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3. India's Economy

An Assessment

Nirvikar Singh

As one of the first colonies to achieve independence in the twentieth century, India was a pioneer among non-Western nations in trying to forge an explicit strategy for economic growth and development. The centerpiece of its strategy for the economy was modernization through industrialization. The private sector was viewed as inadequate for this task, so India's leaders embarked on a program of government occupation of the "commanding heights" of the economy, including the creation of public enterprises in key sectors of the economy, regulation of existing private businesses, and some nationalization.

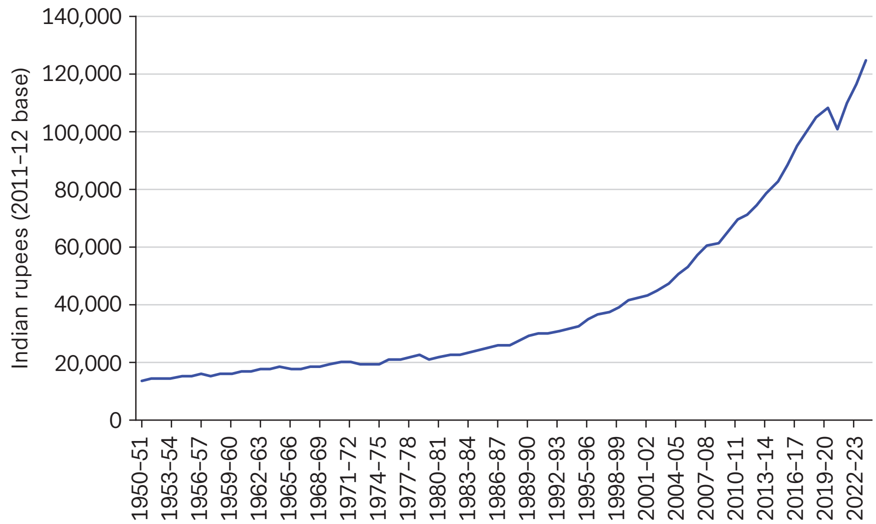
Some of the inspiration for this approach came from the example of the Soviet Union, at that time still considered a successful alternative model to capitalism. However, India's leaders did not completely jettison private property and enterprise, and "big business" continued to matter in the economy.[1] Furthermore, India adopted a federal, democratic system, with regular elections at the national and state levels. These political structures have played an important role in shaping the evolution of the Indian economy. Although India's constitutional democracy has retained its basic structure since it was formalized in 1950, the thinking about the roles of government and market has changed considerably. This evolution provides a typical narrative framing for the manner in which India's economy has progressed over this period.

This chapter is structured as follows. In the next section, we review the broad contours of India's economic progress from Independence in 1947 to the election of Narendra Modi as prime minister in 2014.[2] The third section focuses on the last decade, which has witnessed many ups and downs in the economy, often driven by noneconomic factors. The fourth section drills down to recent economic policies under the current regime, evaluating their rationale and coherence. The fifth section then considers prospects for the Indian economy over the next few years, with some more speculative remarks on the longer run. The last section is a summary conclusion.

FROM INDEPENDENCE TO MODI

In the 1950s, analytical arguments for the government having a central role in promoting economic growth were combined with concerns about inequalities that are inherent in capitalism, and even sociologically or philosophically based concerns about the role of business in society. The strategy for economic growth through

FIGURE 3.1 Real per capita GDP



Source: Author calculations based on data from the National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India

government-led industrialization also included protecting nascent industries from foreign competition, so high barriers to trade were also part of the policy mix. Private industries that were not nationalized or dominated by government enterprises were controlled in various ways, including where and how much they could invest and expand and in their access to external credit. These policies were driven by the twin motives of promoting economic growth and managing economic inequalities. Agriculture was not neglected, but attempts at land reform were mostly ineffective. New universities that focused on science and technology education were also created, to support industrialization.

In the initial decades after Independence, India's growth rate went up considerably from the pre-Independence period, health and education indicators improved steadily, modern industries were created, agricultural productivity increased, and greater self-reliance was achieved in many ways, while inequalities were held in check. Infrastructure and institutions for delivering public goods also improved substantially, as compared with those in the colonial era.[3] On the other hand, poverty came down very slowly, the improvement in human development indicators was also limited, and democracy came under increasing strain, as competition for rents within the system became fiercer due to the limits on the redistributive options of government placed by slow growth. Figure 3.1 and table 3.1 summarize the basics of India's economic growth performance after Independence.

Attempts to reduce the extent of government control of the market, aiming to accelerate slow economic growth, began in the 1980s, but the major shift in policy was triggered by a balance of payments crisis in 1991, leading to a decades-long period of "economic reform." Key initial steps of reform were liberalization of international trade, a greater role for the market in determining the exchange rate, and removal of many controls on private domestic industrial investment and operations. The tax system also began to be reformed, and direct tax rates were reduced substantially. Financial markets, particularly the stock market, were also reformed, with respect to trading technologies and regulatory institutions. Numerous other institutional reforms have followed, including the conduct of monetary policy and other spheres

TABLE 3.1 AGGREGATE AND SECTORAL GROWTH RATES

Period	GDP	Agriculture, forestry, and fishing	Industry	Manufacturing	Services
1951–52 to 1965–66	3.86	1.99	6.42	6.25	4.59
1965–66 to 1981–82	3.36	2.28	4.26	4.11	4.11
1981–82 to 1988–89	5.53	3.75	5.91	6.08	6.39
1988–89 to 2006–07	6.18	3.45	6.84	7.00	7.41
2006–07 to 2014–15	6.63	3.26	6.63	7.73	7.58
2014–15 to 2022–23	5.69	3.74	5.47	6.02	6.22

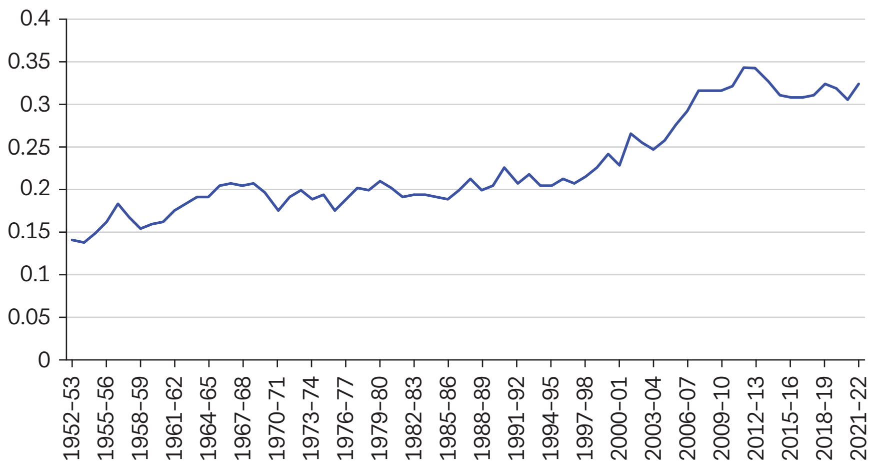
Sources: Arvid Panagariya, *India: The Emerging Giant*, Table 1.2 (Oxford University Press, 2008), and author calculations based on data from the National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India

of regulation, such as telecommunications and industry competition in general. Over time, foreign investment was also gradually liberalized. But reforms in industrial labor markets and agricultural land markets have been politically more difficult to achieve. Nevertheless, India's economy began to grow faster after the reform period began (see table 3.1 and fig. 3.1). Despite differences among various empirical analyses, the best evidence suggests that productivity growth accelerated in the 1980s and thereafter, potentially representing a "structural" shift in the growth trajectory.[4] In the 1990s and subsequently, India has been one of the fastest-growing economies in the world.

Digging deeper, India's improved economic growth performance has had some unusual features. Growth has not necessarily come through the conventional route of producing and exporting labor-intensive manufacturing goods, with quality and variety increasing over time. That pattern of development has empirical backing and seems to fit the case of many East and Southeast Asian economic successes.[5] Instead, India's growth path has been characterized by capital and skill intensities that are out of line with other countries at similar per capita income levels.[6] Aggregate capital intensity in India's economy had long been identified as relatively high, a consequence of policies that pushed heavy industrialization, as well as restrictive laws on hiring and firing labor. High capital intensity was also arguably caused by inefficient use of capital associated with the control regime, including domestic licensing and prohibitive trade restrictions. After economic reforms, India's incremental capital-output ratio (ICOR) did decline, even as investment rates increased, suggesting more efficient use of capital.[7]

Despite improvements in capital use, India's employment generation in labor-intensive manufacturing remains low. There has been limited absorption of the rural labor force into manufacturing, which remains unusually skilled-labor-intensive.[8] The services sector has been relatively more important, contributing over half of GDP growth since the 1990s.[9] But services have also been skill-intensive in areas such as information technology (IT)—specifically software development—and IT-enabled services (ITES, e.g., business process outsourcing). Even seemingly low-skilled areas such as call centers require levels of education and English-language proficiency that are possessed by less than 10 percent

FIGURE 3.2 Ratio of investment to GDP



Source: Author calculations based on data from the National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India

of India's population. Overall, therefore, India's accelerated economic growth in the reform period has not been accompanied by commensurate employment generation.[10]

The acceleration of India's economic growth beginning in the late 1980s had a positive feedback effect, increasing domestic demand for consumer goods and attracting foreign investment. Rising incomes and demographic changes also spurred domestic savings. There were some changes in financial intermediation, including the entry of new private firms, organizational reform of public-sector financial firms, and overall regulatory reform in the financial sector. Growth accelerated even more in the 2000s, approaching double digits for the first time in India's history, supported by rising investment rates (see fig. 3.2). This acceleration took place during a global financial boom, which ended in a financial crisis and a major recession. India was less directly affected by this crisis, but the global slowdown exposed some weaknesses in financial intermediation during the boom. Specifically, many private-sector investment projects stalled. Their viability might have been questionable to begin with, but the slowdown quickly exposed the problems. The result was a rapid deterioration of borrowing firms' balance sheets, as well as a steep increase in nonperforming assets (NPAs) on banks' balance sheets, especially those in the public sector.

The accumulation of NPAs and of stalled or failed private-sector investment projects acted as a brake on economic growth after the financial crisis. Although India did not suffer from a severe slowdown, economic growth fell from the boom years before the crisis and was very slow to recover. Reforms in the bankruptcy laws, designed to speed up resolution of the NPA problem, helped somewhat, but the impact was still limited and slow. The global slowdown affected exports, adding another damper to the growth rate. Another factor at work in this period was heightened government corruption, or at least concerns about such corruption, associated with uncertainty about the future of leadership in the ruling party. In these years, the focus of economic policy also tended to be on welfare programs such as rural employment and food security, rather than on continuing to seek rapid economic growth. Conceptually, growth was supposed to be more inclusive: human capabilities and human development were important goals, not just per capita GDP growth. Slow rates of poverty reduction, rising inequality, and lack of employment generation were also justifying factors in these policy choices. At the same time, policies to stimulate industrial employment growth were not prominent, and a slowdown in employment growth that had started during the boom became worse.[11]

THE LAST DECADE

The year 2014 witnessed a major change in India's national political leadership, when the Bharatiya Janata Party (BJP) led by Narendra Modi won the general election. On the economic front, this change manifested itself in a more explicitly "pro-business" approach to economic policy. Ever since Independence, there had been a strong strand of accommodation of business interests, but in a less overt manner.[12] The BJP had been in power earlier (1998–2004), and it pursued a similar economic strategy but from a more politically constrained position. However, whereas economic conditions at that time had been relatively favorable, with strong global economic growth, the situation in 2014 was more fragile. As compared with the earlier period, India's capital account was more open, and capital flows were sometimes volatile, as when the US Federal Reserve announced plans to reverse its massive postcrisis monetary easing in 2013. Such events reinforced long-standing concerns about economic openness across the political spectrum. In the BJP's case, other forms of nationalism aligned with these concerns and shaped economic policy.

An example of a nationalistic approach was the 2014 launch of a Make in India initiative, designed to increase the growth rate of domestic manufacturing, in a manner somewhat reminiscent of the import-substituting era after Independence. Another strand of thinking, that of modernization, was illustrated by another initiative, Digital India, also proposed in 2014 and formally launched in 2015. In a sense, information technology had replaced steel mills as a symbol of a modern economy. Both these conceptual policy strands were consistent with a "pro-business" orientation. A greater focus on improving India's global ranking in the World Bank's Ease of Doing Business Index illustrated this orientation. A move from 142nd rank in 2014 to 63rd in 2019 was prominently featured by the government, and the tracking of such measures for Indian states has continued, even after the World Bank's own effort was stopped in light of some data issues.

A third and differently motivated strand of policymaking adapted the continual political need to address the welfare of the least-well-off Indians. Although the massive employment guarantee scheme that was deployed under the previous government remained in place, it was de-emphasized, and better targeting of in-kind subsidies was promoted, as well as specific infrastructure. For example, rural sanitation became a major government mission, in the form of building toilets in each village. A Total Sanitation Campaign (TSC) had been in place since 2001, but by 2011, evidence was being presented that open defecation contributed to malnutrition, childhood stunting, and cognitive deficits.[13] Narendra Modi, while campaigning in 2013, sought to signal his focus on inclusive development, as opposed to religious themes or favoring big business, stating, "First toilets, then temples."

Another major aspect of reform, completed in 2017, also represented a continuity across governments. The sales tax structure that had developed out of the Constitution of 1950 was inefficient, in terms of overlapping jurisdictions, cascading taxes, and creating internal trade barriers. Value-added tax (VAT) systems at the state and central levels had begun to be implemented in the late 1980s, and a unified, comprehensive VAT, the Goods and Services Tax (GST), was formally proposed in 1999. After multiple attempts across different governments, the GST came into effect through a constitutional amendment in 2017, but its implementation raised multiple challenges for the central and state governments.

Raising adequate revenue has been a perennial problem for the central government in India. Although fiscal deficits in the range of 3 to 5 percent of GDP seem relatively small, they are larger when viewed as a percentage of expenditure: government revenue is typically only about 70 percent of expenditure. Increasing political pressures for welfare expenditure and the reduction of revenue from customs duties after the 1991 liberalization have been recent factors in this arena, as have recommendations for increasing the share of state governments in overall tax revenue, which is constitutionally mandated.[14] To increase revenue, the previous government had attempted to impose retroactive taxes on a few foreign corporations in areas such as telecommunications.

In December 2016, halfway through its first term, the Modi government resorted to demonetizing all notes with denominations of 500 Indian rupees and above, with the claimed goal of reducing tax evasion and corruption in general. Another justification was also tax related—that the demonetization would force smaller firms to use digital payments and therefore ease their transition into the forthcoming GST system. Perhaps the most plausible explanation of the motive for demonetization has to do with crippling the financial resources of opposition parties in the Uttar Pradesh legislative assembly election of February–March 2017. From an economic perspective, the policy had a severe negative impact, with no clear economic rationale. One estimate is that output fell by 2 percent in the quarter in which the demonetization occurred and took months after that to return to its previous levels.[15] There is no evidence that long-run or trend growth was affected, but the temporary loss in welfare was significant.

During this period, India appeared to still be growing rapidly, especially after a revision of the national income accounts in 2015, to update the base year from 2004–05 to 2011–12. Several analysts questioned the methodology of the new GDP accounts, and it was pointed out that data from other sources, such as the Index of Industrial Production or export statistics, suggested that the economy was growing more slowly than what the official GDP statistics reported. Other aspects of the data and methodology were also explored, but there does not seem to be any consensus on the validity of concerns, and there was no subsequent change in the methodology or the data.[16] Even with the new series, there was evidence of an economic slowdown in 2018–19 along with other negative factors for growth: a continued nonperforming asset (NPA) problem in the banking system, compounded by the 2018 failure of a major nonbank finance company, Infrastructure Leasing & Financial Services (IL&FS), which required a government takeover and had ripple effects through the whole financial system and economy.

Some of the backdrop for the IL&FS crisis was the continued boom in the real-estate sector, even after other investment projects had run into trouble following the global financial crisis. Because global interest rates were low, but the investment climate was uncertain, real estate became relatively more attractive, as a traditionally safe investment. The demonetization also disrupted this boom, since some real estate transactions also involved off-the-books transfers to reduce taxes on property and property transfers. All these disruptions caught up with IL&FS in 2018, after it had failed to adjust its strategy.

The Indian economy's bumpy path in the last decade can be understood in terms of global events (a major boom followed by a historic bust), the evolution of an uneven economic reform process, which created new sources of economic rents, and attempts to capture those rents. Real estate, construction, and telecommunications were all areas where the kinds of rents that had marked the old “license-permit-quota raj” were available for contestation.[17] IT and ITES best represented the new economy, shaped by global competition and global standards.

The COVID-19 pandemic of 2020 came at a difficult time for the economy, and the government response was suboptimal in a couple of ways. The initial lockdown was implemented suddenly and without adequate planning. Subsequent policy responses and relaxations of controls were also suboptimal.[18] In both cases, there were negative human and economic consequences beyond what was necessary. The government was relatively conservative in providing economic support during the lockdown, partly because of its own fiscal situation. In some ways, it squeezed the states’ finances, affecting their capacity to respond. Possibly because of underlying characteristics such as demographics, technological progress in software and biotech, or shifts in geopolitics as China’s importance in global value chains became a source of concern, India had a sharp, if uneven, recovery after the pandemic.

A view from within the government offers a more positive summary of the last decade’s economic trajectory.[19] After a review of the entire 1950–2014 period, problems of the post–financial crisis period are highlighted, including high inflation, ill-targeted subsidies, and dysfunctional government decision making. In contrast, the last decade is described as one of transformative growth. One example to support this claim includes a 3.3X nominal increase in annual public-sector capital investment from 2015 to 2024 (a doubling in real terms), resulting in an “unprecedented” build-out of infrastructure. Other areas where economic progress over the last decade is highlighted include greater financial and monetary stability, financial inclusion (including free bank accounts for the poor and low-cost digital payments), rural sanitation through a massive toilet-building program, and improvements in the reach and targeting of various welfare programs.

Underlying many of these areas of progress is the development of digital infrastructure, particularly within government, and also through increased smartphone penetration.[20]

It is difficult to disentangle what changes are the result of government policies versus what is driven by exogenous factors. Nor can one easily estimate counterfactuals based on different policy regimes. Over the past decade, India’s growth averaged 6 percent per year, slightly lower than the previous decade’s average of 6.8 percent. If one adjusts for the COVID lockdown effect, the two numbers are statistically indistinguishable. On the other hand, it can be argued that the global growth environment has been much less favorable in the past decade. Assessing India’s economic performance requires a more detailed analysis of recent economic policies and their impacts, and one can use that to offer some thoughts on the Indian economy’s prospects.

RECENT POLICIES AND IMPACTS

A persistent problem for the Indian economy has been the failure of manufacturing to grow rapidly enough to create enough “good” jobs, ones where wages and working conditions are better than those in traditional agriculture or services. Labor market rigidities have been identified as one constraint in the Indian context, but access to credit and markets may be even more important. Labor law reforms have always met with resistance, partly from concerns about worker protections in areas such as occupational safety and arbitrary dismissal, but also to defend economic rents. The Modi government passed a new labor code in 2020, simplifying and streamlining labor laws, but it has still to be implemented, although some states have already pursued more flexibility in this area.

The financial aspect of business operations has seen some progress. Bank balance sheets have improved in the last few years, as resolution of NPAs has slowly progressed. However, there is little progress in improving the institutional quality of public-sector banks, although there has been some consolidation. Arguments for privatization of most public-sector banks, to improve efficiency in the sector, have not made any headway in policy circles.[21] Considerable global funding for start-ups has become available, from venture capital and private equity firms, as regulations have been liberalized and India's prospects in some sectors are viewed very favorably. Private equity capital has roughly quadrupled in the last decade, with an annual investment volume of about US$40 billion. As a result, the number of high-value start-ups has increased dramatically. On the other hand, the total number of firms listed on the stock exchange has not increased appreciably, although the number of investor accounts has gone up by a factor of five, along with an increase in market capitalization.[22] Since late 2021, retail investors can also invest directly in government securities, through a new online portal.

The most severe financing constraints have been felt by smaller firms. They have limited access to short-term bank credit for working capital, and they are often squeezed by delayed payments when they supply larger firms or the government. Although the GST system still disadvantages small firms because of such delayed payments, in the case of trade receivables, an electronic platform for discounted trading of such receivables, introduced in 2018, is finally taking off, with volumes doubling in 2023. Although this still accounts for only about 10 percent of trade receivables, network effects may lead to more accelerated adoption.

The most significant change in government policy to support industry has been a new program of subsidies for targeted sectors, called the Production-Linked Incentive (PLI) scheme. The scheme was introduced in 2020, and fourteen sectors are covered. A few of these sectors are narrow (e.g., drones and drone components, advanced chemistry cell batteries), but most of them are quite broad (e.g., automobiles and automotive components, white goods, food products). The sectors span a range of technologies and labor intensities. Subsidies are for investments designed to reward growth and scaling up of firms. Even so-called formal-sector firms in India are small by international standards and lack economies of scale. Although such initiatives do not address the problem of the large number of informal-sector firms with low productivities, they do include smaller firms. The scheme appears to be having an impact, being credited for a significant increase in electronics goods exports, a decrease in telecom-sector imports, and new domestic manufacturing of a number of active pharmaceutical ingredients. Overall, the PLI scheme is credited with stimulating increased foreign direct investment (FDI) in several manufacturing sectors.[23]

The relative importance of services in India's economic growth has continued and even increased in recent years. Services are very heterogeneous in terms of labor intensity and productivity, but those based on high levels of human capital seem to be particularly significant for growth. In addition to domestic information technology firms, centers set up by multinational firms have become increasingly common, as an alternative to outsourcing. Such centers can include customer service, operations management, internal corporate services, consulting, and research and development (R&D), and are not restricted to software services: for example, some of these centers specialize in semiconductor design. These centers are credited with a sharp increase in the share of services exports in GDP. The COVID pandemic accelerated the creation of these centers, when remote work became more common and more sophisticated in nature.[24] Importantly, these high-end services exports are also credited with providing India with stability in its balance of payments.

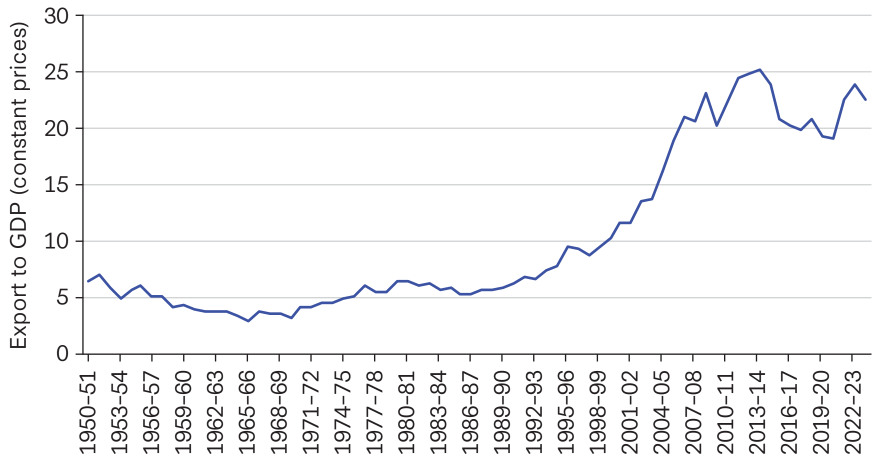
At the other end of the economic spectrum, the government has been less successful with agricultural reforms, although it has made some efforts to provide income support and risk reduction for farmers with various schemes. Much of Indian agriculture is dominated by a national food procurement system, which has provided food security through subsidized food grains. This infrastructure was especially important during the COVID pandemic, when emergency food supplies could be distributed. However, the guarantee of purchases of wheat and rice at minimum support prices (MSPs) has led to procurement beyond storage capabilities and distribution needs and to diminishing returns in production, distortions in cropping decisions and input prices, and environmental degradation. A 2020 attempt at agricultural reform focused on liberalizing agricultural output markets and land markets, with the aim of encouraging corporate investment in agriculture. In theory, such measures could give farmers more choice and higher incomes, but there were concerns about unequal bargaining power in these markets and shifting of risks to farmers. Some of these concerns were related to the detailed design of the reforms and the nature of the political process used, rather than to the principle of reform. After massive protests, the new laws were withdrawn in 2021, putting agricultural reform back to square one. An independent effort, announced in 2024, is a program to buy unlimited maize and pulses at MSPs from farmers who switch from wheat and rice. If this works, it could begin to correct some major distortions in Indian agriculture.[25]

The relatively slow growth of manufacturing, especially labor-intensive, formal-sector manufacturing, has limited rural-urban migration. India therefore still has a high proportion of its population in rural areas. The proportion of the population that is urban has increased by less than two percentage points every five years. This threshold was crossed in 2015–20, but the COVID pandemic reversed that process. More recently, the urbanization rate has picked up again. It is argued that the "gig economy" is now creating over seven million jobs in smaller cities and providing entry-level and part-time options for students and first-time job seekers.[26] Even with slow urbanization, India's cities and towns have struggled to keep up with the development of infrastructure. One reason is that city governments are underfunded and have relatively little autonomy. State governments typically do not have enough funds to transfer, and the central government has been stepping in. One "urban renewal mission" ran from 2005 to 2014 and was replaced by a Smart Cities mission in 2015, which is also nearing its end. A formal evaluation emphasized that lack of local organizational capacity hindered the design and implementation of many projects. It noted that more projects to improve core infrastructure weaknesses, including waste, water, and traffic, should have been planned.[27] One significant change from the past has been a program for construction of low-cost and subsidized housing in urban as well as rural areas, which is reported to have built over thirty million dwellings in the last decade.[28]

Two of the major changes that resulted from the balance of payments crisis of 1991 were significant reductions in trade barriers and abandonment of a fixed exchange rate. Exchange rate policy since then has been what might be termed a "managed float," and this has continued in various forms over the past three decades, with a gradual depreciation of the rupee over time. Although prohibitive tariffs and quotas were removed, India's import tariff barriers have remained relatively high, and some firms find that their input costs are high as a result. On the other hand, sometimes consumer goods are imported very cheaply, especially from China. Although India has a diversified basket of merchandise exports, it has not been globally competitive in large-scale, labor-intensive manufacturing. The outcome has been regular merchandise trade deficits.

The export-GDP ratio did increase steadily until the financial crisis (see fig. 3.3), but then that growth stalled and even reversed. COVID disruptions made matters worse, but recently, there has been

FIGURE 3.3 Ratio of exports to GDP



Source: Author calculations based on data from the National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India

a resumption of export growth, possibly because of more favorable conditions within India, though global factors may also play a role. As noted earlier, services exports based on the digital/knowledge economy have been particularly strong. Overall, India's current account balance has rarely been a source of concern, and strong foreign capital inflows, both portfolio flows and direct investment, have resulted in one of the strongest external positions in the history of India's economy since Independence. India has been slow to enter into trade agreements that would increase its access to some markets, fearing that new imports would threaten its attempt to build domestic manufacturing. This issue is discussed in the next section.

PROSPECTS

The Indian government's chief economic advisor (CEA) emphasizes four economy-related challenges for the country going forward.[29] Paraphrasing his articulation, these challenges are

1. Uncertainty and change in the organization of global production, and opportunities for international trade,
2. A possible trade-off between energy security and economic growth, versus making a transition to a greener economy,
3. The impacts of artificial intelligence (AI) on the demand for labor, displacing labor in some cases, creating new types of demand in others, and
4. Ensuring a healthy, educated, and appropriately skilled population.

The list of challenges is immediately followed by examples of how India has overcome other challenges, such as the COVID pandemic, and a description of the economy's resilience. Resilience is attributed to macroeconomic stability, financial recovery, consumer confidence, and various types of public expenditure, including investments in infrastructure and in people. There is no reason to think that these positive characteristics will not continue to hold for India's economy.

With respect to the possibilities for international trade, the CEA's report is cautious, giving lower growth rates for global trade and geopolitical uncertainties. On the other hand, there are several other developments that might be a basis for optimism. One is the lower cost of internal logistics, which has started to be apparent and is driven by investments in transport infrastructure and by the simplification of indirect taxes through the GST. Another is the likelihood of further acceleration in the growth of services exports, as multinationals make India a major Global Capability Center (GCC) hub. Indeed, the GCC concept offers some suggestions for integrating Indian manufacturing into global and regional production networks. A third positive factor is the scope for new production networks, especially when multinationals want to avoid overcommitting to a single source country. Therefore, dealing with this first challenge will likely require a combination of domestic and external policy decisions, including general tariff policies and trade agreements, as well as more robust versions of special economic zones.[30]

With respect to the second challenge, that of implementing a green transition without sacrificing economic growth or energy security, although the complexity of the transition is indeed significant, there are several areas that can lead the way. India is already building solar power generation capacity quite rapidly and has brought down the cost of solar power to be cost competitive with coal. The National Electricity Policy of 2023 included a decision to postpone new coal power plants and invest that money in storage technology to make renewable sources more efficient.[31] There is an opportunity to make solar panels domestically, and rapid scaling up can reduce costs—China dominates the global market, but future demand will be many times greater than current Chinese production. India has been slow to make the switch to electric vehicles and to invest in the associated transport and charging infrastructure, and that is another opportunity to compete in new global production networks. Designing and building new electric power grids also represents an opportunity where India can move quickly. There are issues of transition costs for coal-producing localities and of securing access to the materials that will be the basis of this green economy, such as lithium and rare earth elements, but these are not any more difficult than other kinds of adjustments to industrialization. Arguably, therefore, if Indian policy continues to move decisively in the direction of a green economy, its ultimate transition costs will be lower. In this case, being a late mover can be an advantage, since there is less need to replace legacy technologies and infrastructure.

The third challenge, that of AI and employment, represents a different situation. Many manufacturing and service jobs will be immune to AI, because they require physical activity. AI may play a greater role in identifying where there are problems in a building's electrical or water systems, or in a power grid, but physical repairs will typically still be required. In other cases, such as knowledge services, for example interpreting medical X-rays, AI may indeed replace human beings. But one can conjecture that the GCCs that use Indian talent to handle many kinds of services will adapt, and this talent will provide complementary services rather than be replaced in any substantial way. In some ways, the issue of AI and employment misses the real challenge that the Indian economy faces. As noted earlier, not enough jobs that offer reasonable income and the opportunity to be productive—good jobs—are being created. This is a basic problem of underdevelopment, and three decades of economic reform have not solved it.

One view is that efforts at skilling, along with technological change that creates new services jobs in the "gig economy," are making inroads into the employment challenge. A rising female labor force participation ratio (FLFPR), particularly in rural areas, is argued to be a consequence of new job opportunities for men and skilling programs for men and women.[32] However, the situation may be more complicated, since the FLFPR is returning to levels of two decades ago but with recent changes in measurement. Furthermore, it is not clear that the rural jobs being taken by women, whether agricultural or nonagricultural, are good jobs in any sense: they remain low-productivity jobs outside the formal or organized sector of the economy.[33]

Even if one takes the increase in FLFPR at face value, it does not represent a major increase in employment numbers. The Indian labor force is almost 600 million people. Even though unemployment rates are low, they provide little information about the actual number of good jobs. There are only about 17 million jobs in organized manufacturing. The GCCs employ fewer than 2 million people. Hence, the scale of the challenge that India faces is an order of magnitude greater than any of the areas for optimism and two orders of magnitude greater than the challenge of AI. Only a rapid, massive push to increase large-scale manufacturing of products will begin to make a dent in the jobs challenge, and much of this production will have to be for export to richer countries.[34] In that sense, tackling the first two challenges will be the key to addressing the true employment challenge in India.

The final challenge listed in the CEA's review of the Indian economy is also the core issue for the country's development. Health indicators in India have continued to improve, though balanced nutrition escapes many children and adults. Access to sanitation remains far from universal. The quality of education and access to education are far short of what propelled China's growth. India is currently rethinking the goals of its education system, moving away from rote learning, but it is known to still be hampered by poor incentives and inadequate training of teachers. There is a case for optimism, if recent policies and initiatives increase their impact, but the evidence is not conclusive.[35] In particular, it is not clear whether national skilling efforts are producing workers who are employable. The task is enormous—over 70 percent of the workforce has not received any kind of skilling or vocational training. To some extent, training and skilling also takes place on the job, and employers are often best placed to know what skills are required. Even in the case of software development, Indian firms developed their own training programs after hiring, as well as used software industry certifications. Skilling and training may be one area where greater industry involvement is needed, rather than new government-run programs. Even in science and technology, it is not clear that India is making sufficient educational investments or investing adequately in research institutions, where on-the-job learning continues and fosters innovation.[36] As yet, much of the policymaking in these areas is aspirational rather than at the level of having significant tangible impacts.

The joint challenges of employment and education also suggest yet another challenge for India's economic trajectory, that of inequality. There are several aspects of inequality that have been increasing over time, and collectively they constitute a distinct problem for the economy's prospects. Most obviously, wealth and income inequality among households have increased, plausibly as a consequence of unequal access to education, skill acquisition, and job opportunities. One manifestation of this inequality is an extreme concentration of wealth at the top of the distribution.[37] A second related manifestation of inequality is increased industrial concentration. After the 1991 reforms, concentration initially went down, then slowly crept up, but resumed its decline until 2015, when another reversal took place. This recent trend has been particularly centered on the five largest Indian conglomerates and may portend a less dynamic economy going forward.[38] A third aspect of increasing inequality is the regional dimension. Regional inequality, typically measured at the level of India's states, has been increasing since the 1990s, and there is no sign that this trend will change.[39] States that got a head start after liberalization have tended to pull away further, becoming preferred sites for further investment in GCCs or other higher-productivity economic activity.[40] In different ways, all these aspects of increasing inequality also present political challenges that can have negative feedbacks to economic growth.

CONCLUSION

India's economy has been growing at an average of 6 or 7 percent a year for over two decades. This has resulted in significant improvements in the standard of living for many of its residents. These growth rates have been achieved through periods of global crisis, which India has weathered quite well, also maintaining macroeconomic stability during those times. However, India's growth has been quite unevenly distributed, and economic inequality has been growing. Governments in India pay a great deal of attention to welfare and social protection programs, and these provide safety nets, but improvements in human development indicators have not been spectacular and poverty reduction has been somewhat slow. At one stage, during the global boom of the early 2000s, the growth rate approached double digits, and savings and investment rates reached new highs, almost comparable to those of the East Asian miracle economies.

The economy has been growing strongly after the recovery from the disruptions of the pandemic, although disparities in who benefits from growth may have increased. The country's biggest challenge has been the failure to increase the number of good jobs quickly enough. Good jobs are created when high-productivity, labor-intensive economic activities expand. Indian economic policies have not pursued that objective aggressively enough. Doing so would require greater openness to inflows of goods, capital, and ideas, more attention to serving global markets, and more domestic competition. The process also requires control of rent-seeking or corruption, so that the economic gains from growth are not captured by a few or dissipated unproductively.

Taking a different perspective than the CEA's review of the Indian economy, changes in global production networks, the need to make the economy green, and technological changes such as AI are all opportunities as much as they are challenges. The real challenges are implementing policies to quickly achieve large increases in the quality and quantity of education and in the creation and expansion of all kinds of new businesses. Savings and investment rates have not recovered to previous boom levels and are not enough at the present to make double-digit growth rates possible. Slowing population growth adds a percentage point to per capita growth rates, but the current demographic dividend risks being wasted. Nevertheless, economic growth rates that would once have been thought of as unrealistic are now a realistic floor if economic policies can be strategically conceived and implemented effectively.

NOTES

1. In particular, see Vivek Chibber, *Locked in Place: State Building and Late Industrialization in India* (Princeton University Press, 2003).

2. This telescoping of a long stretch of post-Independence Indian economic progress is in the interest of brevity and glosses over many intermediate differences in economic policy. For example, as University of Maryland sociologist and demographer Sonalde Desai reminded me, Indira Gandhi's initial period of leadership saw increased emphasis on government control and action, and, at least in stated intention, more focus on poverty reduction and economic equality. Two opposite perspectives on the early post-Independence period are provided by Baldev Raj Nayar, *The Modernization Imperative and Indian Planning* (Vikas Publications, 1972) and Jagdish N. Bhagwati and Padma Desai, *India: Planning for Industrialization* (Oxford University Press, 1970).

3. India also managed relatively low inflation rates, preventing the kind of tax on the poor that has been characteristic of Latin American economies, several of which have experienced hyperinflation.

4. Barry Bosworth, Susan M. Collins, and Arvind Virmani, "Sources of Growth in the Indian Economy," in *India Policy Forum 2006–07*, ed. Suman Bery, Barry Bosworth, and Arvind Panagariya (Sage Publications, 2007); Barry Bosworth and Susan M. Collins, "Accounting for Growth: Comparing China and India," *Journal of Economic Perspectives* 22, no. 1 (2017).

5. Ricardo Hausmann, Jason Hwang, and Dani Rodrik, "What You Export Matters," *Journal of Economic Growth* 12 (2007): 1–25.

6. Kalpana Kochhar, Utsav Kumar, Raghuram Rajan, Arvind Subramanian, and Ioannis Tokatlidis, “India’s Pattern of Development: What Happened, What Follows?” *Journal of Monetary Economics* 53, no. 5 (2006): 981–1019.

7. Rakesh Mohan, “The Growth Record of the Indian Economy, 1950–2008: A Story of Sustained Savings and Investment,” Stanford Center for International Development, Working Paper No. 365 (2008), table 1. Private equipment investment has been specifically identified as the key driver of growth in India: Kunal Sen, “Why Did the Elephant Start to Trot? India’s Growth Acceleration Re-examined,” *Economic and Political Weekly* (2007): 37–47.

8. In addition to Kochhar et al., “India’s Pattern of Development,” an analysis of the patterns and causes of slow employment growth in the first decade of reform can be found in Ashok Kotwal, Bharat Ramaswami, and Wilima Wadhwa, “Economic Liberalization and Indian Economic Growth: What’s the Evidence?” *Journal of Economic Literature* 49, no. 4 (2011): 1152–99.

9. Nirvikar Singh, “Services-Led Industrialization in India: Assessment and Lessons,” in *Industrial Development for the 21st Century: Sustainable Development Perspectives*, ed. David O’Connor (UN-DESA, 2006), 235–91.

10. The success of India’s IT and ITES industries owes something to the post-Independence strategy of focusing on modernization and higher education. But telecommunications growth was stifled by being viewed as a luxury. Software development was not subject to the most restrictive industrial policy controls and flew under the radar, as described in Narayana Murthy, “The Impact of Economic Reforms on Industry in India: A Case Study of the Software Industry,” in *India’s Emerging Economy: Performance and Prospects in the 1990s and Beyond*, ed. Kaushik Basu (MIT Press, 2004), 217–22. Arguably, the software sector in India has had important spillovers. The success of the software development sector involved building direct relationships with business customers, and development of management expertise. Both these factors led to spillovers that generated the ITES sector in India, and thereafter contributed to successful new manufacturing efforts in areas such as automotive components and to IT-based development in financial services.

11. See, for example, Balakrushna Padhi, D. Tripati Rao, and T. Triveni, “Discerning the Long-Term Pace and Patterns of Employment in India,” *Indian Journal of Labour Economics* (2023): 1–30. This trend began to reverse after 2017–18, but the COVID pandemic disrupted that reversal.

12. Chibber, *Locked in Place*. The “pro-business” label, contrasted with “pro-market,” is due to Atul Kohli, “Politics of Economic Growth in India, 1980–2005, Part I: The 1980s,” *Economic and Political Weekly* 41, no. 13 (2006): 1251–59.

13. Early examples are Dean Spears and Sneha Lamba, “Effects of Early-Life Exposure to Rural Sanitation on Childhood Cognitive Skills: Evidence from India’s Total Sanitation Campaign” (2011), https://scholar.google.com/citations?user=NQo9onkAAAAJ&hl=en&oi=sra; and Diane Coffey, Angus Deaton, Jean Drèze, Dean Spears, and Alessandro Tarozzi, “Stunting among Children: Facts and Implications,” *Economic and Political Weekly* 48, no. 34 (2013): 68–70.

14. Recommendations are made every five years by a Finance Commission, appointed for that purpose. The commission determines the share of the states in general government revenue, which supplements their own source revenues, as well as the division of the states’ share among the states.

15. Gabriel Chodorow-Reich, Gita Gopinath, Prachi Mishra, and Abhinav Narayanan, “Cash and the Economy: Evidence from India’s Demonetization,” *Quarterly Journal of Economics* 135, no. 1 (2020): 57–103.

16. One among many analyses is that of Arvind Subramanian, who was chief economic advisor to the Ministry of Finance during this period. See Arvind Subramanian, “Validating India’s GDP Growth Estimates,” CID Working Paper Series Number 357 (July 2019).

17. This term is an extension of “Permit/License Raj,” coined by Chakravarti Rajagopalachari, in an article in the pro-market magazine, *Swarajya*, which was established in 1956. Rajagopalachari was unhappy with the industrial licensing policy introduced in 1955 and formed a new pro-market political party in 1959.

18. See, for example, Šumit Ganguly and Dinsha Mistree, eds., *The COVID-19 Crisis in South Asia: Coping with the Pandemic* (Routledge, 2022), and Nirvikar Singh, “Federal Dimensions of India’s Response to the Covid Pandemic: Challenging the Idea of the ‘Flailing State,’” *Indian Public Policy Review* 4 no. 1 (2023): 27–48.

19. V. Anantha Nageswaran and the Office of the Chief Economic Advisor, *The Indian Economy: A Review*, Office of the Chief Economic Advisor, Department of Economic Affairs, Ministry of Finance, Government of India (January 2024).

20. It can be difficult to determine this number reliably, since individuals may have multiple phones and phone lines, but penetration has probably increased by a factor of 5 or 6 in the last decade.

21. A detailed case for privatization is made in Poonam Gupta and Arvind Panagariya, “Privatization of Public Sector Banks in India: Why, How and How Far?” *India Policy Forum*, 19 (2022), 55–105. The corporate bond market has grown rapidly in this decade, providing some alternative to bank financing for larger firms, so one can avoid the organizational weaknesses in the banking sector: Nageswaran et al., *The Indian Economy*, 36. In addition, the largest firms are being required to raise a minimum proportion of their debt from the bond market.

22. The capitalization of the Indian stock market has tripled in the last decade, which is somewhat greater than the increase in US stock market indexes over the same period. It is likely that there is some churn in the set of listed companies, since it is reported that over a thousand companies had IPOs in the last decade. Nageswaran et al., *The Indian Economy*, 35. Smaller companies have had a separate platform for stock exchange listing since 2012.

23. See EAC International Consulting, "Product Linked Incentives (PLI) of India: Reviewing the Impact," https://eac-consulting.de/production-linked-incentives-pli-of-india-reviewing-the-impact/. Although a large amount has been allocated in total, annual allocations are still relatively small, so the true impact may take some time to be accurately measurable.

24. These centers are called Global Capability Centers (GCCs), although the term does not come with a formal definition. India has over 1,600 GCCs, which is about 30 percent of the worldwide total. Employment in India's GCCs is estimated at 1.66 million. See Nageswaran et al., *The Indian Economy*, 31, and the references therein.

25. Growing rice is particularly water-intensive, and it is environmentally ill-suited for many of its current locations. Procuring pulses makes sense from the perspective of nutritional needs of poorer Indians. The impacts of increasing maize production, which is envisaged as an input for ethanol production, are less clear.

26. Nageswaran et al., *The Indian Economy*, 49, and the references therein.

27. PRS Legislative Research, "Standing Committee Report Summary: Smart Cities Mission—An Evaluation," Institute for Policy Research Studies, New Delhi.

28. Nageswaran et al., *The Indian Economy*, 44.

29. Nageswaran et al., 9.

30. In the Indian implementation of that idea, these zones have been relatively small and still somewhat constrained in their activities and resources.

31. More speculative technological solutions, such as green hydrogen and plant-level capture, are already part of India's green transition portfolio.

32. Nageswaran et al., *The Indian Economy*, 50–52.

33. Cledwyn Fernandez and Havishaye Puri, "A Statistical Portrait of the Indian Female Labor Force," ADBI Policy Brief, 2023-17; and Ashwini Deshpande, "Illusory or Real? Unpacking the Recent Increase in Women's Labour Force Participation in India," Centre for Economic Data and Analysis, Ashoka University.

34. These arguments are developed in Kunal Sen and Nirvikar Singh, eds., "Introduction to e-Symposium: The Good Jobs Challenge in India," *Ideas for India*, September 12, 2022, https://www.ideasforindia.in/topics/productivity-innovation/introduction-to-e-symposium-the-good-jobs-challenge-in-india1.html. As Sen and Singh note, "The ostensible reason for the violence was to do with the results of a Railways Recruitment Board exam, where 12.5 million persons applied for 35,000 jobs. The deeper reason for the frustrations expressed in street protests was the dearth of good jobs, in both the public and the private sectors, for India's increasingly educated youth." The scarcity of good jobs repeatedly manifests itself in excess competition and occasional violence: see, for example, Kunal Mangal, "The Indian Labour Market through the Lens of Public Sector Recruitment," Centre for Sustainable Employment, Azim Premji University (2023); Sumit Ganguly, "Has India's Military Recruitment Plan Backfired?" *Foreign Policy* (June 28, 2022), https://foreignpolicy.com/2022/06/28/india-agnipath-protests-military-recruitment-plan-modi/. The slow pace of pulling workers out of the informal sector, more so than the rate of shifting of workers out of agriculture, is identified as a key factor in slow employment growth by Amit Basole, "Structural Transformation and Employment Generation in India: Past Performance and the Way Forward," *Indian Journal of Labour Economics* 65, no. 2 (2022): 295–320. This is also connected to the slow pace of structural transformation of the Indian economy.

35. Nageswaran et al., *The Indian Economy*, 50–52.

36. Tarun Khanna, "Science-Based Entrepreneurship in India: A Policy Glass (As Yet) Quarter-Full," *India Policy Forum* 19 (2022): 1–44.

37. These increases and the concentration at the top are documented comprehensively in a couple of recent studies: Maitreesh Ghatak, Ramya Raghavan, and Linchuan Xu, "Trends in Economic Inequality in India," *The India Forum* (2022), https://www.theindiaforum.in/economy/trends-economic-inequality-india; and Nitin Kumar Bharti, Lucas Chancel, Thomas Piketty, and Anmol Somanchi, "Income and Wealth Inequality in India, 1922–2023: The Rise of the Billionaire Raj," Working Paper No. 2024/09, World Inequality Lab, Paris.

38. See Viral V. Acharya, "India at 75: Replete with Contradictions, Brimming with Opportunities, Saddled with Challenges," Brookings Papers on Economic Activity (Spring 2023), 185–288.

39. See, for example, Biswa Swarup Misra, Saban Nazlioglu, and Ilhan Kucukkaplan, "Sources of Divergence in Income in Indian States, 2001–2015," *Development Policy Review* 40, no. 4 (2022): e12594; and Biswa Swarup Misra, *Development and Economic Growth in India: Drivers for Indian States* (Routledge, 2022).

40. Renjith Ramachandran, Subash Sasidharan, and Nadia Doytch, "Foreign Direct Investment and Industrial Agglomeration: Evidence from India," *Economic Systems* 44, no. 4 (2020): 100777.