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ORIGINAL ARTICLE

India's demographic dividend or disaster? Mismanaged factors of production—Land, labor, infrastructure, cities

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ABSTRACT

India entered its so-called demographic dividend around 2005—expected to last until 2055. India has already utilized almost a third of the period of its demographic dividend—it saw a period of explosive growth from 2003–2012—but has not been able to sustain that growth. And since 2012, growth has generated less and less employment, as it has turned inward, and so it is not helping the working-age population get usefully employed. The labor force participation rate for women has been low and is now falling. What can be done to use India's underlying factors of production better to generate greater, more inclusive, and sustained prosperity for its citizens? These second-generation reforms are not easy, as they need cooperative federalism and much broader consensus, but without them India's demographic dividend may become a disaster.

Keywords*: demographic dividend; infrastructure; labor market regulation; land misallocation; urban development; India*

1. Introduction

India entered its so-called demographic dividend around 2005—expected to last until 2055. It is a period when a country has a surge of a working-age population of 15–64-year-olds that supports the elderly and the young. India has already utilized almost a third of the period of its demographic dividend[1]—it saw a period of explosive growth from 2003–2012—but has not been able to sustain that growth. And the growth has generated less and less employment.

Japan, Hong Kong, and Singapore entered such a phase of demographic dividend in the 1960s and grew very rapidly to become developed countries. China entered its demographic dividend coinciding with economic reforms in the 1980s and has seen very rapid and sustained growth for over three decades. Brazil entered such a phase in the 1960s, as well, but while it had a sharp growth spurt for a decade from 1966–75, that spurt was not sustained. The Arab world entered its demographic dividend phase in the 1990s, but without growth and employment, frustration amongst the population—especially the

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1. India's southern states have seen a rapid slowdown in population growth and are aging as well.

educated youth—led to the Arab Spring a decade ago. Its dividend became a demographic disaster.

Whether a country realizes its demographic dividend depends on how capital, labor, and land come together to generate income and employment, and the division of income depends enormously on initial attributes but also on technological change and how that change is generated, spread, and determined by market forces, government policies and regulations, and in the end by specific interests and competition.

India has begun to address the issue of red tape through efforts to improve its rankings on the World Bank's Ease of Doing Business, which has improved to 63. But the costs of doing business remain high because land is expensive, inflexible labor laws have prohibited a well-functioning labor market, and logistics costs remain high. Despite some recent efforts to invest more in infrastructure and move up the rankings on the Logistics Performance Index (LPI) to 44th, India still ranks below China, Malaysia, Thailand, and Vietnam. Let us turn to some basic features of a dualistic economy such as India to understand the transformation India needs in order to realize its demographic dividend.

2. India's dualistic labor market

India's working-age population will increase by at least 12 million per year until 2030—roughly adding a Belgium every year. India's labor force participation rate (LFPR) is around 0.5: reasonably high for men at 0.76 but shockingly low for women at 0.2 and declining. The reason why it is so low is still a puzzle, with explanations ranging from the need to perform unpaid household work[2] and lack of appropriate jobs[3] to safety issues, discrimination, inadequate training for women, and overall patriarchy. But this low LFPR means that people cannot find suitable employment, as India produces generates about 5 million employment every year. As a result, an additional million people every year must find some means to survive by becoming self-employed—hawking and selling their labor on the streets.

India would need to create at least 8.5 to 9 million employment every year until 2030 to reach a Lewis turning point—6 million to meet the employment needs of everyone entering the working force and looking for a job; 1.5–2 million if the LFPR of women rises to 0.5, making the average LFPR 0.65; and another 1 million to gradually absorb the sink of underemployed people eking out a precarious living on the streets. At present, according to the World Bank (2018), India creates 0.75 million employment for every 1% of growth. This means India would need to grow at 12% per annum to create adequate employment to realize its demographic dividend—a tall order for an economy that had slowed down to 4%–5% pre-COVID. Even reaching 8%–9% GDP growth (the rate India grew in 2003–2008) would be a huge achievement. Therefore, India must generate more employment from its growth—at least 1m of employment for every percent of GDP growth—for more inclusive growth.

It is in this context that one can view India's economic transformation and how it differs from other countries, especially in the Asia region. During its high-growth phase from 1980 to 2008,

2. If adding unpaid work, the female LFPR jumps to 86%.

3. India did not adequately expand low-skilled apparel, textiles, electronics workforce, wherein women with secondary-level education find jobs in countries such as Bangladesh, Cambodia, Malaysia, Thailand, and Vietnam.

total factor productivity (TFP) grew at 2.6% annually, with the service sector providing half of it, according to an earlier World Bank (2011) report on jobs in South Asia. The manufacturing sector showed TFP growth of only 0.3%—much lower than even in Pakistan. By contrast, China showed enormous growth in manufacturing TFP, which grew 1.4% during its initial growth phase after China's economic reforms from 1978 to 1993, and then rose to 3.1% from 1993 to 2004. TFP growth in agriculture and services was lower in China than in India, but China was able to generate a huge number of jobs in manufacturing—and pulled people out of agriculture, raised standards of living, and reduced poverty. Export-led manufacturing—whereby China became the factory of the world—created the jobs which millions of low-skilled workers could move to, improve their standard of living, send remittances back to their rural families, and build a better life.

By contrast, India saw a boom in the service sector, where high-skilled jobs were created, but it meant that a large mass of low-skilled labor was left languishing in rural areas or drifted to urban centers and took up finding ways to make a living selling things on the street or taking up jobs in construction at wages that kept many of them below the poverty line. India became the back-office IT center for the world, but its benefits were not spread to masses of low-skilled labor. This dualism between a few skilled workers getting jobs in fast-growing IT and service sectors with masses of unskilled labor underemployed or self-employed but poor is largely because India missed the bus on manufacturing that China was successful in. Today, Vietnam is following this model, and in some sectors, such as textiles and apparel, Bangladesh is too.

India's labor laws encouraged dualism. To get around the rigidities in hiring and firing that

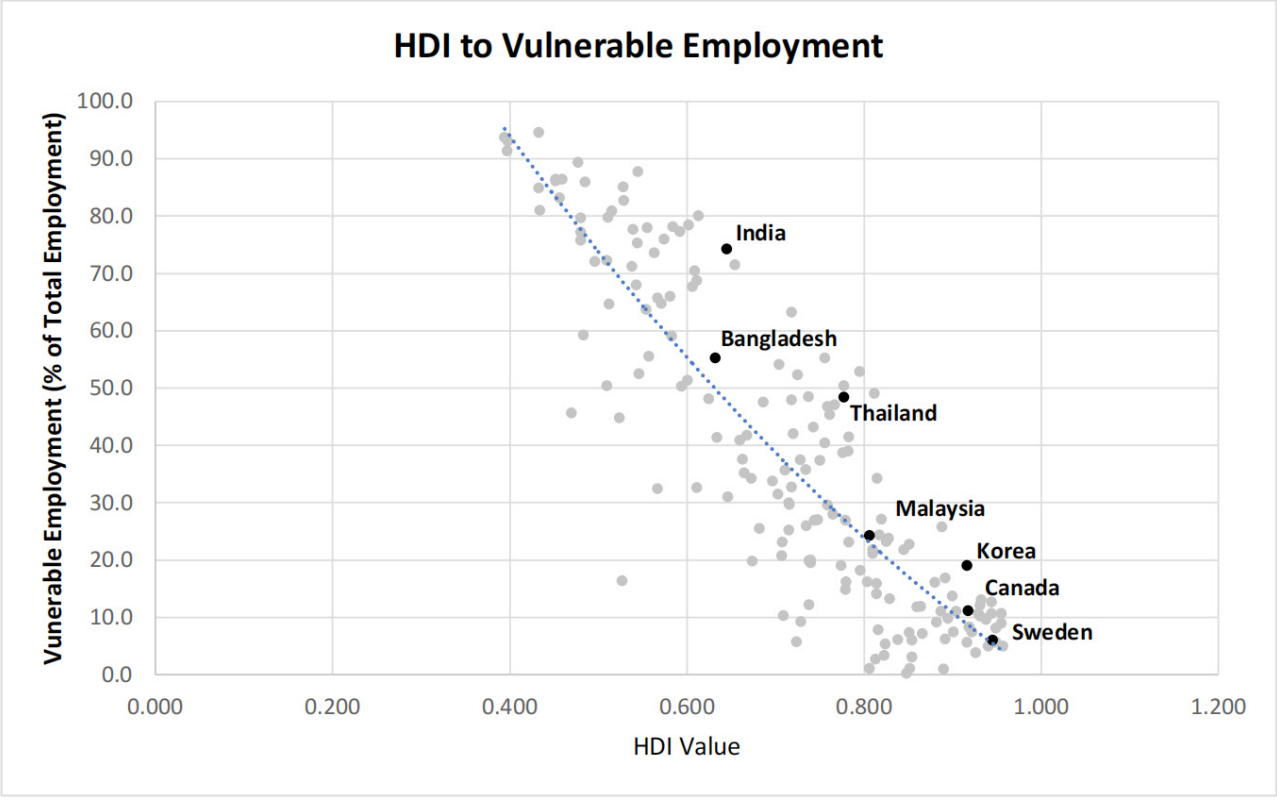

Figure 1. Vulnerable employment and the Human Development Index

Source: HDI Indicators 2020

constrain the ability to adjust to production demands, businesses have increasingly used contract labor. The share of contract workers in factories amongst total workers increased from 26% in 2004–05 to 36% in 2017–18, while the share of directly hired workers fell from 74% to 64% over the same period. India has the largest share (about a third) of a category called "casual wage workers" or, in colloquial use, "daily workers" in South Asia. This is even higher than in Pakistan at 17%, Nepal at 10%, Bangladesh at 22%, Afghanistan at 14%, and Bhutan at 4%. Sri Lanka and the Maldives have none. The Periodic Labor Force Survey Report (2018–19) indicates that, despite all the labor laws, 70% of regular wage/salaried employees in the non-agricultural sector did not have a written contract, 54% were not eligible for paid leave, and 52% did not have any social security benefit (Ministry of Statistics and Programme Implementation, 2020a).

Instead of trying to meet these laws, firms prefer to hire casual labor for whom these laws and regulations need not be applicable. As a result, the mass of India's workforce has very little social protection. The United Nations Development Programme's (UNDP) Human Development Report provides data on the share of vulnerable employment in total employment—it is, as one would expect, highly correlated with the Human Development Index (HDI). But India sticks out as a huge outlier. With its level of HDI, based on cross-country comparisons (**Figure 1**), India's share of vulnerable employment should be at most 50%, but it is above 75%, much higher than even in Bangladesh. India's labor protection and safety nets are amongst the weakest in the world. This was exposed vividly during the sudden Covid-19 lockdown—when millions of migrant casual workers had to trudge back to rural areas under horrific conditions in the largest mass migration seen since the Partition of India. Chhibber (2020), using the share of vulnerable employment, created a vulnerability-adjusted HDI. The exercise calculates how far India's HDI drops with a shock of 1%, 2%, and 5% (**Table 1**). If the shock is of intensity higher than 1%, India drops from the medium HDI category to the low HDI category, as its vulnerability-adjusted HDI drops below 0.55—the cutoff for medium human development.

Ahsan and Pagés (2009) found that registered sector employment and output gets reduced substantially by laws that increase employment protection or the cost of labor disputes. The share of value added that goes to labor does not increase by such laws and so they do not benefit labor. Labor-intensive industries, such as textiles, are the hardest hit by amendments that increase employment protection, while capital-intensive industries are the most affected by laws that increase the cost of labor dispute resolution. These adverse effects are not alleviated by the widespread and increasing use of contract labor.

And until the mid-1990s, India's protectionist trade regime hurt labor. Hasan, Mitra, and Ramaswamy (2003) found a positive impact of trade liberalization on labor-demand elasticities in the Indian manufacturing sector. These elasticities turn out to be negatively related to protection levels that vary across industries and over time. Furthermore, they found that these elasticities are not only higher for Indian states with more flexible labor regulations but are also impacted to a

Table 1. India's vulnerability to shocks: Impact on Human Development Index

HDI 2019	Inequality Adjusted HDI	Vulnerability-Adjusted HDI (1% shock)	Vulnerability-Adjusted HDI (2% shock)	Vulnerability-Adjusted HDI (5% shock)
0.647	0.477	0.5703	0.4936	0.2635

Source: Chhibber (2020)

larger degree by trade reforms. Aghion et al. (2008), following delicensing, showed that industries located in states with pro-employer labor market institutions grew more quickly than those in pro-worker environments.

Li, Megistae, and Xu (2011) believed that labor flexibility is a key factor that explains China's advantage with respect to India in productivity growth in manufacturing. It also explains the much smaller size of Indian firms (median size of 18 vs. 134 for China) and the link between firm size and city complexity that underpins China's advantage and higher productivity. It has been argued that labor rigidity arising from the fear of having to take prior permission for retrenchment/closure even if businesses are not viable (lack of an easy exit option), and high administrative burden—since the multiplicity of labor laws has resulted in multiple inspections, returns, and registers—explains why firm sizes have remained small in India. This has constrained the growth of firms. Amongst registered factories, the Annual Survey of Industries (2017–18) indicates that 47% of factories employ less than 20 workers, providing only 5% of employment and 4% of output (Ministry of Statistics and Programme Implementation, 2020b).

Hasan and Jandoc (2010) found little difference in the size distribution of firms between states believed to have flexible labor regulations versus those with inflexible labor regulations. However, restricting attention to labor-intensive industries, the authors found a greater prevalence of larger-sized firms in states with flexible labor regulations. But the idea of a missing middle—the lack of firms of size 100–1000—is not borne out by the data. Kishore (2015) showed that, in 1980–81, only 31.5% of factory workers were employed in this middle category of firms but by 2011–12, that share had grown to 45.6%. But this growth did not come from small firms growing larger but instead it came from large firms growing smaller. Employment in firms larger than 1000 workers fell from 44.7% in 1980–81 to 28.5% in 2011–12. Outsourcing by larger firms may explain some of this, but labor laws were not responsible for this decline. But what is clear is that average factory size has declined in India and has not grown, which may explain why India has struggled to compete in manufacturing. India does not have a missing-middle-size-factory problem—it has a small-size-factory problem.

The 6th Economic Census (2013–14) reported that there were 59 million establishments in India employing 131 million people (of which 72% of the firms were self-employed establishments and 28% hired at least one worker (Ministry of Statistics and Programme Implementation, 2016). According to the Periodic Labour Force Survey for 2018–19, 79% of the workers were in establishments with less than 10 workers (Ministry of Statistics and Programme Implementation, 2020a). More than 70% of manufacturing employment is in firms with a size smaller than 10 workers. Labor laws explain to a large extent why firms remain small, because most labor laws in India apply to firms larger than 10 workers.

3. New labor codes and skilling

India has now tried to clean up 29 labor laws into four labor codes on (i) wages, (ii) industrial relations, (iii) social security, and (iv) occupational safety, health, and working conditions.

The labor codes on wages and industrial relations apply to all establishments, with limited exceptions. The codes on social security and occupational safety increase the thresholds for factories

from 10 to 20 (with power) and 20 to 40 (without power). According to Aleksynska and Muller (2020) in a report for the International Labor Organization (ILO), collective dismissals to be authorized by public authorities are required in only 22 countries (including India, Pakistan, and Thailand). Of these, seven countries (including India, Sri Lanka, and Colombia) do not require consultation with workers' representatives. On the other hand, notifications to both workers' representatives and competent authorities are required in most countries but no prior permission is needed.

The Industrial Relations Code increases the threshold to 300 workers,[4] after which prior permission to hire and fire workers will be required but retains the notice and compensation requirements specified under the Industrial Disputes Act (IDA) 1947. While the increase is welcome, the question that arises is why any requirement is necessary at all, instead of insisting on prior notification to workers.

To promote the growth of smaller establishments, some states amended their labor laws to increase the threshold of their application. For instance, Rajasthan in 2014 increased the threshold of applicability of the Factories Act 1948 from 10 workers to 20 workers if power is used and from 20 workers to 40 workers if power is not used, and increased the threshold of hiring and firing without government permission from 100 to 300 workers. The Economic Survey (2018–19) noted that increased thresholds for certain labor laws in Rajasthan resulted in an increase in growth of total output in the state and total output per factory (Ministry of Finance, 2019). But the attribution of this growth to labor flexibility has been questioned by Maira and Mehta (2020).

The Code on Occupational Safety and Health increases the threshold for contract labor provisions from 20 to 50 workers. Further, it shifts from the contractor to the principal employer the primary responsibility of providing welfare facilities.[5] The Industrial Relations Code makes provisions for the recognition of a negotiation union with 51% membership.[6] But, the Code weakens collective bargaining rights by requiring a two-week notice for strikes.

Whether these new codes will help re-shape India's employment intensity and improve wage and labor working conditions remains to be seen. The evidence so far is mixed. In some states, instead of labor reforms, reservation for state subjects is gaining momentum. Haryana is the latest state to introduce "reservations" for state citizens for private sector jobs, following Karnataka and Madhya Pradesh. All these state laws have been challenged in courts and have not yet been implemented.

Besides changing labor laws, India must also make its workers employable. According to Shukla, Shree, and Geetha Rani (2019), the proportion of formally skilled workers in India is extremely low at 4.69% of the total workforce, compared with 24% in China, 52% in the US, 68% in the UK, 75% in Germany, 80% in Japan, and 96% in South Korea. This situation can be attributed to three factors: poor education and learning, weak incentives to train workers (largely casual workers), and the limited number of jobs that require deep training. Only 45.6% of the youth graduating from educational institutions are employable.

Using ISCO-8 classification of occupations, Shukla, Shree, and Geetha Rani (2019) found that

4. This limit can be increased under the law.

5. It also provides for automatic absorption of contract workers into the establishment of the principal employer, where they are engaged through an unlicensed contractor.

6. In its absence, a negotiating council may be formed.

a little above half (56%) of the labor market is dominated by people who are classified at Level 2 skills—those who can operate machinery and electronic equipment—while 30% have Level 1 skills, which constitute simple and routine manual and physical tasks. Nearly 11% of the population can be classified at Level 3 skills—those who can record work, do simple calculations, and have good communication skills in specialized fields—while the smallest share are those with Level 4 skills, who have decision-making capability and creativity. Slightly more than half of individuals with Level 1 skills are in the 15–35 age group, whereas this group constitutes about 40% of the other skill levels.

On the flip side, the India Skills Report 2019 (Wheebox, 2019) shows that 63% of employers across all sectors felt that only "some job seekers" or "no job seekers" meet the required skills. The job providers want people with acquired skills and experience. Newcomers to the job market do not have such skills. 84% of students surveyed cited interest in exploring internship opportunities; however, only 37% of employers offer internships to freshers. This mismatch must be addressed.

One state that has done well in getting its youth ready for the job market is Andhra Pradesh (AP). To enhance employability, the AP government's key mandates are training in domain-specific industry-recognized courses, "Modular Market" demand courses, and soft skills training. This is well in line with the findings of the Skills Report that the top 10 Indian states with the highest employability registered not only high domain expertise but also high non-technical skills. Furthermore, when the survey asked employers to cite three highly desirable soft skills apart from technical knowledge, employers ranked communication skills in the first spot, followed by adaptability and learning agility to meet the challenges brought about by disruptive technologies and changing job environments.

4. Land misallocation and acquisition

Some argue that in addition to labor laws, a major reason why India remains uncompetitive is that it has mismanaged its most important and scarce underlying factors of production: land. This has affected the use of capital for the development of infrastructure that is needed for any modern economy to grow and prosper.

Ghani (2018) argued that distortions in land markets are much bigger than those in labor markets. He attributed a substantial decrease in output per worker in the manufacturing sector to factor misallocation. Most of this decline originates from the misallocation of land and buildings. He went on to argue that land misallocation has implications on capital allocation through financial markets. Because land is the best form of collateral due to its immobility (i.e., the debtor cannot run off with land), land misallocation leads to massive capital misallocation. While borrowers can often pledge 80% of the land value against loans, for most other forms of fixed investment, the loan-to-collateral value ratio is substantially lower.

Misallocation in labor market inputs, he argued, has no adverse impact on the allocative efficiency of financial loans. The capital misallocation has worsened over time, as large manufacturing firms move out from cities and into rural areas in search of more land. As a result, financial misallocation is far greater in the organized than in the unorganized manufacturing sector. Land appears to be a minor concern in services. Duranton et al. (2016) compared the role of factor

market distortions in services with the manufacturing sector. As most services tend to be less land-intensive compared with manufacturing, they argued that land distortions have not constrained productivity growth in services. This is one factor that explains India's success in services relative to manufacturing.

There are also huge gender disparities in the ownership of land. According to Agarwal, Anthwal, and Mahesh (2021), women's ownership of assets also remains low, averaging 14% of landowners and 11% of the land. Despite the Succession Act, which gives women equal rights to family assets, widows are more likely to inherit land than daughters, as there is the fear that land inherited by them will transfer to the families they marry into. Without land, access to credit and other benefits is also reduced.

Land acquisition also emerges as the major factor that owners of projects cite as the factor responsible for delays in infrastructure projects. According to Nallathiga et al. (2017), besides land acquisition, environmental and forest clearance and the need for alteration of project design and scope emerge as major factors in delays. The top five important causes of construction delays in transportation infrastructure projects, which are land acquisition, environmental impact of the project, financial closure, change orders by the client, and poor site management and supervision by contractor, are cited by Patil et al. (2013) as key factors affecting project completion. The story is consistently the same in study after study. These delays are primarily responsible for rising non-performing assets (NPAs) for loans given by the banking system to infrastructure projects.

In 2013, India passed a new Land Acquisition Act, with bipartisan support to provide adequate compensation to landowners and define clearly the purposes for which land could be acquired. These are defined as for strategic purposes relating to the naval, military, air force, and armed forces of the Union, including central paramilitary forces or any work vital to national security or defense of India or State police and the safety of the people; for infrastructure projects; or for building housing to resettle people affected by disasters and to resettle poor families. But most business surveys show that the new law has meant more delays in land acquisition and has also made land prohibitively expensive. This is an emotive and politically charged issue, as land grab by politicians and officials before the new law was passed led to widespread agitations in parts of the country.

One option is to lease land instead of selling it. Farmers have an emotional attachment to their land, as it has often been in their family for generations. Leasing allows them to keep the title and get compensation for its use, including jobs for their youth and housing in new real estate developments.[7]

5. Transport, power and urban infrastructure: Improving but remain costly

There is ample evidence that poor infrastructure has held back India's growth. In a simulation exercise, Chhibber and Kalloor (2016) showed that if public infrastructure investment increases by 5% of GDP, India's GDP growth rate will increase by 1%. In a report for Standard and Poor, Dangra (2016) showed that for every 1% of GDP spent on infrastructure, the multiplier effect on India's GDP is 2. The report argues that 1) infrastructure development is critical for improving

7. This was tried recently in Andhra Pradesh when building the new capital Amravati, but when the government changed, the project was abandoned.

India's manufacturing competitiveness and achieving higher growth; 2) timely execution of projects within budgeted costs will be the key challenge, even if funding is available for economically viable projects; 3) power generation and transmission are improving, but transportation infrastructure capacity constraints continue to limit corporate performance and investments; and 4) successful infrastructure development can provide a boost to many sectors, including steel, cement, auto, real estate, and others.

If we look at different components of infrastructure, we get a mixed picture of where India stands. Power generation and distribution are improving but distribution remains a big problem in India, with state distribution companies (discoms) in deep financial distress. Garg and Shah (2020), writing for the Institute of Energy Economics and Financial Analysis, ascribed the problem to the absence of competition, unsustainable cross-subsidies, economically inefficient tariff setting processes, expensive thermal power purchase agreements, and a lack of modern technology and infrastructure development, which add to discoms' losses. But even as power availability improves, India's electricity prices for industry remain amongst the highest in the world for producers—but are very reasonably low for consumers and provided free for the agricultural sector. Electricity prices for consumers average US$0.84/kWh, as against $1.17/kWh for industry.

Very high petrol and diesel prices also add to the cost of doing business in India and work against the development of the manufacturing sector, where energy needs are the highest. India's petrol and diesel prices are higher than average world prices, about 1.5 times the US pump price and above prices in other emerging economies such as Brazil, China, Mexico, and Turkey. They are high because of huge state and central taxes and cesses, mainly imposed for revenue reasons. As demand for energy is relatively price-inelastic in the short to medium run, high prices do not result in lower use but in higher costs, which are passed on to producers and lower their competitiveness. Railway pricing also works against business, with high freight tariffs and lower passenger tariffs.

In combination with demography, urbanization will define how India will realize its demographic dividend. Cities can be engines of growth, innovation, and better living. Oxford Economics' Global Cities Report estimates that 17 of the 20 fastest-growing cities in the world between 2019 and 2035 will be from India (Oxford Economics, 2019). By 2030, McKinsey Global Institute (2016) projects that Mumbai will generate a GDP of $200 billion, Delhi $150 billion, Ahmedabad $95 billion, Hyderabad $82 billion, and Bengaluru $70 billion—these are sizes of many developing countries today. But making these cities more livable and productive will be a major challenge. In 2019, New Delhi and Mumbai ranked a low 118th and 119th, respectively, on the Economist Intelligence Unit's Global Livability Index 2019 that covered 140 cities.

India's cities grew in an unplanned manner until 2005, when a central flagship program, the JNNURM—Jawaharlal Nehru National Urban Renewal Mission—was introduced to help guide and finance urban development. Since 2014, there is an even greater focus on urban development—the JNNURM was renamed AMRUT, or Atal Mission for Rejuvenation and Urban Transformation. This has been complemented by other programs, such as the Smart Cities Program, the Swatch Bharat Mission, and the revamped Pradhan Mantri Awas Yojana—Housing for All—which was largely a rural program earlier. But all these schemes, just like the JNNURM, still reflect a very top-down approach to development. A Sagarmala scheme to build 20 cities (port-led development) along India's coastline has been on the anvil for some time now, but progress is slow.

India's urban development is also very top-heavy. Based on the 2011 census, Class I cities—those with population of 100,000 and above—had only 26% of the population in 1901 and 44.6% in 1951 but now have 70.2% of the population. 42% of the urban population now live in 53 cities with a size above 1 million. The Indian urban system—in terms of distribution of population in different size-class of cities—has clearly become more unequal. The small and medium cities' share in total urban population has consistently declined over the years. Megacities have become congested, clogged, and polluted, and show significant social polarization. There is a gridlock situation in the cities, inhibiting their potential for becoming effective economic and social change sites. According to Shaban, Kourtit, and Nijkamp (2020), the top-heavy character of India's urban system also adversely impacts the balanced regional development of the country.

Land-use regulations and transport infrastructure also have a major impact on whether cities are efficient and reduce disparities. Harari (2016) showed that the shape and spread of Indian cities are hugely impacted by factors, such as floor area ratios (FARs), that discourage compactness, which is very odd for a country with high population density. In India, over time FARs have been reduced ostensibly to avoid congestion in the city center and India now has the lowest FARs in the world—resulting in huge city sprawl and very un-SMART cities. India's FARs are around 1.2–1.5 in most major cities, about the same as in Sao Paulo, as against 8.0 in Shanghai, 15.0 in New York, and 25 in Tokyo.

Some cities, such as New York and Sao Paulo, have used changes in FARs as an incentive for urban rejuvenation. Mumbai municipality has also tried them but has done so in an unplanned manner largely to raise revenue, resulting in further problems, according to Shenvi and Slangen (2018). Besides FARs, Bertaud (2002) argued that examples of regulations that are impacting the effectiveness of urban development are the Urban Land Ceiling Act, which has been claimed to hinder intra-urban land consolidation; rent control provisions, which prevent redevelopment and renovation of older buildings; regulations hindering the conversion of land from one use to another; and, more generally, complex regulations and restrictions in central cities, as opposed to relative freedom outside the administrative boundaries of cities. Many other aspects of efficiency are also affected by spatial development, such as sewage and the delivery of water and electricity.

Urbanization also offers substantial opportunities to reduce poverty, in part because it is more cost-effective to meet many basic needs in cities than in rural areas, according to Colenbrander (2016). Her paper demonstrated that providing electricity to the 200 million urban residents who currently lack access would require only $1.37 billion per year to 2045. Generating this electricity from low-carbon options (consistent with avoiding a 2°C temperature rise) would cost only 1% more.

How cities run depends not just on infrastructure and regulations but also on governance. India's third tier of government—the panchayats and urban local bodies (ULBs)—remain very weak, both in their capacity and in their finances. According to Kapoor and Sinha (2020), the constitution allows 18 functions to be devolved to ULBs, but this must be granted by states who are reluctant to do so. More than that, they can take away revenue-generating jurisdictions from municipal authority by declaring them industrial townships. Municipal finance issues which need urgent attention are particularly the issues of low property taxation and low user charges.

6. Conclusion: Strengthen cooperative federalism and allow more local experimentation

What this paper has shown is that reforms of factor markets, especially labor and land, will not be easy. These will be unlike the 1991 liberalization, which was mainly in product markets and trade, and largely under the jurisdiction of the central government. India is now entering reforms that have concurrent jurisdiction—the states must also come on board—and, in many cases, must be applied and enacted to suit local conditions. This does not mean no national standards must be legislated. We do not want a race to the bottom, with competing states diluting land and labor laws to attract investments. But instead, it may be better to enact broader laws that protect the interests of the workers and land-owners but the application of the laws and accompanying regulations may be left to the states.

India's infrastructure is improving, but infrastructure-related services—especially power, freight costs, and fuel—especially for business remain costly and reduce India's competitiveness. The land and city zonal laws are counter-productive to India's future development. India's floor area ratio must be increased to avoid urban sprawl and inefficient urbanization. The land laws in general now make land prohibitively expensive to acquire. Land leasing may be a better way forward—where the land remains in the original owners' hands. India will have to experiment further, and this experimentation is best done by the states.

India needs to pay much greater attention to much smarter and better-planned urban development. If it wants to grow at 7%–8%, how its cities grow, how they deliver the benefits of agglomeration, how they take care of new entrants, and whether they become centers of innovation or cesspools of social conflict, crime, bad air quality and sanitation, and clogged traffic will be determined by how aggressively and smartly India meets these challenges. It will determine whether India's demography is a dividend or a disaster.

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