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A Tale of Great Divergence**

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Economic Development in China and India: A Tale of Great Divergence

AJIT K. GHOSE*

1. INTRODUCTION

In the early 1950s, China and India – two new nations embarking on development – were similar in many respects. In terms of geographical area and population, both were large countries. Both were low-income economies that had suffered centuries of economic stagnation. And both were labour-surplus dual economies with not too dissimilar structures. Arguably, India was a little more advanced than China; its per capita income was slightly higher (Figure 1) and economic structure was slightly more evolved (as we shall see below).

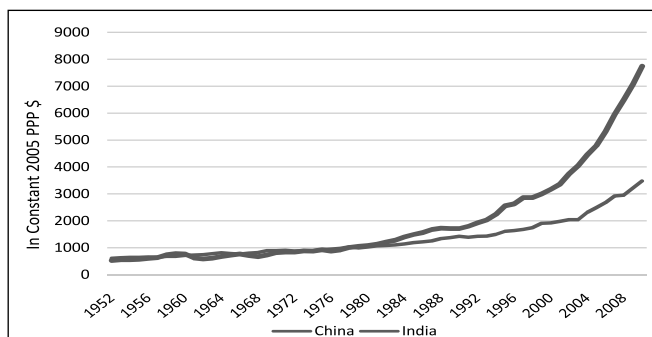
As it happened, the two countries also adopted remarkably similar growth strategies, which emphasized industrialisation led by heavy industries, import substitution under trade protection and entrepreneurial role of the state. China, however, also embarked on a radical transformation of its economic institutions; agriculture was collectivised and private entrepreneurship in non-agriculture was abolished. No comparable institutional change happened in India, which continued to have a peasant agriculture and private enterprises in non-agriculture, though fairly pervasive government controls over private entrepreneurial activities in non-agriculture were put in place.

During 1955-1978, when their growth strategies remained broadly unchanged, the pace and pattern of growth in the two countries were fairly similar. Growth was slightly faster in China than in India, though India's growth was relatively stable while China's growth suffered from large fluctuations (periods of rapid growth interspersed with periods of drastic decline) in consequence of periodic social-political upheavals.¹ By 1978, the two countries had very similar levels of per capita income and economic structure (Figure 1).

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1. Growth declined drastically during 199-1962, the period of the *Great Leap Forward* campaign, and again during 1966-1968, the period of the *Cultural Revolution* campaign.

Figure 1
Per Capita GDP in 2005 (PPP \$)



Source of Data: PENN World Tables, version 7.1.

It was in the late 1970s that both the countries began to implement economic reforms that were to bring about significant changes in their growth trajectories.² The reforms in China defined a new road to industrialisation rather than a new growth strategy. Industrialisation remained central to China's growth strategy but the emphasis shifted from heavy industries to light industries and from import substitution to export orientation. It was in pursuit of export-oriented industrialisation that the economy was gradually opened up to trade and capital flows. Once again, however, important institutional reforms were implemented; agriculture was de-collectivised engendering emergence of egalitarian peasant farming, and private entrepreneurship in non-agriculture was restored and encouraged. The reforms implemented in India bore some similarities to those implemented in China (though, unlike in China, no radical institutional reforms were implemented in India): government controls over private entrepreneurial activities were relaxed, protectionism was abandoned and the economy was gradually opened up to trade and capital flows. These reforms, however, had the effect of fundamentally altering India's growth strategy; industrialisation ceased to be central and services came to replace manufacturing as the engine of growth.

In the post-1978 period, development experiences of the two countries diverged very significantly. Economic growth accelerated in both the countries but the acceleration was far larger in China. China's growth was manufacturing-led while India's growth was services-led.³ By 2010, China's per capita income was more than double that of India (Figure 1). Structural change also was far more significant in

2. In both countries, the reforms were implemented in a certain sequence over more than a decade. These will be briefly discussed in a later section below.

3. China came to be called "world's factory" while India came to be called "world's back-office".

China (as we shall see below) indicating more rapid improvement in employment conditions. In short, China simply had galloped ahead of India. In 2010, China's economy was far more developed than India's.

In this paper, we look into the contours of this 'great divergence'. We focus on identifying the key differences in the pace and pattern of economic growth and in the associated employment outcomes in the two countries in the post-1978 period. We also consider how and why these differences arose.

2. ECONOMIC GROWTH, 1955-2010

Even during 1955-1978, a period marked by political turbulence in China, economic growth was actually faster in China than in India (Table 1). The basic explanation lies in the fact that the level of investment was much higher in China; the incremental capital-output ratio (ICOR) was lower in India suggesting that investment was more productive there.⁴ The significant fact is that China was far more successful in mobilising resources for investment. Already in 1955, the investment rate was higher in China (16 percent) than in India (12 percent). By 1978, the investment rate had increased to 30 percent in China while it had increased to 18 percent in India.

Table 1
Economic Growth

	1955-1978		1978-2010		1978-1994		1994-2010	
	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>
GVA (percent per annum)	5.1	3.6	9.3	5.8	8.7	5.0	9.5	6.6
Average rate of investment (%) - 1	23.2*	15.8*	33.6	25.5	30.2	22.1	37.2	28.7
Average rate of investment (%) - 2	23.9	14.2						
Incremental capital-output ratio - 1	4.5*	4.4*	3.6	4.4	3.5	4.4	3.9	4.3
Incremental capital-output ratio - 2	4.7	3.9						

Note: Economic growth is growth of Gross Value Added (in constant 2005 local currency unit). Rate of investment is gross fixed capital formation as percent of GDP, and average rate of investment is the simple average of the annual rates of investment. The estimates marked with asterisk are for the period 1960-1978.

Source: The data on Gross Value Added are derived from the Groningen Growth and Development Centre 10-Sector Database. The average investment rate - 1 is based on data from the World Bank's World Development Indicators Database. The average investment rate - 2 is based on data from Maddison (2007) for China and from national sources (Central Statistical Organisation) for India.

After 1978, growth accelerated in both countries, but the acceleration was much greater in China. Over a period of three decades (1978-2010), the average annual rate of growth of China's economy exceeded that of India's economy by as much

4. The same conclusions are suggested by growth accounting exercises, which show total factor productivity growth to have been negative in China but positive in India in this period. See Maddison (2007), Zhu (2012) and Bosworth, Collins and Virmani (2007).

as 3.5 percentage points. The investment rate in China was of course much higher (by 8 percentage points) than that in India. Moreover, the ICOR was also lower in China in this period; it had significantly declined in China but had remained unchanged in India.⁵

The story is substantially the same for the two sub-periods of interest: 1978-1994 and 1994-2010. In each of these sub-periods, China's growth was much faster, investment rate was much higher and the ICOR was lower. The two sub-periods are of interest essentially because the reforms implemented during these were different in character. In both the countries, reforms focused on the domestic economy during the first sub-period and were concerned with opening-up of the economy to international trade and capital flows during the second sub-period. It seems clear, however, that there was no substantive change in the growth path (other than growth acceleration) of either of the economies between the two sub-periods.

Finally, China's growth was strongest in the manufacturing while India's growth was strongest in the services sector (Table 2). However, in each of the major sectors, growth was much higher in China than in India. Even in the services sector, China's growth exceeded India's by a wide margin during 1978-2010.

Table 2
Growth of Sectors (percent per annum)

	<i>China</i>		<i>India</i>	
	<i>1955-1978</i>	<i>1978-2010</i>	<i>1955-1978</i>	<i>1978-2010</i>
Agriculture	3.1	4.3	2.2	3.0
Manufacturing	13.7	11.9	4.9	6.3
Construction	12.0	9.6	4.7	6.1
Mining and utilities	13.7	10.2	5.7	6.0
Services	5.0	10.5	5.0	7.3

Source: Author's estimates based on data from the GGDC 10-sector database.

3. STRUCTURAL CHANGE, GROWTH AND EMPLOYMENT

3.1 An Analytical Perspective

Structural change, i.e., change in the sector-composition of output in an economy, is a consequence of unequal growth of sectors, which in turn results from uneven distribution of investment across the sectors and involves reallocation of labour across the sectors. Structural change is of particular significance in low-income

5. Growth accounting exercises have also shown total factor productivity growth to have been much higher in China in the post-1978 period. See Bosworth and Collins (2008).

economies, where the gaps in labour productivity between sectors are typically large. For, labour reallocation associated with structural change has important effects on growth as also on employment outcomes of growth.⁶ Labour reallocation, when this takes place from a low-productivity sector to a high-productivity sector, contributes to productivity growth. Labour reallocation of this kind is also the principal route to improvement in employment conditions.⁷ In developing economies, agriculture (being the reservoir of surplus labour) is typically the lowest-productivity sector, which also employs the bulk of available labour. Labour reallocation from agriculture to non-agriculture, therefore, contributes to growth and improves employment conditions.

Non-agriculture, of course, is a broad category that includes manufacturing, services, construction, and so on. Analysis of past growth experiences of today's developed economies has yielded an important stylised fact: economic growth is led by manufacturing at early stages of development and by services at later stages. Thus, labour reallocation occurs mainly from agriculture to manufacturing at early stages of development, and from agriculture and manufacturing to services at later stages.⁸ This is the classical pattern of structural change that has also been observed in the late-developers of East Asia (Japan, South Korea and Taiwan, for example).⁹

The fact that the classical pattern of structural change is observed in all countries that have successfully developed suggests a strong linkage between this pattern and economic development. The search for the economic logic under pinning this linkage led to the formulation of a set of *growth laws*.¹⁰ These point to certain special advantages that the manufacturing sector enjoys over the agricultural and the services sectors in the context of low-income economies. First, there are increasing returns to scale in manufacturing while agriculture faces diminishing returns and constant returns to scale prevail in services. Second, at low levels of income, the income elasticity of demand for manufactured products is higher than that for

6. This is the central idea in the celebrated Lewis model of development: economic growth in a low-income economy occurs through a process of labour transfer from the traditional sector, in which labour productivity is low because there is surplus labour and no capital is used in production, to the modern sector, in which labour productivity is high because labour is employed together with capital in production. Cf. Lewis (1954).

7. Employment conditions in these countries are poor because most of the workers are engaged in low-productivity activities. Hence, improvement in employment conditions basically through movement of workers from low-productivity activities to high-productivity activities.

8. The stylised fact emerged essentially from the work of Kuznets. See Kuznets (1966).

9. Asian Development Bank (2013).

10. These were formulated by Kaldor (1967) and are known as "Kaldor's growth laws".

agricultural products or services so that, with income growth, the demand for manufactured products grows faster than that for agricultural products or services. Third, manufactured products are far more tradable than the others so that external demand can play an important role in supporting the growth of manufacturing. Finally, the manufacturing sector has are markable capacity to employ low-skilled labour (migrating from agriculture) at a large productivity premium.

The upshot is that, in low-income economies, manufacturing-led growth is expected to be associated with labour reallocation of a kind that generates the highest growth dividend and brings about the fastest improvement in employment conditions. Things change, of course, as economies develop and incomes increase. For one thing, the income elasticity of demand for manufactured products declines while that for services increases. For another, precisely because manufacturing is subject to increasing returns to scale, its ability to absorb labour declines as growth takes place. So, after a certain level of development has been achieved, services take over from manufacturing the lead-role in the growth process and labour reallocation increasingly occurs from agriculture and manufacturing to services. This implies that the growth dividend from labour reallocation declines and the pace of improvement in the employment conditions slows down.

It follows from this analysis that, in low-income economies, rapid development requires both mobilisation of adequate resources for investment and appropriate allocation of investment for promotion of manufacturing-led growth.

Some economists have argued that recent advances in digital technology have transformed certain services so that they now have at least some of the characteristics of manufacturing. Information technology, communication and financial services enjoy increasing returns to scale in production and are also highly tradable. Consequently, so the argument goes, such services can lead the growth process in low-income economies today just as much as manufacturing.¹¹ The argument is far from persuasive for a number of reasons. First, it cannot be and has not been argued that low-income economies either have or can quickly acquire comparative advantage in these transformed services, which are skill- and technology-intensive. In other words, we have little reason to expect these services to account for a significant part of the output in low-income economies. Second, it cannot be and has not been argued that the income elasticity of demand for these services is high at low levels of income. So, we do not expect the domestic demand

11. Dasgupta and Singh (2005, 2006).

for these services to grow more rapidly than that for manufactured goods in low-income economies. Finally, it cannot be and has not been argued that these services can employ low-skilled labour (migrating from agriculture) at a large productivity premium. Indeed, these services are known to be highly skill-intensive. Growth led by these services, even if significant, is not expected to be associated with labour reallocation that brings about significant growth dividend and rapid improvement in employment conditions.

3.2 Structural Change in China and India

In 1955, India's economy was structurally more developed than China's (Table 3). China's economy was clearly more agricultural than India's. And both the industry and the services sectors were relatively more developed in India. Particularly striking is the fact that the manufacturing sector had barely developed in China while its shares in output and employment were already quite significant in India.

Table 3
Structural Change

	<i>Share (%) in GVA</i>				<i>Share (%) in employment</i>			
	<i>1955</i>	<i>1978</i>	<i>1994</i>	<i>2010</i>	<i>1955</i>	<i>1978</i>	<i>1994</i>	<i>2010</i>
China								
Agriculture	77.3	43.2	23.4	9.1	83.3	70.4	54.3	36.6
Manufacturing	1.8	19.6	29.6	36.5	6.5	13.2	15.3	19.2
Construction	0.5	5.2	6.7	6.8	1.0	2.1	5.2	7.8
Mining and utilities	0.6	6.4	5.0	7.9	1.0	2.1	2.2	1.8
Services	19.8	25.6	35.3	39.7	8.2	12.2	23.0	34.6
India								
Agriculture	55.8	40.1	29.8	16.1	77.6	71.1	63.6	51.0
Manufacturing	10.6	15.1	17.6	17.7	11.2	9.9	10.5	11.5
Construction	6.3	7.6	7.0	8.7	1.2	1.7	3.3	9.7
Mining and utilities	2.6	4.1	6.0	4.5	0.5	0.7	1.1	0.9
Services	24.8	33.1	39.7	52.9	9.5	16.6	21.5	26.9

Source: Author's estimates based on (i) data on Gross Value Added (in constant 2005 prices) from GGDC 10-Sector Database, (ii) data on employment in China from GGDC 10-Sector Database, and (iii) data on employment in India from National Sample Survey of Employment and Unemployment (various rounds). The data on employment used in this paper are presented in Appendix Table A4 and the methods of adjustment / estimation are described in a note to that Table.

Another striking difference between the two economies in 1955 was with respect to the pattern of productivity differentials across the sectors. The rather odd pattern of these differentials in China is suggested by the data in Table 3 and is explicitly shown by the data in Table 4. Agriculture was the lowest-productivity sector in India (as is to be expected) but not so in China, where labour productivity

in agriculture was the second-highest (after services) in the economy. The lowest-productivity sector in China was, rather surprisingly, manufacturing.¹² Industries other than manufacturing – “construction” and “mining and utilities” – were also, most unusually, low-productivity sectors in China. It was only by 1963 that the pattern of productivity differentials across sectors in China came to conform to the “normal” for low-income economies.

Table 4
Relative Labour Productivity in Sectors
 (Ratio of output per worker in a sector to the average in the economy)

	<i>China, 1955</i>	<i>China, 1963</i>	<i>India, 1955</i>
Agriculture	0.931	0.758	0.685
Manufacturing	0.276	1.006	0.873
Construction	0.492	3.432	4.309
Mining and utilities	0.567	2.062	4.790
Services	2.426	2.448	3.095

Source: Same as in Table 3.

Yet, during 1955-1978, structural change in China was very much along the expected line.¹³ Indeed, structural change was faster in China than in India such that, by 1978, the two economies had become structurally similar. Agriculture’s share in output had declined in both the countries, but the decline was significantly sharper in China than in India. The same can be said about agriculture’s share in employment. By 1978, China’s economy was no longer more agricultural than India’s. Moreover, manufacturing had developed very rapidly in China during this period while its growth was rather slow in India; by 1978, China’s economy was significantly more industrialised than India’s. Manufacturing accounted for 20 percent of output (up from 2 percent in 1955) and 13 percent of employment (up from 7 percent in 1955) in China; the corresponding figures for India were 15 percent (11 percent in 1955) and 10 percent (11 percent in 1955) respectively. Even in this period, when industrialisation did occupy the centre stage in India’s

12. The low level of development as also the low productivity of manufacturing in China probably reflected the devastation wrought on the economy by the wars (the anti-Japanese war and the civil war) that raged through the 1940s.

13. The process of structural change, however, went through twists and turns during the period. Particularly between 1957 and 1963, there were wild fluctuations in employment in sectors caused by the *Great Leap Forward* campaign, which forced unhelpful reallocation of labour from agriculture to manufacturing and only succeeded in massively disrupting agricultural production, thereby causing a devastating famine. The campaign was abandoned and labour was allocated back to agriculture during 1963-1969. The overall result was structural change without labour reallocation during 1957-1969. Structural change observed to have occurred during 1955-1978 really occurred during 1969-1978.

growth strategy, services actually recorded relatively rapid growth in India and the sector was well on its way to becoming the dominant sector in the economy. In 1978, services already accounted for a third of the national output.

Throughout the period of 1978-2010, structural change in China differed from that in India in four important respects. First, the pace of change was way faster in China, where agriculture's shares in output and employment recorded more rapid decline. In 2010, agriculture's share in output was 9 percent in China and 16 percent in India. And agriculture's share in employment was 37 percent in China and 51 percent in India. Second, China's growth was clearly manufacturing-led while India's growth was services-led. In 2010, manufacturing accounted for 37 percent of output in China but just 18 percent in India. On the other hand, services accounted for 53 percent of output in India but only 40 percent in China. Third, employment intensity of manufacturing was declining in China but remained roughly unchanged in India. In China, the share of manufacturing in total output was surging ahead of its share in total employment; while, in India, the two shares showed no divergence from each other (indeed, neither changed much). These trends imply presence of increasing returns to scale in manufacturing in China and their absence in India. It is worth noting that the trends in China, were in fact of the classical kind, very similar to those observed in Japan and South Korea, for example (as can be seen in Appendix Table A1). Finally, in the case of services, the output share and the employment share were converging in China (suggesting growing employment intensity) but diverging in India (suggesting growing skill intensity). Once again, the trends in China were classical, very similar to those observed in Japan and South Korea (Appendix Table A1) while the trends in India have no precedent in the history of development.

Overall, structural change was rapid and conformed to the classical pattern in China while it was relatively slow and unconventional in India.

3.3 Structural Change, Labour Reallocation and Growth

Structural change positively contributes to growth of labour productivity in the economy and thus to economic growth when it involves reallocation of labour from low-productivity to high-productivity sectors.¹⁴ Overall output growth, in

14. Structural change may involve reallocation of labour from high-productivity to low-productivity sectors, in which case it makes a negative contribution to growth. McMillan et al (2014) show that structural change in fact made a negative contribution to growth in many Latin American and African countries during 1990-2005.

other words, results partly from productivity growth within sectors (which we can think of as the direct result of investment in the sectors) and partly from labour reallocation across the sectors. How did structural change contribute to growth in China and India?

To empirically observe the contribution of labour reallocation to growth, we can employ the following decomposition of the aggregate growth of output per worker:¹⁵

$$g(y) = \sum_i l_i^0 \cdot g(y_i) + s$$

where $g(y)$ is average annual growth of overall output per worker in the economy, $g(y_i)$ is average annual growth of output per worker in sector i , l_i^0 is initial share of sector i in total employment in the economy, and s is the residual.

The first term measures the within-sector productivity growth, i.e., the economy wide productivity growth that would have occurred had there been no reallocation of labour across the sectors. The residual, then, gives a measure of the contribution of labour reallocation to aggregate productivity growth in the economy. The overall output growth, of course, is given by: $g(l) + g(y)$, where $g(l)$ is average annual growth of employment in the economy.

The results of decomposition of aggregate productivity growth in China and India are shown in Table 5. The growth of output per worker was significant and was also accelerating over time in both the economies. But productivity growth was higher in China throughout the period under study and higher by a large margin especially during 1978-2010. The same observation can be made with respect to within-sector productivity growth: this was significantly higher in China than in India throughout the period under consideration and higher by a huge margin during 1978-2010. These differences, of course, reflect that the level of investment was much higher in China during all the periods and that the investment was also more productive in China during 1978-2010.

15. The decomposition has been widely used in the literature. See, for example, Bosworth and Collins (2008), McMillan et al (2014), Timmer et al (2014) and Majid (2015).

Table 5
Labour Reallocation and Growth

	1955-1978		1978-2010		1978-1994		1994-2010	
	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>	<i>China</i>	<i>India</i>
Employment growth	2.6	1.9	1.5	1.8	2.4	2.3	0.8	1.4
Growth of output per worker	2.5	1.7	7.8	4.0	6.3	2.7	8.7	5.2
Within-sector growth	1.5	1.0	5.6	2.6	4.8	1.7	6.5	3.5
Labour reallocation effect	1.0	0.7	2.2	1.4	1.5	1.0	2.2	1.7

Source: Same as in Table 3.

The contribution of labour reallocation to productivity growth was also significant in both the countries. However, the growth dividend from labour reallocation was significantly larger in China in all the periods. The structural change associated with manufacturing-led growth in China was significantly more growth-enhancing than the structural change associated with services-led growth in India. Thus, China's growth was much faster than India's growth not just because the investment rate was higher in the former but also due to the significantly larger growth dividend from structural change in the former.

3.4 Structural Change, Labour Reallocation and Employment

Labour reallocation from agriculture to non-agriculture is the primary mechanism for improvement in employment conditions in the developing economies, where a large part of the workforce is typically engaged in very low-productivity activities in agriculture. Since labour productivity is much higher in non-agriculture, movement of workers from agriculture to non-agriculture means movement from lower-productivity jobs (that yield lower labour-incomes) to higher-productivity jobs (that yield higher labour-incomes). Rapid movement of this kind also contributes to growth of labour productivity in agriculture by reducing surplus labour in the sector, thereby improving the employment conditions there. Thus, structural change that is growth-enhancing is also what improves overall employment conditions in the economy. Indeed, there is a positive relation between the two effects of structural change; the larger the growth dividend, the larger is the improvement in employment conditions.

Given what we already know from the discussion above, we expect labour reallocation to have been larger in scale and to have improved employment conditions much more substantively in China than in India. We can empirically verify this by directly examining the scale of labour reallocation and its contribution to improvement in employment conditions in the two countries. To do this, we

need to find an empirical measure of labour reallocation from/to a sector that has occurred during a specified period. A simple measure is given by:

$$(LR)_i = (e_{it} - e_{i0}) * E_t$$

where $(LR)_i$ is the quantity of labour reallocated from/to sector i in a period, e_{i0} is share of sector i in total employment at the beginning of the period, e_{it} is share of sector i in total employment at the end of the period, and E_t is total employment in the economy at the end of the period.

The idea underlying the measure is simple. Had there been no labour reallocation across the sectors, each sector's share in total employment would have been the same in initial and terminal years of a given period but employment in each sector would have increased reflecting the increase in total employment in the economy. So, $(e_{i0} * E_t)$ would then have been the employment in sector i in period t , which can be called as the "zero-reallocation" employment. If there has been labour reallocation, the actual employment in sector i in period t would be given by $(e_{it} * E_t)$. The difference between these two levels of employment can be regarded as the quantity of labour reallocated from/to sector i . When there is reallocation from sector i , $e_{it} < e_{i0}$ so that $(LR)_i$ is negative. When there is reallocation to sector i , $e_{it} > e_{i0}$ so that $(LR)_i$ is positive.

However, as it stands, $(LR)_i$ is not comparable across countries because it depends on E_t , which varies across countries. But $(LR)_t$ can be expressed as a percentage of the "zero-reallocation" employment $(e_{i0} * E_t)$ to get a measure of the scale of reallocation from/to sector i that is comparable across countries:

$$S(LR)_i = \{[(e_{it} - e_{i0}) * E_t] / (e_{i0} * E_t)\} * 100 = [(e_{it} - e_{i0}) / e_{i0}] * 100$$

Estimates of magnitude and scale of labour reallocation from agriculture to non-agriculture in China and India are presented in Table 6. The scale of reallocation was significant and accelerating in both the economies. But the scale was much larger in China than in India during all the periods. Between 1978 and 1994, for example, 23 percent of the agricultural workers moved to jobs in non-agriculture in China while the corresponding figure was 11 percent in India. Thus, the pace of transfer of workers from low-productivity jobs in agriculture to higher-productivity jobs in non-agriculture was much faster in China than in India.¹⁶ The faster pace

16. In 1978, the ratio of labour productivity in non-agriculture to that in agriculture was 3.2 in China and 3.7 in India. Throughout the period 1978-2010, the ratio was increasing in both economies. By 2010, the ratio was 5.5 in China and 6.3 in India.

of labour transfer also meant faster growth of labour productivity in agriculture in China.¹⁷ Thus, the pace of improvement in overall employment conditions was much faster in China than in India.

Table 6
Labour Reallocation from Agriculture to Non-agriculture

	Magnitude(number in million)			Scale (percentage)		
	1955-1978	1978-1994	1994-2010	1955-1978	1978-1994	1994-2010
China	-51.3	-94.4	-113.2	-15.3	-23.0	-32.4
India	-16.8	-28.0	-58.6	-8.4	-10.6	-19.8

Source: Same as in Table 3.

It is also useful to consider the magnitude of labour reallocation to different non-agricultural sectors, the estimates of which are presented in Table 7. Certain remarkable differences between the two economies in terms of the pattern of absorption of the reallocated labour are immediately apparent. First, the manufacturing sector was a major employer of workers moving out of agriculture in China throughout the period; in India, in contrast, its role as employer of such workers has been quite unimportant. Even during 1955-1978, when manufacturing was accorded a lead-role in the growth strategies of both countries, the sector played stunningly different roles in labour reallocation. While manufacturing employed 52 percent of the transferred workers in China, the sector employed none of the transferred workers in India. In fact, there was labour reallocation from manufacturing to other non-agricultural sectors in India. Second, except during the first period, the services sector was a relatively more important employer of transferred workers in China than in India. Finally, construction was an increasingly important absorber of reallocated labour in India but not so in China. During 1994-2010, when construction absorbed as much as 51 percent of the reallocated labour in India, the corresponding figure for China was 15 percent. Strikingly, during this period, labour productivity in construction recorded zero growth in India while it grew at 6 percent per annum in China. Clearly, construction had become a refuge sector in India.¹⁸

17. During 1955-1978, average annual growth of output per worker in agriculture was 1.3 percent in China and 0.6 percent in India; during 1978-2010, it was 4.9 percent in China and 2.2 percent in India.

18. As a matter of fact, a growing proportion of the employment in construction in India was generated through special employment schemes implemented by the government.

Table 7
Labour Reallocation to Non-agricultural Sectors

	<i>Number in million</i>			<i>Percentage distribution</i>		
	<i>1955-78</i>	<i>1978-94</i>	<i>1994-2010</i>	<i>1955-78</i>	<i>1978-94</i>	<i>1994-2010</i>
China						
Manufacturing	26.9	12.4	25.7	52.4	13.2	22.2
Construction	4.3	18.2	17.1	8.4	19.3	14.8
Mining and utilities	4.4	0.7	-2.6	8.6	0.7	-2.2
Services	15.7	63.1	75.6	30.6	66.8	65.2
Total	51.3	94.4	115.8	100.0	100.0	100.0
India						
Manufacturing	-3.4	2.5	4.6	-20.2	8.9	7.8
Construction	1.3	5.9	29.8	7.7	21.1	50.9
Mining and utilities	0.5	1.5	-0.9	3.0	5.4	-1.5
Services	18.4	18.1	25.1	109.5	64.6	42.8
Total	16.8	28.0	58.6	100.0	100.0	100.0

Source: Same as in Table 3.

It is abundantly clear that China's manufacturing-led growth was far more effective in improving the employment conditions than India's services-led growth. This was not just because, in China, manufacturing was a major destination for labour moving out of agriculture but also because services became increasingly important absorber of such labour. In India, in contrast, not only was manufacturing an insignificant absorber of labour moving out of agriculture but services also became progressively less important absorber of such labour. Had construction not been a major absorber of labour, a fact that stands out as wholly exceptional, the scale of labour reallocation from agriculture would have been significantly smaller than it actually was.

4. THE GREAT DIVERGENCE: WHY?

Why did the growth paths of the two economies diverge so dramatically after 1978? The true answer is: because the two states had different capabilities and were pursuing different goals. To develop and elaborate on this answer, however, the analysis has to focus on identifying the differential capabilities of the two states and on isolating the social and political factors that made the two states pursue different goals. This is not the kind of analysis that we can attempt here.¹⁹ Our objective is to identify some proximate factors that made the divergence a reality.

19. A comprehensive and insightful analysis of the social and political origins of the differences in capabilities and goals of the two states is available in Saith (2008). See also Xu (2011) for a discussion of the strengths and weaknesses of China's institutional framework for economic decision making and its relation to the observed pattern of development.

Accordingly, we focus on differences in initial conditions and differences in the nature and content of the economic reforms in the two economies.

4.1 The Initial Conditions

One important fact is that the actual outcomes of the development during the period of 1955-1978 in the two countries were rather different (even though their development strategies had been quite similar at the level of idea and intent) and had thus set very different initial conditions for growth in the period after 1978. Particularly remarkable is the fact that although, around 1980, the two countries had roughly the same per capita income, China was already well ahead of India in certain important respects.

In the first place, China had made much greater progress in mobilising resources for investment than India. During 1977-1979, the average domestic saving rate in China was 38 percent against India's 14 percent, and the average investment rate was 29 percent in China against 19 percent in India. So, China had already acquired an adequate capacity to invest while India was very far from achieving it. We also note that while the saving-investment gap was positive and large in China indicating large inventory accumulation (i.e., relatively low efficiency of investment), it was negative and large in India indicating substantive dependence on availability of foreign saving. In the post-1978 period, China, with its much greater capacity to invest, was clearly well placed to achieve much faster economic growth than India.

Secondly, China had also made much greater progress than India in human resource development. In 1980, when the per capita income was the same in the two countries, the average Chinese was healthier and better educated than the average Indian (Table 8). Life expectancy at birth was 67 years in China compared to 54 years in India; average years of education of the adult population was 4.7 in China compared to 2.3 in India.

Thirdly, there was a crucial difference between the two countries in terms of the pattern of educational attainments. During 1955-1978, China's education policies had been geared up to achieving mass literacy and basic education for its population at large, while India's education policies had placed much emphasis on tertiary education for a few and paid little attention to basic education for the mass of population.²⁰ In 1980, 66 percent of India's adult population had no formal schooling; the corresponding figure for China was 27 percent. While 72 percent of China's adult population had between one to ten years of education, only 31

20. Cf. Ghose (2016); Kochar et al (2006) and Kotwal et al (2011).

percent of India's adult population had this. On the other hand, while less than 1 percent of the adult Chinese had acquired post-secondary education, more than 2 percent of the adult Indians had done so. Thus, China had created a large force of semi-skilled labour ready for productive employment in manufacturing and labour-intensive services, while India had created a small force of cheap high-skilled labour ready for employment in skill-intensive services.

Table 8
Human Development, 1980

	<i>China</i>	<i>India</i>
Life expectancy at birth	66.8	53.8
Average years of schooling (population aged 15 or more years)	4.7	2.3
Percentage with no schooling	27.1	66.4
Percentage with up to primary education	38.4	12.6
Percentage with up to secondary education	33.6	18.7
Percentage with tertiary education	0.9	2.3

Source: For life expectancy and infant mortality, World Bank (World Development Indicators Database), and for schooling Barro-Lee Database, Version 1.2 (2011).

Overall, thanks to its achievements during 1955-1978, China was much better prepared than India for take-off into rapid manufacturing-led growth in the early 1980s. It is well worth noting here that China's achievements during 1955-1978 owed much to the unique system of collective agriculture it had developed through a process of trial and error. The communes performed impressively in delivering a large agricultural surplus to the state even while providing basic health care, basic education and basic social security to the rural population in a period when rural-urban migration had been made virtually impossible by the *houku* or the household registration system.²¹ The communes also managed to generate a surplus for investment in agriculture. More importantly, they organised labour accumulation involving mobilisation of worker-members for building infrastructure (irrigation and drainage systems, for example) and this played a major role not just in increasing productivity in agriculture during 1955-1978 but also in establishing foundations for growth acceleration in agriculture in the late 1970s.²²

21. The state extracted the surplus through a system of compulsory procurement at very low prices, which amounted to a system of heavy taxation of agriculture. The household registration system accorded permanent rural or urban status to the population; those born in rural areas received rural/agricultural *houku* and those born in urban areas received urban/non-agricultural *houku*.

22. Between 1957 and 1978, the proportion of cultivated area irrigated had increased from 27 percent to 45 percent, chemical fertilizers used per hectare had increased from a negligible level to 89 kg and the proportion of cultivated area machine-ploughed increased from 3 percent to 41 percent. See Ghose (1984).

In contrast, agriculture in India never really delivered a sizeable surplus to the state and the rural economy had no institutions for providing basic health care, basic education and basic social security to the rural population. In fact, the state had to provide investment and subsidies to agriculture to make even a relatively slow agricultural growth possible.

4.2 The Reforms

There are several myths about the economic reforms implemented in China and India in the post-1978 period. The myth about China is that the reforms during the late 1970s opened the economy to trade and capital flows thereby triggering rapid export-oriented industrialisation of the kind that South Korea and Taiwan had experienced earlier. On this view, foreign capital flowed in to promote export-oriented manufacturing, which brought growth acceleration and created jobs for millions of rural surplus workers there by rapidly reducing the incidence of poverty. The myth about India is that the economic reforms really came in the early 1990s resulting in India lagging far behind China in benefiting from the growth-unleashing impact of globalisation.

As a matter of fact, China's reforms started in agriculture in 1979. There were two important reforms that inaugurated a period of rapid agricultural growth.²³ First, the government increased the prices of agricultural goods thereby greatly improving agriculture's terms of trade with non-agriculture and substantially lowering the tax-burden on agriculture. Second, the communes were dismantled and the "household responsibility system" was introduced effectively resurrecting peasant farming with highly egalitarian distribution of landholdings. The effects of these two reforms were dramatic. During 1980-1986, agricultural output grew at an average annual rate of 7.5 percent (it had been just 3 percent during 1955-1978) and output per agricultural worker increased at a rate of 6.3 percent per annum. Per capita real income in rural areas increased rapidly, by 12 percent per annum during 1980-1986, as a result.²⁴ It was this that reduced poverty quite dramatically. After 1986, the growth of agriculture naturally slowed down - it was 4 percent per annum during 1986-1995 - and so did the growth of rural per capita real income, which grew at 3.5 percent per annum during 1986-1995. Even these slower growth rates, however, were in fact still quite high.

23. See Ghose (1984, 1987); Saith (2008); Zhu (2012); and Xu (2011).

24. See Huang, Otsuka and Rozelle (2008).

Apart from reducing poverty, the rapid growth of output and incomes in agriculture also provided strong stimulus to rural industrialisation (i) by generating rapid growth of demand for manufactured consumer goods (and housing), (ii) by releasing labour from agriculture for employment in non-agriculture²⁵ and (iii) by making investable surplus available to rural authorities and individuals. Rural industries—the Township and Village Enterprises (TVEs)- flourished in this context.²⁶ Certain other reforms that freed rural markets, eased access to formal credit (from rural credit cooperatives and the Agricultural Bank of China) and industrial inputs, and provided tax holidays also supported growth of these enterprises.²⁷ Between 1978 and 1994, the value added (in real terms) produced by these enterprises increased at an annual rate of 22 percent while employment in them increased at an annual rate of 9.5 percent.²⁸ Most of the TVEs were engaged in manufacturing.²⁹ And they all employed workers moving out of agriculture.³⁰ From 1978 till the mid-1990s, labour reallocation from agriculture to non-agriculture, mainly to manufacturing, occurred exclusively within the rural economy (rural-to-urban migration of workers was insignificant in this period). The share of TVEs in rural employment increased from 9 percent in 1978 to 28 percent in 1996. Growth of TVEs slowed down after the mid-1990s and employment growth in these enterprises decelerated sharply after 1996.³¹ In the post-1996 period, labour reallocation occurred principally through migration of rural workers to urban jobs.

Export-oriented industrialisation supported by foreign capital, on the other hand, played only a minor role in reallocating labour from agriculture though it undoubtedly played an important role in growth acceleration. This is easily seen

25. In the context of the resurrected peasant farming system, surplus labour now existed in farm households, which facilitated its release.

26. These enterprises, earlier called Commune and Brigade Enterprises (CBEs), had their origins in the Great Leap Forward campaign (1958-1961) but really started growing in the early 1970s. Employment in the CBEs increased from 10 million (3.6 percent of the rural workforce) in 1974 to 28 million (9.2 percent of the rural workforce) in 1978. See Ghose (1987).

27. See Maddison (2007) and Huang (2012).

28. Author's estimates based on data reported in Maddison (2007) and Cai, Park and Zhao (2008).

29. In 1995, manufacturing accounted for 74 percent of the valued added produced by the TVEs. See Maddison (2007).

30. There were a few TVEs engaged in agricultural activities, but these employed very few workers. Majid (2015) estimates that the share of agricultural TVEs in total TVE employment was less than 3 percent in 1990 and just over 1 percent in 2011.

31. The golden era of TVEs extended from 1980 to 1996, when employment in them grew at 9.9 percent per annum. Between 1996 and 2010, employment growth in TVEs was only 1.2 percent per annum.

from the relative insignificance of employment in what are called Foreign Invested Enterprises (FIEs). In 1990, the FIEs employed 0.7 million workers when the TVEs employed 93 million. By 2010, employment in FIEs had increased to 18 million while the employment in TVEs had increased to 159 million. It was rural industrialisation rather than export-oriented industrialisation that moved surplus workers from agriculture to productive jobs in manufacturing.

It should be said here that, contrary to a widespread belief, export-oriented industrialisation was not stimulated by an opening-up of China's economy to trade and capital flows. The opening-up actually happened only in the late 1990s when China was preparing to join the World Trade Organisation (WTO). Export-oriented industrialisation had begun much earlier, in 1980, with the setting-up of four Special Economic Zones (SEZs) designed to attract Foreign Direct Investment (FDI) for establishing fully export-oriented manufacturing industries. The number of the SEZs was gradually increased through the 1980s and the first half of the 1990s.³² Between 1980 and 1995, the number of SEZs increased from 4 to 341, FDI inflow into the SEZs increased from 51 million US\$ (35 percent of total FDI inflow China) to 34 billion US\$ (90 percent of total FDI inflow into China), and exports from the SEZs increased from 278 million US\$ (1.5 percent of China's exports) to 125 billion US\$ (84 percent of China's exports).³³ Throughout this period, China's economy remained nearly as protected as India's (see Appendix Tables A2 and A3). In SEZs, China had found an instrument for developing trade and attracting foreign capital without really opening up its economy.

India began to open up its economy to trade and capital flows in the early 1990s, but the opening-up was a gradual process that was completed only in the late 1990s (see Appendix Tables A2 and A3).³⁴ So, it is not true that India lagged far behind China in opening-up of the economy. It did lag behind in developing trade and in attracting foreign capital but only because it did not have SEZs.

It is not true, moreover, that no economic reforms were implemented prior to the 1990s. There were reforms in the 1980s, which basically sought to relax the restrictions (the so-called "licence-permit-quota raj") that had been imposed on private entrepreneurs in non-agriculture in the preceding period of planned

32. It was only in 1992 that augmenting FDI inflow and exports of manufactures by setting up SEZs became a national policy.

33. Cf. Xu (2011).

34. See Kotwal et al (2011) for detailed discussion.

development. Thus, licensing requirements were relaxed, administered prices of key intermediates (such as steel and coal) were decontrolled, private entrepreneurs' access to credit and foreign exchange was eased and imports of capital goods and intermediate inputs were liberalised. It is difficult to see any particular strategy for growth in these reforms. How is it, then, that growth actually accelerated? And how is it that services emerged as the lead sector?³⁵

The answer to the first question is quite simple: domestic aggregate demand was stimulated through expansionary fiscal policy and increased imports of capital goods (embodying newer technologies) and intermediate inputs (of better quality), financed through external borrowing, were used to augment supply.³⁶ To the second question, there is no simple answer. Several factors were involved. The very instruments used to stimulate the growth - fiscal expansion, external borrowing and increased imports - biased income growth in favour of the rich so that the domestic demand for services increased faster than that for manufactured goods.³⁷ Following the nationalisation of private banks (in 1969 and 1980), there was significant expansion of banking services through the 1980s. Limited import liberalisation interacted with ready availability of cheap skilled labour to stimulate growth of computer-related services (new arrival on the scene at the time).³⁸

The debt-fuelled growth of the 1980s, not surprisingly, led to a serious economic crisis in the early 1990s and there forms of the 1990s came in response to this crisis. The reforms included abolition of industrial and import licensing, narrowing of the list of industries reserved for the public sector, liberalisation of trade (progressive reduction of tariff and non-tariff barriers), liberalisation of inward flows of foreign capital, financial sector liberalisation (removal of control over capital issues, freer entry for private, domestic and foreign, banks, and opening up of the insurance sector).³⁹ Intended or not, these reforms did much for services but very little for manufacturing. The opening-up of communication and financial services (hitherto state monopolies) to private entrepreneurs, domestic and foreign, brought rapid

35. Between 1980 and 1990, the share of services in India's GDP increased from 38 percent to 43 percent while the share of manufacturing remained stable at 15 percent.

36. See Joshi and Little (1996), Srinivasan and Tendulkar (2003) and Panagariya (2008).

37. Income inequality started growing in the early 1980s. See Chancel and Piketty (2017).

38. Fortuitous circumstances such as the exit of IBM from India in 1967 also helped. Enterprises that were to emerge as star exporters of software services in the late 1990s had been established in the late 1960s and the 1970s.

39. For detailed discussion of the reforms, see Kochar et al (2006) and Kotwal et al (2011).

growth of these services. Growth of international trade and capital flows directly boosted domestic trade and “hotels and restaurants” and indirectly facilitated rapid export-oriented growth of software services.⁴⁰ Given the importance of entrepreneurship and skilled labour in the growth of many of these services, incremental incomes went mostly to the already rich and contributed to the growth of domestic demand for services.⁴¹ Meanwhile, manufacturing remained disadvantaged from both the demand side (since little was done to stimulate growth of agriculture and of exports) and from the supply side (non-development of physical infrastructure).

5. CONCLUDING OBSERVATIONS

In the 1950s, China and India were quite similar in terms of level of development. And they had remained similar till the end of the 1970s. Then their development paths diverged quite radically. In the next three decades, China’s growth was not just much faster but also far more development-oriented than India’s. The structural change associated with China’s manufacturing-led growth was significantly more growth-enhancing and employment-generating than the structural change associated with India’s services-led growth. In 2010, China’s per capita income was much higher than India’s. And employment conditions were far better in China than in India. In short, China had become a more developed country.

What explains the divergent development paths of the two countries in the period since the end-1970s? There were two basic reasons. The first relates to the differences in initial conditions. During 1955-1978, when the pace and pattern of growth were apparently quite similar in the two countries, China actually had achieved much greater progress in mobilising resources for investment and in developing human capital. At the end of the 1970s, therefore, it was well prepared for a take-off into rapid manufacturing-led growth. India’s much lower capacity to invest and highly skewed human capital (given the emphasis it had placed on tertiary education for a few) precluded a similar take-off.

The second reason has to do with the differences in the nature and objectives of economic reforms implemented in the two countries through the period of 1980s and 1990s. China’s reforms had well-defined objectives such as agricultural growth,

40. See Murthy (2004) for a discussion.

41. From the early 1990s onwards, the growth of income inequality was very sharp. See Chancel and Piketty (2017).

rural industrialisation and export-oriented industrialisation that had clear relevance for development. On the other hand, it is difficult to discern any clear development-related objectives of India's economic reforms; these were simply about freeing the private entrepreneurs and opening the economy to trade and capital flows. India's services-led growth appears fortuitous, arising from a coincidence of availability of cheap skilled labour (an initial condition) and arrival of new information and communication technologies that spawned rapid growth of new skill-intensive services in the global economy.

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Appendix Tables

Appendix Table A1
Structural Change in Japan and South Korea

	<i>Japan</i>				<i>South Korea</i>			
	<i>Manufacturing</i>		<i>Services</i>		<i>Manufacturing</i>		<i>Services</i>	
	<i>Output share</i>	<i>Emp share</i>	<i>Output share</i>	<i>Emp share</i>	<i>Output share</i>	<i>Emp share</i>	<i>Output share</i>	<i>Emp share</i>
1953	12.9	16.8	59.0	34.4	1.7		74.2	
1963	18.6	22.4	55.4	42.6	4.0	8.3	70.4	26.3
1967	21.7	23.8	55.6	46.1	5.6	12.2	69.1	29.7
1973	25.4	24.6	52.7	50.5	11.0	16.5	64.8	30.8
1991	26.2	22.8	57.2	58.6	23.5	27.1	55.0	48.2
2000	23.8	18.9	63.2	64.6	30.3	20.3	53.9	61.2
2010	24.0	14.5	65.1	71.3	35.2	17.6	50.8	66.6

Source: Author's estimates based on data from GGDC 10-Sector Database.

Appendix Table A2
Export-GDP and FDI-GDP ratios (in %)

	<i>1985</i>	<i>1990</i>	<i>1995</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>
Export-GDP ratio						
China	8.3	13.6	18.0	20.9	33.8	26.2
India	5.3	7.1	10.8	13.0	19.6	22.4
FDI-GDP ratio						
China	0.54	0.97	4.88	3.48	4.55	4.00
India	0.05	0.07	0.59	0.77	0.89	1.64

Source: World Development Indicators Database

Appendix Table A3
Tariff Rates (in %)

	<i>1992</i>	<i>1996</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>
<i>Simple average rates, all products</i>					
China	39.7	22.0	16.4	9.2	8.1
India	56.0	37.0	33.4	16.5	8.9
<i>Import share weighted rates, all products</i>					
China	32.2	19.8	14.7	4.9	4.7
India	27.0	23.7	23.4	13.9	6.1

Source: World Development Indicators Database

Appendix Table A4
Employment in China and India (numbers in million)

	1955	1978	1994	2010
China				
Total	223.3	401.5	583.0	657.8
Agriculture	186.0	282.9	316.5	241.4
Manufacturing	14.5	52.9	89.1	126.2
Construction	2.2	8.4	30.4	51.2
Other industries	2.2	8.4	12.9	12.1
Services	18.3	48.9	134.1	226.9
India				
Total	165.5	258.0	371.0	465.1
Agriculture	128.4	183.4	235.6	237.2
Manufacturing	18.5	25.5	39.3	53.4
Construction	2.0	4.4	12.2	45.1
Other industries	0.8	1.8	4.1	4.2
Services	15.8	42.9	79.8	125.2

Note & Source: In the data for China, taken from the GGDC 10-sector Database, there was a break in the series in 1990. The data for the period 1990-2010, therefore, had to be adjusted so as to make them comparable to the data for the period 1955-1989. The method of adjustment used is as follows: growth of total employment for 1989-1990 is assumed to be the same as that for 1990-1991; an adjusted figure for total employment in 1990 is then estimated by using the figure for 1989 as the base; the procedure is repeated for each of the years between 1990 and 2010. For India, the estimates are derived by combining the ratios and proportions available from the various rounds of the National Sample Survey of Employment and Unemployment with the estimates of population available from the United Nations Population Division Database.

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