## CHAPTER 1

# INTRODUCTION

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India's remarkable economic growth in recent years has made it one of the fastest growing economies in the world. In 2011, India ranks as the 11th largest economy in the world in nominal US dollars. With respect to purchasing power parity, India has the fourth largest economy in the world after the United States, China, and Japan.[1] The immense optimism surrounding the Indian economy is underscored in the *2010 Economic Survey*, which alludes to the strong possibility of double-digit growth in the coming decade.[2]

Various chapters of this volume document that while India's economic growth has been impressive, rapid growth has been accompanied by a slow decline in poverty, widening regional disparities, and continuing sociopolitical instability.[3] The incidence of extreme poverty remains high. Large sections of the population continue to be deprived of basic health and education. The organized private sector has also not created enough jobs—which has led to a divergence between the growth and employment rates of the Indian economy.[4] High growth in recent years has also increasingly become associated with increased food inflation.[5] The growth experience across Indian states has been very disparate, with some of the largest states experiencing decelerations in growth in the 1990s. In effect, the low growth that characterized the pre-1980s has been replaced by a pattern of high but unbalanced growth in the post-1980s period.

Other obstacles have come to the fore as India moves toward transforming itself into a modern twenty-first-century economy. Land acquisition for industrialization has resulted in the displacement of people against their will and without proper compensation and adequate rehabilitation. This has led to deep social unrest in many parts of the country. There are other questions. Who should acquire land—the government or private parties? What constitutes an acceptable rehabilitation package? When are negotiations between private parties subject to a holdup problem? Will transforming agricultural land into industrial use reduce the food supply and raise food prices?[6] The issue of land acquisition has become politically very sensitive.

The caste system still affects the lives of a billion plus people in India. The caste system today is still an important determinant of people's economic choices, with government regulations at both the federal and local levels requiring caste-based job quotas in public sector jobs and caste-specific reservations at institutions of higher learning. There are also proposals for caste-based job quotas in the private sector.[7] The effect of the caste system on poverty reduction is an important issue. Scheduled castes and scheduled tribes have typically been two of the most disadvantaged sections of Indian society.[8] An important question is whether the speed of poverty reduction has been faster for other segments of society than for scheduled castes and scheduled tribes households.[9] These issues find scholarly treatment in this volume.

An important cost of high growth in India has been deterioration in the quality of the environment.[10] This raises a host of questions. What are the environmental challenges of a rapid growth process in India? What is the role of economic instruments in reducing air pollution in India's rapidly growing cities? At the rural level, what is the role of community forestry—or more decentralized governance of forests—in arresting forest decline? Although the evidence in this volume suggests that there are several reasons to worry because of a deteriorating environmental quality of life in both rural and urban landscapes, some indicators suggest that India has been on an environmentally sustainable growth path.

With the aim of achieving rapid growth and eliminating poverty after independence in 1947, India adopted a statist planning model dictated by a philosophy of self-sufficiency.[11] This model—which only began to unravel after the mid-1980s—is referred to as the *license-Raj* system. The elements of the policy framework are well-known (see *OECD Economic Surveys: India,* 2007). Imports were strictly controlled by the government with purchases of most foreign capital goods banned. Foreign direct investment (FDI) was prohibited in many sectors of the economy. The state effectively controlled the expansion of the private sector with larger firms subjected to highly restrictive labor laws. And public sector enterprises proliferated. A predominant view is that the license-Raj system was ostensibly an activist, bottom-up, radical strategy for poverty elimination, but that because the policy framework was wrong, it failed to achieve the desired outcome of raising growth, which failed to reduce poverty.[12]

Per capita real gross domestic product (GDP) growth in India from 1950 to 1980 (1.2% in per capita terms)[13] was less than the long-run average growth rates in the United States during this period[14]: There was minimal, if any, tendency to converge.[15] India's growth during this period was in marked contrast to the extremely rapid growth rates of Japan, South Korea, and Taiwan—later extending to Hong Kong and Singapore. The fast-growing Asian economies were quick to update their import substitution strategy of the 1950s to an export-led development policy in the 1960s. Educated labor forces in these economies helped transform primarily agricultural economies into manufacturing economies and then from economies that focused on low-skilled manufacturing to high-skilled manufacturing (Levin, 2010). This had the effect of removing millions from poverty.

In contrast, primary and secondary education in India floundered. This was a shortcoming of the Indian development model that was already noticed as early as the 1950s (see Nurkse, 1957).[16] The lack of emphasis on early education has had wider implications for India's long-run development and its future course. Without higher allocations to secondary education, for instance, India is not equipping its citizens to make a transition to a nonagriculture economy. The fast-growing sectors in India remain either capital intensive or skilled-labor intensive, meaning that drawing workers out of agriculture has been slow. This feeds into the overall problem of jobless growth.[17] The specter of massive urbanization also poses problems to come. A recent McKinsey Global Institute report predicted that India's urban population will increase from 340 million in 2008 to 590 million by 2030.[18] The puzzling—and somewhat tragic—aspect of India's sluggish growth in the first three and a half decades after independence was that all the signs for India to achieve rapid growth were propitious (Lal, 1999). For instance, modern industrialization, which began in the 1850s, gave India a head start in activities that promised to raise standards of living relatively easily.[19] India also had a relatively diversified natural base, a potentially large domestic market, no shortage of domestic entrepreneurship, and a political leadership that understood economics and was committed to development.[20]

Much has been written about India's transformation starting in the 1980s (see Rodrik and Subramanian, 2005) when the country began to move from a dirigiste economy to a market-based economy. The excesses of the policies in the 1950s and 1960s began to show up in the 1970s. Minimal trade reforms instituted in the mid-1980s culminated in the big-bang reforms of 1991 (Panagariya, 2004). Ghate and Wright (2011) show that although trade reform was minimal and ad hoc in the mid-1980s, various indicators coincided with the growth turnaround of the Indian economy in the late 1980s. For instance, the effective tariff rate—proxied by duties as a percentage of total imports—sharply declined around 1987. India's real effective exchange rate—after adjusting for subsidies—exhibits a large real depreciation of 40% in the second half of the 1980s. One-third of three-digit industries were exempt from licensing in 1985 (Aghion et al., 2008). Other liberalization measures implemented in 1985 and 1986 involved allowing companies that had reached 80% capacity utilization to expand their capacity further. These and other nontrade reforms enacted in the mid- to late 1980s coincide with a shift up in India to a higher growth path in the late 1980s.

Following the Balance of Payments (BOP) Crisis of 1991, India embarked on market liberalization undergoing a host of reforms (see *OECD Economic Surveys: India,* 2007). Pervasive government licensing of industrial activity was almost eliminated and restrictions on investment by large companies were eased. This was at the heart of the New Industrial Policy. Direct tax rates were also reduced, inducing supply-side effects. In the financial sector, equity markets were transformed with new supervisory bodies introduced. Foreign suppliers were allowed to enter the market with a progressive lowering of tariffs. Rules governing FDI were also eased. These had the effect of opening the Indian economy up to competition and private entrepreneurship. An essential difference between the post-1991 Indian economy and the pre-1991 Indian economy is that for the first four decades after Indian independence—in which Indian economic planning was conducted under the framework of the Mahalanobis model—India's modern service and industrial sector lay predominantly in the public sector; only after 1991 did the private sector start coming into its own. Stimulating entrepreneurship, the reforms of 1991 moved India from being a mixed economy toward a private enterprise economy setting the stage for entrepreneurship to be the new engine of growth, with the role of the state slowly metamorphosing to that of an enabler.

The key issue looking forward is, having shifted to a higher-growth path, will it prove self-sustaining? India's savings and investment rates are above 35% and are rising.[21] Its current savings and investment rates are similar to those of the Asian Tigers during their take off years. The demographics of a young population offer a distinct growth advantage.[22] Trade has taken off with India's shift to a higher growth path. India has also significantly opened up to capital flows from 1991 onward—bestowing the attendant growth effects that come with such flows, such as through higher FDI.[23]Therefore, in terms of factor accumulation, sustaining India's higher growth path seems feasible. However, this volume suggests that the lack of appropriate policies to manage an unbalanced pattern of growth poses *huge* future problems for India, potentially jeopardizing India's growth story. It is, therefore, imperative to understand what has happened to the Indian economy and under what structural constraints before drawing policy lessons.

## Why This Volume?

There are three reasons. First, the main goal of this handbook is to help readers acquire a deeper understanding of the issues that are germane to the growth pattern and development experience of India. This understanding is important for tackling the overall theme of the handbook: The nature and scope of government intervention matters for equitable and broad-based, long-run growth in India. The question becomes what combinations of policies (if any) can produce such a growth pattern, and what should be the role of the government in controlling and directing the development process. After all, development is not a formula in which the government identifies the optimal combination of resources for each industry that leads to rapid growth—if the conditions are right, entrepreneurs will discover those soon enough. Rather, government intervention should focus on making sure that "the conditions are right" by removing inefficiencies in ill-defined markets and reducing barriers to production.[24]

Second, although policy research is important, it needs to be based on long-run considerations. Whether to enact certain public policies not only requires a long-run vision of future payoffs, but also diligence in implementation because they may produce few immediately recognizable effects on the welfare. Governments that are short-lived or that experience policy vacuums will not have the political will to implement development policies that will sustain long-run growth but may have unpopular short-run consequences. Democratically elected governments, in particular, are susceptible to the implementation of short-run policies while ignoring the long run (Ghate, 2003). By design, democracies are subject to changes in policies when new administrations take over. This has implications for long-run growth.

There is also a strong disconnect between research and economic policy design in India. Until recently, major government economic policy documents, such as the *Economic Surveys*, ministry reports, five-year plans, or the *Monetary Policy Reviews*, for instance, contained little theoretical foundation despite major methodological advances in the field of econometrics and economic theory. In comparison, other (i.e., advanced) countries tend to incorporate modern economic research into policy advocacy much more successfully. A hope of this handbook is to change policy discourse in India by bridging the analytical foundations of economic policy with long-run policy recommendations. It is to remind policy makers of the well-known aphorism that "either some dependable economic theory provides the necessary underpinning to economic policy, or economic policy does not have a dependable underpinning at all."[25]

Third, this volume is comprehensive. Several issues, such as a deteriorating environment, which is a severe cost of growth; higher education reform, which is a key mechanism for innovation; state-level policies and the political economy of center-state relations; and distributional conflict issues that threaten the Indian growth story find scholarly treatment in this book. In terms of presentation, while formal models are used in many chapters to explain a set of stylized facts or empirical regularities, the material should be accessible to the technically trained economist as well as the nontechnical (economist) reader.[26]

The handbook reflects India's growing economic importance on the world stage. The focus is on the recent and future course of the Indian economy. The topics featured are firmly directed at development topics that are germane to India's experience. Care has been taken to pick both established scholars as well as younger scholars working on the frontier of their fields. Each section contains chapters that are both microeconomic and macroeconomic in nature. Therefore, consistency is with respect to section themes, not the modeling strategy choice of the chapter. In this respect, the handbook is unique. Finally, the important aspect of any handbook is permanence: The chosen chapters are core areas in which future research is required, as well as key elements of the overarching theme of the handbook. The chapters and section choices have been carefully chosen with this in mind. Hence, permanence and comprehensiveness are key features of the handbook. Finally, another important aspect is that it takes the theoretical and empirical foundations of economic policy seriously. To this end, it links discussions on the Indian economy and Indian development policy to growth and development research. The hope is that this handbook will set an academic standard for future research on the Indian economy.

## Organization of the Handbook

The handbook is divided into eight sections, with a total of 31 chapters. The sections headings are "India's Historical Development," "New Insights into Tackling Rural Poverty," "Industrialization," "Social Infrastructure and the Demographic Dividend," "Politics and Policy," "Macroeconomic Policy Reform," "India and the World Economy," and "Looking Ahead." Each section contains chapters on specific areas that are consistent with the overall themes embodied in the section headings. I will briefly describe the objective of each chapter and how these fit the larger questions that characterize the choice of the broader sections of the handbook.

## India's Historical Development

The first section, "India's Historical Development," comprises two chapters that provide a broad review of India's historical development from 1757 to 2010. The first of these, chapter 2, "India and the World Economy: 1757–1947," by Tirthankar Roy, discusses the pattern of economic growth and structural change in the South Asia region between the end of the Mughal empire in the early eighteenth century until the end of the British empire in the mid-twentieth century. An overarching theme of this chapter is that early institutions set patterns for India's postcolonial growth. Further, the transition of power to postcolonial Indian development was made easier by the preconditions created during colonial times. These assertions are part of a broader line of inquiry on "the great divergence": Historically, why did the West grow rich, whereas the non-Western world stayed poor? One of the key arguments that the author makes is that low average growth rates in colonial India mask important economic gains, even though these were restricted to a few industries, a few cities, and a few districts endowed with water, good land, and market access. For instance, colonial rule induced agricultural transformation, which helped spawn urban industrial giants such as Bombay (now Mumbai) and Calcutta (now Kolkata). The author notes that the British administrative tradition, which loved paperwork, left India with a massive volume of documentation. This would greatly help in pursuing these questions as future lines of research.

Chapter 3, "Battles Half Won: Political Economy of India's Growth and Economic Policy since Independence," by Sadiq Ahmed and Ashutosh Varshney, studies India's long-term growth and development experience since independence in 1947. The authors undertake a detailed review of the key developments surrounding the evolution of the Indian economy. Part of the focus of this discussion is on highlighting what is sui generis about India's growth pattern—and the policy challenges this pattern throws up. The authors remind us that the pledge that India's postindependence leadership had undertaken to abolish mass poverty remains only partially redeemed. Indeed, one of the puzzles that characterizes India's growth process is that despite high growth rates, poverty in India has declined slowly. In addition, human development indicators remain weak by international standards, including the quality of health and education outcomes.

The politics of economic policy making are discussed next. Institutional (both formal and informal) features of the Indian polity are shown to have a strong bearing on economic policy. The authors argue that the concept of master narratives can be used to understand why it is not the economy predominantly (apart from inflation) that determines electoral fortunes in India. An interesting observation made is that universal franchise democracy typically followed the industrial revolution in the West. Independent India, in contrast, was born poor and overwhelmingly agrarian and with no restrictions on franchise. This explains—to a large extent—why inclusiveness has played a significant role in policy making in India compared to other countries.

Even though India's low growth–poverty elasticity is taken up in more detail in other parts of the handbook,[27] by talking about it at the outset, it serves to remind readers that the greatest challenge for India's policy makers today is to balance the growth momentum with inclusionary policies.[28]

## New Insights into Tackling Rural Poverty

Rural India is home to 75% of India's population with roughly the same proportion characterizing the poor in the country (Himanshu et al., 2010). The gap between creation of new jobs in agriculture and the number of new jobs created outside agriculture is increasing. Although there is no doubt that the rural nonfarm economy will also have to be a vital source for new jobs, a radical strategy to create rural jobs to reduce rural poverty is of the highest priority.

The section "New Insights into Tackling Rural Poverty" contains four chapters on rural poverty. What characterizes the choice of chapters is that they represent advances in theoretical and empirical research on tackling rural poverty. This volume does not intend to reproduce the findings of a large literature on rural poverty: Several excellent accounts in other published volumes exist on agricultural policy and poverty reduction. Rather, the chapters in this section provide microeconomic advice on the design and evaluation of government policies that have the *potential* to create rapid growth and pull people out of rural poverty into gainful employment in a sustainable way.[29]

In chapter 4, "Estimating Rural Poverty: Distributional Outcomes, Evaluations, and Policy Responses," M. H. Suryanarayana provides an outcome evaluation of India's agricultural growth strategy across three phases of agricultural policy in India: 1950–1965 (first phase), 1967–1990 (second phase), and 1991–2010 (third phase). A general perception is that India's agriculture growth strategy has been effective in reducing poverty. This poses a puzzle: If agricultural growth has been effective in reducing poverty, how does one reconcile this with the current policy thrust toward food security (i.e., a plea for a universal public distribution scheme and the right to food security to be enshrined in a new food security bill) on the grounds that a large percentage of the of the rural and urban population is food insecure and undernourished, or with a plea for rural employment guarantee schemes on a national scale? The author argues that a new approach is required to evaluate India's agricultural growth strategy. In essence, for any evaluation of development strategies, their outcomes, and policy imperatives, it is important to have a meaningful understanding of the concept, a norm, and estimate of deprivation. Nonmonotonic effects among growth, poverty and inequality, survey design, and understanding of specific institutional features of rural labor markets also play major roles in *overstating* the extent of rural poverty in India. One of the purposes of this chapter is to have researchers examine more disaggregated indices of various components of living standards during different phases of development with updated reference norms. Otherwise, policy makers will end up recommending polices that may not address the real issues. The chapter concludes with a brief summary and an evaluation of the national employment guarantee scheme—which has become a capstone welfare state program—and its effectiveness as a tool for poverty reduction.[30]

Chapter 5, by Prabal Roy Chowdhury, examines the SHG (self-help group)-linkage approach, perhaps the fastest growing microfinance model in India. A broad idea that motivates this chapter is the role for microfinance in poverty reduction. A general consensus of researchers and practitioners in the field is that microfinance fails to reach the very poor. The author develops a theoretical model that focuses on what is a key aspect of the SHG-linkage program, the role of nongovernmental organizations (NGOs) in linking the banks with the SHG, thereby acting as a conduit for channeling public funds to the borrowers. This research allows policy makers to identify potential inefficiencies associated with the SHG-linkage program, as well as compare the efficiency properties of the SHG-linkage program with the Grameen model (the dominant model in microfinance). The effect of microfinance on poverty reduction depends on whether credit reaches the poor, and whether, when it does reach the poor, it helps households through capital formation, thereby helping them get out of poverty. The insight gained by the chapter suggests an institutional arrangement among the government, nongovernmental organizations, and borrowers whereby the potential for microfinance to reduce poverty is realized from the efficiency gains due to such an arrangement.[31]

Why has microfinance succeeded in India while microinsurance has not? Chapter 6, by Xavier Gineé, Lev Menand, Robert Townsend, and James Vickery, titled "Microinsurance: A Case Study of the Indian Rainfall Index Insurance Market," describes the basic features of rainfall insurance contracts. These products are relatively new and have been offered in India since 2003. The authors summarize results of their previous research on this market, which suggests that price, liquidity constraints, and trust all pose significant barriers to increased take-up of such products. Rainfall insurance contracts have the potential to offer a significant tool to tackle rural poverty and distress. What mitigates this potential is that small farmers are not buying policies that hedge against their exposure, and the payouts are too low to launch farmers out of poverty.[32] In effect, there are multiple barriers to take-up. To have a meaningful impact on poverty, such insurance would need to be scaled up so that purchasers would buy more than unitary policies. The government can also increase the density of rainfall gauges, which would help reduce basis risk. However—and somewhat crucially—the purchasers of insurance can also be lenders, or the government, especially vis-à-vis the latter, because relief aid, or multibillion dollar loan waivers, tends to be very expensive for governments.

Tackling rural poverty and inclusiveness cannot be done in the abstract. Chapter 7, by Vegard Iversen, "Caste and Upward Mobility," examines the channels and extent to which caste and social identity may have curbed upward mobility and made rural poverty more persistent, and whether there are signs of these transmuting in the postreform era. The chapter identifies two empirical puzzles in the literature that remain unresolved: (1) why political empowerment has not led to economic empowerment of disadvantaged castes in India; and (2) in contrast to the Beckerian view, why market reforms have not led to less discrimination and lessened the economic disparities of the disadvantaged castes. The author notes that a careful reading of the evidence suggests that rural poverty is declining across the board, but at a slower pace than one could have hoped for. One major weakness with Indian data relating to caste is that there are few if any longitudinal data on households that allow researchers to tease out causal stories on caste and mobility from unobserved individual and household characteristics. The author surveys the literature on field experiments as a way out of tackling the causality problem. A primary focus of the chapter is on discussing research design, as methodology matters significantly for assessing the effect of caste on poverty alleviation.

## Industrialization

The third section, "Industrialization," examines the problems facing the manufacturing sector in India. Historically, economic development has been synonymous with the advent of industrialization. In labor-surplus economies such as India, opportunities in labor-intensive manufacturing are vital for job creation and the rural-urban migration at the core of development and poverty reduction. In India, employment growth has not improved in spite of an increase in GDP (see chapter 3). For instance, during the period 1993–1994 to 2004–2005, while GDP growth accelerated to 6.5%, employment growth was 1.9% per annum.[33] In 2007–2008, the share of industry was 27% of GDP, just one percentage point higher than for 1987–1988. Although the research on employment elasticities is inconclusive (an issue that is discussed in chapter 8), some papers have shown that employment elasticities have not only been low in services, but also lower than industry (Papola, 2009). This would suggest that a rate of growth without an accelerated rate of growth in industry is not likely to lead to a higher rate of employment growth. There is also concern with the process through which agrarian land is acquired to build up infrastructure, industries, and various services, as well as with the recent strife in India over such acquisition.

For a labor-surplus economy, an important and relevant question becomes whether a liberalized trade regime in India has favored *labor-intensive* exports? Is India gaining from its labor advantage? In chapter 8, "Performance of Indian Manufacturing in the Postreform Period," Poonam Gupta and Utsav Kumar note that many developing countries have been successful in promoting the manufacturing sector and its exports. However, an acceleration of growth in manufacturing, and a concomitant increase in employment, has eluded India. Limited structural change in India has taken place in industry despite India's growth acceleration. Their chapter analyzes the reasons behind the lackluster performance of manufacturing in India (e.g., labor laws, poor infrastructure, financing constraints). The authors argue that states with relatively inflexible labor regulations have experienced slower growth of labor-intensive industries and slower employment growth. Using the data for growth in services and manufacturing across Indian states, they also show that labor market regulations and infrastructural variables can also explain the relative performance of these sectors across Indian states. Services sector growth is relatively higher in states that have inflexible labor regulations and poorer infrastructure. The implication is that sectoral policies matter in explaining the rise of the service sector as an engine of growth in India.

The informal economy has emerged as one of the most dynamic and active segments of the entire developing world. The informal sector is also a recurring theme in this handbook. Contemporary studies show that markets and competition both play dominant roles in determining wages in the informal sector. In chapter 9, "Informal Sector and the Developing World: Relating Theory and Evidence to India," Sugata Marjit and Saibal Kar look at how wage and employment in the informal sector respond to the shocks to which formal or organized/unionized segments of an industry are subjected (e.g., reduction in tariff rates, greater liberalization). The natural experiments the authors have in mind are the liberalization reforms of India in 1991: The economy was opened up to competition from an import competing sector. This led to the closure of many formal sector units, with the unleashing of unskilled labor from the formal sector that moved to the informal sector. What is surprising is that despite the release of unskilled labor after liberalization, informal wages increased. The authors create a simple general equilibrium model to explain this. Among other things, they argue that without capital accumulation in this sector—partly an outcome of capital mobility between the formal and informal sectors—the observed upward wage movement or productivity growth would not have been possible. The authors also find preliminary empirical support for their model: Growth in informal fixed assets used as an explanatory variable has a positive and significant impact on the unorganized (informal) wage in India. Future work could test the model with a variety of controls, and more empirical work needs to be done. By focusing on the urban informal wage (and therefore urban poverty) this chapter complements the discussion on rural poverty in chapters 4–7.

In chapter 10, "Structural Transformation and Jobless Growth in the Indian Economy," Rubina Verma develops a three-sector general equilibrium model to account for India's unique pattern of structural transformation. Although this chapter also documents the rise of India's service sector discussed in chapter 8, it constructs a theoretical growth model to understand India's pattern of growth vis-à-vis other Organization for Economic Cooperation and Development (OECD) and emerging economies to highlight what is sui generis about the Indian case.

The uniqueness of India's pattern of structural transformation is well known to growth and development economists. The preeminence of services in recent years meant that there has been a shift from agriculture to services, bypassing industry. Further, changes in GDP structure in India are asymmetrical to the workforce (employment in agriculture continues to persist at 58% of the population). The author's model—one of the first general equilibrium growth models calibrated to address these questions in the Indian context—shows that sector-specific total factor productivity (TFP) growth rates were important drivers of resource reallocation across the three principal sectors of Indian economy from 1970 to 2007. Although the model cannot match the levels of sectoral employment in the three sectors (it does a better job capturing the trend), it suggests ways in which this can be done (a modified version of the model in which wages in services are higher than in agriculture and industry does a little better in its ability to track the level of sectoral employment shares). Clearly, future work is needed in this area, in particular, looking at models that incorporate specific (exogenous) sectoral policies to help explain India's pattern of unbalanced growth.[34]

In chapter 11, "Development, Displacement, and Food Security: Land Acquisition in India," Abhirup Sarkar is concerned with the process by which agrarian land is acquired to build up infrastructure, industries, and various services, as well as that process's relation to the project of economic development. Recent strife in India over land acquisition for the purpose of industrialization is relevant to structural transformation in many developing countries. When trickle down is minimal, the question of compensation for those who lose out in the process of economic transformation becomes vital. The author suggests that most of India's large food production is the result of high net sown area, not productivity per acre. Therefore, allocating a small fraction of this land to industrialization would forego some food production, although this can easily be picked up by higher productivity in the remaining area. Fragmented land-holding patterns, however, prevent such productivity increases, which poses an important challenge. Fragmented land holdings can also lead to a speculative holdout. Divergence between the market price and shadow price of land would also induce farmers not to sell their land. Another problem is displacement (which also happens with dams) with the related issue of credible compensation.

The questions then become whether the government should acquire land for private enterprises if the purchase of land involves significant transaction costs, and what an appropriate compensation model should be.



## Social Infrastructure and the Demographic Dividend

The fourth section, "Social Infrastructure and the Demographic Dividend," features chapters relating to primary and secondary education reform, higher education reform, health reform, and the demographic transition in India.

It is widely agreed by development economists and practitioners that primary and secondary education has been grossly neglected in the course of Indian economic planning. India has one of the highest rates of teacher absenteeism in the world (Kremer, 2005). Related to this, approximately 58% of school-going children in rural India in class 5 (roughly 10–11 years old) cannot read material meant for 7- to 8-year-olds in class 2 (ASER, 2008). According to recent education statistics of the Human Resource Development Ministry, the dropout rate up to the fifth class was 25.43%; up to the eighth class (ages 13–14), it was 46%; and up to the 10th class (ages 15–16), 59.87%. These are All-India averages, with large variations across regions, gender, and socioeconomic groups. The rate of growth induced by higher human capital accumulation might have vastly changed the growth pattern of India.[35] In chapter 12, "Reforming Primary and Secondary Schooling," Anjini Kochar provides a summary of the state of primary and secondary education in India. Her chapter notes the achievements of the sector: increased enrollment, particularly in the primary stage, and a narrowing of many traditional gaps. The supply-side impetus to schooling—which occurred through a host of programs, from independence up the 1990s, and thereafter consolidated through the Sarva Shiksha Abhiyan in 2002—has led to significant increase in access to schools throughout India. Indeed, one finding in the literature is that the probability of a school being located within a given distance of a child's habitation of residence *does* increase enrollment. However, school location policy also affects other characteristics of schools that are known to have important effects on learning. For instance, small school size, which tends to be the norm in India because of sparsely distributed and low populated habitations, means that the total numbers of teachers per school are small. This leads to multigrade teaching, which can significantly affect language and mathematics test scores. Schools with two or fewer teachers are less likely to attract students, with the negative effects of small school size being particularly strong among scheduled tribe and scheduled caste communities. Importantly, school location does affect school enrollment, but also determines other inputs—such as the caste composition of students plus the numbers of teachers—that need to be incorporated for any purposeful impact evaluation. The chapter also discusses how policy formulation to combat large teacher shortages is made difficult by the nature of the labor market for teachers; a related discussion looks at the effectiveness of performance pay on tackling high teacher absenteeism. What is novel about the chapter is the critical evaluation of the evidence from field experiments and randomized evaluations in formulating education policy—a discussion that is missing in recent surveys—and a methodological approach that is increasingly being used to evaluate schooling policies in India.

In chapter 13, "Higher Education Reforms in India," Shyam Sunder takes a critical look at the higher education sector in India. The author notes that even though the number of institutions and enrollment in higher education continue their rapid growth (in excess of population growth), the quality of this education outside of a handful of institutions is questionable. The number of such graduates remains small relative to the population and demands of India's economy. In general, graduate education continues to remain in an alarming state with respect to both quality and quantity. India's impressive economic performance has made the problem in higher education seem less urgent than it actually is. The chapter discusses several of the challenges facing higher education: the system's inability to attract the best of the best to lives of teaching and scholarship, separation of education and research, and a short-term profit motive by private education providers, among others. An issue that is discussed somewhat at length is that the privatization of higher education in India—the current norm—through investor-owned universities will only exacerbate the shortage of teachers and scholars in India. This is because it will be impossible to persuade investor-operators of private universities to invest in advanced training of their faculty without compensating revenues. The author notes that there is little theoretical or empirical evidence in the world that supports prospects of success of the for-profit model in building higher education.[36] Thus, higher education provides an opportunity for more significant reform. The author discusses several reform proposals for this sector.

In chapter 14, "Health and Health Care Policy in India: The Case for Quality of Care," Jishnu Das and Jeffrey Hammer argue that despite high private expenditures on health in India, policy discourse reflects a constant preoccupation with the public sector. Even historically, envisioning a universal system of health care, the main focus of public health policy—like schooling policy—has been better "access" to public primary health care centers. This focus has been unduly narrow with little attention paid to understanding the behavior of health providers, or conducting a serious outcome evaluation of any of the components of the link from which health services can be availed, be they primary care centers or superspecialty hospitals. The authors argue that "access" is not the binding constraint in the provision of primary health care in India. The problem is the quality of care provided both in the public and private sector. The authors also suggest how standard measures of "quality" can be directly counterproductive. The key focus should be on how health policy affects the *quality* of services and how to make this a starting point for future policy formulations. Going forward, the authors suggest the absence of a good theory of equilibrium in the medical market place in India. This suggests a rich ground for future research.

In chapter 15, "Population Dynamics in India and Implications for Economic Growth," David E. Bloom looks at the consequences of India's demographic transition—higher population growth and transforming age structure—and its impact on growth. The importance of this question cannot be overstated. In a comparison group comprising select East Asian economies, approximately 2% of their growth in income per capita (over 1975–2005)—roughly one-third of the supposed miracle—can be attributed to demographic change. Counterfactual experiments based on low and medium fertility rates for India imply a sizeable demographic dividend—roughly to the order of an additional percentage point or more annually to per capita income growth (projecting forward to 2050). The key policy question is whether health and education allocations (at all levels) by the government—issues discussed in the other chapters in this section—will grow in tandem to transform India's youth advantage into productive employment. The author notes that the absorptive capacity of India's economy to absorb workers into productive employment will depend on a host of complementary factors ranging from good governance to efficient infrastructure. Therefore, policy complementarities will be critical in the way that both mortality and fertility changes make India's population change in a way that is favorable to growth.

## Politics and Policy

One cannot ignore the crucial role played by politics in economic policy or the impact of political economy forces on the quality of governance and the emergence of rent-seeking. The fifth section of this volume, "Politics and Policy," contains chapters that deal with the political economy of reform, the political economy of infrastructure spending, bureaucratic corruption, distributional conflict, and the political economy of environmental policy in India. Together, they seek to explain the political economy of public policy formation in relation to economic growth and poverty alleviation in India, and the implications this has for better governance and reduced rent-seeking.

In chapter 16, "The Dynamics and Status of India's Economic Reforms," Nirvikar Singh examines the political economy of pending economic reforms in India, with an emphasis on domestic reforms. Some of the specific issues addressed include a discussion of governance structures, implementation of the value added tax (VAT), the introduction of delivery mechanisms for public services, civil service reform, labor laws, corporate governance, bankruptcy laws, land markets, and agriculture reform. One of the main insights of the chapter is that discussions of reform in India usually list an ideal set of reforms, but do not analyze how such changes may be operationalized in a politically feasible manner. Specific areas such as agriculture, land markets, labor, education, and infrastructure all have special characteristics, either in terms of numbers, positions in the income hierarchy, complexity, expertise, or diversity of interests, which make progress more difficult. Recognizing such factors and incorporating them into policy design might be a better way to proceed rather than articulating ideal end points without any pathway for reaching them. Therefore, a crucial question this chapter addresses has to do with understanding when and how economic reform happens.

In chapter 17, "The Political Economy of Infrastructure Spending in India," Stuti Khemani attempts to understand a significant puzzle in the political economy of infrastructure spending in India: the coexistence of low public spending on infrastructure (as a proportion of the total budget) in Indian states, and low efforts to secure private participation for greater investments, despite large demand from citizens for infrastructure services. A broader attempt of the chapter is to identify the key political constraints to effective infrastructure policies.

The argument is based on two separate assumptions—one, on the division of voters between organized interest groups that seek rents, and unorganized swing voters who seek general benefits from public goods; and two, on the degree to which different kinds of public spending programs can be used for rent-seeking versus vote-buying, with infrastructure projects more suited to the former and broader poverty alleviation programs to the latter. The optimal strategy for politicians may be derived to show that they use poverty alleviation programs such as price subsidies, workfare (employment through public works), and other direct transfers to win electoral support from swing voters, and infrastructure programs to gain rents and target benefits to organized core constituents. The author provides empirical evidence for the theoretical model, which has interesting policy implications. If there are weak political incentives to provide broad public goods, deliberate governance interventions by civic society organizations may help swing voters to solve their coordination problems. These interventions could be in the form of compiling and disseminating data on public good performance at the level of electoral constituencies (as seen on the Member of Parliament Local Area Development Scheme [MPLADS]). The media could have a crucial role here. Another area of institutional reform would be to decentralize urban infrastructure and its financing to urban local governments.

What are the effects of the size and scope of government on the incidence of corruption? In chapter 18, "Aspects of Bureaucratic Corruption," Gautam Bose attempts to identify treatments of corruption that draw on characteristics of underdevelopment either as causes or as consequences. There is a very small amount of literature (both empirical and theoretical) on corruption in the Indian context. A primary reason for the lack of empirical work is the unavailability of data: Both parties typically benefit from corruption, and, therefore, neither has an incentive to report it. The author looks at three aspects of government corruption in developing countries, and in India in particular: red tape, rent-seeking, and the abundance of intermediaries (such as middlemen). The author argues that if wasteful red tape is specifically a characteristic of public provision (not private), then provision should be privatized, as suggested by the "efficient corruption" literature.

The author emphasizes that there is very little work on intermediation (and the role of intermediaries) in corruption, an analysis of which is necessary to understand the structure of corruption markets, especially in the Indian context. A conceptual framework to understand the role of intermediaries in corruption activities is developed. Finally, the chapter could be used to understand other features or developments in the Indian economy. For instance, informational issues are central to the role of corruption. The theoretical framework developed in the chapter can be used to understand how the Right to Information Act (2005) would affect the extent or nature of corruption. This is an interesting issue and deserves greater attention in future research.

Why do some democratic societies manage to reach a constructive policy compromise, but others do not? Or by necessity, do democracies undertake politically difficult decisions in stages? Such questions remain important research challenges. In chapter 19, "Distributive Conflict and Indian Economic Policy: Some Notes on Political Economy," Pranab Bardhan discusses political economy issues that arise from distributive conflicts and that govern economic policy in India. The author notes that contrary to popular perception, India may be one of the most unequal societies in the world when land and education inequality are so considered. Further, because the Gini coefficient in India is based on consumption expenditure, it tends to understate inequality because the rich tend to save more than the poor. It is also well known that the National Sample Survey data underrepresent the rich. These corrections would put inequality not only past China, but in the Latin American range. The author then asks whether inequality matters for economic growth and argues that it clearly does, implying that equity and efficiency often go together, contrary to the opposite presumption of much of mainstream economics. The chapter essentially gives a qualitative and broad account of the different types of distributive conflicts that have become prominent in the process of economic development in India and how their influence will shape the nature of problems that afflict economic policy making and implementation.[37]

While the benefits of economic growth are widely touted in the literature, what about its costs? In chapter 20, "Economic Growth and Ecological Sustainability in India," Pranab Mukhopadhyay and Priya Shyamsunder look at issues concerning environmental sustainability and economic growth in India using both micro- and macrolevel evidence. The authors highlight two environmental challenges of India's rapid growth: urbanization and forest cover change. With respect to urbanization, the authors suggest that there is a role for economic instruments in reducing air pollution related to increasing urbanization. With respect to forest cover, the authors note that whereas overall forest cover has marginally increased in India, in the bulk of forests, which are moderately dense, there is a decline. The authors then ask if it is reasonable to expect forest dependence to decrease as India grows and rural wealth increases. From a broader perspective, they argue that there exist crucial environmental thresholds to India's growth strategy. The chapter ends with a discussion about governance issues surrounding Indian environment policy to make growth more environmentally sustainable.

## Macroeconomic Policy Reform

The sixth section, "Macroeconomic Policy Reform," examines domestic macroeconomic reform, with an emphasis on the postreform period (i.e., after 1991). Both long- and short-run macroeconomic issues are discussed.[38] This section covers chapters on the effectiveness of fiscal rules within the Indian context, the monetary policy transmission mechanism in India, implications for monetary policy and exchange rate policy in recent episodes of large capital flows, domestic financial sector reform, using the BOP crisis of 1991 as a natural experiment to think about India's trade and exchange rate reform, and the convergence-divergence debate in the context of Indian states.[39]

Fiscal rules, or fiscal responsibility acts, around the world are rendered ineffective when emerging markets or developed economies tend to default when their economic conditions worsen. An important research question remains: How can policy makers address weaknesses inherent in fiscal rules that try to bind the sovereign? The Fiscal Responsibility and Budget Management Act (FRBMA) of 2003, with the rules framed in July 2004, was India's first formal attempt to "bind" the central government's fiscal conduct. The FRBMA's operational targets pertaining to deficit and debt were extended up to March 31, 2009. In chapter 21, "Fiscal Rules in India: Are They Effective?" Willem H. Buiter and Urjit R. Patel consider India's experience with fiscal (responsibility) rules during the past decade. The authors first provide an analytical foundation on how to think about debt sustainability in the Indian context. They argue that the fiscal space "vacated" in recent years by states has been usurped by the central government. The recommendations of the 13th Finance Commission regarding a roadmap for fiscal consolidation are also examined numerically—something that would be useful to policy makers. Some of the dimensions along which the assessment of fiscal rules takes place—for fiscal policy in Indian going forward—include scope for eliciting time-consistent behavior, features that encourage countercyclical behavior and safeguards against political opportunism.

Recently, the analysis of monetary transmission mechanisms in emerging economies has gained substantial importance due to structural and economic reforms and subsequent transitions to new policy regimes. However, these economies have specific characteristics that differ from those of industrialized countries. In India, the paradox of monetary policy is that when the Reserve Bank of India (RBI) changes its policy rate, this generally does not lead to a corresponding change in bank lending interest rates. In chapter 22, "Financial Frictions and Monetary Policy Transmission in India," Kenneth Kletzer focuses on how the institutional structure of the financial sector and the role of financial intermediation in the Indian economy affect the transmission of monetary policy to the real economy. The author reviews a large amount of empirical literature on monetary transmission within the Indian context (with bank lending and the credit channel being more prevalent). One aspect that emerges from this discussion is that the effect of monetary disturbances on market interest rates, output and prices, depends on the response of such disturbances to the yield curve. However, recent research on emerging markets shows that long-term rates are not responsive to changes in short-term rates. Thus, monetary policy has smaller effects on output and prices in emerging markets. In the Indian context, the shortcomings of the transmission mechanism further arise because of an underdeveloped financial system and the problem of credit rationing by formal sector banks. Financial activity is segmented between a formal sector that primarily serves large enterprises and an informal sector that provides the majority of financing to small and medium enterprises. In addition, both imperfect information and imperfect enforcement characterize informal finance in India.

Building on recent papers in the literature on informal credit relationships, and models of firm investment and growth in the presence of financial frictions based on enforcement problems, the author introduces a new conceptual framework to understand the allocational effects of interest rate shocks and how linkages between formal and informal finance influence monetary policy effects. These insights offer a new direction for the analysis of monetary policy in the context of emerging markets (see also chapter 29). It also sheds light on how monetary policy can be made more effective as a policy tool.

Chapters 23 and 24 deal with exchange rate policy. In chapter 23, "Monetary Policy, Capital Flows, and the Exchange Rate," Partha Sen notes that the use of monetary policy has been constrained by a loose fiscal policy and capital flows.

The problem of capital flows is a self-inflicted pain. The RBI could have kept a lid on capital flows, allowing only the most urgent inflows from a growth standpoint. This would have given India a competitive edge in manufacturing and would have allowed it to expand labor-intensive industry and help facilitate rapid reductions in poverty. However, the RBI has carried out sterilized intervention with large quasi-fiscal costs. The trade balance and, more often than not, the current account continue to be in deficit. A major cause of this is a misaligned exchange rate—the trigger of this being the capital account of the balance of payments. As a strategy for development, the author notes that India is not following East Asia. The author offers numerous research ideas, especially for growth theorists, on how to think about India's (non-labor-intensive) growth pattern vis-à-vis its current exchange rate policy, what implications current exchange rate policy has for external imbalances, and how the magnitude and composition of capital flows will detract from India's objective of labor-intensive growth. Capital flows also have the potential to cause a "Dutch disease"—an aspect of capital flows that has not been discussed in the Indian context in the academic literature sufficiently.

In chapter 24, "India's Trade and Exchange Rate Policies: Understanding the BOP Crisis and the Reforms Thereafter," Rajat Achaarya provides an analytical discussion of the sources of the 1991 BOP crisis and the trade and exchange rate reforms that followed thereafter. The BOP crisis offers a natural experiment to study policy complementarities in the Indian context. This chapter hopes to encourage more formal modern macrowork in this area—something that is missing in the literature. The author argues that exchange controls (along with the pegged regime), implemented partly through import quotas, lead to a black market for foreign exchange and encouraged underinvoicing of exports, thereby, aggravating the BOP crisis. The author discusses what exchange rate reforms were intended to come out of the crisis, and to what extent these have been effective in lowering the black market premium on foreign exchange and improving India's trade balance. An important change in the policy setup is that because in the postreform era trade policies no longer need to complement (or be constrained by) exchange rate policies, these policies can be designed to promote growth and generate employment. Such "decoupling"—and the future course of trade and exchange rate policy with somewhat new objectives—can be understood more clearly by understanding trade and exchange rate policy prior to the BOP crisis.

Financial markets play a vital role in sending information signals to the private sector, shaping resource allocation, and processing information. However, prior to 1991, Indian financial markets were a highly controlled sector. For instance, bank deposit and lending were controlled by the government. The government tried to channel investment into certain sectors—in effect, planning the real economy. India also had an interest rate regime that did not reflect market realities. In essence, the real and financial sectors worked in tandem to prevent any market-led investment and growth. In chapter 25, "Domestic Financial Sector Reforms," Shubhashis Gangopadhyay and S. K. Shanthi discuss domestic financial sector reforms in India since 1991. The authors discuss banking sector reforms at length and argue that although Indian financial markets have increased their efficiency in the postreform phase, India still needs to develop an active and more dynamic bond market and make the bankruptcy market more efficient. This chapter also discusses the global financial crisis of 2007–2009 and how Indian financial markets behaved during that time. This crisis was especially significant because this was the first time that a liberalized Indian financial market was facing an external shock. The authors suggest that the chain of causation during the crisis was more from the real sector to the financial sector rather than the other way round (as in the United States). The chapter discusses what form financial regulation will take going into the future. The chapter also voices a growing acceptance among policy makers around the world—that the macroeconomic effects of financial regulations will be important in rethinking macroeconomic policy.[40]

A fundamental question that confronts policy setters is whether there is a tendency for the poorer regions of a country to grow faster than the richer regions, which leads to a convergence in living standards. Such "balanced" growth is of central concern as it enables regions to share more broadly the benefits of economic growth. A massive amount of literature, building on the initial impetus of Barro and Sala-i-Martin (1992) and Mankiw, Romer, and Weil (1992) and others, has continued to examine the determinants of international growth and convergence (or the lack of it) and differences in GDP per capita. Within the Indian context, a virtual industry exists (see the references in Basu, 2008, and Ghate and Wright, 2011). In chapter 26, "The Convergence Debate and Econometric Approaches: Evidence from India," Samarjit Das notes that the econometric literature on convergence has been critical of traditional growth regressions for studying economic convergence across countries and regions, based on the popular notions of β and σ convergences. This is because these methods fail to allow for unobserved (and persistent) differences across countries, and they are susceptible to measurement errors, endogeneity biases, and spatial autocorrelation. These problems plague many of the papers written (and some published in good journals) in the Indian context as well. The chapter does two things: First, it investigates the convergence hypothesis among Indian states by using panel unit root tests that explicitly incorporate cross-sectional dependence (various socioeconomic variables in different regions in India are expected to be contemporaneously correlated). Second, two measures of well-being are used: per capita consumption—both rural and urban—and per capita state-level GDP (SGDP). Most of the studies on India are based on SGDP, which is a questionable indicator of welfare. The author also incorporates possible structural breaks that may occur and may lead to completely different outcomes of the convergence hypothesis test. The author finds that per capita rural consumption as well as per capita SGDP is diverging across states, although there is evidence that the urban per capita consumption is converging. Whereas the divergence result is also found in other studies, this chapter suggests a robustness benchmark for the econometric techniques required to address such issues.

## India and the World Economy

The seventh section, "India and the World Economy," looks at India's interaction with the world economy. There has been a big transformation in the Indian economy after 1991, with trade having taken off with India's shift to a higher growth path. For instance, world trade in 2008 was 5 times that in 2002, and nearly 20 times what it was in 1980.[41] India has also significantly opened up to capital flows from 1991 onward. The four chapters in this section deal with the globalization debate in India, India's engagement with the World Trade Organization (WTO), an estimated dynamic stochastic general equilibrium (DSGE) model of the Indian economy, and a growth theoretic framework to understand India-China growth patterns.

In chapter 27, "The Globalization Debate and India," Devashish Mitra and Priya Ranjan argue that one of the key questions in the globalization debate in India is whether to allow unfettered movement of foreign capital or whether to make the rupee fully convertible on the capital account.[42] The effects of financial flows can be considerable. Many innovations take place in the financial sector, but economists tend to overlook the downside risks of these innovations. Even though there is a broad consensus among economists on the benefits of trade liberalization, the jury is still out on the issue of free mobility of capital. On balance, the authors come out in favor of a gradual removal of restrictions on capital flows, evaluating the relative costs and benefits of capital account openness. With respect to trade liberalization, the authors note that free trade creates both winners and losers. Since the gains to the winners tend to outweigh the losses to the losers, in principle, everyone can be made better off. However, appropriate policies for redistributing the gains from trade may not be in place. In this context, it becomes important to analyze the impact of trade liberalization on direct outcomes of interest such as poverty, inequality, unemployment, and child labor, on which the political support for trade reforms crucially depends. One hopes that this chapter will lead to more theoretical research on globalization and its implications for uneven growth in India and other developing economies.

In chapter 28, "India at the WTO: From Uruguay to Doha and Beyond," Kamal Saggi looks at the impact of this bargain on India's position at the WTO going forward, especially during the latest round of WTO negotiations launched in Doha, Qatar, in 2001. The author notes that although trade in India has exploded—especially after 2002—India has the dubious distinction of being the world's leading user of antidumping duties. This suggests that trade liberalization since 1991 has been partly undone with the increase use of antidumping measures. With respect to Agreement on Trade Related Aspects of Intellectual Property Rights, several issues are addressed such as whether the WTO is the right organization to implement an international agreement on intellectual property rights, and what—if any—is the relationship between intellectual property rights and international trade through channels such as technology transfers and increased FDI. The chapter examines

India's stance on agriculture, one of the key issues surrounding the Doha round. The author notes that developing countries need not necessarily benefit from the elimination of agricultural subsidies by the United States and the European Union because developing countries tend to be net importers of agricultural goods. There are also ongoing negotiations—that pose a potential roadblock to the successful completion of the Doha round—over the form that special safeguard mechanisms will take with respect to agricultural goods. These will allow developing countries to increase tariffs to temporarily deal with import or surge price declines. In any case, India's overall position in agriculture has been defensive—especially in light of its relatively high tariffs and its willingness to bind its tariff rates to a level above which it cannot raise them. India's demand for more trade liberalization in services, which directly affects software and BPO services, and which is natural given its comparative advantage in these areas, is also unlikely to be fulfilled in the current round of negotiations.

Chapter 29, "An Estimated DSGE Model of the Indian Economy," by Vasco Gabriel, Paul Levine, Joseph Pearlman, and Bo Yang studies business cycle dynamics in the Indian economy using a new Keynesian DSGE framework. This is one of the first attempts to estimate a DSGE model for the Indian economy. The policy relevance of conducting such an exercise is without question: High growth in India since 1991 has been accompanied by significant trade and financial liberalization. Policy makers face significant tradeoffs in ensuring price and financial stability in devising monetary conditions in response to external shocks. Therefore, understanding the mechanisms that contribute to the amplification and propagation of shocks requires careful investigation.

The authors develop a closed-economy DSGE model of the Indian economy and estimate it by Bayesian maximum likelihood methods using Dynare software. The model is built up in stages to a model with a number of features important for emerging economies in general and the Indian economy in particular: a large proportion of credit-constrained consumers, a financial accelerator facing domestic firms seeking to finance their investment, and an informal sector. What is novel about the framework is that it is the first study that estimates a model with a formal-informal sector distinction. The chapter also adds newer features to the model sequentially, giving a clear indication of how such models may be built and ultimately used by researchers. The simulation properties of the estimated model are examined under a generalized inflation targeting Taylor-type interest rate rule with forward- and backward-looking components. The estimation results suggest that RBI's policy stance appears to aggressively target expected inflation. The authors also find that, in terms of model posterior probabilities and standard moments criteria, inclusion of these financial frictions and an informal sector significantly improves the model fit. The hope would be for the RBI to take note of this research and use it in the formulation of monetary policy.

Chapter 30, "Development Patterns in India and China: A Perspective with CES Production Function," by Kamhon Kan and Yong Wang, builds on the voluminous India-China literature, which still lacks a theoretical framework to understand India's and China's growth patterns. This paper builds a simple theoretical model to understand India's and China's different growth patterns. An interesting stylized fact motivates this exercise: from 1985 to 2004—compared with India—China has had (1) considerably higher rates of physical capital formation; (2) much higher ratios of measured physical to human capital; and (3) a more physical capital friendly public policy (a greater ratio of physical capital–enhancing investment to human capital–enhancing investment). To explain these facts, the authors use a one-sector growth model with two accumulating factors (physical capital [K] and human capital [H]). The output technology is assumed to be CES. Along the optimal path, the physical capital–human capital ratio—and optimal government policy in both inputs—is shown to depend on the magnitude of two key model parameters of the model: a distribution parameter, and the elasticity of substitution between K and H. In other words, the different growth patterns across both countries could be attributed to having different parameter values for these key parameters. The authors then estimate the key parameters for both China and India. Their estimation results suggest that their model implications match well with the previously mentioned stylized growth patterns regarding China and India.

## Looking Ahead

The final chapter, chapter 31, "What More Do We Want To Know about the Indian Economy?" by Ashok Kotwal, reflects on an agenda for economic research going forward. This chapter first takes stock of what we know about the patterns observed in Indian development and speculates on the likely scenarios over the next few decades. The main question that the chapter is concerned with—and probably the biggest economic policy challenge today—is why has poverty in India declined so slowly? The author suggests that a proximate cause is the size and productivity levels of the informal sector—a bulk of India's labor force is engaged in low-productivity cottage-type activities with little physical or human capital. This hinders productivity. What then is responsible for the existence and continuation of constraints in the informal sector? If the poor incidence of entrepreneurship in the informal sector is because of poor infrastructure and weak financial inclusion, why have governance structures failed to alleviate these constraints? In addition, the formal sector has not expanded at the expense of the informal sector to absorb a greater part of the labor force. The author discusses a host of factors that could explain obstacles to productivity improvements in the informal sector, and hence the low growth–poverty elasticity: caste, collective action, the political economy of Indian democracy, the role of credit markets, and rural urban migration, among others. The chapter has several suggestions for future course of research to shed light on the process of trickle down and the changes therein.

## Concluding Remarks

The importance of sustaining India's newfound economic growth cannot be understated, with the potential to raise millions out of poverty, and to increase regional economic and political stability. However, a narrow focus on achieving high economic growth sometimes obfuscates a vision of *how* the Indian economy should be growing. Producing broad-based and equitable growth is the overarching theme of this handbook. How should we think about such government intervention to produce such a growth pattern? What is the right welfare-state model for India? Is a new model needed that centers on economic policies when economic conditions are less than optimal? How can India provide more productive jobs at rising real wages—which is essential for poverty reduction? Can India get stuck in a middle-income trap? Understanding the complexity of the Indian economy will be crucial in addressing such questions and the other obstacles India faces in transforming itself into a modern twenty-first-century economy.

A volume like this is aimed at research scholars, teachers, and policy makers. It will be useful for researchers who are new to the field, as well as those who want to update and extend their knowledge to the frontier of the field.

### Acknowledgment

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## Notes

1 See chapter 3.
2 The Economic Survey is the Finance Ministry's view of the annual economic development of the country. See http://indiabudget.nic.in/
3 A recent estimate developed by the Oxford Poverty and Human Development Initiative shows that India's eight poorest states have more people in poverty—an estimated 421 million—than Africa's 26 poorest nations. These estimates are based on a multidimensional poverty index that measures a range of deprivations at the household level. See http://www.ophi.org.uk/policy/multidimensional-poverty-index/

4 Looking at decadal changes from 1983 to 1993–94 and 1993–94 to 2004–2005, employment growth has been flat. Most of the job growth has been in subsidiary (i.e., part-time) workers and in self-employment growth. The growth of employment of *principal* (i.e., full-time) workers has actually slowed down. Further wage growth has decelerated markedly for almost all groups of workers. See the report titled "India's Employment Challenge" (World Bank, 2010).

5 For 2009, inflation stood at 11.49% year-on-year. Inflation was 10.55% in June 2010. It should be pointed out that these rates are not high by historic global standards, or on the standard definition of *high inflation*.

6 See chapters 11 and 16.

7 The reasons for the persistence of the caste system—which is an interesting question in its own right—is beyond the scope of this volume. See the references in chapter 7.

8 As of the 2001 census, Scheduled Castes and Scheduled Tribes constituted 24.4% of the country's population. See http://www.censusindia.gov.in/Census_Data_2001/India_at_glance/scst.aspx

9 See chapter 7.

10 See chapter 20.

11 While India was impressed with Soviet planning at an early stage, economic planning after independence received input from several Western economists.

12 Bhagwati and Desai (1970) provide an influential critique of these policies. After submitting this volume to the publisher, a raging online debate initiated by CUTS (Consumer Unity and Trust Society) discussed how India's historical lack of emphasis on health and education (what are called Stage II reforms) at an early stage of development led to high poverty rates and a large informal sector . One argument given by planners at the time was the revenue constraint: i.e., when governments have limited capacity, they have no choice but to focus on one or other areas of reforms. Sensible people would differ on what the optimal sequencing should be. See Mehta and Chaterjee (2011) for the proceedings of this debate.

13 See chapter 3.

14 Measured in 1996 dollars, the increase in per capita GDP corresponds to a growth rate of 1.8% per year in the United States between 1870 and 2000. See Barro and Sala-i-Martin (2004), p. 1.

15 The identification of a turnaround in the early 1980s is consistent with a range of studies using aggregate data (see Rodrik and Subramanian, 2005). More recent work using disaggregated data (Ghate and Wright, 2011) points to a rather later date in the mid-1980s, suggesting a conflict between both approaches. The key issue on which all studies agree is that, at some point during the 1980s, there was an increase in growth, which, from the 1990s, was not only of statistical but also of massive economic significance. See (Ghate, Wright, and Fic, 2010) for an expository discussion of these issues.

16 It should be pointed out that in contrast to India's record in primary and secondary education, the building of high-quality public research institutes like the IITs, IIMs, ISIs, TIFR, and IISc, after independence was one of the great successes of Nehruvian Fabian socialism. Very few countries—at India's level of development—have institutes of higher research and training of such caliber. See Ghate (2004) . See chapter 13 for a discussion of the problems and prospects for the higher education sector.

17 Papanek (2010) shows that the all India real agricultural wage (in 1999/2000) prices between 1999–2000 and 2004–2005 remain virtually unchanged. The real nonagricultural wage (in 1999/2000 prices) between 1999–2000 and 2004–2005 has

declined by 10%. The question is how a period of high growth in the postreform period led to a worsening of outcomes. A possible reason suggested by Papanek (2010) is that the increase in the number of jobs was less than the rise in the labor force, implying that the real wage did not rise.

18 See http://www.mckinsey.com/mgi/publications/india_urbanization/index.asp

19 See Lal (1999) for a discussion of these and other factors portending the Indian growth potential. The issue of path dependency is discussed in chapter 2.

20 It should be pointed out that relative to the period under British Rule, growth did increase.

21 See Reserve Bank of India (2008).

22 These two are related: The global experience suggests that savings and investment reach their peak at such moments of demographic transition.

23 The important aspects of opening up include portfolio equity flows, FDI, , and certain kinds of debt flows.

24 Policies to initiate equitable growth are more organizational than economic endeavors as the market will not be used if it does not permit economic agents to transact efficiently. Participants in the market will not typically engage in organizing such an endeavor, being unable to internalize the manifold externalities that impede its functioning in the early stages of development.

25 See the introductory chapter in Dutta et al. (1993).

26 Basu (2007) and Panagariya (2008) are two recent excellent volumes on the Indian economy.

27 See, for instance, chapter 31.

28 Chapter 16 also discusses the political economy of reforms.

29 There are three related aspects that are not directly dealt with by the chapters in this section. The first is a larger and more fundamental debate as to whether the farm sector or the nonfarm sector is the route out of poverty. See de Janvry and Sadoulet (2010). A second aspect is that the sectoral structure of the growth rate matters for poverty reduction. For instance, Ravallion and Datt (2010) show that in contrast to the prereform period (pre-1991) in India, the postreform process of urban economic growth has bestowed significant gains to the rural poor as well as the urban poor. So rural-urban compositions matter. The third aspect is that the rate of poverty reduction is sensitive to the distribution sensitive growth rate. In other words, it is poverty that makes growth less pro-poor. Finally, for measurement and estimation issues, see http://www.planningcommission.nic.in/eg_poverty.htm for the background papers of the 2010 *Tendulkar Committee Report* on the issues surrounding and estimation of poverty in India.

30 Hopefully, future editions of the volume will take up a full evaluation of the National Rural Employment Guarantee Act (NREGA) once more data is available. Important issues are getting the NREGA wage rate right and understanding the design features that matter for the overall goals of the program. The potential impact of NREGA on regional inequality will also need to be addressed.

31 As this volume was going into production, the microfinance industry was in crisis in India's biggest market, Andhra Pradesh. One reason was that because regulators were introducing new restrictions, and politicians were urging borrowers not to repay. This was leading to a drop in loan repayments.

32 For instance, a small farmer's typical exposure in the monsoon season is about 40,000–60,000 rupees. However, the payout of a typical insurance contract is 1,000 rupees.

33 This could be viewed as the other side of coin of massive improvement in productivity growth. Given such high-productivity growth, total GDP growth has not been high enough to increase employment.

34 See Ghate, Glomm, and Liu (2011) for a model in which sectoral policies play a key role in explaining India's structural transformation.

35 See Balakrishnan (2010). The reverse question is equally important. If returns to schooling are higher in an environment of economic growth, then augmenting the rate of economic growth is a powerful policy mechanism for increasing the human capital of the population. See Foster and Rosenzweig (2002).

36 Gary Becker noted at the 2010 World Economic Forum in Beijing that although the transition from low to middle income can be managed by countries if they have the right incentives and the basics of human resource development, the transition from middle to high income is more difficult and requires a capacity to innovate. Innovation is critically dependent on higher education and improvements in its quality. Chapter 16 also discusses the political economy of education reform.

37 These issues are taken up in more detail in Bardhan's recent book (2010).

38 Chapters 26 and 30 deal explicitly with long-run growth theoretic issues. Chapter 26 revisits the convergence–divergence debate. Chapter 30 calibrates an India–China growth model to predict these two countries' varied growth patterns.

39 In standard versions of the modern model, for instance, the linkages between the disintegration of financial intermediation and the real economy are missing. These linkages provide an important transmission mechanism whereby shocks in the financial sector can affect the real economy. Chapters 22 and 25, in part, shed light on this issue. However, chapter 3 makes the point that whereas the robustness of India's growth strategy was tested during the global financial crisis of 2007–2009, the resilience of its growth subsequently is testimony of the underlying strength of the Indian economy.

40 It is now widely accepted that financial regulation contributed to the amplification that transformed decreased housing prices into a major world economic crisis (2007–2009). This suggests a new role for monetary and regulatory tools to be enacted in conjunction with one another.

41 See chapter 28.

42 Whereas chapter 23 also deals with the capital account, the focus is on monetary policy design in the presence of capital flows.

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