



Realising the Demographic Dividend

Policies to Achieve Inclusive
Growth in India

Santosh Mehrotra



Realising the Demographic Dividend

This book elaborates on policies to achieve inclusive growth in India. It deals with various development issues like the failure to increase employment despite unprecedented industrial and services growth; failure to generate enough skilled manpower to meet the requirements of fast growing sectors; and failure to ensure human capabilities so that the poor can participate in the benefits of economic growth.

The book's theoretical framework is based on the capability approach discussed in the first chapter. The rest is empirical, and is focused on specific problems with specific policy implications. Human capital levels of the youthful workforce in India remain worrying and the largely informal workforce is not covered by social insurance. In addition, universal elementary education, despite the Right to Education Act 2009, is yet to be achieved in the country. Health outcomes over the years have improved only slowly. Sanitation still remains a very serious problem for a major part of the country. The author discusses these issues in individual chapters. Specific policy implications are also provided, beyond what is currently being practised. Finally the book deals with the governance issues that need to be addressed if growth has to be inclusive.

Santosh Mehrotra is Professor of Economics at the Centre for Informal Sector and Labour Studies, Jawaharlal Nehru University. He was earlier Director General, National Institute for Labour Economics Research, the only research institute of the Planning Commission of India. Mehrotra also headed the Rural Development Division and then the Development Policy Division of the Commission. He was the team leader of the India Human Development Report 2011 and was the chief economist of the Human Development Report, New York. Professor Mehrotra's research has been translated into French, Spanish, Russian, Chinese and Portuguese.

“This is a topic of fundamental importance to the future development path of India. The script is exceptionally clearly structured and sharply written. . . .the level of analysis in this volume is far above other analyses of this complex topic. This book is likely to be widely referred to and become a standard reference for debates about India’s labour market and employment policies, and their relationship to growth and social justice in India.”

— **Peter Nolan**, Director of Development Economics, University of Cambridge

“This excellent book combines analytical sharpness and policy sensitivity to tackle the central issue of how to make best use of the demographic dividend for inclusive development. It will be of interest to analysts and policy makers alike.”

— **Ravi Kanbur**, T.H. Lee Professor of World Affairs, International Professor of Applied Economics and Management, Cornell University

“This book combines a comprehensive factual background on each welfare dimension that he addresses with crisp histories of the various programmes that were initiated in each area. Diagnosis flows naturally from these two elements and translates effectively into practical policy recommendations. This book will become a standard reference for anyone wanting to understand why things are the way they are in India’s welfare state and what must be done about it.”

— **Subir Gokarn**, Former Deputy Governor, Reserve Bank of India
and Director, Brookings Institute India

“It is a highly topical subject: why did India fail to translate its fast growth into welfare for the poor? This is a thoroughly professional piece of work by a thorough and through professional. The book is basically empirical, although it has a theoretical foundation in the work of Amartya Sen and Martha Nussbaum.”

— **Ajit Singh**, Professor Emeritus in Economics, University of Cambridge

“Santosh Mehrotra has been on the inside, and this adds value to his project, apart from giving him access to materials. To be fair, he is not presenting as a spokesperson for the Planning Commission, the Government, and least of all for the freakish outlier interpretations of the Indian neo-liberal economic regime.”

— **Ashwani Saith**, Professor Emeritus, Institute of Social Studies, The Hague

“It is a hard hitting empirical book testing and largely validating the theoretical underpinnings of the importance of the so called ‘softer’ aspects of development practice and policy. The demographic dividend, skilling policies, gender, children are all put together. While people like me saw the Indian advantage over countries like the US, China and Japan, Mehrotra also correctly spells out the challenges of the dividend.”

— **Yoginder K. Alagh**, Former Vice Chancellor, Jawaharlal Nehru University

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CAMBRIDGE

UNIVERSITY PRESS

4843/24, 2nd Floor, Ansari Road, Daryaganj, Delhi - 110002, India

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781107091726

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First published 2016

Printed in India

A catalogue record for this publication is available from the British Library

Library of Congress Cataloging-in-Publication Data

Mehrotra, Santosh K.

Realizing the demographic dividend : policies to achieve inclusive growth in India /

Santosh Mehrotra.

pages cm

Includes bibliographical references and index.

Summary: "Presents the neo-structuralist ideas on open economy macro-economics, evolutionary and complex systems thinking on economic growth"— Provided by publisher.

ISBN 978-1-107-09172-6 (hardback)

1. Economic development--Social aspects--India. 2. India--Economic policy. 3. India--Social policy. I. Title.

HC435.3.M453 2015

330.954--dc23

2015011578

ISBN 978-1-107-09172-6 Hardback

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Preface

This book has grown out of many years of learning while I was with the Planning Commission of India, first heading two divisions (Rural Development and then Development Policy) and then as the head of the only research institute of the Commission (2006–14). In the early 1990s, I had joined the United Nations system, after having left an academic position in JNU, New Delhi. In the UN role I had had the opportunity of advising governments from across the developing world, but had never actually worked for the government. The opportunity of joining the government came at a time when India's GDP was growing at an unprecedentedly high rate. It was an extremely exciting time to be in government, as I was quite often at the cutting edge of policy design and policy advice. India has remained, along with many other major Asian economies, a country that has prepared five year plans almost continuously since Independence. Both China and India are currently into their 12th Five Year Plan. I had the good fortune of contributing to the process of preparation of the 11th as well as 12th Five Year Plans, apart from working with central line ministries as well as state governments. It was a profoundly important learning experience, and many of the lessons from that wide and rich experience are reflected in the chapters of this book.

India is at an extremely critical juncture in its development – the demographic dividend – a period when the share of the working age population in the total population rises, which is known to have many benefits flow to its people provided government policies are such as to exploit this once in a life time opportunity in a nation's history. Before the dividend begins the nation is burdened with a high dependency ratio, with a large and growing share of the population below the working age of 15. Once the dividend period has passed, the share of the elderly population rises who are no more working, and hence have to be provided for (in terms of pensions and health benefits). The dividend, lying in between these two periods, is characterised by a low dependency ratio and a high share of the working age population.

India's demographic dividend began in the early 1980s and is expected to come to an end towards the latter part of the 2030s. In other words, India is just beyond the midpoint of its dividend, and this once in a life time opportunity for our nation is unlikely to last beyond another quarter of a century from now. The question is whether our policymakers recognise the limited time available for exploiting the advantages of the demographic

dividend. Visionary policies and speedy decision making to increase and sustain GDP, reduce poverty and enhance the human capabilities of our citizens cannot wait – every year lost will never return in the life of a child or youth, and in 25 years India will be an aging society. The West European and Japanese populations are already aging, and their total populations have in fact been declining. China is at the end of its demographic dividend, and although its GDP has grown at a rate for three decades unprecedented in human history and has succeeded in reducing the numbers of the poor at the same time, their leaders are already complaining that ‘Europe became rich before they became old, we have become old without having become rich’. India, and its leaders, could face the same challenge in a quarter century but today, they need to guard against missing the current opportunities, so that a quarter century from now our children and their leaders do not have to repeat the Chinese concern at the end of their demographic dividend.

This book is organised as follows. In chapter 1 the theoretical framework is laid out which holds the rest of the book together. The remaining 15 chapters of the book are to be found under four broad headings: Growth, Employment and Inclusion (Part 1), Human Capital Formation (Part 2), Building a System of Social Protection (Part 3) and Governance (Part 4).

The subject discussed in each chapter is a critical priority if the objective of India’s policymakers – inclusive growth – is to be achieved. Thus, the concern behind chapter 2 (Sustaining Economic Growth) is that after achieving a growth rate of 8.4 per cent per annum over 2003–04 to 2011–12 GDP growth declined in the following two years (2012–13 and 2013–14). Even though India is yet far from the risk of hitting the point of the middle-income trap, as it still has more than abundant supplies of labour, yet we note that this kind of volatility in growth is reminiscent of the middle income Latin American experience and is contrary to the experience of China or the miracle economies of East Asia. This raises the concern that, if this volatility in growth continues, there is the risk that India may even have difficulty in graduating from low-middle-income status to upper-middle-income status, while the demographic dividend begins to peter out. This chapter makes the case for action needed to preclude this eventuality. If growth is to be sustained, then agricultural output must grow much faster (discussed in chapter 3) than even the 3.2 per cent per annum experienced over 2007–12; over 2012–14 agriculture has grown under 2 per cent per annum. Such a low agricultural growth rate was not typical of the East Asian economies and is not even typical in several Indian states (for example, Gujarat and Andhra Pradesh). Chapter 3, therefore, presents the policies needed in order to raise the growth rate of agriculture, a pre-requisite for overall inclusive growth.

Also inclusive growth will only be achieved if the employment-elasticity of output rises. Chapter 4 presents several employment related paradoxes of India’s rapid economic growth in the last decade. The first is that output has grown and poverty fallen, but the slow rate of poverty decline remains a major concern. The second is that output growth has

sustained but manufacturing/services employment has been volatile. The third paradox is that despite growth in per capita income, women's labour force participation rate, already amongst the lowest in the world, has continued to decline. The chapter elaborates policies needed to address these employment-related concerns.

The historical evidence of the now industrialised countries is that with rising per capita income the size of the state and the share of public expenditure in GDP rises almost monotonically. India too has experienced rapid growth over the two decades since the economic reforms began (compared to the preceding four decades), but the tax GDP ratio has remained stagnant. Chapter 5 (Public Finance: Increasing Fiscal Capacity) devotes attention to the ways in which the fiscal capacity of the state can be raised, so that infrastructure investment can be sustained as well as public investment in health, education, skill development and social protection. Expenditure reforms required to improve the effectiveness of spending are discussed in several later chapters.

The last two chapters in Part 1, chapter 6 (Skill Development: Finding New Financing Mechanisms to Take Vocational Education and Training to Scale) and chapter 7 (A Common Platform for Skill Development: Implementing the National Skills Qualification Framework), both address a concern that has become particularly important in the last seven or eight years, when the growth rate increased. These chapters spell out how an eco-system can be created to expand the provision and improve the quality of vocational education and training in the country. In particular, it makes the case for a grand bargain between the public and private sectors to create a national training fund to finance skill development on a vast scale, and also presents the case for why a common platform for skill development is needed, in the form of a national skills qualification framework (which the author had a key role in formulating), to ensure coherence among the skill development providers in India.

Part 2 (Human Capital Formation) turns its attention to one of the most serious weaknesses of the Indian economy: the state of human capital. Chapter 8 (Addressing Capability Deprivation of Women for Inclusive Growth) suggests that India suffers from one of the worst gender discrimination in the world, and argues that sustaining a rapid growth rate is itself dependent upon ensuring much better status for girls and women as part of an inclusive growth strategy, than is currently realised by policymakers. It spells out the dimensions where sustained action is needed.

Chapter 9 (From the Right to Education to the Right to Learning) goes on to examine the school system five years after the implementation of the Right to Education Act. The challenges, despite the significant increase in enrollment at every level, remain monumental. The policies to address the huge challenges have to be not only visionary, but based on research evidence, rather than the 'gut feeling' of senior bureaucrats or merely political directives. The research evidence collected here suggests a number of policy priorities differ from those currently in the focus of government policy.

Chapter 10 (Food Security, Nutrition and Health: Policy Dilemmas and Interlinked Challenges) addresses the complex and inter-related problems underlying the worst malnutrition rates in the world. It first discusses the complex challenges around implementation of the Food Security Act and key reforms needed in it; examines whether the 40 year old Integrated Child Development Scheme can address malnutrition in its current form; and then proposes key reforms to ensure early childhood development and to the public health system. Malnutrition remains an intractable problem requiring multi-sectoral action. However, the chapter makes the case that there is little or no prospect for multi-sectoral action being realised within the foreseeable future, given fundamental problems with the incentive structure our bureaucrats face for such cooperative action. It, therefore, argues for specific requirements within each of several programmes, if the world's worst malnutrition rates are to improve more rapidly than has happened since 2005.

One of the greatest failures of policy/programming and a shame for India is that more than two-third of its rural population defaecates in the open – a phenomenon found nowhere else in the world. India accounts for only 16 per cent of the global population, but 60 per cent of the world's population that defaecates in the open lives in India. Chapter 11 (Redesigning Sanitation Programmes to Make India Free from Open Defaecation) makes the case for a radical re-design of the government programmes, away from merely building toilets (that remains a focus even mid-2014 onwards). The new government's programme design is not much different from that before 2014, when between 2001 and 2011, the share of rural households that has a toilet increased only 10 percentage points to 32 per cent, and often even those are not used. At this rate, there is a risk that Indians will still be defaecating in the open 70 years from now.

Part 3 (Building a System of Social Protection) makes the case for a comprehensive social assistance and social insurance programme, which must cover in the first phase the households below the poverty line. Chapter 12 (Minimising Leakages in Welfare Programmes: How to Identify the Poor Correctly?) addresses an issue that has proved a challenge in many developing countries: how to identify the poor as opposed to 'estimating' them? It draws upon the author's experiences in government to present a design for the census that has recently been implemented in the country. It is hoped that the identification of the poor will not remain such a contentious issue in the future, as it has been for the last two and a half decades.

India is an outlier among emerging market economies in having 93 per cent of its workforce in informal employment, almost none of whom have any social insurance. Chapter 13 (Needed a Social Insurance System for Unorganised Workers below the Poverty Line) presents the outline of a social insurance system consisting of old age pension, death and disability insurance and maternity benefits for those below the poverty line, and goes on to cost it. The cost of covering the entire BPL population within such a social insurance mechanism works out to no more than 0.38 per cent of GDP (but it

cautions that it must not be introduced hurriedly, without careful planning and piloting, unlike the efforts initiated since mid-2014). Chapter 14 (Introducing Cash Transfers: A Proposal for a Minimum Income Guarantee and Some CCTs) goes on to argue that India is again a complete outlier among middle-income countries in having very little cash assistance provided to workers. This is particularly surprising given that one in ten of the Indian workforce is without any social insurance, and has informal employment. The chapter details the case for a minimum income guarantee for BPL and some CCTs.

The last two chapters examine two complex, even ticklish, problems of governance. The first is that, despite being a federal, democratic country India remains one of the most fiscally centralised governance systems in the world. Chapter 15 (Two Pre-requisites for Optimum Governance: Deep Fiscal Decentralisation and the Bureaucracy's Ability to Learn) makes the case for deep democratic decentralisation, contrasting India with China in this regard which is much more fiscally decentralised. It also argues that the Indian bureaucracy is in urgent need for radical reform to become a 'learning administrative service'. Without this institutional change it may be difficult for the state to respond with agility. Also domain knowledge in the senior bureaucracy is needed to respond to the needs of a rapidly diversifying economy. The Indian bureaucracy has to learn to become a learning civil service, and incentive systems must be put in place if civil servants are to cease being generalists. Finally, Chapter 16 (Addressing Left-wing Extremism: Encourage Peace to Secure Development – or the Way Round?) addresses the developmental challenges facing almost one-sixth of the country's districts that are infested by left-wing extremists. We argue that without addressing the developmental challenges of these districts the security-centric approach of the Indian state so far is unlikely to ensure peace with social justice. The area of influence of left-wing extremists may only continue to grow, as it has for the last quarter century.

The book, despite covering a broad canvas, does not attempt to be exhaustive; it does not cover some very important dimensions that are also critical to ensuring inclusiveness in growth. For example, the rapid enhancement of access to electricity to hundreds of millions who still live in darkness as night falls, or climate change and its growing impact on small farmers who have no capacity to cope with it or financial inclusion in a country where nearly half the population does not have a bank account. These issues are not discussed at length, but brought up briefly where they fit in well in the theme in focus in a particular chapter.

Acknowledgements

I am grateful to the Parkin Trust of the University of Bath, UK for awarding me the Parkin Visiting Professorship over the three year period from 2010 to 2013, which enabled me to take time off from my full time position as the head of the research institute of the Planning Commission of India. I am also grateful to the Rockefeller Foundation for enabling me to spend a month at the mountainside resort, Bellagio Centre in Italy in June 2013, on a fellowship meant for authors, artists and musicians. These fellowships allowed me to nearly complete a manuscript which I had been working on for some years.

I am also grateful to the editors of journals who allowed me to use extracts from my papers published with them: International Journal of Educational Development, the Journal of Asian Public Policy, Indian Journal of Labour Economics, Indian Economic Journal, and Economic and Political Weekly; and also to Sage Publications for allowing me to use a revised version of my chapter in my book, *Countering Naxalism with Development: The Challenge of State Security with Social Justice* (2014) as chapter 16 in the current volume. Chapter 10 entitled 'Food Security, Nutrition and Health: Policy Dilemmas and Interlinked Challenges' is a revised version of the article 'Coordination Failure: Can Multisectoral Intervention to Tackle Hunger and Malnutrition Succeed in India?' in the volume *Nutrition and Public Policy in India: Investing in the Future*, edited by S. Desai, L. Haddad, D. Chopra and A. Thorat (Routledge, forthcoming).

I am extremely grateful to my co-authors on many papers for sharing their ideas with me: Partha Saha, Bimal Sahoo, Ankita Gandhi, Jajati Parida, Kalaarasan, Sharmistha Sinha, Harsh Mander, Deboshree Ghosh, Vinay Mehrotra and Basab Banerjee. I am also grateful for the multiple discussions with Deepak Sanan and Kamal Kar on sanitation issues from whom I learnt a lot.

I am also grateful to Sushma, Pia and Michael for putting up with my reclusive disappearances into my hermitage while I was finishing this book. Finally, the support from Deepak Kumar and Meenakshi Gupta in laboriously taking hours of dictation and typing up the manuscript several times over was enormously important in sustaining my productivity.

Part 1

Growth, Employment and Inclusion

Capability-centred Approach to Inclusive Growth

Theoretical Framework and Empirical Reality¹

A basic premise of the capability approach is that focusing development analysis and policy mainly on increasing income and material wealth is misguided. Although almost every person would want to enjoy a higher income, one's state of well-being is determined also by policies that expand one's capabilities, which in turn affect one's income and functioning. There is an interactive relationship (synergy) between income growth and the expansion of capabilities. Our model of synergy leads to a set of recommendations which explicitly integrate economic and social policies, and which are associated in the economics literature with different heterodox approaches (Post-Keynesian, Evolutionary, Structuralism and Transformational Growth).²

Mainstream economics is insufficient as a heuristic device to allow us to understand the main intricacies and complexities concerning the outcomes of development strategy. Mainstream economics, with its theoretical foundations in utilitarianism (see Sen, 1985; Nussbaum, 2001) and its limited success so far in unbundling the family or examining and interrogating intra-household allocation of resources, has been the basis for both macro-economic and social policies. Moreover, mainstream economics has been at the core of much of public policies since the 1980s, with extremely mixed results, as the experience of Latin American and Sub-Saharan developing economies demonstrates. Most

1 This chapter's theoretical framework is essentially based upon the theoretical framework (which in turn is based on the work of Amartya Sen) developed for the author's earlier book, *Eliminating Human Poverty: Macro-economic and Social Policies for Equitable Growth* ([2007] 2008) with the Argentinian American economist Enrique Delamonica. The empirical analysis of India is drawn partly upon the chapter on poverty reduction in the 11th Plan (the work for which the author led in the Planning Commission, as head of the Rural Development Division in the Commission), and partly upon the India Human Development Report, 2011 that the author led (IAMR, 2011).

2 See Taylor (1983); Nelson and Winter (1983); Nell (1992).

Asian economies performed very differently over this same period, as they adopted policies not consistent with mainstream economics, or prescriptions emanating from their adherents (Rodrik, 2002). Therefore, there is a need for an alternative framework for development, one founded on human development and the capability approach.

The work of Amartya Sen, Martha Nussbaum and others on human capability (Sen, [1985] 1995; Nussbaum, 2001) resulted in the gradual emergence of a human development paradigm – partly manifested in the Human Development Reports. In fact, ‘human development’ became an overly popular term after 1990 – popular even with the international financial institutions, which reorganised departments and then named some of them Human Development networks. However, the consensus within which the term ‘human development’ was used remained founded in neo-classical economics, and the macro-economic policies that emerged remained bound within it.³

An alternative framework for policies is necessary, as the theoretical basis of the consensus (i.e., neo-classical economics) was weak (Sen, 1982; Amsden, 1989; Nell, 1998), and as the philosophical foundation of the theory on which it is based was even weaker (see Sen, 1985). The rest of this chapter is devoted to spelling out that alternative framework. In terms of this alternative theoretical framework, it also examines the dimensions on which India’s development strategy has been failing on the count of inclusiveness.⁴

In this alternative framework, we posit that two kinds of synergies exist. One exists between interventions in health, nutrition, family planning, water and sanitation, and basic education. The other is between interventions that are the basis of income growth, the reduction of income-poverty, and improved health and educational status. The first synergy is actually a sub-set of the second. With these two synergies as foundations, we propose an alternative approach to integrate economic and social policies. As a theoretical construct, the notion of dual synergies is a conceptual framework for understanding a given situation in

3 Such policies became known as the Washington Consensus (Williamson, 1990). The post-Washington Consensus that emerged in the wake of Stiglitz’s critique of IMF–World Bank policies is, we believe, only a partial alternative framework for development policy. For a discussion, see Standing (2001), Fine et al., (2001) and Mehrotra and Delamonica (2007) for a critique of the post-Washington Consensus.

4 For a recognition of this failing, see Ahluwalia (2011) and the Approach Paper to the 12th Plan (www.planningcommission.nic.in).

terms of human development outcomes (as we shall see below for India);⁵ it is, at the same time, a framework for drawing policy implications.⁶

In any economic analysis, it is important to distinguish the means from the ends. We suggest that the state has a critical role to play in ensuring all three desirable *ends* or outcomes for its citizens: economic growth, income-poverty reduction, and improved health and education outcomes. The *means* for achieving these ends – the policies – have not been discussed in this chapter for reasons of space, but the rest of the book is very much devoted to this very subject in the context of India.

Section 1.1 spells out the conceptual framework. Its two sub-sections develop each of the two synergies mentioned above. Section 1.2 deals with the failures of government policy in the case of India, which contributed to the dual synergies not being realised. Section 1.3 then spells out the theoretical contribution of this dual synergy framework.

1.1 The Conceptual Framework of Dual Synergies in the Development Process

The mainstream view of development posits that if economic growth is maximised, poverty will be reduced and increases in welfare will ensue (in a more or less automatic fashion). Thus, much policymaking globally (including in India) occurs under a leader/follower hierarchy model, where macro-economic policy is determined first, while social policy is derivative and left to address the social consequences (Atkinson, 1999). This separation of the ‘economic’ from the ‘social’ discourse is inherent to even the post-Washington consensus, and certainly to the neo-classical theory which underpinned its predecessor.

In this section, we sketch a different theoretical perspective while we take an explicitly normative stance.⁷ The capabilities approach has placed human

5 For instance, see Taylor et al. (1997) and Mehrotra and Delamonica (2007) for applications of the framework to developing countries in general.

6 Women’s well-being and their agency is one of the cornerstones of our alternative framework and hence of policy. They are central to both synergies that constitute this alternative theoretical framework. However, we do not develop this aspect very explicitly here, although we will do so in Chapter 8. In addition, see Mehrotra (2013) in Comim and Nussbaum (2013).

7 See Myrdal (1959) and Sen (1988), *inter alia*, for the case that economics cannot be value-free.

beings and their well-being at the centre of its concerns – not only their well-being, but their freedom to choose a life one has reason to value. Thus, Sen has argued that for many evaluative purposes, the appropriate ‘space’ is not that of utilities (as claimed by welfare economists,⁸) but that of substantive freedoms and capabilities.

At the theoretical level, there have been many other critiques of the simplistic neo-classical view of human behaviour. At the normative level, it has resulted in over-reliance on the principle of Pareto optimality, which severely hinders any redistributive attempt. Sen, in various writings (for example, Sen, 1985), has shown some of the contradictions of this approach. For instance, a rich person may obtain very little utility from having several houses and many cars, while a poor person (without either) may be content with a small hut and a bicycle, leading to the conclusion that redistribution from the former to the latter would increase aggregate utility. The attempt to solve these paradoxes by stressing that fairness should be analysed at the level of commodities, however, also leads to some dead ends.⁹ Actually, people need different goods and services, and more or less of them, for example, if they are sick or they live in different climates. Thus, Sen argues for a ‘middle space’ between commodities and utilities, which he calls ‘capabilities’.

As income or commodities are not enough for human satisfaction (an increase in capabilities), different lenses are needed to understand the interaction of economic and social objectives. Consequently, a different strategy from the one consciously or unconsciously followed by most developing countries is needed.¹⁰ The starting point is the well-known synergy, or feedback loop, among social interventions in basic healthcare, reproductive healthcare, education, nutrition

8 As Nussbaum (2001, 122) says: ‘We have to grapple with the sad fact that contemporary economics has not yet put itself onto the map of conceptually respectable theories of human action.’

9 For elaborations and criticisms of this view, see Sen (1985), and the sources cited therein. Taylor (1983) and Uvin (2002) also present interesting criticisms and limitations of Sen’s approach.

10 We say ‘most’ and not ‘all’ developing countries because some – the positive deviants – of them (those called ‘high-achievers’) have succeeded in developing education and health standards comparable to those of industrialised countries, despite having a fraction (sometimes just a tenth) of their level of income (Mehrotra and Jolly, 1997). Needless to say, they implemented policies and strategies without reference to the synergies we described ex-post, and they represent an interesting case of what Lindblom (1959) calls ‘muddle-through’.

and water and sanitation. This synergy (which we call synergy 1) takes place at a micro-economic level – at the level of an individual.¹¹

1.1.1 The synergy among social services

Interventions in health, nutrition, water and sanitation, fertility control, education and income complement each other and positively affect the life of an individual. This increases the impact of any one from investments in any other (see Figure 1.1).

Figure 1.1: The first synergy between social service inputs and outputs

Social services inputs/ processes	Human development outcomes/ outputs				
	Knowledge	Family size	Health status	Nutritional status	Healthy living conditions
Education	↙	↙	↙	↙	↙
Family planning	↙	↘			
Health	↙	↙	↘	↙	↙
Nutrition	↙	↙	↙	↘	
Water and sanitation					↘

Figure 1.1 represents this notion of synergy (although only of synergy 1). Along the horizontal rows, the various social services are represented as inputs or interventions – education, family planning, health, nutrition, and water and sanitation. The vertical columns represent the human development outcomes or outputs – knowledge, family size, health status, nutrition status, and healthy living conditions. The dark-shaded cells show the direct and obvious relationship between inputs and outputs. The light-shaded cells are the ones where there is a relationship – but an indirect one – between a certain intervention and an outcome; for example, the use of contraception (i.e., family planning), by helping the spacing of birth of children, indirectly benefits the health status of both the mother and the child.

11 See Mehrotra and Delamonica (2007) for details on this synergy and earlier precedents in the literature.

The arrows represent feedback effects from human development outcomes to the inputs/processes. For example, the improved health status of a child improves her ability to learn, just as improved nutritional status does. Similarly, a reduced family size improves the chances of a poor family being able to afford education for all the children rather than merely the boy(s) in the family, and so on.

Since the connections presented here are central to our arguments about synergies, a more in-depth review of these connections is needed. First of all, it has to be recognised that all of these relationships are based on evidence discovered several years ago. However, probably in part due to over-specialisation within the disciplines represented on the matrix, they are all too often presented separately. By integrating them, it becomes clear that their separate effects, the ones often reported, are only partial. In fact, the impact of any one form of investment is increased in the presence of the others, proving the advantages of integrated approaches.

Notice that *educational inputs* have an impact on all types of human development outcomes. The positive effects of education are intuitive and well known. First, parents, especially mothers, make better use of information and reproductive healthcare facilities if they are more educated. Thus, more widespread education is associated with lower fertility. Better nutritional and healthcare is provided by educated parents for themselves and their children. Various routes ensure this result. The general knowledge acquired at school increases the understanding of modern health practices and scientific beliefs, which make mothers (and fathers) more open to using healthcare centres. Households with educated mothers spend a higher proportion of their income on food and health services.

In addition, the capacity to acquire new knowledge and change behaviour accordingly is higher among those who attended school, as evidenced by the differential diffusion of HIV/AIDS among educated and uneducated women (Vandemoortele and Delamonica, 2000). As a result, health investments are more efficient in the presence of a more literate population (Caldwell, 1986). In countries where parents have been exposed during their school years to nutrition information, they combine different foods to obtain better nutritional outcomes. Also, such mothers take better care of their nutritional needs during pregnancy, avoiding low birth weight (ACC/SCN, 2000). Basic education also facilitates the rapid adoption of improved hygienic behaviour. This not only improves health outcomes, but also enhances the impact of investments in water and sanitation systems.

In summary, education and in particular girls' education, contributes to enhance the impact of other sectoral interventions. All of these, in turn, result in good nutrition and health, increasing the likelihood that children will attend school and become better students. For instance, with lower fertility, parents can devote more attention to their children's studies and afford more food and school supplies, which improve learning. In addition, access to clean water and safe sanitation (that is, healthy living conditions) helps girls – when girls need less time for household chores like fetching water, they have more opportunities to attend school. Also, they have more time and energy to study and do well in school, avoiding repetition or dropping out.

Family planning, by providing easy access to contraceptive means, enables the mother to space births, thus lowering the health risk to herself and the child, reducing infant and maternal mortality and improving the healthy development of the child. Thus, lower fertility has a positive implication for improving health and increasing life expectancy. Another important complementary outcome of intervention in health, education, water/sanitation and family planning is the rapid demographic transition. As children survive, families voluntarily curtail the number of children. This is not the place to enter the debate on the relative impact of supply of contraceptives versus desired family size in family planning (Bongaarts, 1994; Pritchett, 1994; Cassen, 1994). However, it is clear that lower infant and child mortality plays a major role in reducing fertility rates (Caldwell, 1986), as does education, the availability of information on reproductive healthcare and its accessibility (Cochrane, 1979).

As population growth slows down, school systems find it easier to absorb all children. Teacher-pupil ratios can be reduced (see the evidence in Chapter 9) without unduly burdening budgets, and construction costs can also be reduced, releasing resources for other measures to enhance school quality.

As in the case of the health and nutrition sectors, the availability of information on and access to family planning services will not, on their own, reduce fertility as much as it might be needed or desired. They are more effective when couples are more educated and child survival rates are higher.

It is also very well established that lack of good **nutrition** critically interacts with **health**. For instance, control of diarrhoea and measles is very important not only for health outcomes, but also in reducing malnutrition (by improving the capacity to absorb and retain caloric intake; see the analysis in Chapter 10). By the same token, an insufficient intake of total calories, vitamins and proteins weakens

children's immune systems. This would make them vastly more vulnerable to the onset and consequences of infectious disease. Interventions in health promote good nutrition, and interventions in nutrition promote good health.

Moreover, micronutrient deficiencies and illness can have devastating consequences for the cognitive development of a child. For instance, iron deficiency anaemia reduces cognitive functions, iodine deficiency causes irreversible mental retardation and vitamin A deficiency is the primary cause of blindness among children. Girls are unfairly disadvantaged in many of these cases. They are more likely to suffer from iodine or iron deficiency.

While it is clear that good health and nutrition have benefits that reinforce each other, the above examples also show that they impact positively on fertility control and education. But it is also clear that good health, protection against disease, and proper nourishment cannot be produced by health services or food alone.

Safe water and adequate sanitation also play a fundamental role in determining health conditions. Access to safe water and sanitation dramatically reduces the incidence of diarrhoea and many other diseases that kill millions of children and adults each year. Another effect of better access to water takes place through the reduced effort in carrying water, which is usually unduly borne by women and girls. Given the traditional roles they play in most societies, when women and girls have more time, they can apply it to better infant and childcare. This leads to positive health results. Finally, especially for women, more time is available for pecuniary productive activities. This direct impact of water and sanitation improvements on income-poverty reduction is less well publicised than the effect of higher levels of education and better health on productivity.

The presence of toilets, safe water and hygienic conditions at school can reduce some constraints on sending children, especially girls, to school. Separate toilets for girls are known to be a consideration for parents (Mehrotra et al., 2005). Backed by proper hygienic behaviour, such as hand washing and the use of soap, access to safe water and adequate sanitation reduces morbidity from infectious diseases and increases the nutritional status of children, which furthers their learning abilities.

In summary, each intervention has ramifications which lie outside its 'sector' and add up to a virtuous circle of social and economic development. This is different from the existence of an externality, although they are of course present. Unlike the traditional treatment of externalities, which are usually exceptions, these interactions are pervasive.

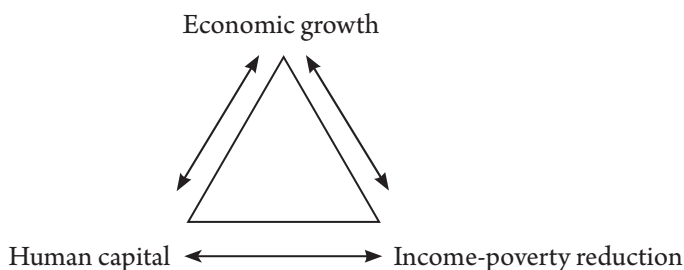
It is a multi-dimensional synergetic system. No wonder it results in a complex system, at which most developing countries have not yet succeeded. From an instrumental point of view, the benefits do not automatically accrue to all and markets alone would not ensure universal access – hence the need for the public sector to step in and finance these services.

The discussion so far has focused on the individual or micro-economic level; the rest of this section proceeds at a macro-economic level, rather than at the level of the individual. It is important that this be clear from the beginning, because at the level of the individual, economic growth (defined as increases in per capita income) is a means to an end: human capability. In our model, human capability of the individual is the ultimate end, but in terms of the dynamic of the model, the processes that lead to enhanced human capabilities are the result of larger macro-economic processes, over which the state and its agents have dominant control.

1.1.2. The second synergy: Economic growth – human capital formation – income-poverty reduction

In the process of development, there is a second synergy. It takes place at the macro-economic level among income-poverty reduction, enhancement of functionings at the aggregate level (that result in human capital formation), and economic growth. Figure 1.2 presents this second synergy.

Figure 1.2: The relationship between economic growth, human capital formation and income-poverty reduction



We are, obviously, borrowing the expression ‘functionings’ from Sen. However, in this context we are interpreting it in a narrower sense than he does. Instead of all the important activities that people may value, we stress those functionings which result from the provision of basic social services, i.e., healthy, literate lives.

For synergies to be realised at this macro-economic level, actions on several fronts are needed (for example, progressive fiscal policies, which are consistent with monetary policy, distributive policies to reduce poverty, and so on; see the chapters in Part 1). This supports the need to integrate social policies with macro-economic ones.

In the positive experience of recently industrialised countries or of high-achieving developing countries (for an analysis of how inclusive growth was achieved in some developing countries, see Mehrotra and Jolly, 1997), we are struck by the difficulty of establishing causality relationships. For example, despite widespread literacy within a population, many countries have not achieved rapid growth, although education is a major determinant of such economic growth.¹² There are also examples of countries with relatively rapid economic growth, but persistent income-poverty. Indeed, the relationship between economic growth, income-poverty, and enhancement of functionings is a complex one. A framework to describe these linkages is presented below.¹³

The lingering question remains: If there are no sufficient or necessary conditions linking these elements, are they unrelated? The answer is yes, they are related, but in a complex way. Although no particular element is necessary or sufficient for the advancement of the other, they help each other. Thus, for instance, the effectiveness of industrial policy in inducing economy-wide productivity growth or non-agricultural employment in rural areas will be enhanced by the widespread presence and high average quality of functionings in a healthy/educated population, in turn resulting in higher rates of income growth.¹⁴ That is why, in Figure 1.2, there are arrows running in *both directions* between Economic growth – Human capital formation – Income-poverty reduction. We first present the theoretical framework and then some empirical evidence in this sub-section.

12 The reason is obvious because other growth-oriented policies (technological change to induce productivity increase macro-economic stability, etc.) are not present.

13 Our framework could be considered a ‘magnifying lens’ view of the transformational growth matrices developed in Nell (1992), whereby we introduce less elements (for example, we do not include youth socialisation), but attempt to provide more detail to the interactions we do explore.

14 Thus, no single element can be specified as the main cause (or ‘development magic bullet’) for success in all areas. Pritchett (2003), Easterly (1999), and Levine and Radelet (1992) discuss the various shortcomings of econometric estimates that attempt (and fail) to establish these relationships.

1.1.2.1 Theoretical framework

A synergy or feedback loop can be succinctly expressed as the enhanced impact a change in an independent variable has on the growth rate of a dependent variable, given the presence of a third variable (Haken, 1980). This leads to several important, and often overlooked, interrelated effects in terms of policy. The impact of a policy measure (for example, redistribution to directly reduce poverty) on another variable (say economic growth) crucially depends on the level and rate of change of a third variable (for example, health and educational status). In other words, economic growth will be faster and more sustainable if (income) poverty is reduced simultaneously through direct policies, and if the health and educational status of the population is higher and increasing.¹⁵ What we have in mind can be expressed algebraically:

$$\text{GNP per capita growth} = f_1(\text{macro-economic policies, technical/structural change, expansion of functionings, income-poverty reduction}) \quad (\text{Equation 1.1})$$

GNP per capita growth is not chosen by governments, but is the result of public policies and private decisions. GNP per capita growth is influenced by the expansion of functionings, the pace of poverty reduction, macro-economic policies, and, in the medium to long term, technological change (i.e., the introduction of value-adding activities and productivity increases through technical/structural change).

Job creation and rising wages reduce poverty, leading to higher levels of consumption (as we demonstrate for India in Chapter 4; see also Mehrotra et al., 2014), internal demand and economic growth.¹⁶ Stable prices and low interest rates also contribute to a favourable context in which firms would want to work and invest. However, this does not mean that macro-economic stability per se results in economic growth, as evidenced by the standard error of the regressions that try, but fail, to establish this point. Nor does this imply that a privately-led boom will not result in imbalances. Here we want to stress that innovations are

15 A widely recognised simple example, and one often mentioned even within the literature emanating from the international financial institutions, is that economic growth will be more successful in reducing income-poverty, i.e., the elasticity of poverty reduction will be higher when human capital is more equitably distributed. We do not deny this. We only stress that this is only one of the many interactions among various interventions.

16 As noted by Adam Smith (1776): ‘The liberal reward of labour, therefore, as it is the necessary effect, so it is the natural symptom of increasing national wealth. The scanty maintenance of the labouring poor, on the other hand, is the natural symptom that things are at a stand’ (Book I, Ch. 8).

introduced through investment which is financed by profits or borrowings, or by sustainable inflows from abroad. The latter may be more volatile than the former and both are influenced by macro-economic policy.¹⁷

In order to understand the engine of growth, i.e., technological change (Abramovitz, 1989; Chakravarty, 1982; Schumpeter, 1934; Solow, 1997), a model such as the evolutionary one, rather than one involving firms with absolute knowledge concerning static production functions, is needed. Such a model would stress that both inventing and adapting new technologies is a process of discovery characterised by uncertainty, rather than by probabilistic risk (Nelson and Winter, 1982). In this case, markets are not efficient and have no tendency to reach equilibrium, as they tend to change (Anderson et al., 1988; Lesourne and Orléan, 1998; Pack 1992; Nell [1992] 1998). This different theoretical perspective leads to alternative policy recommendations.¹⁸

With Lin (2012), a neo-structural economist, we argue in Chapter 2 thus: that an economy's growth is endogenous to its factor endowment structure, and sustained economic growth results from changes in factor endowments and continuous technological innovation. If a country wishes to upgrade its industrial structure (as India), it will need to upgrade its factor endowment structure, which can be changed over time.

Income-poverty incidence reduction = f_2 (GNP per capita growth, expansion of functionings, asset redistribution policies) (Equation 1.2)

As with economic growth, the primary income distribution lies not in the hands of the government, but emerges from market results and the relative bargaining power of the owners of the factors of production. The distribution of income, in turn, affects the incidence of income-poverty. Nevertheless, the government, both through regulation and the overall management of macro-economic conditions (captured in the GNP per capita growth variable), can affect income distribution.¹⁹ Most importantly, it can affect income distribution through a growth strategy that is labour-intensive (as we discuss in Chapter 3).

17 However, the focus on freeing up financial markets in overly market-friendly policies (for example, in the run-up to the Asian financial crisis of 1997, or the global economic crisis of 2008) may have had the adverse effect of contributing to macro-economic instability by weakening the financial sector (UNCTAD, 1999; Grabel, 2003; Raghuram Rajan, 2009).

18 Similarly, we suggest that the traditional 'human capital' concept is too limited to capture the expansion of capabilities, and that many other factors are needed to launch economies into sustainable growth paths.

19 See Nell (1992) on relative bargaining and full employment.

In fact, the employment link back to the other variables appears to be missing in our system of equations – but this is only an apparent gap. An employment-intensive growth strategy can be defined as one that generates productive jobs faster than the growth of the labour force. For instance, a problem with a Foreign Direct Investment (FDI) intensive growth strategy (for example, typical of Latin America over several decades) is its capital-intensity, leaving unemployment at high levels. While the Indian industrial strategy has not been particularly dependent upon FDI, the labour-intensity of growth has been low (as we discuss in Chapters 2 and 4). The government can also use fiscal policy to affect the after-tax income streams (the secondary income distribution), correcting the excesses of the market and reducing income-poverty (as we discuss in Chapter 5 on tax issues in India).

Moreover, the distribution of assets can be altered (for example, land reform, titling), which in turn will affect the primary income distribution (as we discuss in Chapters 3 and 16). It has been argued that the single most important economic factor affecting women is the gender gap in command over property. In rural South Asia, the most significant form of property is arable land, which is a critical determinant of economic well-being, social status and empowerment. However, few women own land and fewer control it (Agarwal, 1994). Research on Sub-Saharan Africa has also argued that one of the factors constraining growth and poverty reduction is the gender inequality regarding access to and control of a diverse range of assets (World Bank, 1999).

Also, distribution is affected by taxes. If markets are in constant flux as firms try to alter constraints through innovation, then the very notion that taxes or import restrictions introduce distortions lacks foundation. Taxes do, however, play another important role that is usually unnoticed. Taxes affect the distribution of income, which impacts on income-poverty, as we see in the next equation.²⁰

Finally, a fundamental way in which the government can also influence distribution is public expenditure on the provision of basic services (discussed in Part 2 of this book) and transfers (the tertiary income distribution), through social assistance and social insurance (a subject to which Part 3 of the book is devoted). This in turn builds and enhances functionings.

$$\text{Functionings expansion} = f_3 (\text{GNP per capita growth, income-poverty reduction, social policy}) \quad (1.3)$$

20 For more on macro-economic policy and human development, see Nayyar (2012), Mehrotra and Delamonica (2007) and Singh (2012).

Education, health and sanitation, the elements that enable people to enjoy the functionings which make life worth living, have myriad interaction effects among them (as noted above). Obviously, additional resources (at the household level and nationally) through poverty reduction and economic growth helps. However, as many country experiences show, 'unaided opulence' is not sufficient. Public action in terms of social policy is fundamental in enhancing functionings.

A fundamental point about the notion of synergy between the three types of interventions is that in strategies where one is absent, the effect of interventions in the other two spheres is less than what it would otherwise be. Policies which focus largely on *economic growth* without much regard for income-poverty reduction, or enhancement of functionings, are doomed to unequal income distribution (and thus higher income-poverty) and lower levels of functionings (than is otherwise possible). Such a policy of 'unaided opulence', as Sen (1989) calls this strategy, represents a failure to convert the benefits of output growth into an enhancement of functionings or poverty reduction.

Policies that focus only on *enhancement of functionings*, but ignore economic growth or income-poverty reduction, will lead to outcomes that are not sustainable. On the other hand a 'growth-mediated' security strategy, following Sen's terminology, could be translated into enhancement of functionings through supportive social policy (transfers), which eventually could lead to poverty reduction.²¹ A growth-mediated strategy may also help people expand their functionings, as higher income may enable private command over goods and health/education services and make use of their enhanced capabilities if growth increases jobs. However, a growth-mediated strategy should not result in an unconscionable delay for those at the bottom of the social pyramid.

In our model, the synergy between income-poverty reduction, enhancement of functionings and economic growth does not put the growth rate on a pedestal

21 Dreze and Sen (1989) identified two alternative approaches to improved human well-being, after examining developing countries over 1960 to 1985: one approach (followed by South Korea, Hong Kong, Singapore and oil-rich Kuwait and UAE) is to promote economic growth and use the resources to expand private incomes but also public support – the 'growth-mediated' strategy. The second approach is to focus directly on wide-ranging public support for job creation, health care, education, and social assistance 'to remove destitution without waiting for... general affluence' (p. 183). The second approach was adopted by China, Cuba, Costa Rica, Chile and Jamaica over 1960-85. In fact, they argue that China's growth followed rather than preceded the wide-ranging measures of public support, which they regard as the main source of China's success at poverty-reduction. Dreze and Sen (1989) call this a 'support led security' approach.

higher than the other two objectives. Instead, it calls for the integration of social and economic policy.

1.1.2.2. Empirical evidence on synergies between economic growth and human development

Based on cross-country regressions for 1960–92, using a sample consisting of 35 to 76 developing countries, Ranis, Stewart and Ramirez (2000) estimate the connections between economic growth (EG) and human development (HD). They show a significant relationship in both directions, which give rise to virtuous or vicious cycles, with good or bad performance on HD and EG reinforcing each other. They also find that evidence over time has important sequencing implications: countries that initially favoured EG lapsed into a vicious cycle, while those with good HD and poor EG sometimes move into the virtuous category.²²

More recently, Suri et al. (2011), using panel data (over (1960–2001) from 79 developing countries with populations in excess of 1 million, come to the following conclusions on the relationship between EG and HD. They find that HD plays an essential role in determining growth trajectories (their measure of sustained growth). Improving HD (a measure of human well-being), they find, must precede or accompany rising EG for a country to reach sustained EG. Their results imply that successful policy requires an early focus on HD, not only because of its direct impact on well-being but also because of its feedback effect sustaining EG. In fact, they find that without improvements in HD, policy that attempts to enhance EG is highly unlikely to lead to sustained growth. Increases in a country's EG appear to be sustained only if HD levels were upgraded earlier or at least at the same time. Their preliminary cross-sectional correlations suggest this conclusion strongly. We don't consider this finding surprising since this is exactly what we had argued earlier (Mehrotra and Jolly, 1997). The actual experience of India has borne this finding out in the most recent period (as we will argue later in this chapter and book). This finding is important as it contradicts the neoclassical view that different inputs in the process are substitutable (thus, e.g., investment in physical capital can be substituted by investment in human capital).

When Suri et al. (2011) examine this sequencing hypothesis more precisely in regression analysis they find clear evidence of a strong positive relationship between early HD levels and countries' growth trajectories, with achievement of high HD levels early contributing to accelerating growth.

22 Ranis et al. (2000) in fact concluded that where choice is necessary HD should be given sequencing priority.

When they measure the strength of the linkage from EG to HD, they of course find that improved growth does lead to improved HD, but strong long-run growth without accompanying strong HD improvements does not yield sustained EG. There is a very important lesson here for Indian policymakers intent upon reviving growth currently (2015), even if it means squeezing social expenditures (to contain the fiscal deficit). Suri et al. (2011) contradict the oft-held view in India that investments in HD may be postponed until economic resources make them affordable or at least confine them to ones that maximise vote banks.

We present empirical analysis by incorporating all three variables from our synergies model (EG, HD and Income-poverty reduction). An empirical exercise can help to underscore these interactions (Mehrotra and Delamonica, 2007). There are serious restrictions on the availability of data on changes in income-poverty. Nevertheless, there are close to 50 countries for which data are available on the incidence of income-poverty (based on national poverty lines) at the beginning of the 1990s. For these countries, the *under-five mortality rate* (USMR) in 1990 was used as a proxy for the level of human capital (for reasons, see Sen, 1995). Also, the *average annual growth rate* for the period 1990 and 2000 is available. The countries were classified according to their *initial incidence of income poverty* as: high (a head count ratio of over 50 per cent of the population), medium (between 50 and 30 per cent), and low (less than 30 per cent). Also, they were grouped in terms of their levels of USMR: high (over 170 per 1,000 live births), medium (between 170 and 70), and low (less than 70).

With these classifications, nine groups of countries can be formed (Table 1.1). The findings tend to confirm our earlier theoretical framework of dual synergies. Few countries combined low USMR and high income-poverty or high USMR and low income-poverty. An interesting pattern emerges when the growth rates of per capita income are compared among the remaining seven groups. Countries with high initial USMR experienced negative growth in per capita income. Even countries with medium levels of initial USMR but with high income-poverty experienced negative economic growth (the top-left three cells in Table 1.1), suggesting that poverty and low levels of human capital are actually inimical to economic growth. Countries falling in the other combinations (medium or low levels of initial USMR and income-poverty) experienced positive economic growth. Moreover, the rates of economic growth were highest when the initial level of income-poverty and USMR was lowest (the bottom-right cell).

Table 1.1: Economic growth by level of income-poverty and enhancement of functionings
(Average annual growth rate of per capita income, 1990–2000)

Income-poverty	USMR		
	High	Medium	Low
High	-1.6	-0.5	0.5
Medium	-2.6	0.9	1.9
Low		0.6	2.7

Source: Estimated from data in Tabatabai (1996); State of the World's Children (UNICEF) and World Development Report (World Bank), various issues.

In fact, countries with high levels of human capital and low income-poverty experienced faster growth than countries with high levels of human capital and medium levels of income-poverty.

Although these figures show only correlation and are not necessarily indicative of conclusive results, they strongly suggest that basic social services are of fundamental importance in triggering the virtuous circle between economic growth, income-poverty reduction and enhancement of functionings.

Hence, we undertook a similar exercise for Indian states (Mehrotra, Parida and Kalaierasan, forthcoming). We tested for the relationships from EG to income-poverty reduction (and vice versa), and from EG to human capital improvement (health and education outcomes) – and vice versa. We undertook a Granger causality test, using data over 2000 to 2012 (National Sample Surveys) for the 20 major states of India (after conducting the stationarity test in which all the relevant variables are found as stationary). Our core empirical findings, using 21 cross sections for the bivariate case, assume one period lag models. The empirical results confirm the synergy depicted in the theoretical part of this chapter.

The Poverty-Growth two-way relationship: The empirical result suggests a bi-directional causality between economic growth and poverty reduction. The decline in absolute number of poor in the period of high growth explains that high growth in India caused a reduction in poverty. In the period of high growth both because rural and urban real wages increased (the reasons for which are discussed in chapters 2–4). The rise in real wage caused an improvement in the standard of living and reduction in poverty in India.

The casual connection from poverty reduction to growth could be explained by the increasing domestic demand for goods and services. Since a large number of people have come out of poverty, with the emergence of new non-poor and middle class, domestic demand for a number of consumer goods has grown sharply after 2004–05 that is reflected in a shift in consumption pattern (see Mehrotra et al., 2014). This leads to an increase in employment growth in labour intensive manufacturing sectors and output/consumption growth that has partly enhanced the economic growth.

The two-way relationship of Human Capital and Poverty: We have also found a bi-directional causality from poverty reduction to health (improvement in IMR as a proxy). The improved consumption pattern due to the reduction in poverty has greater impact on health status of the family members. As illness can limit productivity and reduce earning ability that perpetuates poverty (WHO,²³ 1999 and 2002); while an improvement in the health status causes a reduction in household poverty. The causality between health and educational outcome is well recognised in the literature. Grossman (1972)²⁴ and Michael (1973)²⁵ found that there is a potential causal link between education and health that can be established through higher productivity.

This argument can be seen as an analogy to the well-known relationship between education and wages. The increasing mean years of schooling might have caused the increase in private sector wages along. With increasing level of income, apart from raising public health spending with rising real wages the out of pocket healthcare expenditure (about 70 per cent of total health spend in India) of households also increased that is reflected in a reduction in IMR.

The two-relationship between Economic Growth and Human Capital: The causality from growth and education suggests that due to higher economic growth government of India was able to spend more on education (see chapter 9 on Right to Education); as a result mean years of schooling increased. The increasing level of education has a positive impact on productivity that in turn raised economic growth.

23 World Health Organization (1999), *Poverty and Health* (Report by the Director-General), Geneva, World Health Organization Executive Board Session. World Health Organization (2002), *Dying for change*, Geneva.

24 Grossman, Michael (1972), 'On the concept of health capital and the demand for health', *Journal of Political Economy* 70(2): 223–55.

25 Michael, Robert T. (1973), 'Education in nonmarket production', *Journal of Political Economy* 81(2): 306–27.

The one-directional causality between health and growth on the other hand suggests that better health conditions increased productivity and hence growth; however economic growth in India did not cause an improvement in health conditions. This is not surprising as the health expenditure in India and in most of the states does not grow significantly during this high growth period. According to Choudhury and Nath (2012) public spending on health in India was about 1.1 per cent of GDP in 2010–11. Including water supply and sanitation, their estimate was around 1.5 per cent of GDP. Further, with nutrition, the estimate was about 1.7 per cent of GDP. This expenditure increased by about 0.2 per cent of GDP between 2004–05 and 2010–11.

1.2. Dual Synergies in India?

Inclusive growth can only occur if, with rapid economic growth, both income poverty falls commensurately and significant improvements occur at the aggregate level in human functionings.²⁶ In fact, we would suggest that rapid economic growth will only be sustained over the long term if it is inclusive in nature.

1.2.1 What contributed to the dual synergies not being realised in India?

India became independent in 1947, South Korea in 1945 and China's communist revolution occurred in 1949. They all started out at roughly the same level of per capita income. However, both South Korea (a high-income country) and China (an upper-middle-income country) have much higher levels of per capita income today, as well as a much lower incidence of income-poverty and much higher levels of human development. One could argue that the dual synergies have worked in South Korea and China, while they have been much weaker in India.²⁷ India became a low-middle income country only in 2007, after being on the low-income category (according to the World Bank classification) for 60 years.

26 This is a notion of inclusion which is similar, but not the same as that discussed in Chapter 1 of the 12th Five-Year Plan (Planning Commission, 2013). The 12th Plan states that inclusiveness can be interpreted to mean the following: inclusiveness in poverty reduction, inclusiveness as reduction in group inequality, inclusiveness as regional inter-state balance, inclusiveness as reduction in income inequality and inclusiveness as empowerment.

27 For a discussion on Korea's economic growth and human development, see Singh (1995), Chang (2003), Amsden (1989), Mehrotra, Park and Back (1997), Nolan (1990). On China, see China Human Development Reports of 2005, 2002, 1999 and 1997; Dreze and Sen (1989); also Nolan and Sender (1992).

In order to answer why dual synergies have been much weaker in India, we break up the period since planned growth began post-independence into two periods: 1950–80 and 1981–2011. The first period was characterised by the Hindu rate of economic growth of 3.5 per cent pa, while in the latter period the growth rate increased significantly.²⁸ The second distinction between the two periods is that the start of the demographic dividend can be traced to around 1980.

A review of the first three decades of planned development in independent India suggests that on all three counts (economic growth, human capital development and income-poverty), major strategic policy errors were made, despite remarkable progress on many counts compared to the colonial period (Bhagwati and Chakravarty, 1969). Policies led to economic growth being slower than the country's potential; investments in basic social services (as opposed to higher-level services) was neglected; and the directly-targeted poverty reduction programmes were not only few but were also poorly conceived, designed and implemented. We will discuss each of these failures, which prevented the dual synergies from being realised, in turn. In other words, the failures were quite comprehensive in the first period, despite the fact that the country acquired a heavy industry base (consistent with the objective of the Second Five-Year Plan and in consonance with the Mahalanobis model).

Table 1.2: Gross domestic product (GDP) growth rate, 1951–55 to 2011–12 (by Plan period)

	Growth rate per annum		Growth rate per annum
I Plan (1951–55)	3.5	VI Plan (1980–84)	5.5
II Plan (1956–60)	4.2	VII Plan (1985–89)	5.6
III Plan (1960–65)	2.8	Annual Plan (1990–91)	3.4
Annual Plans (1966–68)	3.9	VIII Plan (1992–96)	6.5
IV Plan (1969–73)	3.2	IX Plan (1997–2001)	5.5
V Plan (1974–78)	4.7	X Plan (2002–06)	7.7
Annual Plan (1979–80)	-5.2	XI Plan (2007–12)	7.9

Source: Planning Commission, Five-Year Plans, various years

28 This periodisation (of pre-1980 and post-1980) of growth has been fairly well-established in the literature for many years. See Rodrik and Subramaniam (2004) and Balakrishnan (2010).

India's economy grew at barely 3.5 per cent pa for nearly three decades (1950–80) (see Table 1.2). Given that the population was also growing at 2.2 per cent pa on an average over this period, the only redeeming feature was that per capita income grew faster than before 1947. The heavy industry-based import-substituting industrialisation led to a relative neglect of agriculture, at least until the mid-1960s, accompanied by a food crisis and distress imports of large amounts of grain (under Public Law 480 from the US) (Chakravarty, 2002). M. S. Swaminathan, the doyen among agricultural scientists in India and the force behind India's green revolution of the 1970s, called it a 'ship-to-mouth existence' for India. However, it was followed by a green revolution by the early 1970s, which enabled India to at least become food self-sufficient (Rao, 1975).

Nevertheless, the neglect of agriculture led to a growth rate of agriculture (1950–80) that was far below that achieved by the East Asian economies over the same period (Saith, 1996) with significant human consequences. Given that nearly 70 per cent of the population was dependent on agriculture in the early 1970s, this situation kept the mass of the rural population mired in poverty. In 1973–74, there were 322 million poor people in the country,²⁹ at a time when India's total population was about 600 million with a 55 per cent head count ratio of poverty in that year (see Table 1.3). The sustained slow growth over the first three decades after independence seriously undermined the other two objectives – human functionings expansion and income-poverty reduction.

1.2.1.1 The neglect of basic social services

Human capabilities were not helped by the neglect of basic social services (BSS), especially of elementary education (Classes 1–8). By the census of 1981, India's population of illiterates was larger than its total population had been at independence – about 300 million. In fact, after the First Five-Year Plan's focus on elementary education, the strategic focus shifted from elementary education to higher education (Tilak, 1991). This shift in emphasis was necessitated by the growth strategy adopted

29 This estimate is based on the Lakdawala method. It uses a uniform recall period in the survey of consumption expenditure on both durable and non-durable consumer goods. All estimates of poverty after 2004–05 are based on the mixed recall period, where the reference period for the household answering questions about consumption expenditure (which is the basis for estimating whether a household's monthly consumption expenditure is below the poverty line or not) is 365 days for five infrequently purchased items (clothing, footwear, education, medical expenses, durable goods), while for all other items including food items, the reference period is 30 days. The uniform recall period, by contrast, uses the same 30-day recall period for both durables and non-durables.

(which was, within an appropriate import-substituting industrialisation, focused on heavy industry first, modelled on the Soviet strategy [Bhagwati and Chakravarty, 1969]). The latter required a large and growing number of people with high levels of engineering and scientific skills (Mehrotra, 1990).

Not surprisingly, for a full four decades of planned educational development in 1957–90 (i.e., over the first eight Five-Year Plans, except the very first one), higher and technical education absorbed a good 25–30 per cent of the total government education expenditure of state and central governments taken together (Tilak, 1991). In fact, never in the history of independent India has primary education (Classes 1–5) ever accounted for more than 35 per cent of total government education expenditure, which is way below that in most high-achieving developing countries (Mehrotra and Jolly, 1997; Mehrotra, 2005). Clearly, children were not a priority in educational policymaking till four decades after independence (see Chapters 9 and 10 for further discussion).

That the capital investment in higher education should have been made is not being questioned here. What is more questionable is two aspects of this public expenditure: the absence of a long-term strategy to meet recurrent costs in publicly funded higher education, and the public-private mix in higher education. First, almost all of higher education was publicly provided and it was almost free of charge, despite the fact that those who were being subsidised could afford to pay, and thus meet a significant part of the recurrent costs met by the state in higher education (Mehrotra, 2005).

Second, there was hardly any private provision of higher education in India. Both these features of the education strategy are exactly the opposite of the strategy followed in South Korea at the same stage of development (see Mehrotra et al., 1997 for a further discussion). In India central government allocations for elementary education increased in relative terms only after 1990, by which time serious damage to elementary education had already been done. In other words, one of the foundational elements of the first synergy (between basic social services) could not be realised since even primary enrolment was not universal until 2007 – quite the contrary to what was achieved in countries such as South Korea, China and Malaysia early in their development process.

Another relatively neglected aspect of basic social services (BSS) was basic and preventive healthcare. While a three-tier infrastructure of public healthcare was created, it remained under-funded and understaffed. With state governments in the driving seat, accounting for over 80 per cent of total public expenditure for

health, the central government kept a low profile on the subject. Life expectancy was barely 52 years by the census of 1991.

The dual synergy model is useful as an analytical and diagnostic device to compare the experience of countries with regard to poverty reduction. The reason why China, for instance, managed to reduce income-poverty very rapidly after 1980 (when its economic reforms began), in contrast to India, even though both experienced rapid economic growth, is three-fold. First, unlike India, China had managed to universalise primary schooling by the end of the 1970s, when its economic reforms and its period of rapid economic growth began. Literacy was 67 (79 per cent male, 54.4 per cent female) per cent in China in 1981–82 (for 15+ year olds), while in India it was 43.6 per cent (for 7+ year olds, which is normally higher than for 15+). The gap had widened between the two countries by 1991, with China having reached 78 per cent, and India still at 52.2 per cent literacy (Dreze and Loh, 1995). In other words, India reached a literacy rate of 65 per cent only in 2001, which is lower than a rate China had achieved 20 years earlier, when it began its economic reforms. Naturally, the Chinese workforce was much better prepared to take advantage of the economic growth when it started after 1979.

Moreover, age-specific literacy rates highlighted another important dimension of the Chinese headstart. Nearly 40 per cent of Indian children could not actually read and write in the early 1990s, while the corresponding figure for China was only 5 per cent (Dreze and Loh, 1995). Unfortunately, the state of learning achievement of India's children (see Chapter 9) has hardly improved in the 2000s (Banerji and Duflo, 2011; ASER, 2014).

Meanwhile, as in education, so in health China made amazing progress in the first three decades after the revolution in 1949. Between 1950 and 1990, life expectancy almost doubled, rising from 35 to 68 years; the latter is higher than India's 2011 life expectancy. There was a similarly dramatic fall in infant mortality, declining from 200 to 34 per 1,000 live births, which is again lower than India's infant mortality rate (IMR) in 2012 (42). A big difference between the way the public health systems were organised in the two countries was that China trained, for the rural village or urban street health clinic, thousands of 'barefoot doctors', who were selected by county health authorities to receive three to four months of initial training as well as additional annual training to upgrade their skills (Hsiao, 1995). There was no one in the Indian system who was comparable. The vacuum was filled by local quacks who survive – rather,

dominate – in the rural (Rohde and Viswanathan, 1995) and even the urban slums to this day.

The contrast in outcomes is evident. By the beginning of the 1980s, China was undergoing an epidemiological transition, with the prevalence of infectious diseases radically decreasing, and infectious diseases such as polio nearly eradicated. In India, the last case of polio was found in 2011. Second, healthcare is not the only factor that influences health outcomes (as we have argued throughout this chapter). Between 1950 and 1980, nutrition, hygiene and education and living standards greatly improved in China, which positively impacted health (Hsiao, 1995).

The Chinese strategy was to focus on preventive and promotive health, especially in the rural areas. The Indian health system neglected the rural areas and preventive healthcare with catastrophic consequences, and allowed investments to grow in curative care, and the public health system simply could not cope with the resulting disease burden. The pressures on the government health system of curative care led to most healthcare being provided by private providers (Rohde and Viswanathan, 1995).

As a result, out-of-pocket expenditure accounts for 80 per cent of the total health expenditure in the country.

Moreover, key nutritional interventions (see the discussion in Chapters 8 and 10) as well as sanitation interventions (see Chapter 11) were lacking. The main nutritional intervention, the Integrated Child Development Scheme (ICDS), although in existence since 1975, remained very low in coverage (barely a quarter of the country's children were covered till 2006), and has a poor design (and is hence ineffective; see Chapter 10). In fact, 54 per cent of all of India's children under five were underweight in 1992–93, according to the National Family Health Survey. By contrast, the rate in China was 19 per cent in the same year (National Nutrition Survey, 1992). The prevalence of stunting was 33 per cent in China in 1990; by contrast, in India it was 52 per cent in 1992–93.

An underlying cause of the health and nutrition outcome indicators was also the state of sanitation (see Chapter 11 for a detailed discussion). The nutritional and health implications of poor sanitation are well known, but clearly there was no recognition of these synergies in the way policies were formulated. The contrast is between 69 per cent rural households not having toilets in India according to Census 2011, compared to 4 per cent of all households in China (Registrar General of India, 2011).

Overall, one can firmly state that requirements to trigger the first synergy – between key basic services like preventive health, adequate nutrition, basic education, water and sanitation – were nearly ignored by policymakers during the first decades of planned development. The low human capital stock is a direct outcome of this neglect.

The most damaging consequence of the lack of investment in basic healthcare (that is, public health, preventive and basic curative care), school education, nutrition, and safe drinking water and sanitation in the first three decades after 1950 was that India's demographic transition to lower birth rates/death rates was much slower than it might have been. India's population grew from 350 million in 1947 to 700 million by 1981. China's population grew much more slowly from a much higher base (541.7 million in 1949) to 989 in 1981, on account of investments in basic health, school education and family planning.

Not surprisingly, India's population growth rate now (2010–11) is still 1.4 per cent pa (a rate that China achieved in the early 1980s), while that of China is 0.4 per cent. As a result, India's population will exceed that of China by 2025, and will reach 1.6 billion people by 2050, before stabilising, and then falling. Had social investments in India been on the same scale as in China between 1950 and 1980, India's population would have grown slower, and given that India's population base was much lower than that of China at the end of the 1940s, it could have stabilised earlier and hence at a lower level than China. If infant mortality is low, parents expect their children to survive childhood, and would not over-compensate by having more children than they themselves desire. This mind-set change would have lowered fertility faster. This contrast between China and India shows beyond any shadow of doubt the catastrophic consequences of the neglect of BSS for India.

The high population growth rate and the poor health, nutrition and education levels were reflected in high levels of income-poverty in a context in which GDP growth averaged only 3.5 per cent per annum over 1950–80 (see Table 1.3).

Table 1.3: Number and percentage of persons below poverty line in India (1973/4–2004/5)

Years	Rural		Urban		Combined	
		%		%		%
1973/4	261.2	56.4	60.0	49.0	321.3	54.9
1983/4	251.9	45.6	70.9	40.8	322.8	44.5
1993/4	244.0	37.3	76.3	32.4	320.3	36.0
2004/5	220.9	28.3	80.7	25.7	301.7	27.5

Source: Various National Sample Survey (NSS) Rounds (27th, 38th, 50th, and 61st)

Note: These estimates are based on a consistent method (the Lakdawala Committee), using a uniform recall period (see fn. 24), which was used until 2004–05. That method was replaced by the Tendulkar method in 2009.

1.2.1.2 Money-metric measures of poverty

The absolute number of poor: We have comparable numbers for the total number of poor based on a consistent poverty line and the same methodology from 1973 to 2005, i.e., over three decades.³⁰ Over time, while the headcount ratio of the poor fell (see Table 1.3), the number of poor barely changed over, remaining constant over two decades: 321.3 million in 1973, 322.9 million in 1983, and 320.3 million in 1993–94 and barely falling to 302 million ten years later (Table 1.3). At this rate, it would take 150 years to eliminate poverty in India. Over these two decades, India's total population increased by 54 per cent, from 548 million in 1971 to 846 million in 1991; and some could claim that it is a major achievement that the number of poor did not increase, and only remained constant. Since 1980, China has achieved, by contrast, an average economic growth rate of 10 per cent pa, and lifted 400–500 million people out of poverty (Huang, 2011).

In some states of India, the absolute numbers of the poor in the population actually increased over the three decades (1973–2005). In fact, the *geographical concentration of poverty in the country increased over the 10-year period from 1993–94 to 2004–05*. The four northern states (Madhya Pradesh, Uttar Pradesh, Bihar and Maharashtra) used to account for 49 per cent of the country's total poor in 1993–94; in 2004–05, they (including Chhattisgarh and Jharkhand, which were

30 The big change that occurred in India after 2005 in the method for estimating the poor was that the superior method of using a 'mixed recall period' for consumer durables (365 days) and for non-durables (30 days recall) was adopted, and the uniform recall period used till the mid-2000s was abandoned.

carved out of Madhya Pradesh and Bihar, respectively, in 2000) accounted for 58 per cent of India's total poor.

Most of the consumption poor (70 per cent) were of course in rural areas in 2005. Among the social groups, Scheduled Castes (SC), Scheduled Tribes (ST) and backward castes accounted for 81 per cent of the rural poor in 2004–05, double their share in the rural population (Working Group on Poverty, Planning Commission, 2006).³¹ The SCs/STs are concentrated in the same four states mentioned above.

The headcount ratio of poverty: India successfully reduced the share of the poor in the population by 27.3 percentage points, from 54.8 per cent in 1973 to 27.5 per cent in 2005 (Table 1.3). However, nearly 60 years after independence, over a quarter of India's population still remained poor. To make matters worse, there was growing consensus that the poverty line (₹ 356 monthly per capita consumption expenditure for rural areas and ₹ 458 for urban areas in 2004–05) in India was much too low.

When the poverty line was raised by the Planning Commission in 2011, both the incidence of poverty and the absolute number of the poor increased,³² the effects of which are visible in Figure 1.3. While the earlier poverty line was at a level below the erstwhile \$1.08 per day per capita poverty line (used in setting the MDG goal of poverty reduction) estimated by the World Bank, the current Indian poverty line is higher than the \$1.25 per day per capita now adopted as the international poverty line.³³ However, what is clear from Figure 1.3 is that the rapid economic growth in the 2000s meant that not only did the incidence of poverty fell, but the total number of poor also fell significantly.

31 In 2004–05, while the headcount ratio of the poor in the total rural population was 28 per cent, among the SCs it was 36.8 per cent. In urban areas, the headcount ratio overall was 25.6 per cent, but among SCs it was even higher than in rural areas, at nearly 40 per cent. In terms of both income-poverty and other indicators of human development (such as education and health), the STs are at the bottom. The increasing concentration of tribals among those who suffer from multiple deprivations is a matter of deep concern, since it has led to the rise of a Maoist insurgency in most of the same four states where poverty and the SCs/STs are concentrated (an issue we address in Chapter 16). Without addressing these concerns, it is impossible to achieve inclusive growth.

32 The expert group, chaired by Professor Suresh Tendulkar (Delhi School of Economics), raised the poverty line in 2011.

33 Besides, after the acceptance of the Tendulkar Committee Report, the Planning Commission has been using the mixed recall period for making monthly per capita consumption expenditure (see fn. 25 on the subject).

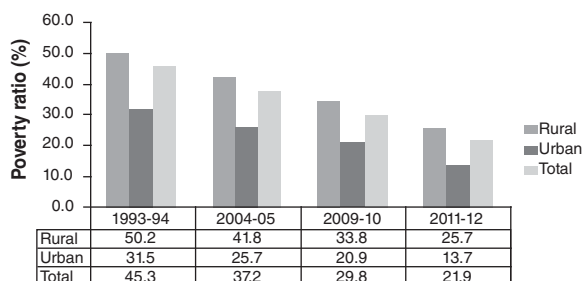
In fact, the decline in absolute number of poor of 138 million between 2004–05 and 2011–12 was unprecedented in India's post-independence history. If the global MDG goal of poverty reduction is achieved, it will be primarily on account of the remarkable reduction in absolute terms of the poor in China and India (Ravallion, 2013).

The decline in poverty (absolute numbers and incidence) is a consequence showing the macro-synergy at work.

1.2.2 Evidence on the synergy post-1980s

We have taken 1980s as a break point in the post-independence economic history of India for two reasons. The first is that the demographic dividend (i.e., a rise in the share of working age to non-working age population) begins around 1980. The second reason is that the GDP growth rate picked up markedly in the 1980s, compared to the Hindu rate of growth (3.5 per cent per annum) between 1950 and 1980.

Figure 1.3: Consistent decline in incidence of poverty by Tendulkar method



Source: India Human Development Report, 2011 update (IAMR, 2014)

India's population growth in the twentieth century was fairly in line with the classical theory of demographic transition (although the right health and education policies could have hastened the transition). The colonial period of 1901–21 could be called a period of stagnant population, with the average annual exponential growth rate being 0.56 per cent (1901–11) and 0.03 per cent (1911–21). The three decades just before independence were a period of low steady growth, with the growth rate slowly rising: 1.04 per cent pa over 1921–31, 1.33 per cent pa over 1931–41, to 1.25 per cent pa over 1941–51. As curative healthcare services improved over the first three decades after independence, a period of rapid population growth then set in: 1.96 per cent pa over 1951–61, 2.2 per cent pa over 1961–71, and 2.2 per cent pa over 1971–81.