was technological progress. Scientists, engineers and workers improved on existing machines or invented new products (think of James Watt or Thomas

Edison), while managers streamlined production processes to make them more efficient (think of Henry Ford).

So countries grew richer. Between 1820 and 1870, income per person in Western Europe and the United States grew at a rate of 1–1.3 percent a year. This was painfully slow compared to the growth of per capita incomes in China and India in recent years, but spectacularly fast compared to the previous 5,000 years of human history.

## **Why Has Developing-Country Growth in Recent Years Been So Much Faster?**

Why could the early industrializing countries not grow faster? Even though production on a large scale, as in many modern factories, was feasible in the past, a factory owner faced limitations in achieving such scale. For one, he might not have had the funds or financing to make the investment. Also, he could not produce much more than the existing demand for his product, in the hope that it would be bought. Instead, he had to plan for gradual demand growth, driven by steadily increasing incomes and higher spending by the country's people. This, in turn, was made possible by the steady increase in physical and human capital employed. Of course, some industrializing countries, such as Great Britain, had colonies like India, which could be used to absorb manufactured goods. But the ability of the poor colonial population to buy the colonizer's goods was small to begin with and fell further as machine-made imports crowded out local handicrafts, further impoverishing the colonial population. In the long run, imperialism was not a sustainable source of demand growth.

Technological progress could improve production and income growth significantly—with better sewing machines, garment workers could produce more per hour, earn more, and spend more on food and entertainment. But since these countries were already using the best technologies available at that time, better technologies had to be invented. Innovation at the knowledge frontier is slow.

Yet, in recent years, we have seen some countries grow spectacularly. Most impressive has been the growth of the Asian economies, starting with Japan, proceeding to Korea, Malaysia, Singapore and Taiwan, and then, most recently, China (we will come to India shortly).

In his illuminating book *How Asia Works*, journalist and author Joe Studwell explains how, in the latter half of the twentieth century, Asian economies undertook the traditional transformation from agriculture to manufacturing somewhat differently—with a very active role played by the government.<sup>4</sup>

The starting point was land reform, which distributed land ownership (or rights to its produce in China) to the tiller. This allowed the small farmer to thrive, generating surpluses that could be deployed in manufacturing. The government recognized, however, that if manufacturing had to wait for the domestic demand for goods to build up, manufacturing scale would remain small and productivity low for a long time.

Think, for example, of a poor country that is good at making top hats. If it wants to achieve scale through its own demand, it needs income to grow enormously so that there are a huge number of high-society events, such as balls and horse races, where top hats are de rigueur. That could take a long time. But if it targets demand in rich countries, there is a ready need for top hats that it can cater to.

Therefore, economies of scale in manufacturing could be achieved by targeting world markets where the developing country's initial comparative advantage was the cheap labor that richer industrialized countries no longer had. So the government cajoled producers to focus on export sectors, especially those where low or moderately skilled labor was needed in large quantities—such as textiles, leather goods, toys and the assembly of electronic goods. In these sectors, demand from the rich world would supplement local demand, ensuring that growth and production scale would not be held back by low demand.

Nor was it held back by technology. Since these developing Asian countries were not yet at the technological frontier, they could buy,

imitate, rent or even steal technologies, and didn't have to innovate—initially, they bought rudimentary sewing machines for their garment workers, then more sophisticated ones. All these technologies were available since industrial countries had already done the necessary innovation. Catch-up growth was therefore easier and faster than growth at the frontier.

Manufacturing productivity also did not remain static. With practice and repetition, workers became more skilled—what economists call learning by doing—with more pieces produced per hour, and error rates and spoilage coming down. Furthermore, with increasing scale, automation increased—buttons were stitched by machines rather than by hand, reducing costs and improving productivity. Managers also learned by doing, figuring out new and better ways to incentivize workers, configure assembly lines, and manage the logistics of supplies and shipments. Foreign producers set up base domestically, bringing their productive practices to the country, allowing domestic producers to learn by imitation.

As workers became more skilled and better educated, manufacturers moved to more sophisticated goods, such as cameras, motorcycles, cars and machinery, leaving low-skilled manufacturing to newcomer countries on the development ladder.<sup>5</sup> Countries nearing the technological frontier started doing their own research and development. The technological gap with the industrial countries closed, and Japanese cameras, Korean TVs and Chinese electric vehicles became global leaders.

Finally, better practices from the competitive export-oriented sector spread throughout the manufacturing sector, as well as to other sectors in the economy. The exporter who needed just-in-time inventory and reliable delivery demanded better logistics and transportation services—requiring better truck maintenance, for example, to cut down on unexpected delays. As logistics and transportation improved, the local property developer could source raw materials efficiently to build apartments more quickly. In the jargon, productivity improvements did not stay in the export-oriented sector; they spread to other parts

of the economy, such as construction. Manufacturing was indeed the ladder to riches.

Asian export-led growth accelerated the typical shift in labor between sectors, but the transformation was similar to the one that rich countries had already gone through. First manufacturing expands, drawing workers from agriculture, accounting for a greater share of the total economic output of the country. Strong productivity growth in manufacturing increases worker incomes. As the population gets richer, people start demanding more services. When a country is poor, most services are done in-house—people cook their own food and someone in the household cuts their hair. As some people get richer, they employ a cook and go to a barber. As the country gets richer still, household help becomes expensive, and people go to a restaurant when they don't want to cook. In short, productivity growth in manufacturing increases the demand for services and eventually reduces the need for workers in manufacturing.

The growth of services consequently picks up, and draws workers from both agriculture and manufacturing, reducing their share of workers. The services sector eventually dominates employment in the economy. Thus, the manufacturing share of employment in an economy as a function of its income per person first increases as workers move from agriculture to manufacturing, then decreases as they move from manufacturing to services. Typically, manufacturing's share of workers decreases only when a country becomes quite rich, and indeed even then, given the high productivity of manufacturing jobs, its share of the economy's output does not decrease as fast.

## How Has India Fared?

Add up all the incomes paid for goods and services in the country and we get the country's gross domestic product or GDP. Divide GDP by a country's total population to get income per person (in the jargon, GDP per capita).

In 1961, India's income per person was \$86, South Korea's was \$94 and China's was \$76. India was right in the middle of a very poor pack of countries. India's income per person today is around \$2300, China's is around \$12,500 and Korea's is around \$35,000.<sup>6</sup> India is no longer in the middle of the pack; it is at the bottom by a long way. Indians can have three immediate reactions to these statistics. First, of course: the comparison is unfair. We have selected two of the most successful growth stories in the history of humanity and have set India up against them. The second response is despondency: How did India get it so wrong? The third is to get defensive: India chose a different path, prioritizing stability and democracy in a diverse country rather than economic growth at any costs. There is some merit to all three reactions.

For instance, we have indeed selected two of the fastest-growing large countries for comparison. Compared to the rest, India does not fare so badly. Between 1980 and 2018, India's GDP per capita grew at an average of 4.6 percent per annum, and the decadal average never fell below 3 percent. If we filter countries by those that have grown at 4.5 percent or more for at least thirty-eight years in this period, and during which any consecutive ten-year average has not fallen below 2.9 percent, only nine countries make the cut, and only Botswana, other than India of course, comes close to being a persistent democracy.<sup>7</sup>

There is another aspect of growth worth noting. We mentioned earlier that the share of workers in manufacturing typically peaks at some point in a country's development, and then falls. As Dani Rodrik of Harvard University has documented, since 1990 the share of manufacturing, in terms of both total workers and total output, has started decreasing in a number of countries in Africa and Latin America. This has happened long before these countries reached the levels of per capita income at which a country's share of manufacturing typically started declining in the past. He argues this is also true for India, with the manufacturing employment share starting to decline from 2002.<sup>8</sup> While there is some controversy about whether India is



deindustrializing, it is undoubtedly true that services employment has picked up a bigger share of those leaving agriculture than is typical for developing countries, while the share of workers in manufacturing has stayed relatively flat. Whether this is a bug or a feature of late industrializers like India is something we will examine in the next few chapters.

Whichever way you cut the data, it is clear that India came late to the manufacturing exports game, only beginning with its reforms in the early 1990s. Its growth since the early '90s has certainly benefited from its increasing exports, both of manufacturing and services. But why has it not built a greater manufacturing presence? What kinds of manufacturing is it adept at? That is what we now turn to.