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Five Centuries of Economic Growth in India: The Institutions Perspective

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9 February 2011

Online at <https://mpra.ub.uni-muenchen.de/67901/>
MPRA Paper No. 67901, posted 16 Nov 2015 18:32 UTC

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FIVE CENTURIES OF ECONOMIC GROWTH IN INDIA

The institutions perspective

Sambit Bhattacharyya

Introduction

India's rapid economic progress over the past two decades has attracted a lot of attention from academic economists, development practitioners and policymakers. Indeed, the Indian economy has been growing at a steady pace since the 1980s (see Figure 3.1). Not surprisingly, much of the emphasis of the academic as well as the policy debates are on the causes of this turnaround. However, the vast gap between the living standards in India and in the developed world goes relatively unnoticed. Figure 3.1 illustrates that, even though there has been a steady increase in per capita GDP in India, it has had little effect on the gap between India and the United States or the United Kingdom. It also shows that the gap between countries is persistent and that there is very little change in relative positions since 1950.¹

The origin of this gap, therefore, is certainly not the post-war period of 1950 to 2004. To locate the origin, we need to look further back. Indeed, Figure 3.2, using data from Maddison (2004),² suggests that the origin of the divergence goes back to the 1500s. During the first half of the sixteenth century there appears to have been very little difference in living standards between India and the rest of the world. In fact some argue that, during this time, Indian living standards were superior to the rest of the world (Acemoglu et al., 2002). Why, in spite of this early advantage, did the Indian economy stagnate for the following four centuries while UK and US economies surged ahead? Is deindustrialization a factor? What are the root causes behind two centuries of deindustrialization? Is the mediocre economic performance during the first three decades after independence a consequence of poor institutions or simply bad luck? What changed after 1991 to cause fortunes to reverse? Answers to these questions are critical in improving our understanding of the process of economic growth not just in India but also in other developing countries. It is also extremely important as economic growth has the potential to pull millions out of poverty.

In this chapter, I make an attempt to address these questions using an analytical framework. I argue that these events are not isolated but, in fact, interconnected, and institutional change may help us understand why the Indian economy took such a course. This is a significant

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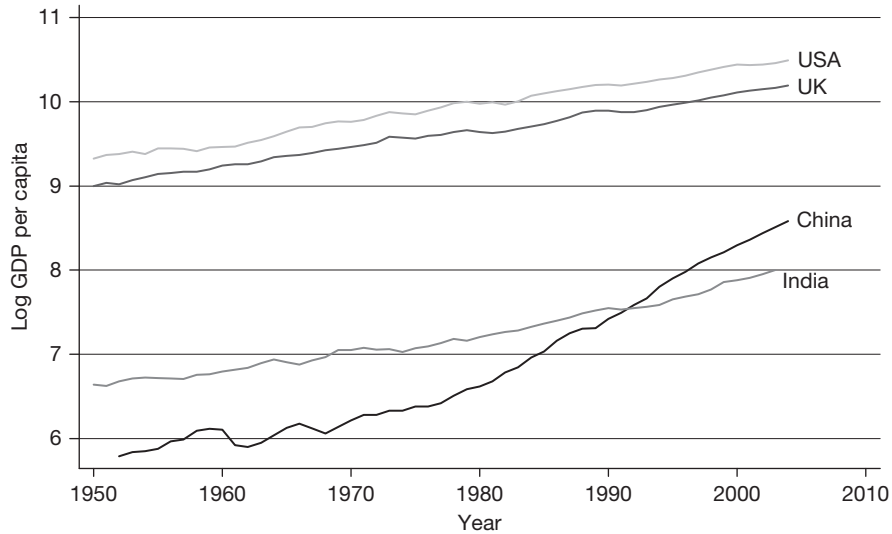


Figure 3.1 Indian economy in comparative perspective since independence
Note: Real GDP per capita figures are from Heston et al. (2006: Table 6.2) and measured in PPP 2000 constant US dollars.

departure from the existing literature which does look at these events in isolation and puts very little emphasis on institutions. I make an attempt to present a unified view of the Indian growth process by bringing institutions back into the debate. I present my account of the Indian growth experience as follows. In the next section, I explain how root causes (institutions and geography) of development affect proximate causes (factor accumulation and productivity

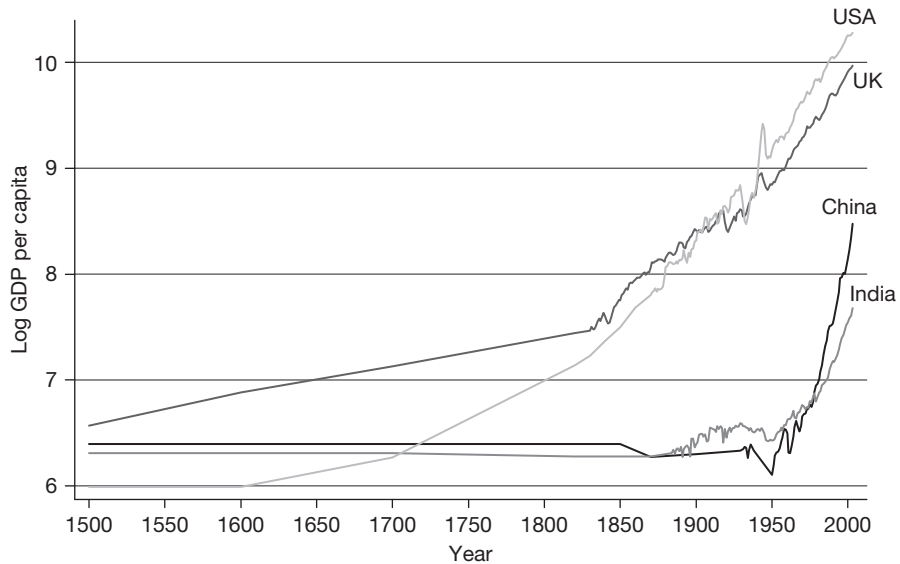


Figure 3.2 Indian economy in comparative perspective over the long run
Note: Real GDP per capita figures are from Maddison (2004) measured in 1990 international Geary-Khamis dollars (Geary, 1958; Khamis, 1969)

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growth). I also review a small selection of literature on the impact of root causes other than institutions (in particular, geography) on economic development in India. The following section presents an account of institutions and economic performance during the pre-modern period. Subsequent sections deal with deindustrialisation and how institutions affected that process, the post independence 'Hindu rate of growth' and the post-1980 turnaround. This is followed by my conclusion.

Institutions as a root cause of development

In a neoclassical growth accounting framework, economic growth is driven by the following three factors — accumulation of physical capital, accumulation of human capital, and technological progress. The key question is how do we incorporate the idea of root causes into this framework? For the purpose of this chapter I tend to take the view that institutions are root causes as they create incentives or disincentives for investments in physical capital, human capital, and technological progress which promotes economic development. In other words, root causes influence proximate causes (factor accumulation and productivity improvements) which promote economic growth. Is this distinction meaningful? The answer is yes. Given a time frame, this distinction relies on the chain of causation which can provide useful information on the long run determinants of development. Indeed factor accumulation and policy may impact institutions in the short run. But institutions outlive short run policy changes and are likely to have a relatively lasting impact on development. Therefore, for the purpose of this chapter where I am focusing on the long run, it does make sense to treat institutions as a root cause of economic development.

Factors other than institutions also have an effect on long term development. Sachs et al. (2002) show that geographical and cultural differences are an important determinant of across states economic development in India. Coastal areas and areas near to ocean navigable waterways are typically more prosperous than the inland. Even though their analysis focuses on the post-independence economic performance, these factors may as well be reflective of the long term trend. I however choose to focus on the long run impact of institutions in this chapter as this aspect has not been covered adequately by other authors.

Institutions and growth in India during the pre-modern period

The early modern world witnessed an unprecedented increase in world trade due to the discovery of the Americas and the sea route to Asia via the Cape of Good Hope. India also benefited enormously from the integration of the Indian Ocean into the larger network of world trade. The early half of the sixteenth century witnessed the rise of a trading network where the European traders exchanged South American bullions (mainly silver) for manufactured goods and spices from India to be sold in Europe and Africa (Prakash, 2004). This was made possible by the European conquest of South America and thereby getting access to the lucrative silver and gold mines of the continent. Vasco da Gama's arrival in Calicut in 1498 is perhaps the start of this new era of trade in the Indian Ocean. Soon after Vasco da Gama's arrival, the Portuguese Crown did not hesitate to monopolise this trade route and exclude other key European competitors. The exchanges during this time were largely restricted to spices from the Malabar region in return for precious metals. However this trade pattern changed significantly a century later when the Dutch and later the English successfully challenged the Portuguese monopoly. Exchanges during this period involved not only spices but also a wide variety of manufactured goods and textiles. In fact, by 1750 China and India together accounted for 57 per cent of the world manufacturing output and therefore a substantial share of the world manufacturing

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exports (Bairoch, 1982). The Dutch East India Company also participated in the intra Indian Ocean trade.

In spite of the significant capital inflows to India in the form of precious metals, the growth dividends were relatively moderate during this time. This, in my view, is largely due to the institutional weaknesses. Institutions in India during this time fit the following model developed by North et al. (2009) well. States protected the monopoly power and rents of politically influential elites by restricting entry into the courts. These elites (feudal landlords and local rulers) shared a part of their rent with the state in return.³ The main instrument used by the state to restrict entry was violence, expropriation of private property, and higher taxes. Entry restrictions were further reinforced by the caste system which hindered mobility. Therefore, in summary what we observe are rent seeking states with very weak institutions to constrain the actions of the elite. Indeed the effective tax rate during the Mughal period was as high as 40 per cent of the total farm produce which increased to 50 per cent or more during the later periods as the central authority of the Mughal Empire waned (Raychaudhuri, 1983; Bayly, 1983). The farmers had very few rights over their land and any dissent would have attracted disproportionate violence from the local elites and their armies. The artisans and merchants were also no exception to this treatment. The additional rents captured by the states by taxing trade with the Europeans were largely spent on conspicuous consumption. Without doubt this created some short term demand for Indian manufactured goods and textiles. The long run costs of not investing in public goods, infrastructure, research and development however far outweighs the short term benefits. In other words, the gains from trade failed to deliver long run growth because a significant proportion of the surplus frittered away in conspicuous consumption. Very little of the state-appropriated-rent was invested back in public goods which have long term positive externalities. History took this course because institutions were weak with very little political power in the hands of the merchants and the mass to constrain the actions of the elites.

Institutions and deindustrialization in India during the eighteenth and nineteenth centuries

Economic historians debate whether India suffered deindustrialization during the eighteenth and nineteenth centuries. Roy (2002) argues that Britain's productivity gains in textile manufacturing and the decline in sea freight rates due to world transport revolution made it increasingly difficult for Indian producers to be competitive in the world market. As a result Britain first captured India's export market and then the domestic market. Hence India experienced deindustrialization. In a similar vein, nationalist authors argue that deindustrialization was a direct consequence of British colonial rule (Dutt, 1906; Nehru, 1947; Dutt, 1992). For example, Dutt (1992) argues that strong parliamentary lobbying by the British cotton manufacturers against the import of Indian textiles forced the East India Company to resort to policies which led to a systematic destruction of the Indian textile industry. He writes, 'Even in 1813, witness after witness in the Select Committee of the House of Lords testified that free Indian textile imports (of both finer and coarser varieties) would damage British industry' (Dutt, 1992: 148–9). The British East India Company resorted to policies of imposing internal tariffs and transit duties on Indian goods, dislocation and direct exploitation of the artisans, and forceful reduction of market demand to destroy the industry.⁴ Indian textiles also lost their overseas market due to the imposition of high import tariffs in Britain. Empirical evidence on deindustrialization, however, is extremely sparse. The majority of the contributions on this topic rely on a few available employment and output share numbers

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(Clark, 1950; Thorner, 1962; Bagchi, 1976a, 1976b; and Prakash, 2005). Clingingsmith and Williamson (2008), however, are an exception. They rely on relative price data to show that indeed India suffered from deindustrialization during the eighteenth and the nineteenth centuries.

The key question, however, is whether deindustrialization was harmful for India's economic performance. A simple way to visualize deindustrialization is that of a skilled manufacturing worker or artisan moving back to the farm. As a result the entire economy becomes reliant on the farming sector and non-farm contribution to national income declines. Modern observers regularly point out that economies over reliant on the primary sector are susceptible to global commodity price shocks and volatility. Bleaney and Greenway (2001) and Hadass and Williamson (2003) are amongst the early contributions to stress the long-run growth implications of such instability. Most theories stress the investment channel in looking for connections between commodity price shocks and growth (Dercon, 2004; Fafchamps, 2004). The story goes as follows. Poor households find it difficult to smooth their expenditures in the face of shocks and volatility because they are rationed in credit and insurance markets, so they lower investments and take fewer risks. Poor firms find it difficult to smooth net returns on their assets, so they lower investment and take fewer risks. Perhaps most importantly, poor governments whose revenue sources are mainly volatile customs duties find it difficult to smooth public investment on infrastructure and education in the face of shocks. Lower public investment ensues, and growth rates fall. In short, theory informs us that commodity price shocks and volatility should reduce investment and growth in the presence of risk aversion. In addition, negative shocks are typically followed by severe cuts in investments in health and education in poor countries which adversely affects long-term human capital accumulation and growth (Jacoby and Skoufias, 1997; Jensen, 2000). Therefore, economies over reliant on the commodity sector are likely to suffer from these shocks and experience lower growth over the long run. Modern evidence seems to be consistent with the theory. Using data from 92 countries between 1962 and 1985, Ramey and Ramey (1995) found that higher volatility leads to lower mean growth. This result is confirmed for a more recent cross-section of countries (Fatás and Mihov, 2006; Poelhekke and van der Ploeg, 2007; Koren and Tenreyro, 2007; Loayza et al., 2007). Focusing on the period 1870 to 1939 Blattman et al. (2007) show that commodity price shocks and volatility impact negatively on growth. Bhattacharyya and Williamson (2009) document that the impact of volatility on growth is not uniform across countries, with the rich European offshoots such as Australia typically less affected than the poor periphery. Recent research also indicates that volatility and poor economic performance may be reflective of a much deeper institutional weakness which perhaps causes both (Acemoglu et al., 2003). In light of the evidence presented above, therefore, it is perhaps fair to conclude that deindustrialization was harmful to economic growth in India.

The question that follows is why deindustrialization happened in India? An answer to this question would lead us to the root causes of India's slow growth during the eighteenth and nineteenth centuries. Clingingsmith and Williamson (2008: 218) argue that Indian manufacturing succumbed to both globalization price shocks as well as domestic supply side shocks. They write,

In sum, our view is that the long run sources of India's deindustrialization were both the globalization price shocks due to European productivity advance in manufacturing (and the induced demand for industrial intermediaries such as cotton and indigo) plus the negative productivity shocks to Indian agriculture induced by the earlier Mughal decline and deteriorating climate conditions.

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They support their argument using evidence from the relative price data, but they ignore the role of institutions. During the eighteenth century the Mughal empire was on the decline, which left a large vacuum in Indian polity. Regional powers scrambled to get a fair share of the vacant territory; confusion and chaos ensued. The effective tax rate under the Mughals was already as high as 40 per cent of total farm produce. But, amid this confusion and endemic local warfare, regional powers went into revenue farming and increased the tax rate to 50 per cent or more (Raychaudhuri, 1983; Bayly, 1983). This was a rent-seeking institution at its worst. The effect was predictable. Farm productivity declined as households were often left with very little savings to invest in the next season. Therefore grain prices increased and grain wages declined throughout the eighteenth century (Mukherjee, 1939; Broadberry and Gupta, 2005), which had a devastating impact on manufacturing as the farming sector became more attractive for workers relative to manufacturing. This effect was further aggravated by frequent droughts.

During the nineteenth century Indian manufacturing faced another major shock. Globalization forces in the form of a decline in sea freight rates and a boost in productivity of British manufacturing made it increasingly impossible for Indian textile to be competitive in the world market. Faced with higher costs and lack of innovation, Indian manufacturing first surrendered its export markets to Britain and then the domestic market. The decline of the domestic market was further precipitated by the decline of the royal courts, which were major consumers of local goods. The rent-seeking nature of institutions remained intact all throughout this period. Feuding courts were so engaged in local warfare that they paid very little attention to infrastructure investments and technological progress which may have had positive externalities. Being a subject of revenue farming, individual economic agents also had very little savings to invest in their machines or import technology that would allow them to withstand British competition. The result was a steady decline of manufacturing during the nineteenth century.

These rent-seeking institutions persisted even after the British Crown formally took control from the British East India Company in 1858. Banerjee and Iyer (2005) show that in a majority of areas the colonial administration handed over proprietary rights in land to landlords rather than cultivators. This in effect made revenue farming legal under the colonial administration.⁵ Furthermore, the absolutist nature of the colonial administration and the lack of democratic representation for the local farmers and artisans made it impossible to constrain the actions of the colonizers, which facilitated persistence of these extractive institutions. Indeed they find that the long-term development consequences of these extractive institutions are significant. Areas where landlords have the proprietary rights in land produce significantly worse outcomes in terms of agricultural investments, productivity, health investments and education investments than areas where cultivators have those proprietary rights.

In summary, I argue that Indian manufacturing suffered shocks both from within and outside. They were political shocks resulting from the decline of the Mughal empire, climate shocks and globalization shocks resulting from lower transport costs and European productivity increases. Indian manufacturing succumbed to these shocks because of weak and extractive institutions.⁶ Deindustrialization ensued and the Indian economy experienced virtual stagnation during the eighteenth and the nineteenth century.

Colonial hangover, institutions and the post independence ‘Hindu rate of growth’ in India

India’s first Prime Minister, Jawaharlal Nehru, was a staunch critique of the colonial administration and held the view that deindustrialization was a direct consequence of British colonial rule

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(Nehru, 1947). So it is not surprising that he emphasized import substitution and the public sector after assuming power in 1947. His support for the public sector was inherited from the dramatic and awe-inspiring developments in the then Soviet Union, though, politically, he was a liberal and believed in democratic ideals. So he supported democratic institutions and universal suffrage. The Indian constitution also acknowledged the right of private individuals to own property. In summary, the institutional structure of post-independence India was akin to any other advanced capitalist country with property rights, universal suffrage and a free press. In spite of a start with strong institutions, India experienced extremely slow growth over three decades post independence. India's growth rate in per capita income over the period 1950 to 1980 was as low as 1.7 per cent (Rodrik and Subramanian, 2004). This phenomenon is commonly known as the 'Hindu rate of growth' — a term coined by the eminent Indian economist Raj Krishna to describe India's slow growth.

What went wrong? The answer may lie in the quality and nature of India's regulatory institutions. The import substitution industrialization policy relied on high tariff and quota restrictions to prevent imports. This was to protect domestic investments from foreign competition through imports. Furthermore, private sector investments were discouraged and the government implemented a development plan where the public sector would play a major role.⁷ Five-year plans akin to socialist economic systems were implemented. To discourage the development of a private sector, the government of the time implemented a meticulously designed regulatory system. The shared beliefs amongst policy makers and politicians around that time were that:

- India was a capital scarce country and therefore capital needed to be conserved;
- the private sector and the market mechanism were not ideal in deciding where and how capital should be invested, as private individuals are short-sighted and only care about private benefits. They are not able to foresee the long-term positive externalities or social benefits of investments in infrastructure and human capital. Therefore aggregating private benefits resulting from private investments will always be less than the net social benefit achievable in the presence of externalities.
- Social planners, the government and the public sector could minimize this net social loss by directing capital to its highest valued use over the long run which may not have been obvious to the myopic private investor.

As a result every private investment had to go through scrutiny (a tedious process of licensing) to prevent wastage of capital. The process of licensing is also commonly known as the 'license raj'. The consequence of these regulatory institutions is well known. It led to a culture of widespread rent seeking described by Bhagwati and Desai (1970) and Krueger (1974) as the problem of 'rent-seeking society'.

In summary, after independence India experienced sluggish economic growth largely due to weak regulatory institutions. The negative impact of near-stifling regulatory institutions on growth and investments far outweighed the positive effects of strong property rights and political institutions. This is in line with the cross-national evidence reported by Bhattacharyya (2009a) where he shows that over regulation leads to slower growth in a country even if property rights and contracting institutions are favourable.

Policy shift, institutional turnaround and growth since the 1980s

Indian economy experienced a turnaround in the 1980s. Growth in per capita income more than doubled from 1.7 per cent in 1950–80 to 3.8 per cent in 1980–2000 (Rodrik and Subramanian,

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2004). De Long (2003) and Williamson and Zaghera (2002) also note that India's growth rate approximately doubled a full decade before the 1991 reforms. In recent years the Indian economy accelerated even further. What caused this turnaround? Many observers point towards the reforms of the 1990s as an answer (Bajpai and Sachs, 1999; Ahluwalia, 2002; Srinivasan and Tendulkar, 2003). But 1980s' growth cannot be explained by 1990s' reforms. Rodrik and Subramanian (2004) argue that the attitudinal change of the government towards business and industrial establishments kick-started the growth process in the 1980s. To counter the electoral threat from the Janata Party and reclaim some of her lost ground during the 1977 election, Indira Gandhi was actively trying to garner support from the business community (Kohli, 1989). As a result when she came back to power in 1980, her government took a more business friendly stance without making any significant changes in policy. This action was meant to benefit incumbents and was not an embrace of a fully market-driven policy. Consequently, this small shift in attitude triggered a large productivity response which powered growth in the 1980s. More formal policy changes through economic liberalization took place in 1988 and 1991, which boosted growth in the 1990s, though not everyone agrees with the attitudinal change-driven growth explanation of the 1980s' growth. Ahluwalia (2002) and Srinivasan and Tendulkar (2003) argue that the 1980s' growth was driven by fiscal expansion and was inherently unstable. Even though supported by data, this explanation ignores the potential productivity impact of fiscal expansion (Rodrik and Subramanian, 2004). Indeed the data show that the fiscal expansion and current account deficit wasn't a one-for-one relationship during the 1980s, implying that an increase in demand may have played a role in boosting productivity.⁸ Kotwal et al. (2009) presents an excellent account of the literature on economic liberalization and its impact on economic growth in India.

How and where do institutions fit into this story? Attitudinal change in the 1980s may have brought about changes in informal institutions and business environment overall. This may have improved the quality of property rights and contracting institutions adding further into productivity dividends. After the reforms of 1988 and 1991 the quality of regulatory institutions improved many-fold. Reforms also had an impact on the quality of property rights institutions. The International Country Risk Guide (ICRG, 2010) expropriation risk index, which is a measure of property rights institutions, jumped from 6 in 1982 to 10 in 1993 and thereafter. In fact the effect of liberalization on institutions is even more noticeable when 1991 expropriation risk is compared with that of 1992. The score jumps from 6.2 to 8.2. This is in line with the cross-national results of Bhattacharyya (2009b), who shows that liberalization leads to improvements in institutional quality. Therefore, in summary, institutions improved both in the 1980s and in the 1990s, a part of the improvement being due to major policy changes. Attitudinal change, however, also played a role. Improved institutions (especially regulatory institutions) have had a major impact on productivity and growth performance in India over the past three decades.

Concluding remarks

A large body of empirical literature emphasizes the role of institutions in long-term economic development (see Hall and Jones, 1999; Acemoglu et al., 2001, 2002; Rodrik et al., 2004; Bhattacharyya, 2009a; Bhattacharyya et al., 2009; and many others).⁹ The institutional aspects of India's long-term growth, however, are much less studied. Banerjee and Iyer (2005) are an exception. They show that the colonial land revenue institutions set up by the British in India explain variation in long-term development across provinces and regions. In this chapter I have attempted to integrate the role of institutions in explaining five centuries of economic growth

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in India. In order to understand the subtleties of institutional change and its impact on economic performance, I chose a descriptive style of presentation. I have argued that during the pre-modern period India became part of the international trade network after the discovery of the all-sea route to the east. This led to an unprecedented increase in commerce. India exported manufactured goods and spices in return for silver and other precious metals. The rent-seeking state of the time taxed merchant surplus heavily. In return the state hardly reinvested in public goods or research and development. The majority of this surplus went into maintaining the army and the conspicuous consumption of the courts. Therefore institutions were not conducive to long-term economic development or productivity improvement. Then came the political chaos from the Mughal decline during the eighteenth century which caused institutions to deteriorate even further. Local rulers resorted to revenue farming, and large-scale rent seeking weakened economic institutions and stifled economic activities especially in the farming sector. Moreover, farming productivity experienced significant declines due to frequent droughts and climate shocks, causing grain prices to increase and leading to a secular decline in grain wages for over a century. Manufacturing became unprofitable. During the nineteenth century the British Crown formally assumed political control of the country and largely continued with the extractive institutions (Banerjee and Iyer, 2005). Then came the globalization shock to manufacturing. Boosted with a significant productivity advantage European manufactured goods first took over India's export market and then its domestic market. As a result India experienced two centuries of deindustrialization, which had a negative impact on long-term growth. After independence, India's first prime minister, Jawaharlal Nehru, adopted the development strategy of protecting domestic capital from foreign competition. Inefficient regulatory institutions were set up to tackle capital drainage by the private sector. What ensued is commonly known as the 'Hindu rate of growth'. The 1980s experienced an attitudinal change on the part of the government towards private sector. This led to improvements in informal institutions and subsequent productivity growth. The 1988 and 1991 liberalization reforms dismantled many of the regulations and improved the quality of regulatory institutions. As a result, the power of the market was unleashed and India has experienced steady economic growth since then.

What have we learned from this discussion? It has helped us to create a unifying narrative of India's long-term economic growth and to study how institutions may have affected this process. Narratives by nature are somewhat speculative, though many of the facts presented here are shared by economic historians and economists. Nevertheless, this chapter raises several questions and opens up room for further enquiry into this topic.

Acknowledgement

I gratefully acknowledge comments by and discussions with Anna Gladkova, Ashima Goyal and Raghbendra Jha on an earlier version of this chapter. Any remaining errors are mine.

Notes

- 1 China surpassing India during the early 1990s is the only exception.
- 2 In spite of all its inadequacies, Maddison's data are useful in understanding the broad picture.
- 3 This can be in terms of precious metals, army or crops.
- 4 According to Dutt (1992), many artisans were subjected to flogging, imprisonment and worse. Cutting off the thumbs of winders of raw silk has been documented. The domestic demand for textiles also reduced significantly due to the decline of the Indian royal courts, as they were the major buyers of quality products.

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- 5 This model goes back to the Permanent Settlement of Bengal between the East India Company (headed by Lord Cornwallis) and the Bengali landlords concluded in 1793. The agreement between the two parties was that the landlords would transfer a fixed magnitude of the revenue raised from land to the Company.
- 6 A related question is: what types of institution would have dealt with these shocks better? Better representation of the merchants in royal courts and better property rights may have helped in keeping taxes low and promoting business-friendly infrastructure investments. However, this area is not covered in this article and begs further investigation.
- 7 However, it is important to note that the private sector was not entirely discouraged. In other words, India never completely went down the socialist path. The idea was to build a mixed economy with the public sector as the main driver.
- 8 Rodrik and Subramanian (2004) show that this holds even after adjusting for capacity utilization.
- 9 Note that Bhattacharyya (2009c) shows that diseases, especially malaria, are an important factors explaining long-term development in Africa. Further, institutions are statistically insignificant as an explanation for this development.

References

- Acemoglu, D., S. Johnson and J. Robinson (2001), 'The Colonial Origins of Comparative Development: An Empirical Investigation', *American Economic Review*, 91: 1369–401
- (2002), 'Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution', *Quarterly Journal of Economics*, 117: 1231–94
- Acemoglu, D., S. Johnson, J. Robinson and Y. Thaicharoen (2003), 'Institutional Causes, Macroeconomic Symptoms: Volatility, Crises and Growth', *Journal of Monetary Economics*, 50: 49–123
- Ahluwalia, M. (2002), 'Economic Reforms in India Since 1991: Has Gradualism Worked?', *Journal of Economic Perspectives*, 16(7): 67–88
- Bagchi, A. (1976a), 'De-industrialisation in India in the Nineteenth Century: Some Theoretical Implications', *Journal of Development Studies*, 12: 135–64
- (1976b), 'De-industrialisation in Gangetic Bihar 1809–1901', in B. De (ed.) *Essays in Honour of Prof. S.C. Sarkar*, New Delhi: People's Publishing House
- Bairoch, P. (1982), 'International Industrialization Levels from 1750 to 1980', *Journal of European Economic History*, 11: 269–333
- Bajpai, N., and J. Sachs (1999), 'Fiscal Policy in India's Economic Reforms', in J. Sachs, A. Varshney and N. Bajpai (eds), *India in the Era of Economic Reforms*, New Delhi: Oxford University Press
- Banerjee, A., and L. Iyer (2005), 'History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India', *American Economic Review*, 95: 1190–213
- Bayly, C. (1983), 'Rulers, Townsmen, and Bazaars: North Indian Society in the Age of British Expansion, 1770–1870', Cambridge: Cambridge University Press
- Bhagwati, J., and P. Desai (1970), *Planning for Industrialization: A Study of India's Trade and Industrial Policies Since 1950*, Cambridge: Cambridge University Press
- Bhattacharyya, S. (2009a), 'Unbundled Institutions, Human Capital, and Growth', *Journal of Comparative Economics*, 37: 106–20
- (2009b), 'Trade Liberalization and Institutional Development', Unpublished Manuscript, The Australian National University
- (2009c), 'Root Causes of African Underdevelopment', *Journal of African Economies*, 18(5): 745–80
- Bhattacharyya, S., and J. Williamson (2009), 'Commodity Price Shocks and the Australian Economy Since Federation', *NBER Working Paper No. w14694*, January
- Bhattacharyya, S., S. Dowrick and J. Golley (2009), 'Institutions and Trade: Competitors or Complements in Economic Development?', *Economic Record*, 85(270): 318–30
- Blattman, C., J. Hwang, and J. Williamson (2007), 'The Impact Of the Terms of Trade on Economic Development in the Periphery, 1870–1939: Volatility and Secular Change', *Journal of Development Economics* 82 (January): 156–79
- Bleaney, M. and D. Greenway (2001), 'The Impact of Terms of Trade and Real Exchange Rate Volatility on Investment and Growth in Sub-Saharan Africa', *Journal of Development Economics*, 65: 491–500
- Broadberry, S., and B. Gupta (2005), 'The Early Modern Great Divergence: Wages, Prices and Economic Development in Europe and Asia, 1500–1800', unpublished manuscript, University of Warwick
- Clark, C. (1950), *Conditions of Economic Progress*, London: Macmillan

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- Clingingsmith, D., and J. Williamson (2008), 'De-industrialization in 18th and 19th Century India: Mughal Decline, Climate Shocks and British Industrial Ascent', *Explorations in Economic History*, 45: 209–234
- De Long, B. (2003), 'India since Independence: An Analytical Growth Narrative', in D. Rodrik (ed.) *In Search of Prosperity: Analytical Narratives on Economic Growth*, Princeton University Press, Princeton: New Jersey
- Dercon, S. (2004), *Insurance Against Poverty*, Oxford: Oxford University Press
- Dutt, A. (1992), 'The Origins of Uneven Development: The Indian Subcontinent', *American Economic Review*, 82: 146–50
- Dutt, R. (1906), *The Economic History of India, Vol. I: Under Early British Rule, 1757–1837*, London: K. Paul
- Fafchamps, M. (2004), *Rural Poverty, Risk and Development*, Cheltenham: Edward Elgar
- Fatás, A., and I. Mihov (2006), 'Policy Volatility, Institutions and Economic Growth', INSEAD, Singapore and Fontainebleau, France, unpublished
- Geary, R. (1958) *An International Comparison of National Products and Purchasing Power of Currencies*, Paris: OECD
- Hadass, Y. and J. Williamson (2003), 'Terms-of-trade Shocks and Economic Performance, 1870–1940: Prebisch and Singer Revisited', *Economic Development and Cultural Change* 51 (April): 629–56
- Hall, R., and C. Jones (1999), 'Why Do Some Countries Produce so much more Output per Worker than Others?', *Quarterly Journal of Economics*, 114: 83–116
- Heston, A., R. Summers and B. Aten (2006) 'Penn World Tables', Center for International Comparisons of Production, Income and Prices, University of Pennsylvania, Philadelphia
- ICRG (2010) The International Country Risk Guide expropriation risk database, of the Political Risk Services Group (updated occasionally), available at <<http://www.prsgroup.com/ICRG.aspx>>, accessed 25 November 2010
- Jacoby, H.G., and E. Skoufias (1997), 'Risk, Financial Markets, and Human Capital in a Developing Country', *Review of Economic Studies* 64 (July): 311–35
- Jensen, R. (2000), 'Agricultural Volatility and Investments in Children', *American Economic Review* 90 (May): 399–404
- Khamis, S.H. (1969), 'Neoteric Index Numbers', *Bulletin of the International Statistical Institute*, Vol. 43, Book 2, 41–2
- Kohli, A. (1989), 'Politics of Economic Liberalization in India', *World Development*, 17(3): 305–28
- Koren, M. and S. Tenreyro (2007), 'Volatility and Development', *Quarterly Journal of Economics*, 122(1): 243–87
- Kotwal, A., B. Ramaswami and W. Wadhwa (2009), 'Economic Liberalization and Indian Economic Growth: What's the Evidence?', unpublished manuscript, available at <<http://faculty.arts.ubc.ca/akotwal/541/Kotwaleta.pdf>>, accessed 25 November 2010
- Krueger, A. (1974), 'The Political Economy of the Rent-seeking Society', *American Economic Review*, 64 (3): 291–303
- Loayza, N. V., R. Rancière, L. Servén and J. Ventura (2007), 'Macroeconomic Volatility and Welfare in Developing Countries: An Introduction', *World Bank Economic Review*, 21(3): 343–57
- Maddison, A. (2004), *The World Economy: Historical Statistics*, Paris: OECD
- Mukherjee, R. (1939), *The Economic History of India, 1600–1800*, London: Longmans, Green & Co
- Nehru, J. (1947), *The Discovery of India*, London: Meridian Books
- North, D., J. Wallis and B. Weingast (2009), *Violence and Social Order: A Conceptual Framework for Interpreting Recorded Human History*, New York: Cambridge University Press
- Prakash, O. (2004), *Bullion for Goods: European and Indian Merchants in the Indian Ocean Trade, 1500–1800*, New Delhi: Manohar
- (2005), 'The Great Divergence: Evidence from Eighteenth Century India', paper presented at the GEHN Conference on Imperialism, Istanbul, 11–12 September
- Poelhekke, S. and F. van der Ploeg (2007), 'Volatility, Financial Development and the Natural Resource Curse', CEPR Discussion Paper 6513, October
- Ramey, G. and V. Ramey (1995), 'Cross-country Evidence on the Link between Volatility and Growth', *American Economic Review*, 85(5): 1138–51
- Raychaudhuri, T. (1983), 'The Mid-Eighteenth-Century Background', in D. Kumar and M. Desai (eds) *The Cambridge Economic History of India, Vol. 2*, Cambridge: Cambridge University Press
- Rodrik, D., and A. Subramanian (2004), 'From "Hindu Growth" to Productivity Surge: The Mystery of the Indian Growth Transition', *NBER Working Paper 10376*, March

Five centuries of economic growth in India

- Rodrik, D., A. Subramanian and F. Trebbi (2004), 'Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development', *Journal of Economic Growth*, 9: 131–65
- Roy, T. (2002), 'Economic History of Modern India: Redefining the Link', *Journal of Economic Perspectives*, 16: 109–30
- Sachs, J., N. Bajpai and A. Ramiah (2002), 'Understanding Regional Economic Growth in India', *Asian Economic Papers*, 1(3): 32–62
- Srinivasan, T., and S. Tendulkar (2003), *Reintegrating India with the World Economy*, Washington, DC: Institute for International Economics
- Thorner, D. (1962), 'Deindustrialisation in India, 1881–1931', in D. Thorner and A. Thorner (eds), *Land and Labour in India*, Bombay: Asia Publishing House
- Williamson, J., and R. Zaghera (2002), *From Slow Growth to Slow Reform*, Washington, DC: Institute for International Economics